City of Lawrence
Douglas County
PLANNING & DEVELOPMENT SERVICES

Updated:
1/30/13 @ 1:45pm
Added revised staff memo with revised conditions for Item 8 - CUP for Penny Sand Pit

1/28/13 @ 12:15pm
Added communications for the following items:
Item 3A-3E - Preliminary Plat & Rezonings for Langston Heights
Item 4 - CPA Auto-Related Commercial Centers
Item 8 - CUP for Penny Sand Pit at N 1500 Rd & E 1850 Rd
Added staff memo for Item 9 - Preliminary Dev Plan for The Links at 251 Queens Rd

1/25/13 @ 4:45pm
Added the following items:
Replaced W of K-10 Area Plan Map for Item 3A - Preliminary Plat for Langston Heights
Communications for Item 8 - CUP for Penny Sand Pit at N 1500 Rd & E 1850 Rd
Communications for Item 9 - Preliminary Dev Plan for The Links at 251 Queens Rd
Draft December Planning Commission Minutes

1/24/13 @ 3:00pm
Added Item 9 - Preliminary Development Plan for The Links, 251 Queens Rd

1/23/13 @ 2:00pm
The following items will be added when available:
Item 9 - Preliminary Development Plan for The Links, 251 Queens Rd
The Draft December Planning Commission Minutes

LAWRENCE-DOUGLAS COUNTY METROPOLITAN PLANNING COMMISSION
CITY HALL, 6 EAST 6TH STREET, CITY COMMISSION MEETING ROOM
AGENDA FOR PUBLIC & NON-PUBLIC HEARING ITEMS
JANUARY 28 & 30, 2013 6:30 - 10:30 PM

GENERAL BUSINESS:

PLANNING COMMISSION MINUTES

Receive and amend or approve the minutes from the Planning Commission meeting of December 10, 2012.

COMMITTEE REPORTS

Receive reports from any committees that met over the past month.

COMMUNICATIONS

a) Receive written communications from the public.
b) Receive written communications from staff, Planning Commissioners, or other commissioners.

c) Receive written action of any waiver requests/determinations made by the City Engineer.
d) Disclosure of ex parte communications.
e) Declaration of abstentions from specific agenda items by commissioners.

AGENDA ITEMS MAY BE TAKEN OUT OF ORDER AT THE COMMISSION'S DISCRETION

REGULAR AGENDA (JANUARY 28, 2013) MEETING
PUBLIC HEARING ITEMS:

ITEM NO. 1 RS7 TO RS5; 10.56 ACRES; SE OF 25TH TERR & O'CONNELL RD (SLD)

Z-12-00325: Consider a request to rezone approximately 10.56 acres from RS7 (Single-Dwelling Residential) to RS5 (Single-Dwelling Residential) for Fairfield Farms East Addition, located SE of 25th Terrace and O'Connell Road. Submitted by CFS Engineers, for Fairfield Investors LLC, property owner of record.

ITEM NO. 2 CONDITIONAL USE PERMIT FOR COMMUNICATIONS TOWER; NEAR THE SOUTHEAST CORNER OF N 400 RD & E 550 RD (SLD)

CUP-12-00287: Consider a Conditional Use Permit for construction of a 180' tall communication tower for county emergency communication equipment, to be located east of the existing water tank near the southeast corner of N 400 Road and E 550 Road. Submitted by Selective Site Consultants on behalf of Douglas County Emergency. Jere McElhaney, property owner of record.

NON-PUBLIC HEARING ITEM:

ITEM NO. 3A PRELIMINARY PLAT FOR LANGSTON HEIGHTS ADDITION; E SIDE OF K-10 & S OF W 6TH ST (SLD)

PP-12-00228: Consider a Preliminary Plat for Langston Heights Addition, a 70 lot subdivision that includes detached, duplex and multi-family residential lots. An original variance from Section 20-811 (c) of the Subdivision Regulations that requires sidewalks on both sides of streets was withdrawn at the December Planning Commission meeting. The property is along the east side of K-10 highway and south of W. 6th Street, north and south of Crystal Lane and Palisades Drive extended to the west. Submitted by Landplan Engineering, for Langston Heights, LC, property owner of record.

PUBLIC HEARING ITEMS:

ITEM NO. 3B UR TO RM12D; 4.582 ACRES; N & S OF CRYSTAL LANE & PALISADES DR (SLD)

Z-12-00229: Consider a request to rezone approximately 4.582 acres from UR (Urban Reserve) to RM12D (Multi-Dwelling Residential), located north and south of Crystal Lane and Palisades Drive extended as shown in the preliminary plat of Langston Heights Addition. Submitted by Landplan Engineering, for Langston Heights, LC, property owner of record.

ITEM NO. 3C UR TO RS7; 9.122 ACRES; N & S OF CRYSTAL LANE & PALISADES DR (SLD)

Z-12-00231: Consider a request to rezone approximately 9.122 acres from UR (Urban Reserve) to RS7 (Single-Dwelling Residential), located north and south of Crystal Lane and Palisades Drive extended as shown in the preliminary plat of Langston Heights Addition. Submitted by Landplan Engineering, for Langston Heights, LC, property owner of record.

ITEM NO. 3D UR TO RM12; 9.98 ACRES; E SIDE OF K-10 & S OF W 6TH ST (SLD)

Z-12-00232: Consider a request to rezone approximately 9.98 acres from UR (Urban Reserve) to RM12 (Multi-Dwelling Residential), located along the east side of K-10 highway south of W. 6th Street and along the west side of a proposed street known as Renaissance Drive, as shown in the preliminary plat of Langston Heights Addition. Submitted by Landplan Engineering, for Langston Heights, LC, property owner of record.

ITEM NO. 3E UR TO RS5; 3.88 ACRES; E SIDE OF K-10 & S OF W 6TH ST (SLD)

Z-13-00015: Consider a request to rezone approximately 3.88 acres from UR (Urban Reserve) to RS5 (Single-Dwelling Residential), located along the east side of K-10 highway south of W. 6th Street and along the west side of a proposed street known as Renaissance Drive, as shown in the preliminary plat of Langston Heights Addition. Submitted by Landplan Engineering, for Langston Heights, LC, property owner of record.

ITEM NO. 4 COMPREHENSIVE PLAN AMENDMENT TO H2020, CHP 6 TO ADD POLICIES FOR THE AUTO-RELATED COMMERCIAL CENTERS DESIGNATION (DDW)

CPA-5-5-11: Comprehensive Plan Amendment to Chapter 6 of Horizon 2020 to add policies for the Auto-Related Commercial Centers designation. *Initiated by Planning Commission 5/25/11*.

NON-PUBLIC HEARING ITEMS:

ITEM NO. 5 SAND DREDGING REPORT (DDW)

Consider Sand Dredging Report and direct staff, as appropriate.

ITEM NO. 6 DOWNTOWN REDEVELOPMENT

Receive report related to Downtown redevelopment issues and opportunities. Staff will schedule a joint Planning Commission/Historic Resources Commission work session to consider the report.

ITEM NO. 7 APPOINTMENTS FOR OREAD DESIGN GUIDELINES

Appointment two Planning Commission members to serve with staff and Historic Resources Commission members on a joint steering subcommittee of the Planning Commission and Historic Resources Commission to process the Oread Design Guidelines.

MISCELLANEOUS NEW OR OLD BUSINESS

Consideration of any other business to come before the Commission.

MISC NO. 1 VARIANCE; REVISED PRELIMINARY PLAT FOR FORMER FARMLAND PROPERTY (SMS)

Variance request from sidewalk requirement in Section 20-811(c)(1)(i) associated with a revision to the Preliminary Plat for the Former Farmland Property (PP-12-00101); located at 2700 E 23rd Street. Request is to construct sidewalk on one side of access road adjacent to Tract B (Westar permanent easement) where open ditch section is designed for stormwater improvements.

Recess until 6:30pm on January 30, 2013

BEGIN PUBLIC HEARING (JANUARY 30, 2013):

COMMUNICATIONS

a) Receive written communications from staff, Planning Commissioners, or other commissioners.
b) Disclosure of ex parte communications.
c) Declaration of abstentions from specific agenda items by commissioners.

AGENDA ITEMS MAY BE TAKEN OUT OF ORDER AT THE COMMISSION'S DISCRETION

REGULAR AGENDA (JANUARY 30, 2013) MEETING
PUBLIC HEARING ITEMS:

Recess LDCMPC
Convene Joint Meeting with Eudora Planning Commission

ITEM NO. 8 CONDITIONAL USE PERMIT FOR PENNY SAND PIT; N 1500 RD & E 1850 RD (MKM)

CUP-12-00099: Consider a Conditional Use Permit for sand excavation and extraction for Penny Sand Pit, approximately 434 acres located on the NE Corner of N 1500 Road & E 1850 Road. Submitted by Landplan Engineering, for William Penny & Van LLC, property owners of record. *Joint meeting with Eudora Planning Commission. (The Planning Commission voted at their October meeting to forward the CUP to the County Commission. The CUP application is being returned to Planning Commission for a new public hearing after identification of error in mailed public notice for the October meeting.)*

Adjourn Joint Meeting
Reconvene LDCMPC

ITEM NO. 9 PRELIMINARY DEVELOPMENT PLAN FOR THE LINKS; 251 QUEENS RD (MKM)

PDP-12-00283: Consider a Preliminary Development Plan for The Links at Lawrence, a 630 unit multi-dwelling residential planned development with 9 hole golf course on approximately 81 acres located at 251 Queens Road and associated modification from the height limitation in the RM12 Base District. Submitted by Holloway Engineering, Surveying & Civil Design, PLLC., for Links at Lawrence, property owner of record.

ITEM NO. 10 CONDITIONAL USE PERMIT FOR BAKER WETLANDS VISITOR CENTER COMPLEX; 1365 N 1250 RD (MKM)

CUP-12-00248: Consider a Conditional Use Permit for Baker Wetlands Visitor Center Complex, located at 1365 N 1250 Rd. Submitted by Baker University, for the KS Department of Transportation, property owner of record.

ITEM NO. 11 INITIATE TEXT AMENDMENT; ZONING REGULATIONS; NANOBREWERY (MKM)

Initiate a text amendment to Section 12-319-1 of the Zoning Regulations of the Unincorporated Territory of Douglas County to include *Nanobrewery* in the list of uses permitted with as Conditional Uses and to establish any necessary standards for the use.

MISCELLANEOUS NEW OR OLD BUSINESS

Consideration of any other business to come before the Commission.

MISC NO. 2 VARIANCE FROM ROAD FRONTAGE REQUIREMENT; CLUSTER DEVELOPMENT (MKM)

Variance from the road frontage requirement in the Subdivision Regulations for Cluster Development Land Divisions in the Urban Growth Area of 666 ft on minor arterials to permit a frontage of approximately 540 ft. This variance is associated with a Cluster Development Certificate of Survey, CSU-12-00271.

ADJOURN

CALENDAR

December 2012

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

January 2013

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

February 2013

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28		

PCCM Meeting: (Generally 2nd Wednesday of each month, 7:30am-9:00am)

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City of Lawrence
Douglas County
PLANNING & DEVELOPMENT SERVICES

PLANNING COMMISSION MEETING
December 10, 2012
Meeting Minutes DRAFT

December 10, 2012 – 6:30 p.m.
Commissioners present: Belt, Blaser, Britton, Burger, Culver, Hird, Josserand, Lamer, Liese, von Achen
Staff present: McCullough, Stogsdill, Day, Larkin, M. Miller

PLANNING COMMISSION MINUTES

Receive and amend or approve the minutes from the Planning Commission meeting of October 22 & 24, 2012.

Motioned by Commissioner Britton, seconded by Commissioner von Achen, to approve the October 22 & 24, 2012 Planning Commission minutes.

Motion carried 7-0-3, with Commissioners Blaser, Hird, and Lamer abstaining.

Receive and amend or approve the minutes from the Planning Commission meeting of November 12, 2012.

Motioned by Commissioner von Achen, seconded by Commissioner Britton, to approve the November 12, 2012 Planning Commission minutes.

Motion carried 9-0-1, with Commissioner Burger abstaining.

Commissioner Hird said he voted to approve the November minutes because it reflected that he abstained from two items.

EX PARTE / ABSTENTIONS / DEFERRAL REQUEST

- Ex parte:
  Commissioner Culver said he had a meeting with Mr. Steve Schwada regarding items 4A and 4C and the discussions were based upon the information within the staff report and communications posted in the packet.

  Commissioner Hird said he had ex parte communications but they were on items he would be recusing himself. He said he did not have any ex parte communications on any matter in which he would vote.

  Commissioner Liese said he went to look at the property listed in item 5A and ran into and discussed the project with Ms. Erica Gudenkauf. He said he also spoke with Mr. Ryan Fike on the telephone.

  Commissioner Belt said he had a brief conversation with Mr. Fike as well and also received an email from Ms. Carisa Stejskal regarding the Langston Heights items.

- Abstentions:
  Commissioner Hird said he would abstain from items 4A and 4C because his law firm represents one of the adjoining property owners.

PC Minutes 12/10/12 **DRAFT**

ITEM NO. 1 2012-2016 CAPITAL IMPROVEMENT PLAN

Approve projects to be included in the 2012-2016 Capital Improvement Plan (CIP) for the City of Lawrence.

STAFF PRESENTATION

Ms. Sheila Stogsdill presented the item.

PUBLIC HEARING

Ms. Melinda Henderson encouraged Planning Commissioners to review previous Capital Improvement Plans. She said in the current Capital Improvement Plan the costs went down to $25,000. She said the other issue she had was it was not user friendly. She said previous Capital Improvement Plans used to go through an administrative review committee and ranked.

Mr. McCullough said there was a committee that selected and prioritized the list. He said the City Commission had seen many of the projects through their own budget process. He said with the slower economy there hadn't been a Capital Improvement Plan in a few years.

Ms. Casey Toomay, City Budget Manager, said before the committee met all City departments were asked to rank their top 10 projects for their department for the next five years.

ACTION TAKEN

Motioned by Commissioner Hird, seconded by Commissioner Lamer, to approve the 2012-2016 Capital Improvement Plan for the City of Lawrence.

Commissioner Hird said he needed to withdraw his motion because he just noticed one of the recommendations was for construction of the Sports Village that was on the agenda this evening. He asked Mr. Randy Larkin if he should abstain from voting on the Capital Improvement Plan.

Commissioner Lamer withdrew his second to the motion.

Mr. Larkin said it would be a good idea for Commissioner Hird to abstain from voting on the Capital Improvement Plan.

Commissioner von Achen wondered if they were being premature with the Sports Village since it had not passed yet.

Mr. McCullough said the Capital Improvement Plan was a placeholder for a project in the northwest area of the city. He said he did not know yet if it would be the Sports Village or in what shape that might happen. He said City Commission annexed the property and the rezoning request was on their agenda tomorrow. He said the most current direction was to work on the site at the intersection of K-10 and 6th Street so staff was confident enough to include it in the Capital Improvement Plan. He said it was a flexible plan and projects would come and go as funding and as the Commission moved on different kinds of projects. He said for their review tonight to look at if a project of a recreation center in the northwest area of the city was compliant with Horizon 2020 and let that guide their decisions. He said if they did not believe it was then they may want to move this past that agenda item tonight and vote on it after. He felt there had been enough work on that particular location that there had been findings about meeting the Comprehensive Plan Policies to date.

Mr. Larkin agreed with Mr. McCullough.

Commissioner Josserand said the way he understood KSA 12-748, was once the plan was approved tonight no further approval by Planning Commission was necessary.

Ms. Toomay said this was not meant to be the last step by any means. She said what the statute was articulating was that rather coming to them with each individual project it was a statement that these were the projects that had been roughly identified. She said if there were projects that they thought were not in keeping with the plan the Planning Commission could put something in writing to City Commission outlining why that was and either approve the remainder of the projects in the plan or put something in writing that outlines why they did not think any of the projects in the Capital Improvement Plan were consistent with the Comprehensive Plan.

Commissioner Josserand read the following statement from KSA 12-748: *'Whenever the planning commission has reviewed a capital improvement program and found that a specific public improvement, public facility or public utility of a type embraced within the recommendations of the comprehensive plan or portion thereof is in conformity with such plan, no further approval by the planning commission is necessary under this section.'*

Mr. Larkin said he understood it to mean that once Planning Commission made the approval that it conformed with the Comprehensive Plan and it were to reappear before them, either on a subsequent Capital Improvement Plan or individually as a program itself, they would have already determined it met the Comprehensive Plan and would not have to be determined again, assuming there was no change.

Mr. McCullough said section (a) talks about bringing individual projects forward. He said this was a multi-year plan and that paragraph (b) says if approved in a Capital Improvement Plan that covers multi-years it does not need to be reapproved when it comes up in year three or four.

Commissioner Josserand asked how they could determine a new police facility was in conformance with Horizon 2020 when they don't know the details of it.

Mr. McCullough said there were policies that spoke to public facilities, such as police departments, so that was what the plan review was based on for that item. He said this was not giving zoning approval or site plan approval to any of these projects. He said it was indicating that in the full breadth of policy statements within Horizon 2020, this generally complied. He stated it did not mean there would be a new police facility station.

Commissioner Josserand asked what kind of a project would not apply to Horizon 2020.

Mr. McCullough said, for example, if the City was trying to expend millions of dollars on infrastructure outside of the urban growth area that would be one that may not comply with the Comprehensive Plan.

Commissioner Burger said she had additional questions and suggested they move this agenda item to the end of the agenda.

Commissioner Liese suggested moving items 1, 2, and 3 to the end of the agenda so they could begin discussion on item 5A.

Mr. McCullough suggested forgoing staff presentations on items 2 and 3 and taking action since they had already read the staff reports.

ITEM NO. 2 SPECIAL USE PERMIT; METERING STATION; 4100 O'CONNELL RD (MKM)

SUP-12-00220: Consider a Special Use Permit for City of Baldwin and RWD#4 Metering Station, a Minor Utility, located at 4100 O'Connell Rd. Submitted by the City of Lawrence, property owner of record.

PUBLIC HEARING
No public comment.

ACTION TAKEN
Motioned by Commissioner von Achen, seconded by Commissioner Lamer, to approve SUP-12-00220, a Special Use Permit for Baldwin City and RWD No. 4 Metering Station, a *minor utility*, based upon the findings presented in the body of the staff report and subject to the following conditions:

1. Provision of a revised Special Use Permit plan with the following changes:
    a. The site summary table revised to include only the building and pavement areas as impervious surface.
    b. If the Board of Zoning Appeals approves the variance from the Floodplain Management Regulations a note indicating the variance and the date of approval should be added. If the variance is not approved, the plan should be revised to remove the fill from the setback.
2. A copy of the recorded access easement shall be provided to the Planning Office prior to the release of the SUP plans for building permits and the book and page number shall be noted on the plan.
3. Approval of the Special Use Permit is contingent upon approval of a Floodplain Development Permit. The SUP will be released to Development Services for a building permit following the approval of a Floodplain Development Permit.

Unanimously approved 10-0.

PC Minutes 12/10/12 **DRAFT**

ITEM NO. 3 CONDITIONAL USE PERMIT; BOAT STORAGE; 32 N 1000 RD (MKM)

CUP-12-00222: Consider a Conditional Use Permit for Hoyt Boat Storage, located at 32 N 1000 Rd. Submitted by Timothy K Hoyt, property owner of record.

APPLICANT PRESENTATION

Mr. Tim Hoyt was present for questions.

PUBLIC HEARING

No public comment.

ACTION TAKEN

Motioned by Commissioner Hird, seconded by Commissioner Blaser, to approve Conditional Use Permit, CUP-12-00222, for the boat storage facility subject to the following conditions:

1) The provision of a revised site plan with the following changes:
   a. Addition of the following notes:
      i. "*All boat storage must be stored entirely inside the buildings.*"
      ii. "*The Conditional Use Permit (CUP-12-00222) will be administratively reviewed by the Zoning and Codes Office in 5 years and will expire in 10 years from the approval date noted on the plan.*"
      iii. "*The County Commission approved the change in use of the non-conforming structure which is setback approximately 50 ft from the centerline of N 1000 Road at their September 19, 2012 meeting.*"

Unanimously approved 10-0.

ITEM NO. 5A PRELIMINARY PLAT; LANGSTON HEIGHTS ADDITION; E SIDE OF K-10 & S OF W 6TH ST (SLD)

PP-12-00228: Consider a Preliminary Plat for Langston Heights Addition, a 61 lot subdivision that includes detached, duplex and multi-family residential lots. This subdivision includes a variance from Section 20-811 (c) of the Subdivision Regulations that requires sidewalks on both sides of streets. The property is along the east side of K-10 Highway and south of W. 6th Street, north and south of Crystal Lane and Palisades Drive extended to the west. Submitted by Landplan Engineering, for Langston Heights, LC, property owner of record.

ITEM NO. 5B UR TO RM12D; 8.333 ACRES; N & S OF CRYSTAL LN & PALISADES DR (SLD)

Z-12-00229: Consider a request to rezone approximately 8.333 acres from UR (Urban Reserve) to RM12D (Multi-Dwelling Residential), located north and south of Crystal Lane and Palisades Drive extended, as shown in the preliminary plat of Langston Heights Addition. Submitted by Landplan Engineering, for Langston Heights, LC, property owner of record.

ITEM NO. 5C UR TO RS7; 9.206 ACRES; N & S OF CRYSTAL LN & PALISADES DR (SLD)

Z-12-00231: Consider a request to rezone approximately 9.206 acres from UR (Urban Reserve) to RS7 (Single-Dwelling Residential), located north and south of Crystal Lane and Palisades Drive extended, as shown in the preliminary plat of Langston Heights Addition. Submitted by Landplan Engineering, for Langston Heights, LC, property owner of record.

ITEM NO. 5D UR TO RM12; 10.025 ACRES; E SIDE OF K-10 & S OF W 6TH ST (SLD)

Z-12-00232: Consider a request to rezone approximately 10.025 acres from UR (Urban Reserve) to RM12 (Multi-Dwelling Residential), located along the east side of K-10 Highway south of W. 6th Street and along the west side of a proposed street known as Renaissance Drive, as shown in the preliminary plat of Langston Heights Addition. Submitted by Landplan Engineering, for Langston Heights, LC, property owner of record.

STAFF PRESENTATION
Ms. Sandra Day presented the item.

APPLICANT PRESENTATION
Mr. Brian Sturm, Landplan Engineering, reviewed the Langston Heights Addition project. He said there would be a ½ mile extension of the City sanitary sewer system and the majority of the lots would be serviced by a sanitary sewer main that today stops just to the east of where Bob Billings Pkwy ends. He stated the project features a diverse selection of housing types and a selection of rezoning applications for three different districts.

He showed the previous Langston Heights Addition on the overhead and stated it was approved by City Commission in January of 2006. He said the plat was never recorded and ultimately the plat and associated rezoning amendments expired. He said it remained significant because the residents of the existing Diamondhead Subdivision were aware of the plat when they bought their homes over the last 5-7 years and clearly shaped their set of expectation for future development on this ground.

He said the plat became a benchmark for City staff and consultants when evaluating the current development groups proposal. He stated Landplan looked at the plat and sized up the differences to craft something better. He said the first step was looking at Horizon 2020 and the nodal plan that lay out land use recommendations for this part of the city. He said the 6th & K-10 nodal plan provided clear recommendations in graphic and verbal form. He said strategies such as providing a mixture of housing types, styles, and economic levels, providing appropriate transition zones and protecting the character and appearance of existing residential neighborhoods helped form the current proposed plat. He said the South Lawrence Trafficway had an overlay zoning district which provided further guidance on how land adjacent to it must develop. He said the piece of land to the north was platted as part of the Diamondhead subdivision which had not developed yet but had approved zoning of RM24, a high density residential zoning district. He stated it was already adjacent to other parts of the Diamondhead neighborhood. He said on the south side there was other land unplatted and unzoned as urban reserve. He said per the West of K-10 Plan and Horizon 2020 the land was slated for low density residential development. He said the land to the east was platted as part of the Diamondhead subdivision, zoned RS7, and over the last 5-7 years had matured into a vibrant single-family neighborhood. He said any new subdivision platted for this piece of ground would need to respond to all these uses.

He said Langston Heights was a neighborhood that conformed to the Comprehensive Plan, responded to the existing conditions, and would provide a sustainable and safe addition to West Lawrence. He said speaking to Horizon 2020, Langston Heights represented a low density residential development and would preserve the character of the existing Diamondhead neighborhood to the east by extending that neighborhood to the west while providing similar zoning and size. He stated it provided compatible infill development by extending the pattern of local streets already in place, sidewalks, front yard setbacks, while still providing a variety of housing types for West Lawrence. He said it provided appropriate transitional methods between the different housing types via back-to-back relationships. He said there would be an ample buffer of landscaping prescribed as part of the South Lawrence Trafficway overlay district. He showed a concept plan on the overhead. He said the plan would provide recreational opportunities adjacent to the higher use.

He said regarding transportation concerns, the traffic study indicated that these medium density residential uses would not change the level of service already existing in the surrounding street system. He said the plat provided adequate egress and ingress for vehicles and provided ample pedestrian and bicycle access through sidewalks on both sides of the streets. He said the development would produce more traffic but that the traffic impact study stated the traffic generated would have a nominal impact on the existing street network. He said this would be a safe neighborhood.

Mr. Mehrdad Givechi, Traffic Engineer, discussed the differences between the Langston Heights that was approved in 2006 and the Langston Heights plat that was before them today, in terms of traffic. He said when the traffic study was conducted they looked at traffic from 3pm-6pm to cover the time period when school gets out and 7am-9am to cover the time period when parents drop kids off at school. He stated, in addition, the background traffic usually peaks between 7am-9am and 4pm-6pm so by combining the two together and looking at the generated traffic they came up with the worst case scenario. He said the numbers showed that the worst case scenario would be 134 vehicles generated during one peak hour. He showed a table on the overhead. He said the previously approved plan showed 101 vehicles, which would only add one car every four minutes to each one of the side streets coming out of the proposed development site. He said the traffic study also showed under existing conditions there were no deficiencies with operation and/or safety of the traffic.

Mr. Sturm said the term level of service from the traffic study referred to the delay any motorist would encounter at an intersection. He said the development poses no change to the level of service to those intersections.

PUBLIC HEARING

Mr. Brad Finkeldei, attorney with Stevens & Brand, said he represented some of the neighbors and would be showing about 12 slides on the overhead.

Mr. Andy Pitts said in the original application Horizon 2020 did not specifically designate a land use for the subject project, although it did now. He said they keep skipping over some of the Horizon 2020 language that speaks specifically to a low density single family neighborhood. He said the total density of the proposed plan exceeded what was considered low density by over 7 dwelling units per acre. He said his expectation was that Langston Heights would be part of the low density single family residential zone. He said 42% of the proposed and existing land uses qualified as medium density under the Development Code. He said his concern was the quantity of medium density. He requested deferral of this item to continue dialogue with the developer.

Mr. Mark Crabtree said he had expectations, based on plans and plats, about what would happen to the west when he moved into the area. He said the latitude in RM12 allowed for apartment complexes. He said he did not have enough information to feel comfortable about what would be coming into his neighborhood. He said there was undeveloped and unplanned development to the south. He asked for a deferral to continue discussions so that neighbors could be comfortable about what was going to happen.

Mr. Ryan Fike felt a precedent had already been set by the denial of Greentree Subdivision in 2006 based on the same merits. He said property owners had made important decisions based on previous actions for the area. He requested denial or deferral for further discussions.

Mr. Eric Boedeker said the neighbors met with the developers in December and were told the driving force for the change in zoning was based on economics. He stated Horizon 2020 was a long term vision document and was not subject to economic conditions, market conditions, or the bottom line of developers. He said there was a lot of opportunity in the area for single family home sales.

Mr. Mike Whittlesey said the applicant referred to this as an experiment in design during the December neighborhood meeting. He said multi-family residents would have to travel through single family areas. He said Greentree Subdivision was denied and property owners made decisions based on recent previous actions for the area. He said the proposed request was not in conformance with Horizon 2020. He stated Alvadora Apartments only had secondary emergency access through the neighborhood. He said the character of the area would change with multi-family residents moving in and out. He also stated the types of people living in multi-family areas were different. He said the neighborhood did not include informed consent.

Ms. Debbie Pitts expressed concern about traffic. She said the West of K-10 Nodal Plan discussed the required need for neighborhood connectivity. She said it stated streets within the various neighborhoods of the area shall be connected to each other and that connected streets provide multiple route options, which helps eliminate choke points. She said without the complete development of the north/south road all of the development traffic would be forced on to the two local streets. She stated Mr. Sturm said the width of Diamondhead was 60' but it was actually 23' in width. She said they weren't arguing that the traffic was okay as far as the City statutes provided, however the traffic did not take into account the dramatic impact of the neighborhood elementary school on traffic patterns. She said the applicant stated at the neighborhood meeting that this was a

minor blip in the traffic study. She said this had been a primary focus of the Langston Hughes site council for years. She requested the item be deferred for to allow for continued dialogue.

Mr. Erica Gudenkauf said when she moved in to the neighborhood they were told it was single family. She said it was a close neighborhood that planned activities together. She discussed the goals in Horizon 2020 of neighborhood conservation/identity. She requested deferral of the item to further discuss concerns with the developer.

Mr. Rustin Schemm agreed with everything that had been said. He was skeptical of the pitch from the applicant about keeping the integrity of the neighborhood intact. He said the applicant was proposing the maximum number of dwelling units. He said he would like to see a cost benefit analysis on multiple courses of action besides just one preplanned optimization program. He expressed concern about the safety of children walking in the area.

Mr. Alan Cowles, President of West Lawrence Neighborhood Association, said there were too many other areas on the west side of Lawrence for high density development. He said the connector streets would not connect for years to come and it did not make sense to put this development here. He said the neighbors had staked their homes and the futures of their children on this area. He said the West Lawrence Neighborhood Association opposed the rezoning and urged Planning Commission to oppose it also.

Ms. Melinda Henderson, President of the League of Women Voters, expressed concern about predictability and being able to rely on codes and documents. She said documents like Horizon 2020 were in place to protect the citizens so that they could see what was expected and feel comfortable building their dream home. She said the developer indicated that they were working on acquiring the property to the south, which should send up red flags, because if this property was developed in a higher density than single family then the area to the south would most likely develop that way too. She felt this was a great opportunity to plan the remainder of the area. She was encouraged that the neighbors wanted to meet with the developer for further discussions.

Mr. Rod Laing said he was a homebuilder in the area and currently had three spec houses going up in Diamondhead. He felt there needed to be access for the multi-family portion. He expressed concern about increased traffic and being able to purchase more lots in Diamondhead. He said the Longleaf area had major arteries for the townhome ground. He recommended going back to the original zoning requested, single family and duplexes or creating a separate access road.

Mr. Finkeldei said the neighbors would like more time to work with the developer on this project. He said the neighbors met with the developer on December 3rd for an informational session. He said no changes had been made since that meeting and that the plan was the same. He requested a deferral to allow time for the developer to consider neighborhood concerns. He discussed changes that could be made. He said the 6th & Wakarusa Nodal Plan does not define low density residential but does say low density, single family detached. He stated staff and the applicant fit RM12 in the low density category. He said if the proposal was just for row housing it would not comply with Horizon 2020 but when put in combination it was seen as being compliant.

He asked Planning Commission to request the applicant look at that and come back with a plan that really meets the heart and spirit of Horizon 2020 and the 6th & Wakarusa Plan, as well as being low density and single family detached. He said the area to the south was in the West of K-10 Plan, which defines low density slightly differently as single family duplex and attached dwellings, with an emphasis placed on residential type uses. He said the West of K-10 Plan also includes zoning districts RS10, RS7, RM12D & PD. He said RM12 was not possible in the definition of low density in the West

of K-10 Plan. He said placement of the access road made all the difference and that the original plan put the road as a buffer along K-10. He said the West of K-10 Plan included an outer rim road. He requested Planning Commission direct the applicant to use Renaissance Drive at the edge to be a buffer between the highway and neighborhood. He felt this would influence land uses to the south. He also requested a road be constructed to serve the multi-family.

APPLICANT CLOSING COMMENTS

Mr. Sturm said during the neighborhood meeting the developer recognized there was at least one thing they could do in that amount of time to make an improvement in the proposed plan, which was included in the letter of intent. He said it was uncertain if the development group would have a chance to work on the property to the south in the near future or at all. He said they were able to put into writing an agreement to establish a temporary construction access regulated by easement. He said if and when Langston Heights Addition would move forward construction traffic for the development could travel directly from Bob Billings Parkway through Alvamar property to the subject site. He felt the development conformed to Horizon 2020 and said staff agreed with that.

Mr. Tim Herndon said the street width right-of-way was 60'. He said the street was 27' from back of curb to back of curb. He stated the plan was not snuck through a loophole, as was insinuated by some comments. He said the previous plan that had been referred to multiple times tonight was a moot point because it was never recorded and the plan expired. He said the previous plan did not conform with contemporary subdivision regulations, did not provide any traffic calming devices, and did not provide sidewalks on both sides of the street. He said all of the professionals involved in the project were in unison with a valid approvable project.

COMMISSION DISCUSSION

Commissioner Burger asked who owned the property to the north and if it was financially connected to the applicant.

Mr. McCullough said it was his understanding they were separate entities.

Mr. Sturm confirmed they were separate entities, owned by Kenny Liu, and not connected in any way to the project.

Commissioner von Achen asked if averaging the different densities in a development to come up with an average unit per acre was common, as opposed to taking each zoning district separate.

Mr. McCullough said it had the W 6th St & K-10 Nodal Plan associated with it. He said staff had the opportunity with this project to look at the total parcel size and spread the density across 27 acres. He said they typically do that by project. He stated the plan talks about low density single family neighborhoods with a small portion considered appropriate for medium density residential development. He said the medium density served as primary buffer between single family neighborhoods and commercial activities and staff extended that concept of buffering to K-10 Highway which was articulated in the packet. He said they looked at the density spread out over 27 acres and then looked at transitioning. He said it was typical to look at density spread over the entire area of the project and similar to what would be seen with a Planned Development overlay if this was a different zoning process.

Commissioner von Achen asked if that approach was common.

Mr. McCullough said it was common in recent history with the City.

Commissioner Lamer asked why the Planned Development approach wasn't used instead of three different zoning applications.

Mr. McCullough said typically when staff meets with an applicant they lay out some options to get to the goal. He said one approach was the combination of platting and base district zoning. Another approach was the Planned Development overlay.

Commissioner Lamer asked if there would only be one category for dwelling units per acre if there was a Planned Development.

Mr. McCullough said there would likely be one base district and a clustering of different types of housing types and different densities in a specific area. He said the density would be spread out over the entire area.

Commissioner Lamer asked if the Planned Development would be tied to a certain number of dwelling units per acre.

Mr. McCullough said it could be but would have a cap/limit associated with it.

Commissioner Lamer asked if the proposed RS7 rezoning would be 4 dwelling units per acre.

Ms. Day said yes.

Commissioner Lamer asked if the proposed RM12D rezoning would be 7 units per acre.

Mr. McCullough said it would be about 7.5 net after right-of-way was taken out.

Commissioner Lamer asked if the proposed RM12 rezoning would be 11 units per acre.

Mr. McCullough said that was correct.

Mr. Sturm said zoning district boundaries were shifted for lots to meet the Code in all manners. He said with the latest zoning applications put forward the RM12 district had 10.8 dwelling units per acre, the RM12D district had 7.5 units per acre, and the RS7 district had 4.2 dwelling units per acre.

Commissioner Lamer said RM12D zoning and RM12 zoning was higher than what they would consider single family residential dwelling units per acre.

Mr. Sturm said 6 dwelling units per acre was what Horizon 2020 spelled out as low density residential development.

Commissioner Liese inquired about considering each item separately or as a package.

Mr. McCullough said it was essentially a package with how the plat was designed. He said they could legally separate out three separate zoning requests. He urged them to look at it as a package because the plat was designed to accommodate the different zoning districts.

Commissioner Hird asked the applicant to respond to the comments about the nodal plan describing this as low density single family neighborhood.

Mr. Herndon stated the nodal plan did not say that the property within the subject boundary was to be all single family. He said the plan said the subject property was to be comprised of low density residential. He said it described a variety of residential types that could occur there. He said the report given to them by the neighbors counsel referred to the West of SLT plan, which described the type of houses at certain locations. He said it did not apply to the 6th Street Nodal Plan or to the Comprehensive Plan. He said those plans specifically cite a mixture of housing types and emphasis on transition and buffering.

Commissioner Hird said it appeared to be a unique project with multi-family housing and the only access being through the single family residential areas. He asked if there was another example in Lawrence where the traffic patterns were similar.

Mr. Sturm referred to a multi-family development of townhomes that were addressed on Jana Drive or Jana Road, north of Harvard, west of Lawrence Avenue, and east of Kasold Drive. He said it was a townhome development that was smack dab in the middle of mixed residential development.

Mr. Herndon said in Old West Lawrence and older parts of the city multi-family development coexists with single family and permeates the eastern portion of Lawrence. He said another thing that was important to contemplate was that Horizon 2020 prescribed a maximum of 6 units per acre coming from the approximately 30 acre site. He said whether it was 6 units per acre of single family homes or 6 units per acre of a mixture of row homes, brownstone villas, duplexes, or single-family homes the traffic generated would be the same.

Commissioner Hird stated the townhomes on Jana Drive were built by his uncle. He asked if there were any examples of this type of traffic pattern since the 2006 Development Code was adopted.

Mr. Herndon said the traffic generated was 6 units per acre, so yes, it was typical throughout the city.

Commissioner Liese inquired about the word ‘experiment’ that speakers mentioned the applicant using during a neighborhood meeting.

Mr. Sturm said he probably did use the word ‘experiment’ and believed this was a relatively unique project since the passage of the 2006 Development Codes and 2008 Subdivision Regulations. He said he was referring to the project being something new and different by using creativity.

Commissioner Liese asked staff to respond to Mr. Boedeker’s earlier comment about the inventory of multi-family in the area.

Mr. McCullough said staff does not track market conditions of multi-dwelling structures to know whether there was a healthy or unhealthy apartment or rental market. He felt the comment was referring to opportunities along 6th Street and other areas on the west side of Lawrence.

Commissioner Liese asked if they should be concerned about whether the units would be inhabited.

Mr. McCullough said they could be owner occupied structures. He said in terms of multi-dwelling structure type it was not tracked the way retail inventory was.

Commissioner Liese inquired about the access to multi-dwelling structures.

Mr. McCullough said traffic studies are reviewed by several people within the City for acceptance. He said the traffic was an interesting component of this because at some point when you look at just the 27 acres developing at 6 units per acre, unit type actually matters. He said the unit type of multi-dwelling would actually create a little lower traffic volume than single family units would generate. He said from a traffic volume basis single family type housing typically generates more traffic. He said the traffic study was accepted. He also said they do anticipate the north south roads to go in.

Commissioner Liese said a number of people suggested that Planning Commission should consider deferral.

Mr. McCullough said that was within their purview. He said typically Planning Commission has only deferred items when they seek additional information or provide specific instruction to staff or applicant.

Commissioner Josserand asked if the trip generation traffic data was based on national data or data from a college town.

Mr. Givechi said the data used was national data and could not really be distinguished between locality due to the data being collected throughout the nation and submitted to the institute of transportation over the last 20 years. He stated it was a compilation of the data put together as a summary.

Commissioner Josserand said the data could in fact be wrong if Lawrence was substantially different than what a national average would be.

Mr. Givechi said that was always a possibility.

Commissioner Josserand felt that Planning Commission had a role in the timing of development and that excess inventory of any type could and does have a deleterious effect on the community. He asked Mr. Herndon about his conclusory remarks about not considering the earlier plat.

Mr. Herndon said the previous plat was never reality.

Commissioner Josserand said it was appropriate to know it existed.

Mr. Herndon said it never existed beyond being reviewed and approved. He said it was never recorded and never became an item of record.

Commissioner Josserand said it was something the neighbors relied upon.

Mr. Herndon said he would not say it shouldn't be discussed or not a topical matter. He said the point he was making was that if it was ever represented to a prospective home buyer that the ground was zoned in a certain way or that the ground had been subdivided it was not true.

Mr. Herndon said there were other factors that affect comparisons of housing. He said the row houses would not compete for the same market as Hunters Ridge.

Commissioner von Achen asked if there was ever any consideration about changing the route of Renaissance Drive.

Mr. Herndon asked which streetscape would be a better buffer for residents and pedestrians; a row of apartments with landscaping separated by a 50' South Lawrence Trafficway prescribed greenspace buffer, or a street with two curbs, two sidewalks, and two rows of trees. He said that was what drove the changing of the street from the original plan. He said the previous plat was not as well thought through, as creative, or as environmentally designed as the current plan.

Commissioner von Achen asked if any thought had been given to how the road would go through the south parcel.

Mr. Herndon said Horizon 2020 prescribes a certain set of parameters for land use to the property to the south, as it does on the subject property. He said the Comprehensive Plan suggested a range of uses, a general density, so that is what is used to move forward with specifics of zoning. He said the interchange at Bob Billings Parkway and the South Lawrence Trafficway was set to be fully constructed by 2015. He said KDOT already established a north entrance point that would serve the school districts ground, serve the ground south of the subject property, and eventually connect further north. He said KDOT had already established that intersection point which dictated the "s" shape.

Commissioner Culver asked if there had been any open discussions prior to the December 3rd neighborhood meeting.

Mr. Sturm said the December 3rd meeting was the first interaction between planners for the developer and neighbors.

Commissioner Culver asked if the applicant would be open to having further discussions about this concept plan and possibly alternative plans prior to moving forward on it.

Mr. Sturm said the developer was not opposed to continuing dialogue with neighbors but based on the findings of fact he felt the Planning Commission had a decision that they could make tonight.

Commissioner Liese asked staff if the project was denied would the applicant have to wait one year.

Mr. McCullough said Planning Commissions action was a recommendation on the zoning items and the final decision making body for the preliminary plat. He said the zoning items would move to the City Commission for final decision. He said if the rezoning requests were denied the Development Code had a requirement that the same application could not be resubmitted for 12 months. He said a substantially different application could be submitted but the same application could not be.

Commissioner Blaser felt the area to the south was more important than what they were giving it credit for and that consideration should be given to how the area to the south would develop. He felt both sides, the neighbors and the applicant, needed to get together and come up with a plan they could both accept. He did not think they should have a higher density area driving through a single family home area.

ACTION TAKEN on Item 5A-5D
Motioned by Commissioner Blaser, seconded by Commissioner Belt, to defer items 5A-5D to January Planning Commission.

Commissioner Hird asked the applicant if there would be benefit in deferral.

Mr. Herndon said he was willing to accept a 30 day deferral. He said they would gladly and promptly reschedule a neighborhood meeting to work through concerns as best they could.

Commissioner Hird said he would support the motion. He said there was a certain cost to an applicant for deferral but if there was a chance for some compromises it was worth having the applicant meet again with the neighbors.

Commissioner Liese said he supported the deferral.

Commissioner Britton supported the deferral. He stated the neighbors made some compelling points. He felt it would be difficult to resolve traffic thru single family without building new roads. He said he had a problem with the fact that the nodal plan said low density, single family detached and that was not what they were talking about. He said there was some reliance put on the previously approved plat, even if it wasn't recorded. He said he would have difficulty voting to recommend a plat or rezoning that included those previsions.

Mr. Herndon asked for clarification and guidance on moving forward so they could have a productive 30 days of deferral. He said if the plan had, for example, 80 single family homes that generated x amount of traffic through an existing neighborhood, versus a combination of multi-family/single family homes that generated the same amount or less traffic. He said he was at a loss at how to appease the Commission.

Commissioner Britton said he was not sure. He said there was something to be said for the type of community that a certain type of housing builds and grows. He felt there was a difference between the hard numbers of traffic that go into an apartment complex as opposed to a single family subdivision.

Mr. Herndon asked if phasing or a timing element that changed the timing of traffic going in certain places would be compelling to him.

Mr. Britton said that might be able to alleviate some concerns.

Commissioner Liese said staff could assist in the process of design.

Commissioner Josserand agreed with Commissioners Blaser and Britton. He expressed concern about the location of the eventual road. He thought there was benefit to having the street along the edge. He was concerned about the implications of the location of the road to the property south. He was concerned about the amount of multi-family going in. He also felt they should handle traffic and parking better within the community.

Commissioner Burger agreed with Commissioners Blaser, Britton, and Josserand. She said at this point with the planning documents they had without additional area planning to give more clarity on the issue of the area to the south. She said she would vote for deferment because both sides of the table were willing to talk more and she hoped they could work something out.

Commissioner von Achen said she supported the deferral. She said her main concern was traffic going from an area of somewhat higher density to lower density.

Commissioner Hird said he respectfully disagreed with Commissioner Josserand's comment about too much multi-family because there was no data/evidence to make that determination.

Motion carried 10-0.

ITEM NO. 4A PRELIMINARY PLAT; ROCK CHALK PARK ADDITION NO. 2; W 6TH ST & K-10 (MKM)

PP-12-00223: Consider a Preliminary Plat for Rock Chalk Park Addition No. 1, a 2-lot subdivision of approximately 90 acres located in the NE quadrant of the intersection of W. 6th St/Hwy 40 & Kansas Hwy 10 (K-10) and associated variances from the Subdivision Design and Improvement Standards related to street right-of-way dedication and improvements. Submitted by Paul Werner Architects, for Fairway, LC, Property owner of record.

~~**ITEM NO. 4B PRELIMINARY PLAT; ROCK CHALK PARK ADDITION NO. 2; W 6TH ST & K-10 (MKM)**~~

~~**PP-12-00224**: Consider a Preliminary Plat for Rock Chalk Park Addition No. 2, a 1-lot subdivision of approximately 19 acres located in the NE quadrant of the intersection of W. 6th St/Hwy 40 & Kansas Hwy 10 (K-10) and associated variances from the Subdivision Design and Improvement Standards related to street right-of-way dedication and improvements. Submitted by Paul Werner Architects, for Fairway, LC, Property owner of record.~~

Item 4B was deferred prior to the meeting.

ITEM NO. 4C SPECIAL USE PERMIT; RECREATION CENTER; W 6TH ST & K-10 (MKM)

SUP-12-00225: Consider a Special Use Permit for an Institutional Development Plan for development of General Entertainment and Spectator Sports, Active Recreation, and Outdoor and Participant Sports & Recreation uses on approximately 90 acres located in the NE quadrant of the intersection of W. 6th St/Hwy 40 & Kansas Hwy 10 (K-10). Submitted by Paul Werner Architects, for Fairway, LC, Property owner of record.

STAFF PRESENTATION
Ms. Mary Miller presented the item.

APPLICANT PRESENTATION
Mr. Paul Werner, Paul Werner Architects, agreed with the preliminary plat staff report. He said to extend George Williams Way to Mr. Jack Graham's property line would impact the road and only be a temporary extension. He said the applicant agreed not to protest future improvements so when and if the time arrives the applicant would still pay for their half of the street. He said regarding the concern for tractor pulls, the list of uses did not come from the applicant, it came from staff and the applicant agreed it would require a Special Event Permit. He felt planning staff had a good answer regarding alcohol sales. He said an amphitheatre was off the table for now. He showed plans on the overhead.

PUBLIC HEARING
Mr. Thomas Johnson, Petefish, Immel, Heeb, & Hird law firm, representing Mr. Jack Graham, went over the comments from the letter he sent. He said they do not object to the Sports Village but do object to non-sports uses on the property. He did not feel the property was appropriate for many uses. He also felt the Special Event Permit process was not a good tool to control property and protect the neighbors. He wondered who would manage the property and what the intention would be. He objected to all future uses being shown on the plat as well as alcohol being sold on the property. He requested a condition be added for the installation of a perimeter fence on the eastern

part of the property to keep people using the trails off private property. He also requested the road be extended to Mr. Graham's property line.

Mr. Jim Bowers, White, Goss, & Bowers law firm, representing Tanglewood LC, agreed with Mr. Johnson's comments regarding the use issues. He expressed concern about access and parking. He said access would have to come from 6th Street to the south up along George Williams Way to the project. He said the City portion of the project does not have direct access to George Williams Way and was through a shared parking arrangement yet to be devised. He said to the south George Williams Way was only two lanes, not four lanes. He said the number of cars driven to the site would exceed a two lane road and that 5,000 parking spaces were anticipated for the shared facilities. He said the access road on the east side of K-10, East 902 Road, was currently a gravel road. He said the staff report suggested it be a chip and seal road. He did not feel this was adequate for the number of persons anticipated to use the facility. He expressed concern about costs being transferred to others not directly involved in the project. He felt parking agreements should be worked out before Planning Commission made a recommendation. He felt a deferral would be appropriate to allow for additional information to be developed.

APPLICANT CLOSING COMMENTS

Mr. Werner said he agreed that parking agreements should be done before a building permit was pulled. He said an extensive traffic study was approved by the City. He stated George Williams Way would operate in the current configuration. He said the developer and property owner would sign an agreement to help improve the chip and seal road, East 902 Road, even though it may not be their responsibility. He said regarding access The Links had submitted a new development plan just east of the property so there would potentially be even more streets of how traffic could get to/from the site.

COMMISSION DISCUSSION

Commissioner Blaser inquired about fencing on the east side.

Mr. Werner said he discussed that with Mr. Jack Graham and his counsel. He said he struggled with it because he was not sure where to start and stop it. He said he understood and respected Mr. Graham's comments but he struggled with how to build a fence to stop someone from going further north to get on his property. He said the other issue he struggled with was extending the road 600' to Mr. Graham's property line and at the same time putting up a fence to keep people out. He said extending George Williams Way was difficult because of the grade. He said The Links would not even be using George Williams Way for northern access.

Mr. McCullough said the Parks and Recreation Department did not typically fence in park property. He said this particular area was so heavily wooded that putting in a fence of substance, maintaining it, and not blocking wildlife corridors would be issues to consider.

Commissioner Liese asked Mr. Johnson to reiterate Mr. Graham's concerns.

Mr. Johnson said the primary concern was non-sports uses. He said other concerns included the special event permit process, fencing, road issues, future undefined uses, and lighting.

Commissioner Blaser inquired about the special event permit process for public property.

Mr. McCullough said the Code treats private property in contrast to public right-of-way. He said a number of events were held on public right-of-way, such as marathons and parades. He said events could be held on private property and sometimes the City owns private property. He stated many

times things were programmed through the Parks and Recreation Department for actual park property. He said this did afford the City Commission, in his opinion, to establish a framework for non-sport/non-athletic related events that utilizes the City's special event permit process.

Mr. Randy Larkin said the distinction between public right-of-way and publicly held property was that the right-of-way was held in trust for the public. This would be land the City would own itself.

Commissioner Josserand asked if the special event permit process would require approval by the City Commission.

Mr. McCullough said there were different types of special events and the ones that were large in scope, mainly public entertainment venues, would require City Commission approval.

Commissioner Josserand said there was the potential for alcohol consumption at a fundraiser on the site, for example.

Commissioner Belt inquired about the public notification process for special event permits.

Mr. McCullough said the notice process was the City Commission agenda and that there was no notice to adjacent property owners.

Commissioner Belt said alcohol could be obtained on campus in the box suites during games but that KU did not sell it for the normal patron. He said because of the public/private nature of the entire project it made alcohol sales a little nebulous. He asked if it was an essential part of the project to make it work or if it was an amenity that would be nice to have.

Mr. Werner said it would be nice to have. He said it would be a case by case basis and depend on what type of event it was. He felt limiting alcohol sales would be a huge mistake.

Commissioner Burger asked when the traffic was evaluated and configured were their discussions or design allowances for tailgating that might occur prior to an event.

Mr. Werner said he had not studied tailgating for a track and field facility. He felt the amount of parking spaces should cover the venues. He said there would have to be some coordination with KU Athletics and the City in scheduling events.

Commissioner Burger inquired about public access to the recreation center during KU Athletic events.

Mr. Werner said George Williams Way was a public street and Rock Chalk Parkway would have an access easement. He said KU could not just close that permanent access easement.

Commissioner von Achen felt a reasonable approach would be to keep alcohol out of the recreation center except for special events in the evening.

Mr. McCullough said an important part of the special event permit or alcohol issue was that the owner controlled the alcohol issues. He said the City would own and control the recreation center as it does any community recreation center with a wide range of programming that goes into that. KU Athletics would control the KU Athletic events portion of the other lot. He said the nebulous area was that they may have an agreement with Bliss Sports to do some non-sport related activities that would be open to the special event permit. He said the ownership of the lots was important in terms of responsible ownership parties.

Commissioner von Achen asked who owned and would maintain the detention ponds.

Mr. McCullough said they were on private property and there would be maintenance agreements for the ponds. He said the agreements between the City, KU Athletics, KU Endowment Association, and Bliss Sports would determine who would maintain the ponds.

Commissioner Culver inquired about gas utility infrastructure.

Mr. Werner said this was out of Black Hills territory and would be serviced by Atmos. He said Atmos agreed to bring gas to the site but that they may be an all electric facility.

Commissioner Culver asked if it was premature to approve the preliminary plat before the agreements were executed.

Mr. McCullough said the conditions on the platting and special use permit had to be executed and implemented. He said it was a little outside the Planning Commission purview as a land use matter but that it would have to be done to the satisfaction of all the parties involved.

Mr. Werner said parking was a perfect example and that the City agreed early on to snow removal, for instance.

Commissioner Culver asked if there was a need to have the traffic impact study listed in the conditions.

Mr. McCullough said not in his opinion. He said as the staff report notes the only item still in the works was where E 902 Road would come out on 6th Street. He said the City had some stake in that with the 6th Street improvements.

Commissioner Blaser inquired about the City's expense for 6th Street improvements at George Williams Way.

Mr. McCullough said that was an issue that would not be an expense of the project, it would either be the City at large or a KDOT expense. He said the City was in negotiation with KDOT for a number of improvements.

Mr. Werner said George Williams Way, rightfully so, was built to the ultimate configuration so all that would be added would be lights.

Commissioner Liese inquired about the public concern regarding the role of the Bliss Sports entity.

Mr. Werner said this would be a KU Athletics operated facility and City recreational center. He said Bliss Sports and others in the community would help to bridge the gap between the $25 million that the City would spend and the $32 million cost of the project.

Commissioner Liese asked what Bliss Sports and others would get in return for their generosity.

Mr. Werner said they care about the community and see this as a viable option for economic development and give children a place to play. He said the City would be getting a $32 million dollar project for only $25 million.

Commissioner Burger said Mr. Werner indicated the amphitheatre was not really being considered at this time but he said some people were excited about it. She asked what they were excited about.

Mr. Werner said at the neighborhood meeting at Free State High School he was approached by several people who thought an outdoor amphitheatre was a great idea. He said many people had spent time working on an amphitheatre out by Clinton Lake but that there were no facilities, such as bathrooms, there. He said an amphitheatre was an attraction that people would drive to and would be good for the community.

Commissioner Burger asked how many lanes there would be for Rock Chalk Parkway.

Mr. Werner said they were designed as 31' wide collector streets. He said they tried to disperse the entrances and exits from the parking lots. He said there was a good path for buses to drop off and that there were good loops with an extra wide radius.

Commissioner Liese asked Mr. Johnson if there were any additional questions from the neighborhood that had not been addressed.

Mr. Johnson said he still did not understand the role of Bliss Sports. He said if Bliss Sports was simply donating the money it was not an issue but it was an issue if Bliss Sports had something to do with the management or the uses of the property. He said the concern was that KU would own the land but not the operators.

Mr. McCullough said there was no secret to it and that KU Endowment Association would own the land with an arrangement, in terms of leasing the land, between the KU Endowment, KU Athletics, and Bliss Sports. He said there was likely some arrangement that Bliss Sports would seek approval or agree to use parts of the facilities for non-sporting events. He said for their purview in terms of a land use perspective, KU Athletics had a vested interest in all of the facilities and that they would have some sort of input into what non-sport events and activities would take place there. He said there may be non-sport/non-athletic events that would possible. He said they tried to build a list to guide their decisions in the future of when to allow a use by right or require it to go through a special event permit.

Commissioner Josserand said he still had lots of questions about what uses could be allowed and the potential impacts.

Mr. Monte Soukup, KU Endowment Association, said they were still in the process of negotiating the ground lease which would put some limits on what the uses would be, but at this point it was not a final agreement. He said KU Endowment would own the property and there would be a ground lease to Bliss Sports and, to his understanding, Bliss Sports would have an operation agreement with KU Athletics to operate the facility. He said they would also have a lease with Bliss Sports to lease the facility from Bliss Sports.

Commissioner Liese asked if it would be a profit making endeavor.

Mr. Soukup said no, the way the ground lease works was that it simply covers the cost of ownership of the land (property taxes, insurance, etc) so there was no profit involved in the ground lease with Bliss Sports.

Mr. Werner said it was a KU Athletic facility and that the ground lease was a financing mechanism.

Commissioner Liese asked if Bliss Sports wanted to run an event would they have to go through the same procedure of getting approval.

Mr. Werner said if someone wanted to use the facility they would talk to KU Athletics, KU Endowment, and then the Planning Department for a public hearing to obtain a special event permit from City Commission.

Commissioner Josserand wondered why Bliss Sports was even necessary.

Mr. McCullough said their questions were good but that they needed to bring it back to land use discussions.

Mr. Johnson said he was concerned about land use issues.

Commissioner von Achen said Mr. Johnson was inferring that it was a land use issue.

Mr. Johnson said yes.

Mr. McCullough said who does it was not the issue, it was what was being done that was the issue.

Mr. Bowers said he still had concerns about traffic impacts and offsite improvements that would be required in order to satisfy the traffic anticipated to be generated by these uses.

Commissioner Lamer inquired about the level of service for peak times in the traffic impact study.

Mr. Werner he said he did not recall but that it functioned very well and there were no issues. He said the only thing they were waiting on was what KDOT would do with the interchange.

Mr. McCullough said they viewed this in terms of the typical tournaments, not the large KU relays that may happen a few times a year. He said for example, the streets around the KU football stadium were designed for a typical traffic day, not for a football crowd.

Mr. Bowers read from the traffic study: *"The traffic impact study indicates that the intersection of George Williams Way and 6th Street was operating at a level E or worse during morning and afternoon peak hours of a typical day. The study recommends that a traffic signal be installed at this location to mitigate the existing operational deficiency."*

Mr. McCullough said that was the recommended improvement that would be required with the project.

ACTION TAKEN on Item 4A
Motioned by Commissioner Lamer, seconded by Commissioner Blaser, to approve the variance requested from Section 20-810(e)(2) to allow the property to be platted and developed without requiring George Williams Way to be constructed to the north property line subject to the following condition:

1) An agreement not to protest the formation of a benefit district for the future extension of George Williams Way, including planting of street trees and installation of shared use path, shall be executed and recorded prior to the recording of the final plat.

Motion carried 9-0-1, with Commissioner Hird abstaining.

Motioned by Commissioner Lamer, seconded by Commissioner Blaser, to approve the variance from Section 20-811(c)(1)(i) to allow Rock Chalk Drive to be constructed with a 10 ft shared use path along the north side and no sidewalk on the south side subject to the following conditions:

1) The location of crosswalks providing connections between the development to the south and the shared use path to the north of Rock Chalk Drive shall be shown on the plat.
2) A note shall be included on the plat that best management practices, such as raised pavement, pavement markings, or alternate pavement materials will be used to insure pedestrian safety at the crosswalks.

Motion carried 9-0-1, with Commissioner Hird abstaining.

Motioned by Commissioner Lamer, seconded by Commissioner Blaser, to approve the Rock Chalk Park Addition No. 1 Preliminary Plat subject to the following conditions:

1. Provision of a revised plat with the following changes:
   a. Easement widths between Lots 1 and 2 and on the south side of Lot 1 shall be provided per Westar's requirement.
   b. Addition of a note establishing the construction and maintenance responsibilities for the shared access drives.
2. Agreements not to protest the formation of a benefit district for street and sidewalk improvements and street trees for E 902 Road and George Williams Way (if Variance 1 is approved) shall be executed and recorded prior to the recording of the final plat

Motion carried 9-0-1, with Commissioner Hird abstaining.

ACTION TAKEN on Item 4C

Motioned by Commissioner Lamer, seconded by Commissioner Britton, to approve the Special Use Permit SUP-12-00225 subject to the following conditions:

1. Provision of a revised plan with the following changes:
   a. Lots 1 and 2 shall be clearly identified and the boundaries delineated on the plan drawings. On Sheet SUP-3 identify Kansas Athletics Facilities identified as Lot 1, and City Facilities as Lot 2.
   b. The named access drives, Rock Chalk Parkway and Rock Chalk Lane, labeled as 'access drives'.
   c. Parking related items:
      i. Location of the racks for the 153 bike parking spaces shall be shown per standards in Section 20-913(g).
      ii. Uses and parking requirements revised in Parking Summary as noted in staff report; include the 700 overflow parking spaces in the summary.
      iii. Dimension parking lot islands to insure compliance with code standards.
      iv. Note that parking lot islands will be landscaped with a minimum of 2 of the following materials: trees, shrubs or ground cover.
      v. Provide 2 additional ADA parking spaces for a total of 32 spaces. Four of the 32 spaces shall be van accessible.
      vi. Note that the Planning Director approved the number of parking spaces provided on the plan and the use of shared parking based on the results of the parking study.
      vii. Addition of recording information for shared parking agreement and maintenance agreement.

viii. Provide a landscape table listing the interior landscaping for each parking lot per standards in Section 20-1003.
ix. Add the required shrubs to the interior parking lot landscaping plans.

d. The bufferyard lengths shall be noted on the plan and a bufferyard landscaping table provided. Bufferyard landscaping, trees and shrubs, shall be noted in the table per standards in Section 20-1005.
e. Addition of a note on the plan that existing vegetation where indicated on the plan can serve as the bufferyard landscaping, but that bufferyard landscaping as required in Section 20-1005 would be provided in the event the existing vegetation is removed during construction or damaged to the point the City Horticulture Manager determines it needs to be replaced. New trees may be planted within the southern bufferyard to create a new tree row per the City Forestry Manager's specifications.
f. Show the sight triangles at all intersections.
g. Utility easements shall be revised as necessary for City Utilities Department and Westar approval.
h. Show graphically the stands of trees which will be protected.
i. Addition of the following notes:
    i. "*Uses and facilities noted as 'future' are approved conceptually as shown on this SUP; however, the addition of the use will require submittal and approval of a revised SUP application through the SUP process, including a public hearing before the Planning Commission and approval by the City Commission."*
    ii. *"Trail locations shown on the SUP are approximate. Specific locations and surfacing will be approved by the City Commission."*
    iii. *"Alcohol sales and consumption are permitted on the premises with appropriate liquor licensing."*
    iv. *"The Planning Director administratively waived the requirement for a Type 1 Bufferyard for the west and north lot lines."*
    v. *"The Planning Director waived the perimeter parking lot requirement for a wall or berm and approved the perimeter landscaping as shown on the plan."*
    vi. "*The use of the recreation center building, soccer field, softball field, and track stadium shall be unrestricted for sport and athletic event related activities. Sport and athletic event related activities include, but are not limited to, the following, whether at the intercollegiate or other level:*
        a. Softball, soccer, and track and field competitions, practices, and events;
        b. Parks and Recreation programmed events and athletic programs such as, but not limited, to:
            i. Basketball, volleyball, gymnastics, community recreation programs, etc. contained within the building,
            ii. Tennis play and tournaments at the tennis courts,
            iii. 3-on-3 basketball tournaments in the parking lot, etc.
        c. Recreational level sports – Ultimate Frisbee, flag football, etc. on the KA fields;
        d. Exhibition games and tournaments such as, but not limited to:
            i. Kansas Relays,
            ii. Football/softball/soccer games and tournaments,
            iii. Special Olympics,
            iv. Cross Country meets,
        e. Marching band performances and practices.

    Non-sport and non-athletic related events, located within the facilities or in the parking lots, shall require approval through the city's Special Event Permit process. Non-sport and non-athletic related activities include, but are not limited to:
        a. Music concerts,

b. Festivals,
c. Fairs,
d. BBQ cook-offs,
e. Farmers' markets,
f. Racing and vehicle exhibitions: BMX and Motorcross racing, truck and tractor pulls, etc."

vii. "*Tennis court lights shall be shut off no later than 10:30 PM Sunday through Thursday and no later than 11:00 PM on Friday and Saturday nights. Stadium and other outdoor recreation lights shall be shut off no later than 11:30 PM throughout the week."*

viii. *"The detention pond/drainage easement will be privately-owned and maintained. The developer is responsible for establishing ownership and maintenance of same via individual owner maintenance. No fences or structures other than necessary retaining walls and/or guardrails will be allowed within the drainage easements."*

ix. *"All curb inlets will be constructed per City storm sewer standard details."*

x. *"Exterior ground-mounted or building-mounted equipment including, but not limited to, mechanical equipment, utilities boxes and meters, shall be fully screened from view of adjacent properties and from street rights-of-way (as measured 6 ft above ground level). Screening shall be in the form of landscape plantings or an architectural treatment compatible with the architecture of the principal building."*

2. A photometric plan for all exterior lighting shall be provided for review and approval by the City Commission prior to the release of the SUP plans for building permits.
3. A shared parking agreement between the owner of Lot 1 and Lot 2 shall be executed prior to the issuance of building permits for any structure.
4. A maintenance agreement between the owner of Lot 1 and Lot 2 shall be executed prior to the issuance of building permits for any structure.
5. Provision of a revised drainage plan per the City Stormwater Engineer's approval.

Motion carried 6-3-1, with Commissioner Hird abstaining.

PC Minutes 12/10/12 **DRAFT**

MISCELLANEOUS NEW OR OLD BUSINESS

MISC NO. 1 REVISED 2013 PLANNING COMMISSION MEETING CALENDAR

Approve the revised 2013 Planning Commission meeting calendar.

ACTON TAKEN

Motioned by Commissioner Josserand, seconded by Commissioner Belt, to approve the revised 2013 Planning Commission Meeting Calendar.

Unanimously approved 10-0.

Consideration of any other business to come before the Commission.

ADJOURN 12:45am

2013
LAWRENCE-DOUGLAS COUNTY METROPOLITAN PLANNING COMMISSION
MID-MONTH & REGULAR MEETING DATES

Mid-Month Meetings, Wednesdays 7:30 – 9:00 AM	Mid-Month Topics	Planning Commission Meetings 6:30 PM, Mon & Wed	
Jan 9	Topics for 2013	Jan 28	Jan 30
Feb 13		Feb 25	Feb 27
Mar 13		Mar 25	Mar 27
Apr 10		Apr 22	Apr 24
May 8	APA Conference follow-up	May 20	May 22
Jun 12		Jun 24	Jun 26
Jul 12**	*PC Orientation – all day Friday*	Jul 22	Jul 24
Aug 14		Aug 26	Aug 28
Sep 11		Sep 23	Sep 25
Oct 9		Oct 21	Oct 23
Nov 6	*tentative*	Nov 18	Nov 20
Dec 4	*tentative*	Dec 16	Dec 18

Suggested topics for future meetings:

How City/County Depts interact on planning issues
Stormwater Stds Update – Stream Setbacks
Overview of different Advisory Groups – potential overlap on planning issues
Open Space Acquisition/Funding Mechanisms – what do other states do?
Library Expansion Update
Joint meeting with other Cities' Planning Commissions
Joint meeting with other Cities and Townships – UGA potential revisions
Tour City/County Facilities
2010 Census Data
Oread Overlay Districts
Water/Wastewater Master Plan Update
*Downtown Survey Memo – redevelopment options**
*Comprehensive Plan – Goals & Policies**
**new suggestions*

Meeting Locations

The Planning Commission meetings are held in the City Commission meeting room on the 1st floor of City Hall, 6th & Massachusetts Streets, unless otherwise noticed.

Planning & Development Services | Lawrence-Douglas County Planning Division | 785-832-3150 | www.lawrenceks.org/pds

Revised 12/04/12

PLANNING COMMISSION REPORT
Regular Agenda - Public Hearing Item

PC Staff Report
1/28/2013

ITEM NO. 1 Z-12-00325 RS7 (SINGLE-DWELLING RESIDENTIAL) DISTRICT TO RS5 (SINGLE-DWELLING RESIDENTIAL) DISTRICT; 10.56 ACRES (SLD)

Z-12-00325: Consider a request to rezone approximately 10.56 acres from RS7 (Single-Dwelling Residential) to RS5 (Single-Dwelling Residential) for Fairfield Farms East Addition, located SE of 25th Terrace and O'Connell Road. Submitted by CFS Engineers, for Fairfield Investors LLC, property owner of record.

STAFF RECOMMENDATION: Staff recommends approval of the request to rezone approximately 10.56 acres, from RS7 (Single-Dwelling Residential) District to RS5 (Single-Dwelling Residential) District based on the findings presented in the staff report and forwarding it to the City Commission with a recommendation for approval subject to the following conditions:

1. Density shall be limited to 6 dwelling units per acre to prevent the total area from being replatted in the future that would exceed the low-density category.

Reason for Request: *The current filed plat shows this area as RM12D & RS7 zoning classifications. The subject area would be rezoned from RS7 to RS5 to allow for a handful of (8) smaller lot footprints.*

KEY POINTS
- Existing single-dwelling residential zoning.
- Previously approved subdivisions to accommodate low-density residential development.

ASSOCIATED CASES/OTHER ACTION REQUIRED
- PF-12-00252; Final Plat; Fairfield Farms Addition No 3; approved, pending recording.
- MS-12-00280; Minor Subdivision to revise interior lot lines; pending review.

PLANS AND STUDIES REQUIRED
- *Traffic Study* – Not required for rezoning
- *Downstream Sanitary Sewer Analysis* – Not required for rezoning
- *Drainage Study* – Not required for rezoning
- *Retail Market Study* – Not applicable to residential request

ATTACHMENTS
1. Area map
2. *Southeast Area Plan* Future Land Use Map 3-1
3. Zoning Exhibit prepared by applicant
4. Approved preliminary plat
5. Final Plat – Phase I
6. Minor Subdivision – portion of Phase I
7. Summary of Associated Cases

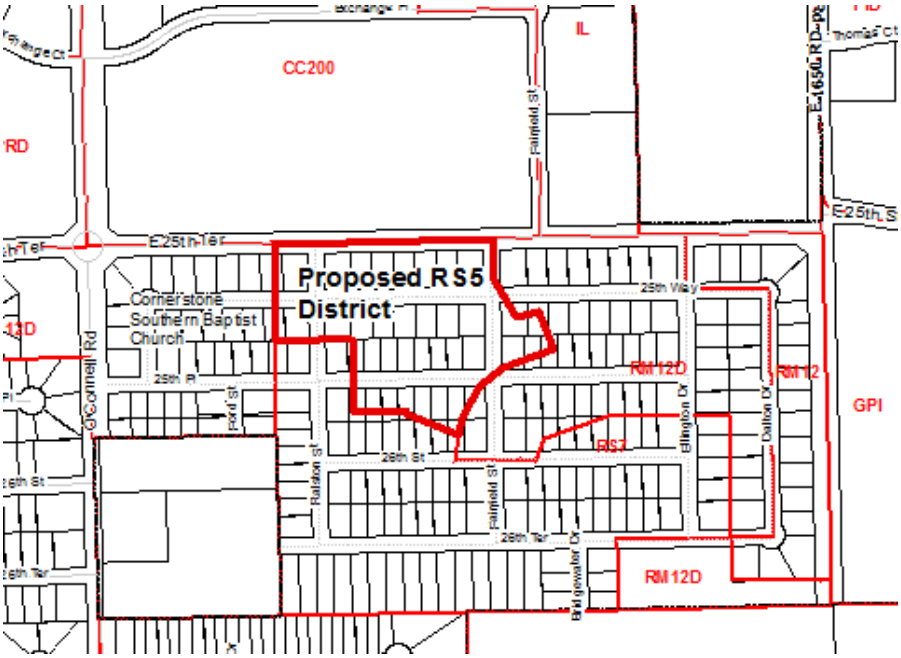
PUBLIC COMMENT RECEIVED PRIOR TO PRINTING
- None to date

Project Summary:
Proposed request is for rezoning 10.56 acres within the Fairfield Farms Addition subdivision area to accommodate several smaller lots for future development. The property is located on the south side of 25th Terrace and is east of the future church lot located on the southeast corner of O'Connell Road and 25th Terrace.

Rezoning a portion of the area to RS5 will increase the total number of lots by 5. Partial lots are zoned on the eastern edge of the church property because the RM12D boundary has been adjusted to accommodate a future church, but the property has not yet been Final Platted to correspond with this boundary. No changes to the RM12 district are included in this application.

Existing Platted Lots	**RS7**		**RM12D**	**RM12D- Church**	**RM12**	**Total**
Total prior to rezonig		125	53	38	18	234
Proposed Platted Lots 2012	**RS7**		**RM12D**	**RM12D- Church**	**RM12**	
Total		122	46	1	18	187
Revised Platted Subdivision	**RS7**	**RS5**		**RM12D- Church**	**RM12**	
Total	89	40 (129)	46	1	18	188

The overall increase in the total number of RS lots is 7 (122 lots previously approved, 129 lots proposed with final plat and minor subdivision). Of the total 129 residential lots, a total of 8 of the lots would be less than 7,000 SF as proposed on the minor subdivision (MS-12-00280).



1. CONFORMANCE WITH THE COMPREHENSIVE PLAN

Applicant's Response: *Proposed and existing zoning is residential neighborhood. This complies with the comprehensive plans for urban growth projects in the subject area.*

This property is located within the boundary of the *Southeast Area Plan*. The plan was amended into *Horizon 2020*, the City's comprehensive land use plan on December 1, 2008. *Horizon 2020* provides the framework for all area plans. Residential strategies include a preference for infill

development over new annexation of land and the provision of a mixture of housing types, styles and economic levels in new residential areas (*Horizon 2020, Chapter 5, 5-1*).

The proposed request, when reviewed concurrently with the minor subdivision, provides a subdivision with a variety of lot sizes that enhance the ability to provide a more mixed residential development. The smaller lots can be dispersed throughout the development to allow for larger and smaller lots within the same area.

The proposed RS5 zoning is identified in the *Southeast Area Plan* as a zoning district that could be considered in either the low density or medium density development areas. Primary uses in these areas district include *Detached Dwellings*, *Attached Dwellings, Duplex*, and various group living residential uses and community facilities such as *Schools* and *Daycare Centers*, *Extended Care Facilities* (nursing homes), and *Religious Assembly* uses. The proposed RS5 zoning allows some of these uses but is generally limited to dwellings that are *Detached Dwellings*.

The request as proposed creates an area within the neighborhood for smaller lots. The zoning boundary is intended to follow proposed platted lot lines. The zoning coupled with the subdivision plat arrangement results in a low-density development pattern.

Staff Finding – The proposed zoning is consistent with the land use recommendations of the *Southeast Area Plan* and with the comprehensive plan, *Horizon 2020*.

2. ZONING AND USE OF NEARBY PROPERTY, INCLUDING OVERLAY ZONING

Current Zoning and Land Use:	RS7 (Single-Dwelling Residential) District; existing platted undeveloped lots.
Surrounding Zoning and Land Use:	CC200 (Community Commercial) District to the north, north side of E. 25th Terrace; undeveloped land.
	RM12D (Multi-Dwelling Residential) District to the west; future church site.
	RS7 (Single-Dwelling Residential) District to the south; existing platted residential lots, future phases of the Fairfield Farms Addition subdivision.
	RM12D (Single-Dwelling Residential) District to the east; existing platted residential lots, future phases of the Fairfield Farms Addition subdivision.

Staff Finding – The property is surrounded by commercial zoning to the north and residential zoning to the south, east and west. This area is currently undeveloped. The subject property represents an initial phase of the residential development in this area.

3. CHARACTER OF THE NEIGHBORHOOD

Applicant's Response: *The neighborhood area is all residential bordered by agricultural, industrial and the County Jail to the east. Further north there is some commercial property.*

The property is located within the southeast area of Lawrence. Prairie Park Neighborhood is located to the southwest of the proposed rezoning. This request is located within a developing

neighborhood that includes a mix of uses. Residential uses will dominate the area south of E. 25th Terrace. The subdivisions in the area provide the framework for the neighborhood pattern providing connectivity and access throughout the area. Both lot orientation and zoning district boundaries are key features in establishing land use transition from the intensive activity planned north of E. 25th Terrace and east of Franklin Road and the low-density residential uses to the south and west.

Approval of this request modifies the minimum lot size and overall density of development within this phase of the total subdivision. This district allows a minimum lot size of 5,000 SF compared to the current requirement of 7,000 SF. This area has always been intended as a mixed-use area with non-residential uses located within walking distance to residential uses.

Approval of the request will not impact the future development of a church site on the southeast corner of E. 25th Terrace and O'Connell Road, previously approved per Z-4-13-11, or impact the future development of townhouses along Dalton Drive previously approved per Z-6-16-11. The proposed request is consistent with anticipated neighborhood development.

Staff Finding – The area between O'Connell Road and Franklin Road is a developing neighborhood east of the Prairie Park Neighborhood. E. 25th Terrace is established as the boundary between the residential and commercial land uses planned for the area. The proposed request is consistent with developing character of the area.

4. PLANS FOR THE AREA OR NEIGHBORHOOD, AS REFLECTED IN ADOPTED AREA AND/OR SECTOR PLANS INCLUDING THE PROPERTY OR ADJOINING PROPERTY

As noted above, this property is within the *Southeast Area Plan* planning boundary. Land uses include low and medium density residential uses along O'Connell Road and E. 25th Terrace. Land use recommendations found in section 3.11 of the *Southeast Area Plan* include *"detached dwellings, attached dwellings, duplex, group homes, public and civic uses"*. This request is intended to allow for the development of smaller lots within the residential neighborhood. Land use transition north and south is maintained with the pending minor subdivision that provides back-to-back relationships and buffer yards applicable to the future commercial development.

The RS10, RS7, RS5 and RM12D are districts noted as applicable to low-density residential areas within the plan area. The proposed request, when reviewed concurrently with the subdivision design, results in a low-density development pattern. This request is consistent with the approved planning documents for the area.

Staff Finding – The proposed request is consistent with the land use recommendations included in the *Southeast Area Plan*.

5. SUITABILITY OF SUBJECT PROPERTY FOR THE USES TO WHICH IT HAS BEEN RESTRICTED UNDER THE EXISTING ZONING REGULATIONS

Applicant's Response: *The existing zoning classification is/will remain residential. Rezoning part of the RS7 to RS5 would be to allow for a handful (8) of smaller entry-level lot footprints.*

Both the existing and proposed zoning districts are suitable for the proposed land use and the land use recommendation for the area. This review must be considered in context with the subdivision design to ensure compliance with the land use recommendations in terms of density.

The proposed district boundary includes 35 single-dwelling residential lots. If approved with the proposed minor subdivision, a total of 40 single-dwelling residential lots will be created.

Existing Density with RS7 zoning
- 35/10.56 = 3.3 dwelling units per acre

Proposed Density with RS5 zoning
- 40/10.56 = 3.7 dwelling units per acre

Allowed Density with RS5 zoning
- 43,560/5,000 = 8.7 dwelling units per acre
- 8.7 DU * 10.56 acres = 91 units

Low-density residential development is defined as a development pattern with six or fewer dwelling units per acre. Both the existing and proposed zoning (together with the pending minor subdivision) comply with this definition and recommended land use for the area.

Basic neighborhood design concepts are defined in *Horizon 2020 in Chapter 5, Residential Land Use.* The Plan States:

> *3. Mixed Housing Types*
> *Different types, styles, sizes, densities, and price ranges should be incorporated. Where possible rehabilitation of existing structures is encouraged. Live/Work opportunities should be explored. (Page 5-2)*

The plan supports the mixture of housing types, styles and economic levels in new residential areas. The plan also supports compatible densities and housing types. These are included as Key Strategies for residential development.

Approval of the request modifies the minimum lot size and setback requirements, but does not impact the specific use as detached residential.

Staff Finding – The existing and proposed zoning are both suitable to the existing area. The approval of the request expands the ability to provide a greater range of housing types and economic diversity within the neighborhood by allowing smaller lots. When viewed at the neighborhood scale, the RS5 district is more suitable and provides both greater land use transition north to south but also increases the housing choices in this developing neighborhood.

6. LENGTH OF TIME SUBJECT PROPERTY HAS REMAINED VACANT AS ZONED

Applicant's Response: *7 to 8 years*

The property is undeveloped but platted for individual lot development. The zoning boundary was originally established in 2005. The districts were renamed to RS7 (Single-Dwelling Residential) District and RM12D (Multi-Dwelling Residential) District in 2006 with the adoption of the Land Development Code. The most recent zoning change occurred in 2012 to establish a modified grid pattern and enhance land use transition north to south.

Staff Finding – The current zoning has been in place since March 2012.

7. EXTENT TO WHICH APPROVING THE REZONING WILL DETRIMENTALLY AFFECT NEARBY PROPERTIES

Applicant's Response: *The change will be negligible and will harmonize with adjoining existing properties. The area remains residential as is the existing zoning and plat.*

Staff Finding – The immediate area is undeveloped and under the control of the developer with the exception of the area owned by Cornerstone Southern Baptist Church. There are no immediate property owners that will be impacted by the proposed request.

8. THE GAIN, IF ANY, TO THE PUBLIC HEALTH, SAFETY AND WELFARE DUE TO THE DENIAL OF THE APPLICATION, AS COMPARED TO THE HARDSHIP IMPOSED UPON THE LANDOWNER, IF ANY, AS A RESULT OF DENIAL OF THE APPLICATION

Applicant's Response: *By rezoning the subject property would make available 8 smaller, more affordable entry-level lots, while keeping it residential.*

Evaluation of this criterion includes weighing the benefits to the public versus the benefit of the owners of the subject property. Benefits are measured based on anticipated impacts of the rezoning request on the public health, safety, and welfare.

The proposed request has been reviewed within the scope of an evolving neighborhood design that allows for a comprehensive assessment of the changes prior to construction of any portion of the neighborhood. This allows conflicts to be identified in the planning stages and provides a more efficient development process.

It should be noted that as the area develops more changes to the lot configuration and density may require revised utility studies in the future to assure that the developing neighborhood is consistent with the infrastructure capacity as the area is built out.

Staff recommends the zoning include a condition that caps the density at 6 units per acre to comply with the land use recommendation in this area and to maintain consistency with utilities planned for the area.

Staff Finding – The benefit to the community results from the provision of a greater variety of housing choices within the overall neighborhood.

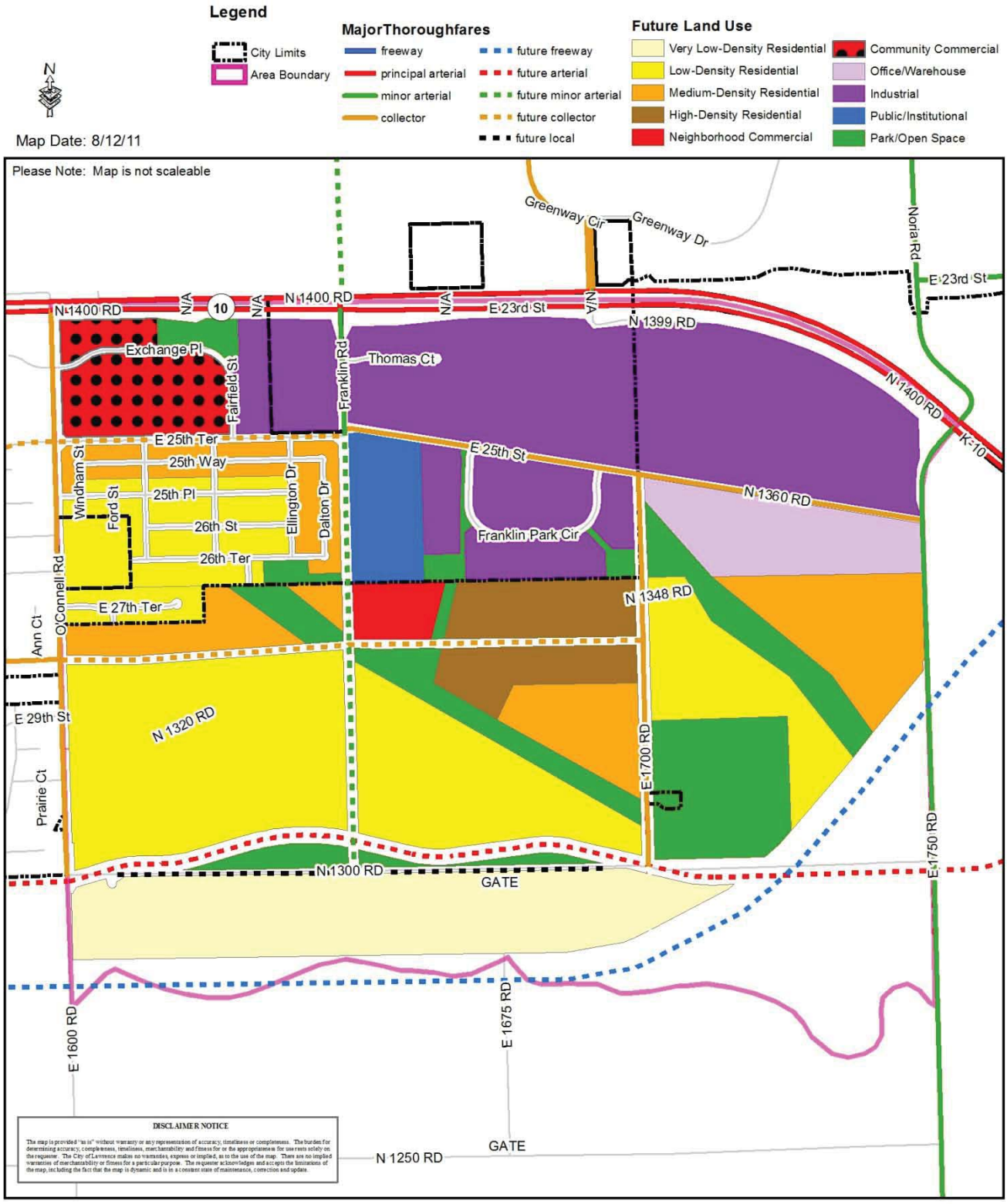
9. PROFESSIONAL STAFF RECOMMENDATION

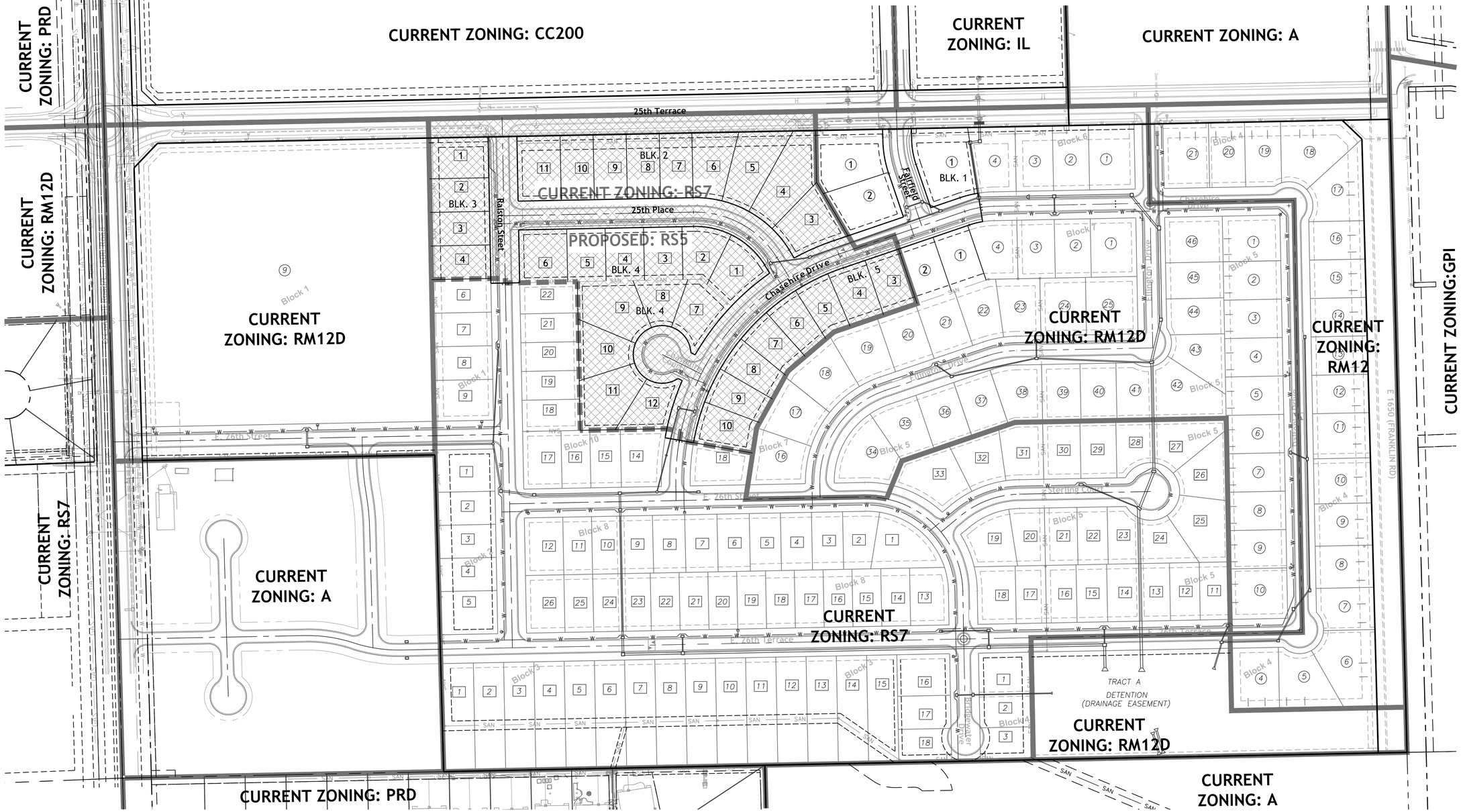
The original plan for this neighborhood has changed since the initial approvals in the early 2000's. The culmination of changes provides a greater variety for the neighborhood with clear expectations for a development pattern that includes a mix of uses and housing types. This project provides a range of housing choices and lot sizes for the east side of Lawrence.

CONCLUSION

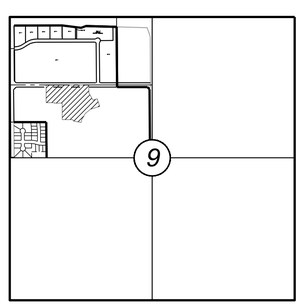
The proposed request conforms with land use recommendations of the *Southeast Area Plan*. The related subdivision design results in a low-density residential development pattern.

Southeast Area Plan
Map 3-1 Future Land Use





Location Map:



SECTION 9-T13S-R20E

NOT TO SCALE

Legend:

EXISTING ZONING BOUNDARY

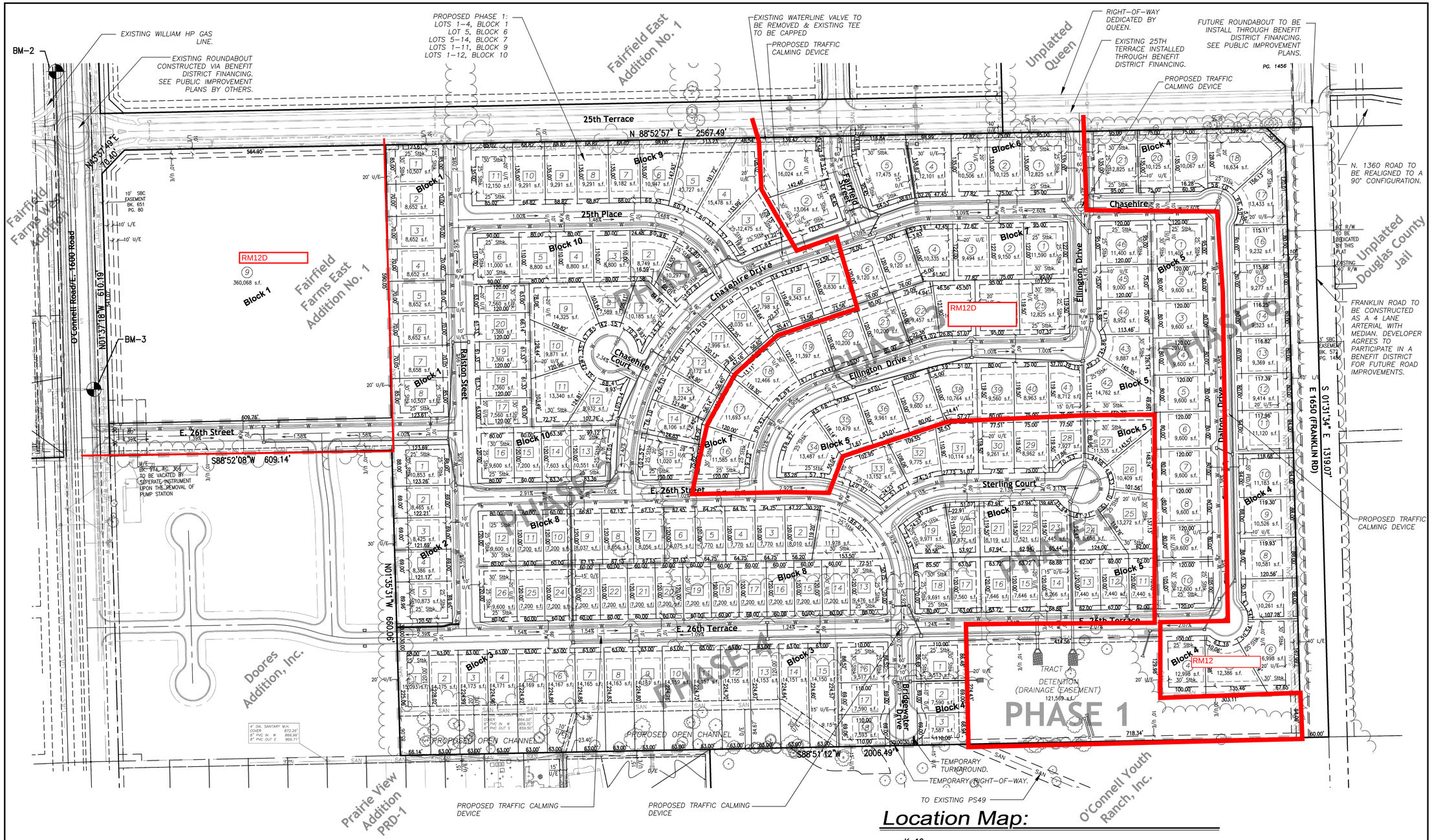
PROPOSED ZONING BOUNDARY

AREAS CURRENTLY ZONED RS7 TO BE REZONED RS5

ZONING MAP FOR

Fairfield Farms East Addition

CFS Cook, Flatt & Strobel ENGINEERS, P.A.
850 E 13 B
r 66044
785.856.9600



Legend:

△	SECTION CORNER
D/E	DRAINAGE EASEMENT
U/E	UTILITY EASEMENT
L/E	LANDSCAPE EASEMENT
R/W	RIGHTS-OF-WAY
5	SINGLE FAMILY (RS7) LOTS
5	DUPLEX (RM12D) LOTS (LOTS 4–21 BLOCK 4 ARE ZONED RM12)
	NO ACCESS

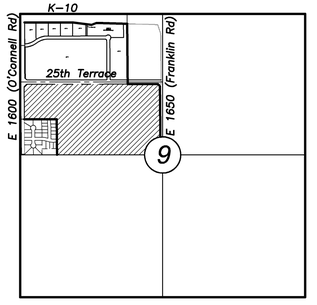
Benchmarks

BM-1:
CHISELED "S" IN CENTER OF STORM STRUCTURE AT SW CORNER OF INTERSECTION OF E. 1600 RD. AND K-10 HIGHWAY. ELEV.=890.82

BM-2:
RAILROAD SPIKE SET IN EAST FACE OF POWER POLE 130' NORTH OF 25TH TERR., WEST SIDE OF O'CONNELL RD. ELEV.=897.75

BM-3:
SET "S" CUT IN CENTER OF CURB INLET ON EAST SIDE OF O'CONNELL RD. (SW CORNER OF FAIRFIELD FARMS EAST ADDITION NO. 1) ELEV.=889.64

Location Map:



SECTION 9-T13S-R20E

NOT TO SCALE

100' 0 50' 100' 200'

1 Inch = 100 ft.

JOHNSON GROUP LLC
ENGINEERING & CONSTRUCTION
850 East 13th Street, Suite B
P.O. BOX 1058
LAWRENCE KS 66044
T 785.856.9600 | F 785.371.0212

Fairfield Farms East Addition No. 2

Preliminary Plat

Lawrence, Kansas

#	Date	Comment	By

JG Project #: 11004
File Name: 11004-PP.dwg
Date: 12.27.2011

Layout Plan

Sheet #: 2 of 3

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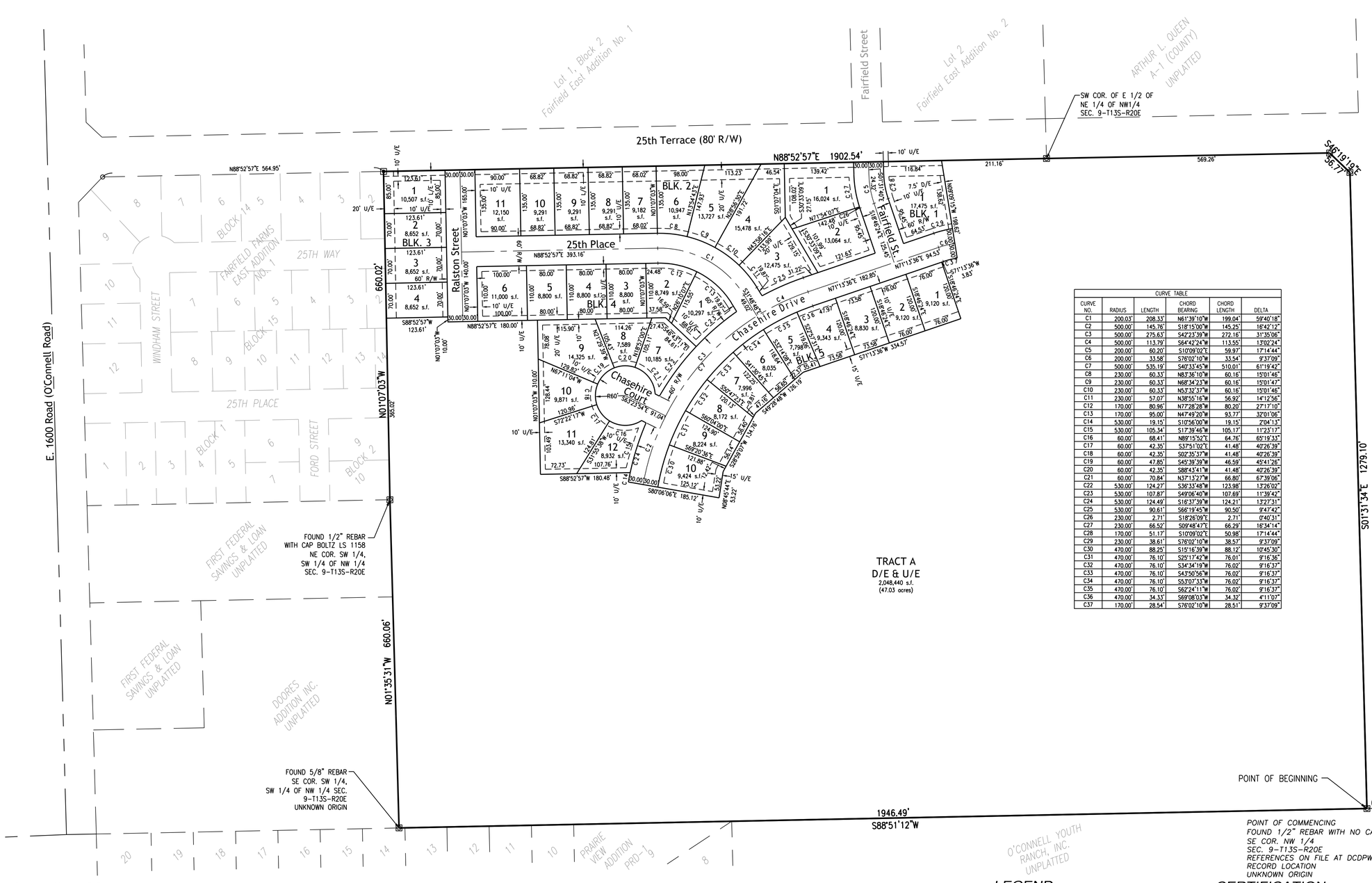


CURVE TABLE					
CURVE NO.	RADIUS	LENGTH	CHORD BEARING	CHORD LENGTH	DELTA
C1	200.03'	208.33'	N61°39'10"W	199.04'	59°40'18"
C2	500.00'	145.76'	S18°15'00"W	145.25'	16°42'12"
C3	500.00'	275.63'	S42°23'39"W	272.16'	31°35'06"
C4	500.00'	113.79'	S64°42'24"W	113.55'	13°02'24"
C5	200.00'	60.20'	S10°09'02"E	59.97'	17°14'44"
C6	200.00'	33.58'	S76°02'10"W	33.54'	9°37'09"
C7	500.00'	535.19'	S40°33'45"W	510.01'	61°19'42"
C8	230.00'	60.33'	N83°36'10"W	60.16'	15°01'46"
C9	230.00'	60.33'	N68°34'23"W	60.16'	15°01'47"
C10	230.00'	60.33'	N53°32'37"W	60.16'	15°01'46"
C11	230.00'	57.07'	N38°55'16"W	56.92'	14°12'56"
C12	170.00'	80.96'	N77°28'28"W	80.20'	27°17'10"
C13	170.00'	95.00'	N47°49'20"W	93.77'	32°01'06"
C14	530.00'	19.15'	S10°56'00"W	19.15'	2°04'13"
C15	530.00'	105.34'	S17°39'46"W	105.17'	11°23'17"
C16	60.00'	68.41'	N89°15'52"E	64.76'	65°19'33"
C17	60.00'	42.35'	S37°51'02"E	41.48'	40°26'39"
C18	60.00'	42.35'	S02°35'37"W	41.48'	40°26'39"
C19	60.00'	47.85'	S45°39'39"W	46.59'	45°41'26"
C20	60.00'	42.35'	S88°43'41"W	41.48'	40°26'39"
C21	60.00'	70.84'	N37°13'27"W	66.80'	67°39'06"
C22	530.00'	124.27'	S36°33'48"W	123.98'	13°26'02"
C23	530.00'	107.87'	S49°06'40"W	107.69'	11°39'42"
C24	530.00'	124.49'	S16°37'39"W	124.21'	13°27'31"
C25	530.00'	90.61'	S66°19'45"W	90.50'	9°47'42"
C26	230.00'	2.71'	S18°26'09"E	2.71'	0°40'31"
C27	230.00'	66.52'	S09°48'47"E	66.29'	16°34'14"
C28	170.00'	51.17'	S10°09'02"E	50.98'	17°14'44"
C29	230.00'	38.61'	S76°02'10"W	38.57'	9°37'09"
C30	470.00'	88.25'	S15°16'39"W	88.12'	10°45'30"
C31	470.00'	76.10'	S25°17'42"W	76.01'	9°16'36"
C32	470.00'	76.10'	S34°34'19"W	76.02'	9°16'37"
C33	470.00'	76.10'	S43°50'56"W	76.02'	9°16'37"
C34	470.00'	76.10'	S53°07'33"W	76.02'	9°16'37"
C35	470.00'	76.10'	S62°24'11"W	76.02'	9°16'37"
C36	470.00'	34.33'	S69°08'03"W	34.32'	4°11'07"
C37	170.00'	28.54'	S76°02'10"W	28.51'	9°37'09"

BOUNDARY DESCRIPTION:

LOTS 1 THROUGH 8 IN BLOCK 2, ALL OF BLOCKS 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 AND 13, LOT 1 AND A PORTION OF LOT 2 IN BLOCK 14, LOTS 1 AND 15 AND A PORTION OF LOTS 2 AND 14 IN BLOCK 15, ALONG WITH PUBLIC STREET RIGHT-OF-WAY, ALL IN FAIRFIELD FARMS EAST ADDITION NO. 1, IN THE CITY OF LAWRENCE, DOUGLAS COUNTY, KANSAS, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF THE NORTHWEST QUARTER OF SECTION 9, TOWNSHIP 13 SOUTH, RANGE 20 EAST, THENCE ON FAIRFIELD FARMS EAST ADDITION NO. 1 BEARINGS, SOUTH 88°51'12" WEST, COINCIDENT WITH THE SOUTH LINE OF SAID NORTHWEST QUARTER A DISTANCE OF 60.00 FEET TO THE SOUTHEAST CORNER OF SAID BLOCK 4 AND THE POINT OF BEGINNING; THENCE CONTINUE SOUTH 88°51'12" WEST, COINCIDENT WITH THE SOUTH LINE OF SAID ADDITION, 1,946.49 FEET TO THE SOUTHWEST CORNER OF SAID BLOCK 3; THENCE NORTH 01°35'31" WEST, COINCIDENT WITH THE WEST LINE OF SAID BLOCKS 3 AND 2, 660.06 FEET TO THE SOUTHEAST CORNER OF LOT 10 IN SAID BLOCK 2; THENCE NORTH 01°07'03" WEST, 660.02 FEET TO THE NORTH LINE OF SAID BLOCK 14 AND THE SOUTH LINE OF 25TH TERRACE AS PLATTED IN SAID ADDITION; THENCE NORTH 88°52'57" EAST, COINCIDENT WITH THE SOUTH LINE OF SAID 25TH TERRACE, 1,902.54 FEET TO THE NORTHEAST CORNER OF LOT 18 IN SAID BLOCK 4; THENCE SOUTH 46°19'19" EAST, COINCIDENT WITH THE NORTHEASTERLY LINE OF SAID LOT 18, 56.77 FEET TO THE NORTH MOST CORNER OF LOT 17 IN SAID BLOCK 4; THENCE SOUTH 01°31'34" EAST, COINCIDENT WITH THE EAST LINE OF SAID BLOCK 4 AND THE WEST LINE OF E 1650 ROAD (FRANKLIN ROAD) AS PLATTED IN SAID ADDITION, 1,279.10 FEET TO THE POINT OF BEGINNING, CONTAINING 2,566,911 SQUARE FEET OR 58.928 ACRES, MORE OR LESS.

GENERAL NOTES:

1. STREET TREES SHALL BE PROVIDED IN ACCORDANCE WITH THE MASTER STREET TREE PLAN FILED WITH THE DOUGLAS COUNTY REGISTER OF DEEDS AT BOOK _____, PAGE _____.
2. ALL LOTS WILL HAVE NO DIRECT ACCESS TO E. 1650 ROAD/FRANKLIN ROAD.
3. TRACT 'A' TO BE OWNED AND MAINTAINED BY THE HOME OWNERS ASSOCIATION.
4. SOILS INVESTIGATIONS SHALL BE PERFORMED BEFORE PRIMARY STRUCTURES ARE ERECTED ON LOTS WITH SLOPE GREATER THAN 3:1, OR NON-ENGINEERED FILL GREATER THAN 12 INCHES. A SOILS ENGINEER LICENSED BY THE STATE OF KANSAS SHALL PERFORM INVESTIGATIONS, AND A REPORT OF THE INVESTIGATION SHALL BE SUBMITTED TO THE CITY OF LAWRENCE CODES ENFORCEMENT DIVISION. OTHER LOTS MAY BE REQUIRED TO BE INVESTIGATED WHERE EXCAVATIONS OF UNSUITABLE CONDITIONS.
5. THE CITY IS HEREBY GRANTED A TEMPORARY RIGHT OF ENTRY TO PLANT THE REQUIRED STREET TREES TO CHAPTER 21, ARTICLE 7, SECTION 21-708a OF THE CITY SUBDIVISION REGULATIONS.
6. ACCESS TO 25TH TERRACE FOR RESIDENTIAL LOTS IS NOT PERMITTED.
7. NO FENCES OR OBSTRUCTIONS SHALL BE CONSTRUCTED WITHIN DEDICATED DRAINAGE EASEMENTS.
8. TRACT A SHALL BE DEDICATED AS DRAINAGE AND UTILITY EASEMENT. THE DRAINAGE AND UTILITY EASEMENT WILL BE REDEFINED WITH FUTURE PLATS.
9. ENERGY DISSIPATORS ARE REQUIRED IN FULLY DEVELOPED CONDITIONS ON THE DOWNSTREAM END OF THE DETENTION POND OUTLET PIPES. THESE WILL BE INSTALLED IN A FUTURE PHASE.
10. TRACT 'A' WILL BE DEVELOPED IN PHASES CONSISTENT WITH THE APPROVED PRELIMINARY PLAT FOR THIS PROPERTY.
11. ALL SUBDIVISION BOUNDARY DIMENSIONS ARE MEASURED RECORD VALUES.

ENDORSEMENTS:

APPROVED BY
CITY OF LAWRENCE
PLANNING COMMISSION
DOUGLAS COUNTY, KANSAS

PLANNING DIRECTOR DATE
SCOTT MCCULLOUGH

RIGHT-OF-WAY AND EASEMENTS
ACCEPTED BY
CITY COMMISSION
LAWRENCE, KANSAS

MAYOR DATE
ROBERT J. SCHUMM

CITY CLERK DATE
JONATHAN DOUGLASS

FILING RECORD:

STATE OF KANSAS COUNTY OF DOUGLAS THIS IS TO CERTIFY THAT THIS INSTRUMENT WAS FILED FOR RECORD IN THE OFFICE OF THE DOUGLAS COUNTY REGISTER OF DEEDS ON THIS _____DAY OF _____, 20__ AND IS DULY RECORDED AT_____; PLAT BOOK _____; PAGE _____.

REGISTER OF DEEDS DATE
KAY PESNELL

DEDICATION:

BE IT KNOWN TO ALL MEN THAT I (WE), THE UNDERSIGNED OWNER(S) OF THE ABOVE DESCRIBED TRACT OF LAND, HAVE HAD CAUSE FOR THE SAME TO BE SURVEYED AND PLATTED UNDER THE NAME OF FAIRFIELD FARMS EAST ADDITION NO. 2 AND HAVE CAUSED THE SAME TO BE SUBDIVIDED INTO LOTS AND STREETS AS SHOWN AND FULLY DEFINED ON THIS PLAT. ALL STREETS, DRIVES, ROADS, ETC. SHOWN ON THIS PLAT AND NOT HERETOFORE DEDICATED TO PUBLIC USE ARE HEREBY SO DEDICATED. AN EASEMENT IS HEREBY DEDICATED TO THE CITY OF LAWRENCE TO ENTER UPON CONSTRUCT AND MAINTAIN DRAINAGE STRUCTURES AND APPURTENANCES UPON, OVER, AND UNDER THOSE AREAS OUTLINED AS "DRAINAGE EASEMENT" OR "D/E". AN EASEMENT IS HEREBY DEDICATED TO THE CITY OF LAWRENCE AND PUBLIC UTILITY COMPANIES TO ENTER UPON, CONSTRUCT AND MAINTAIN UTILITIES UPON, OVER, AND UNDER THOSE AREAS OUTLINED ON THIS PLAT AS "UTILITY EASEMENT" OR "U/E."

WILLIAM R. NEWSOME
FAIRFIELD INVESTORS, LLC

ACKNOWLEDGMENT:

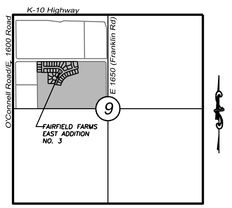
STATE OF KANSAS
COUNTY OF DOUGLAS

BE IT REMEMBERED THAT ON THIS_____DAY OF_____, 20__, BEFORE IN WITNESS WHEREOF, I HAVE HEREUNTO SET MY HAND AND AFFIXED MY SEAL ON THE DAY AND YEAR LAST WRITTEN ABOVE. ME, THE UNDERSIGNED, A NOTARY PUBLIC, IN AND FOR SAID COUNTY AND STATE, CAME WILLIAM R. NEWSOME, FAIRFIELD INVESTORS, LLC, WHO IS (ARE) PERSONALLY KNOWN TO ME TO BE THE SAME PERSON(S) WHO EXECUTED THE FOREGOING INSTRUMENT OF WRITING AND DULY ACKNOWLEDGE THE EXECUTION OF THE SAME.

NOTARY PUBLIC

MY COMMISSION EXPIRES

Location Map:



SECTION 9-T13S-R20E
SCALE: 1"= 2,000'

BEARINGS BASED ON FAIRFIELD EAST ADDITION NO. 1

GRAPHIC SCALE
100. 0' 50' 100' 200'
1 INCH = 100 FT.

A FINAL PLAT OF

Fairfield Farms East Addition No. 3

A REPLAT OF A PORTION OF
FAIRFIELD FARMS EAST ADDITION NO. 1
IN THE CITY OF LAWRENCE, DOUGLAS COUNTY, KANSAS

LEGEND:

○	FOUND 1/2" PG CLS 131 CAP UNLESS OTHERWISE NOTED
◉	1/2"x 24" REBAR SET WITH DM2 224 CAP
□	SUBDIVISION BOUNDARY SET IN CONCRETE
△	QUARTER SECTION CORNER
U/E	UTILITY EASEMENT
D/E	DRAINAGE EASEMENT
R/W	RIGHT-OF-WAY
L/E	LANDSCAPE EASEMENT
s.f.	SQUARE FEET
DCDPW	DOUGLAS COUNTY DEPARTMENT OF PUBLIC WORKS
BLK	BLOCK

CERTIFICATION:

I HEREBY CERTIFY THAT THE PLATTED AREA SHOWN HEREON IS THE TRUE AND ACCURATE RESULTS OF A FIELD SURVEY DONE BY ME OR UNDER MY DIRECT SUPERVISION. THIS SURVEY CONFORMS TO THE KANSAS MINIMUM STANDARDS FOR BOUNDARY SURVEYS AND THAT IT REPRESENTS A CLOSED TRAVERSE. THE FIELD WORK WAS COMPLETED IN THE FIELD _____.

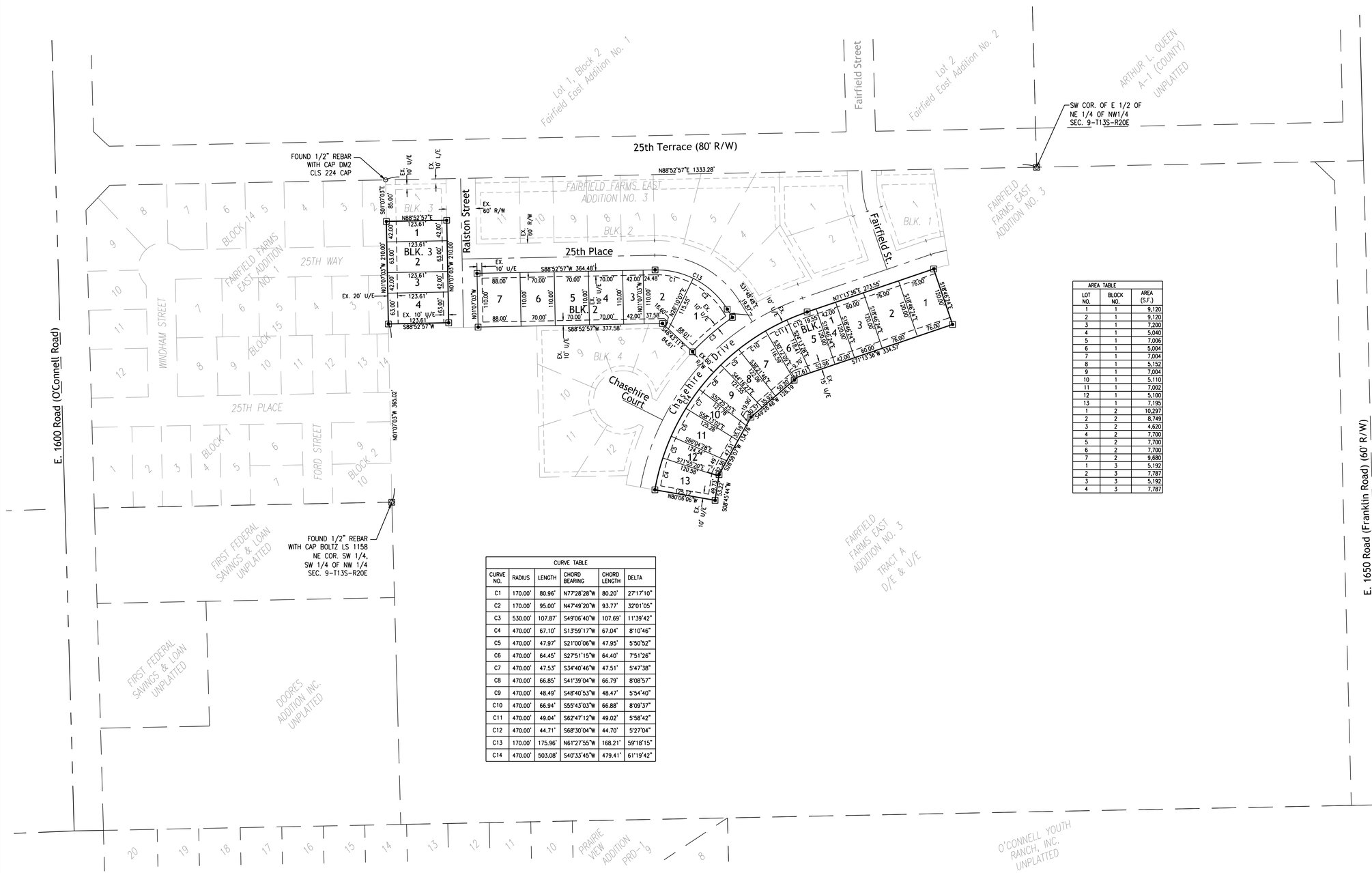
DM SQUARED, LLC
DENNIS E. BOLTZ, L.S. #1158
101 E. 4TH STREET
MUSCOTAH, KANSAS 66058
(785) 423-6944

REVIEWED BY:

REVIEWED IN COMPLIANCE
WITH K.S.A. 58-2005.

MICHAEL D. KELLY, L.S. #869
DOUGLAS CO. SURVEYOR

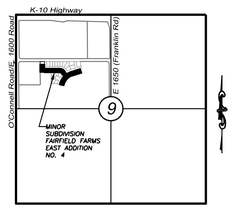
CFS Cook, Flatt & Strobel ENGINEERS, P.A.
850 E 13[illegible] B
[illegible] 66044
785 856 9600



AREA TABLE		
LOT NO.	BLOCK NO.	AREA (S.F.)
1	1	9,120
2	1	9,120
3	1	7,200
4	1	5,040
5	1	7,006
6	1	5,004
7	1	7,004
8	1	5,152
9	1	7,004
10	1	5,110
11	1	7,002
12	1	5,100
13	1	7,195
1	2	10,297
2	2	8,749
3	2	4,620
4	2	7,700
5	2	7,700
6	2	7,700
7	2	9,680
1	3	5,192
2	3	7,787
3	3	5,192
4	3	7,787

CURVE TABLE					
CURVE NO.	RADIUS	LENGTH	CHORD BEARING	CHORD LENGTH	DELTA
C1	170.00'	80.96'	N77°28'28"W	80.20'	27°17'10"
C2	170.00'	95.00'	N47°49'20"W	93.77'	32°01'05"
C3	530.00'	107.87'	S49°06'40"W	107.69'	11°39'42"
C4	470.00'	67.10'	S13°59'17"W	67.04'	8°10'46"
C5	470.00'	47.97'	S21°00'06"W	47.95'	5°50'52"
C6	470.00'	64.45'	S27°51'15"W	64.40'	7°51'26"
C7	470.00'	47.53'	S34°40'46"W	47.51'	5°47'38"
C8	470.00'	66.85'	S41°39'04"W	66.79'	8°08'57"
C9	470.00'	48.49'	S48°40'53"W	48.47'	5°54'40"
C10	470.00'	66.94'	S55°43'03"W	66.88'	8°09'37"
C11	470.00'	49.04'	S62°47'12"W	49.02'	5°58'42"
C12	470.00'	44.71'	S68°30'04"W	44.70'	5°27'04"
C13	170.00'	175.96'	N61°27'55"W	168.21'	59°18'15"
C14	470.00'	503.08'	S40°33'45"W	479.41'	61°19'42"

Location Map:



SECTION 9-T13S-R20E

SCALE: 1"= 2,000'

BEARINGS BASED ON FAIRFIELD FARMS EAST ADDITION NO. 3

GRAPHIC SCALE

100, 0' 50' 100' 200'

1 INCH = 100 FT.

MINOR SUBDIVISION

Fairfield Farms East Addition No. 4

A REPLAT OF LOTS 2 THROUGH 4, BLOCK 3, LOTS 1 THROUGH 6, BLOCK 4 AND LOTS 1 THROUGH 10, BLOCK 5 FAIRFIELD FARMS EAST ADDITION NO. 3 IN THE CITY OF LAWRENCE, DOUGLAS COUNTY, KANSAS

LEGEND:

○	FOUND 1/2" PG CLS 131 CAP UNLESS OTHERWISE NOTED
◉	1/2" x 24" REBAR SET WITH DM2 224 CAP
□	SUBDIVISION BOUNDARY SET IN CONCRETE
△	QUARTER SECTION CORNER
U/E	UTILITY EASEMENT
D/E	DRAINAGE EASEMENT
R/W	RIGHT-OF-WAY
L/E	LANDSCAPE EASEMENT
s.f.	SQUARE FEET
DCDPW	DOUGLAS COUNTY DEPARTMENT OF PUBLIC WORKS
BLK	BLOCK

CERTIFICATION:

I HEREBY CERTIFY THAT THE PLATTED AREA SHOWN HEREON IS THE TRUE AND ACCURATE RESULTS OF A FIELD SURVEY DONE BY ME OR UNDER MY DIRECT SUPERVISION. THIS SURVEY CONFORMS TO THE KANSAS MINIMUM STANDARDS FOR BOUNDARY SURVEYS AND THAT IT REPRESENTS A CLOSED TRAVERSE. THE FIELD WORK WAS COMPLETED IN THE FIELD _____.

DM SQUARED, LLC
DENNIS E. BOLTZ, L.S. #1158
101 E. 4TH STREET
MUSCOTAH, KANSAS 66058
(785) 423-6944

REVIEWED BY:

REVIEWED IN COMPLIANCE WITH K.S.A. 58-2005.

MICHAEL D. KELLY, L.S. #869
DOUGLAS CO. SURVEYOR

DESCRIPTION:

A PORTION OF FAIRFIELD FARMS EAST ADDITION NO. 3, IN THE CITY OF LAWRENCE, DOUGLAS COUNTY, KANSAS, DESCRIBED AS FOLLOWS:

LOTS 2 THROUGH 4, BLOCK 3, LOTS 1 THROUGH 6, BLOCK 4 AND LOTS 1 THROUGH 10, BLOCK 5, ALL IN FAIRFIELD FARMS EAST ADDITION NO. 3, IN THE CITY OF LAWRENCE, DOUGLAS COUNTY, KANSAS, CONTAINING 168,465 SQUARE FEET OR 3.867 ACRES, MORE OR LESS.

GENERAL NOTES:

1. STREET TREES SHALL BE PROVIDED IN ACCORDANCE WITH THE MASTER STREET TREE PLAN FILED WITH THE DOUGLAS COUNTY REGISTER OF DEEDS AT BOOK _____, PAGE _____.
2. SOILS INVESTIGATIONS SHALL BE PERFORMED BEFORE PRIMARY STRUCTURES ARE ERECTED ON LOTS WITH SLOPE GREATER THAN 3:1, OR NON-ENGINEERED FILL GREATER THAN 12 INCHES. A SOILS ENGINEER LICENSED BY THE STATE OF KANSAS SHALL PERFORM INVESTIGATIONS, AND A REPORT OF THE INVESTIGATION SHALL BE SUBMITTED TO THE CITY OF LAWRENCE CODES ENFORCEMENT DIVISION. OTHER LOTS MAY BE REQUIRED TO BE INVESTIGATED WHERE EXCAVATIONS OF UNSUITABLE CONDITIONS.
3. THE CITY IS HEREBY GRANTED A TEMPORARY RIGHT OF ENTRY TO PLANT THE REQUIRED STREET TREES TO CHAPTER 20, ARTICLE 8, SECTION 20-811(g)(4) OF THE CITY SUBDIVISION REGULATIONS.
4. ACCESS TO 25TH TERRACE FOR RESIDENTIAL LOTS IS NOT PERMITTED.
5. NO FENCES OR OBSTRUCTIONS SHALL BE CONSTRUCTED WITHIN DEDICATED DRAINAGE EASEMENTS.
6. ALL SUBDIVISION BOUNDARY DIMENSIONS ARE MEASURED RECORD VALUES.
7. NO PORTION OF THIS SUBDIVISION LIES WITHIN THE "100 YEAR FLOODPLAIN" ACCORDING TO FIRM FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NO. 20045C0187D & 20045C0179D, EFFECTIVE DATE AUGUST 5, 2010.
8. FURTHER DIVISION OR CONSOLIDATION OF ANY LOTS CONTAINED IN THIS MINOR SUBDIVISION/REPLAT IS PROHIBITED, AND SHALL BE PROCESSED AS MAJOR SUBDIVISION, UNLESS THE ACTION MEETS THE EXCEPTIONS NOTED IN SECTION 20-808(c)(5)(i).
9. CURRENT ZONING: RM12D LOTS 1 AND 2, BLOCK 1. RS-5 (ALL OTHER LOTS)

ENDORSEMENTS:

APPROVED AS A MINOR SUBDIVISION UNDER THE SUBDIVISION REGULATIONS OF THE CITY LAWRENCE AND THE UNINCORPORATED AREAS OF DOUGLAS COUNTY.

_____
PLANNING DIRECTOR DATE
SCOTT MCCULLOUGH

FILING RECORD:

STATE OF KANSAS COUNTY OF DOUGLAS THIS IS TO CERTIFY THAT THIS INSTRUMENT WAS FILED FOR RECORD IN THE OFFICE OF THE DOUGLAS COUNTY REGISTER OF DEEDS ON THIS _____DAY OF _____, 20__, AND IS DULY RECORDED AT _____; PLAT BOOK _____; PAGE _____.

_____
REGISTER OF DEEDS DATE
KAY PESNELL

DEDICATION:

BE IT KNOWN TO ALL MEN THAT I (WE), THE UNDERSIGNED OWNER(S) OF THE ABOVE DESCRIBED TRACT OF LAND, HAVE HAD CAUSE FOR THE SAME TO BE SURVEYED AND PLATTED UNDER THE NAME OF FAIRFIELD FARMS EAST ADDITION NO. 4 AND HAVE CAUSED THE SAME TO BE SUBDIVIDED INTO LOTS AS FULLY DEFINED ON THIS PLAT.

_____
WILLIAM R. NEWSOME
FAIRFIELD INVESTORS, LLC

ACKNOWLEDGMENT:

STATE OF KANSAS
COUNTY OF DOUGLAS

BE IT REMEMBERED THAT ON THIS _____DAY OF _____, 20___, BEFORE IN WITNESS WHEREOF, I HAVE HEREUNTO SET MY HAND AND AFFIXED MY SEAL ON THE DAY AND YEAR LAST WRITTEN ABOVE. ME, THE UNDERSIGNED, A NOTARY PUBLIC, IN AND FOR SAID COUNTY AND STATE, CAME WILLIAM R. NEWSOME, FAIRFIELD INVESTORS, LLC, WHO IS (ARE) PERSONALLY KNOWN TO ME TO BE THE SAME PERSON(S) WHO EXECUTED THE FOREGOING INSTRUMENT OF WRITING AND DULY ACKNOWLEDGE THE EXECUTION OF THE SAME.

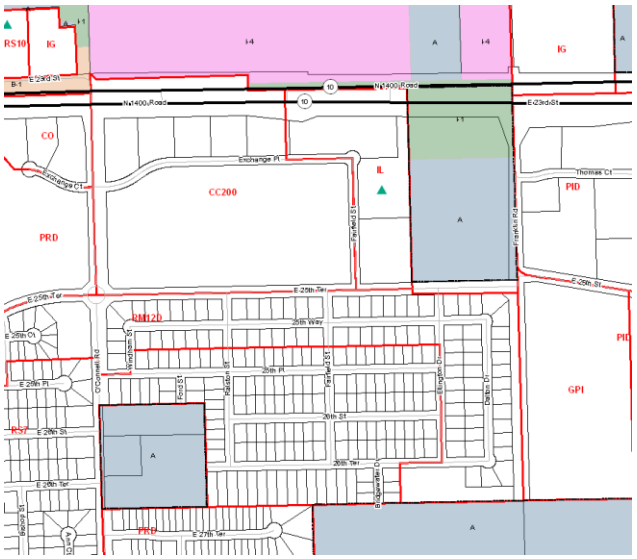
_____ _____
NOTARY PUBLIC MY COMMISSION EXPIRES

CFS Cook, Flatt & Strobel ENGINEERS, P.A.
850 E. 13[illegible] B
[illegible] 66044
785.856.9600

ASSOCIATED CASES

Annexation

- A-12-14-03; Annexation approved 4/13/04 subject to conditions including adoption of an area plan.
-



Zoning

- Z-06-38-05; 35.835 acres to RM-D
- Z-06-39-05; 12.329 acres to RM-2
- Z-06-40-05; 37.580 acres to RS-2
- Z-06-41-05; 17.889 acres to M-1
- Z-06-42-05; 28.833 acres to C-5
- Z-06-13-08; RM-24 & UR to CC-200; Fairfield Farms East Addition No. 2
- Z-06-14-08; RM-24 & UR to IL; Fairfield Farms East Addition No. 2
- Z-4-13-11; RS7 to RM12D to accommodate church lot.
- Z-6-16-11 RM12D to RM12 for lots along Franklin Road.
- Z-12-37-11; RS7 and RM12D revised boundary line. Concurrent submittal with *PP-12-15-11*
- Z-12-00325 RS7 to RS5 to allow by right lots less than 7,000 SF

Subdivision

- PP-06-16-05; Fairfield Farms East Addition; original preliminary plat.
- PP-06-7-08; Fairfield Farms East Addition No. 2; entire residential and non-residential development)
- PF-08-30-05; Fairfield Farms West Addition No. 2; (non-residential portion of preliminary plat)
- PF-02-04-06; Fairfield Farms West Addition No. 1 (residential portion of preliminary plat)
- MS-9-3-09; Minor Subdivision of Lot 1, Block 1, Fairfield East Addition No. 1 (IL zoned property) for Tractor Supply store lot.
- PP-4-5-11; Fairfield Farms East Addition #1, approved by the Planning Commission on 6/20/11; and City Commission on 7/5/11. A final plat was not submitted for this approved preliminary plat.
- PP-12-15-11; revised preliminary plat to provide consistent with zoning boundary and establish a modified grid pattern for neighborhood Development.
- PF-12-00252; final plat of phase 1 residential development
- MS-12-00280; revised final plat of phase 1 creating lots less than 7,000 SF

Site Summary (PP-6-16-05)						
Zoning	**RS-2 (old) RS7 (new)**	**RM-D (old) RM12D (new)**	**RM-2 (old) No longer part of project**	**M-1 (old) IL (new)**	**C-5 (old) CC200 (new)**	**TOTAL**
Title	Single-Family Residence	Duplex Residential	Multiple-Family Residence	Research Industrial	Limited Commercial	
Case	Z-06-40-05	Z-06-38-05	Z-06-39-05 Rezoned in 2008 to be incorporated in to the IL and CC200 area.	Z-06-41-05 Z-6-14-08	Z-06-42-05 and Z-06-13-08	
Area	37.580	35.835	12.329	17.889	28.833	119.896
Total Lots	151	87	1	1	5	245
Tracts	0	2[1] 2.8 .05	0	1 4.06	0	3 6.91
ROW	13.68	11.94	1.80	6.259	8.50	24.813
Net Area	23.90	21.05	10.52	7.57	20.33	80.383
Min. Lot Size	7,200	9,000	10.52	7.58	1.29	--
Max. Lot Size	15,093	16,988	NA	NA	14.80	--
Avg. Lot Size	8,091	10,564	NA	NA	1.3[2]	--
Density/Acre	6.3 units	8.2 units	21 units/acre allowed	Residential use not allowed	43.5 units/acre allowed	

Site Summary: Original Approval (PP-4-5-11)						
Zoning	**RS-2 (RS7)**	**RM-D (RM12D)**	**RM-2 (CC200)**	**M-1 (IL)**	**C-5 (CC200)**	**TOTAL**
Title	Single-Family Residence	Duplex Residential	Multiple-Family Residence	Research Industrial/ **Limited Industrial**	Limited Commercial **Community Commercial**	
Area (acres)	37.580	35.835	12.329 **(0)**	17.889 **(10.307)**	28.833 **(33.029)**	119.896
Total Lots	151[3] /*(141)*	87	1/ **NA**	1	5/ **(6)**	245/ **(236)**
Tracts	0	2[4] 2.8 .05	0/ **NA**	1 4.06 **(3.794)**	0 **(1)**[5] **(.114)**	3 **(4)** 6.91 **(6.758)**
ROW	13.68	11.94	1.80/ **NA**	6.259	8.50	24.813
Min. Lot Size	7,200	9,000	10.52/ **NA**	7.58 **(6.399)**	1.29 **(1.346)**	--
Max. Lot Size	15,093	16,988	NA/ **NA**	7.58 **(6.399**	14.80 **(26.297)**	--
Avg. Lot Size	8,091	10,564	NA/ **NA**	7.58 **(6.399**	1.3[6]	--

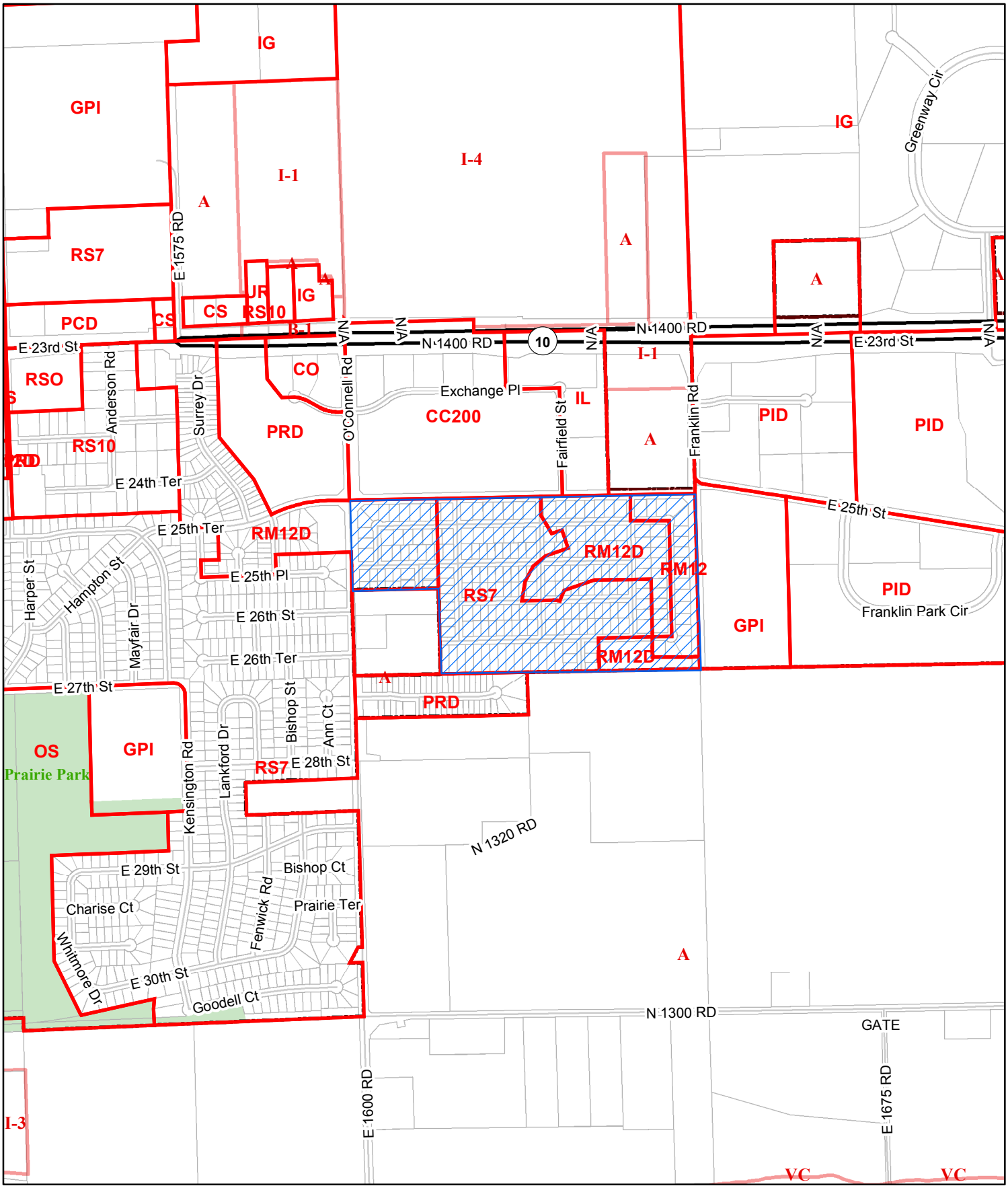
[1] RMD area includes Tract B = to 2.7 acres for drainage and Tract D = 2,372 SF for pedestrian access
[2] Excludes large commercial lot
[3] Total lots in the RS7 developed with 141 lots not 151 as shown on original preliminary plat.
[4] RMD area includes Tract B = to 2.7 acres for drainage and Tract D = 2,372 SF for pedestrian access
[5] Tract for City Utility Pump Station
[6] Excludes large commercial lot

Site Summary: PP-4-5-11 (PP-12-15-11)								
Zoning	**RS-2 (RS7)**	(RS5)	**RM-D (RM12D)**	RM12	**RM-2 (CC200)**	**M-1 (IL)**	**C-5 (CC200)**	**TOTAL**
Title	Single-Dwelling	Single-dwelling	Multi-Dwelling *Duplex*	Multi-Dwelling *Rowhouses*	Multiple-Family Residence	Research Industrial/ **Limited Industrial**	Limited Commercial **Community Commercial**	
Area (acres)	37.580		35.835		12.329 **(0)**	17.889 **(10.307)**	28.833 **(33.029)**	119.896
Total Lots	151[7] */(141)*		87		1/ **NA**	1	5/ **(6)**	245/ **(236)**
Tracts		0	2[8] 2.8 .05		0/ **NA**	1 4.06 **(3.794)**	0 **(1)**[9] **(.114)**	3 **(4)** 6.91 **(6.758)**
ROW	13.68		11.94		1.80/ **NA**	6.259	8.50	24.813
Min. Lot Size	7,200		9,000		10.52/ **NA**	7.58 **(6.399)**	1.29 **(1.346)**	--
Max. Lot Size	15,093		16,988		NA/ **NA**	7.58 **(6.399**	14.80 **(26.297)**	--
Avg. Lot Size	8,091		10,564		NA/ **NA**	7.58 **(6.399**	1.3[10]	--

Site Plan

- SP-7-30-09; Tractor Supply 2420 Fairfield Street.
- SP-9-50-10; Tractor Supply, modification to landscape and exterior display areas.

[7] Total lots in the RS7 developed with 141 lots not 151 as shown on original preliminary plat.
[8] RMD area includes Tract B = to 2.7 acres for drainage and Tract D = 2,372 SF for pedestrian access
[9] Tract for City Utility Pump Station
[10] Excludes large commercial lot



Z-12-00325: Rezone 10.56 acres from RS7 to RS5
Fairfield Farms East Addition

Lawrence-Douglas County Planning Office

January 2013

Area Requested

Scale: 1 Inch = 1000 Feet

PLANNING COMMISSION REPORT
Regular Agenda – Public Hearing Item

PC Staff Report
1/28/13

ITEM NO. 2: CONDITIONAL USE PERMIT; COMMUNICATION TOWER; NEAR THE SOUTHEAST CORNER OF N 400 ROAD AND E 550 ROAD (SLD)

CUP-12-00287: Consider a Conditional Use Permit for a 180' self-support communication tower to be located east of the existing water tank near the southeast corner of N 400 Road and E 550 Road. Submitted by Selective Site Consultants on behalf of Douglas County Emergency. Jere McElhaney, property owner of record.

STAFF RECOMMENDATION: Staff recommends approval of the Conditional Use Permit for the 180' tower and forwarding it to the County Commission subject to the following conditions:

1) The provision of a revised site plan add the following notes to the face of the drawing:
   a) *"The owner at the owner's expense shall remove any tower that is not in use for a period of three years or more."*
   b) "A sign shall be posted on the tower or the exterior fence around the base of the tower noting the name and telephone number of the tower owner/operator."
   c) *"Use of this tower for other carriers shall require County Commission approval as the tower owner in addition to site plan review and approval of any a co-location request for new equipment."*
   d) *"A change of ownership of the tower shall require a new Conditional Use Permit and public hearing."* This will allow review of the intended use of the tower and public notice of the proposed change.

Reason for Request: *"To enhance and upgrade Douglas County's emergency communication system to the P25 800 MHz Digital Radio standard."*

KEY POINTS

- Per Section 12-319-4.31 of the Zoning Regulations for the Unincorporated Territory of Douglas County, *Radio, television, telecommunication and microwave towers* are uses which may be approved as a Conditional Use.

DESCRIPTION OF USE

Request is for the construction of a 180' tower to accommodate public communication equipment specifically for Douglas County. The tower is proposed to be constructed on a 100' by 100' leased area.

ASSOCIATED CASES/OTHER ACTION REQUIRED

- Board of County Commissioners' approval of the Conditional Use.
- Zoning and Codes Office issuance of a Conditional Use Permit when plans have been released to the Zoning and Codes Office and conditions of approval have been met.

PUBLIC COMMENT

- No public comment was received prior to the printing this staff report.

Site Summary:	
Subject Property:	76 acres
Proposed Buildings:	180' communication tower and base equipment and generator.

GENERAL INFORMATION

(Figure 1)

Current Zoning and Land Use:	A (County-Agricultural) District; 76-acre agricultural field.
Surrounding Zoning and Land Use:	A (County-Agricultural) District in all directions. Rural Water District No. 5 water tank to the west. Agricultural fields to the north, south and east.

I. ZONING AND USES OF PROPERTY NEARBY

This property is located on the south side of N 400 Road and east of E 550 Road. The tower location is north of the townsite of Globe located in southwest Douglas County. The property and the surrounding area is zoned A (Agricultural). This area is rural in nature and includes large tracts of land for agricultural activities with scattered rural residential homes located along County roads. Section 12-319-4.31 (d) (5) recommends that towers be located in commercial, industrial or agricultural zoning districts. The subject property is zoned Agricultural.

Staff Finding – Nearby properties are zoned A (Agricultural) and contain agricultural land uses. The proposed tower would be located in a recommended district.

II. CHARACTER OF THE AREA

This property is located in the southwest portion of Douglas County. This area is a rural portion of Douglas County. There are no urban growth boundaries that extend to this portion of Douglas County. The area includes large parcels of land used primarily for agricultural purposes.

Staff Finding – This area is rural in nature, with agricultural lands, and scattered residential homes along county roads.

III. SUITABILITY OF SUBJECT PROPERTY FOR THE USES TO WHICH IT HAS BEEN RESTRICTED

Applicant's response:
"The subject property is used for agricultural purposes. The site is suitable for the above proposed use."

The current zoning designation for the property is A (Agricultural) District, a variety of agriculture-related uses are allowed. Towers are allowed in this district with approval of a Conditional Use Permit. Additionally, the agricultural district is a recommended base district for towers. The proposed request will not alter the underlying zoning district.

Staff Finding – The property is suitable for agricultural uses. A Conditional Use Permit (CUP) does not change the underlying zoning; therefore, the suitability of the property for agricultural uses will not be altered.

IV. LENGTH OF TIME SUBJECT PROPERTY HAS REMAINED VACANT AS ZONED

This A (Agricultural) zoning has been in place since 1966. The proposed tower will be located on a leased area in the northwest corner of the site. There are no improvements on the property. An existing water tower is located to the west of the proposed lease area on a separate parcel. The property is vacant and has been since the adoption of zoning in 1966.

Staff Finding – The property is vacant and has been since the adoption of the zoning in 1966.

V. EXTENT TO WHICH REMOVAL OF RESTRICTIONS WILL DETRIMENTALLY AFFECT NEARBY PROPERTY

Applicant's Response:
"There will be no detrimental affect. The proposed use is adjacent to an existing water tank. The use is unmanned, will generate little traffic, noise or pollution."

Section 12-319-1.01 of the County Zoning Regulations recognize that "*….certain uses may be desirable when located in the community, but that these uses may be incompatible with other uses permitted in a district…when found to be in the interest of the public health, safety, morals and general welfare of the community may be permitted, except as otherwise specified in any district from which they are prohibited."*

This request is for a 180' self-supporting communication tower. The purpose of the tower is for the location of emergency communication equipment only. Other communication carriers such as Sprint, AT&T, T-Mobile are not proposed to provide equipment on this tower structure. There is no office or staff associated with this structure. Access to the site shall be limited to regular service and maintenance of the tower and associated equipment. There are few residents located within the immediate area. Land parcels are generally 50 acres or larger. There are no anticipated detrimental effects to nearby property owners from the proposed land use.

Staff Finding – Given the large parcel size and the very low density of residential use there should be no detrimental effect on surrounding property.

VI. RELATIVE GAIN TO THE PUBLIC HEALTH, SAFETY AND WELFARE BY THE DESTRUCTION OF THE VALUE OF THE PETITIONER'S PROPERTY AS COMPARED TO THE HARDSHIP IMPOSED UPON THE INDIVIDUAL LANDOWNERS

Applicant's Response:
"Enhanced communication for first responders in Douglas County. Please see attached memo from Scott Ruf dated April 20, 2012."

The purpose of this criterion is to compare the effect of denial of the request on the public health, safety and welfare to the effect on the individual landowner.

The applicant states "the overarching goal of Douglas County Emergency Communications is to provide highly efficient, effective and interoperable public safety communications for City and County Police, fire and EMS agencies…". The applicant is a public service division of the local government. The application notes the existing communication system is aging and that state and federal requirements make it necessary for Douglas County to expand and upgrade the existing system. (Refer to memo to David Corliss, City Manager and Craig Weinaug, County Administrator, dated April 20, 2012).

The purpose of this request is to extend coverage to a portion of Douglas County that currently lacks coverage. Denial of this request hinders the County's ability to implement planned communication improvements as part of the basic pubic services provided to residents of Douglas County.

Staff Finding – Approval of the request will facilitate planned emergency communication coverage for the southwest portion of Douglas County. Approval will benefit the public health, safety, and convenience by providing more reliable communication to emergency personnel as needed.

VI. CONFORMANCE WITH THE COMPREHENSIVE PLAN

The subject property is not located within an identified urban growth area. The comprehensive plan recommends that agricultural uses continue to be the predominant land use within the areas of the county beyond the designated urban growth areas. Uses permitted in the rural area should continue to be limited to those which are compatible with agricultural production and uses.

Staff Finding – The comprehensive plan recommends that uses in the rural area be limited to those compatible with agricultural uses and that the design should be consistent with the rural character. A Conditional Use Permit can be used to allow specific non-residential uses subject to approval of a site plan. This tool allows proportional development in harmony with the surrounding area. The proposed request is consistent with the Comprehensive Plan.

STAFF REVIEW

Section 12-319-4.31 allows radio, television, telecommunication, and microwave towers in Douglas County subject to approval of a Conditional Use Permit when the structures are more than 100' tall. This section also provides guidelines and standards intended to be used during the review of the application.

The proposed site plan shows the location of a new structure to accommodate equipment specific to the purposes of the Douglas County Emergency Communication Department. This application differs from previous similar applications where the applicant intended the structure for telecommunication equipment by private carriers. Prior to the construction of a new tower an applicant is required to show reasonable proof that there is no opportunity to "co-locate" on another tower within the proximity of the proposed location. In this case there is a rural water tower immediately to the west of the proposed site. However that structure does not provide adequate vertical elevation to meet the minimum operational standards of the equipment needed by the County Emergency Communication Department.

Per section 12-319-4.31 (c)(3) new towers are required to provide space for "at least three two-way antennas for every 150' of tower height, or at least one two-way antenna and one microwave facility for every 150 feet of tower heights." The applicant is requesting a waiver from the co-location provisions of the Zoning Regulations. The structure is designed to accommodate multiple carrier equipment; however, the intent of this tower is to provide space for emergency communication (public) equipment only. There is no intent to sub-lease space on this tower to other carriers. This would allow remaining tower space to be reserved for future equipment intended to serve the public system.

As with any tower, if the equipment is removed and the tower is vacant for 3 years then the tower owner (Douglas County) would be required to remove the structure. All towers are required to provide a sign on the structure or fence around the base of the tower identifying the tower owner/operator with a name and phone number. These elements should be added to the site plan as notes for future reference.

The County Zoning Regulations require the tower to be setback a distance equal to the height of the tower from any property line except that the setback may be reduced if documentation from a registered engineer is submitted certifying the fall zone of the tower in event of a failure or collapse. The proposed structure complies with the setback in relationship to the east and south property lines. The site plan shows a fall zone of 70' of the centerline of the tower. The tower setback exceeds 70' from the north and west property lines.

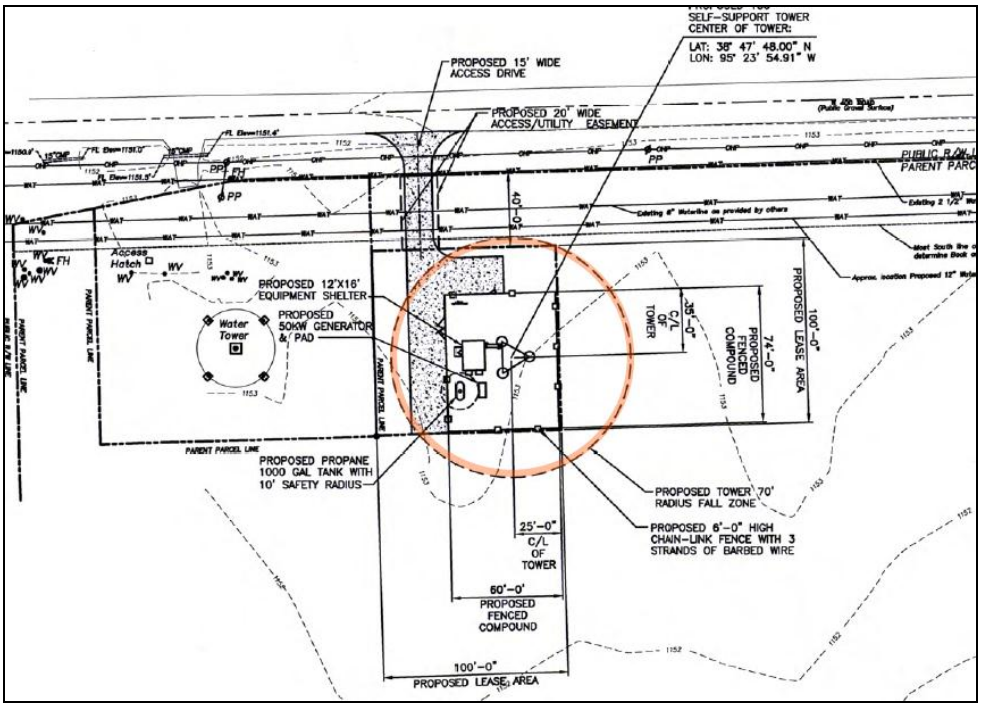


Figure 2

Any ground equipment such as placement of an equipment cabinet or generator must comply with the base building setbacks of the district. Ground equipment must be setback 50' from N 400 Road (a local road). The site plan shows the equipment setback 93' from the north property line. The minimum sideyard setback is 10'. The proposed dequipment is located more than 40' from the west property line. These measurements are provided for the two closest property lines. The building setbacks are highlighted in Figure 3 at the end of this report.

The application states that towers less than 200' are not typically required to be lighted by the FAA. Lighting of the equipment shelter should be limited to the area around the access doorway. Any lighting added to the site shall require review and approval by the County Zoning Administrator per applicable building permits to ensure lighting is limited to the site and directed downward.

Use of this tower for other carriers shall require County Commission approval as the tower owner. Change of ownership of the tower shall require a new Conditional Use Permit and public hearing. This will allow review of the intended use of the tower and public notice of the proposed change.

Conclusion

This request is for the construction of a new communication tower for the exclusive use of public communication equipment. Additional notes are recommended to clarify the use and intent of this tower. Staff recommends approval of the Conditional Use Permit for a 180' tower located southeast of the intersection of N 400 road and E 550 Road (CUP-12-00287) as conditioned.

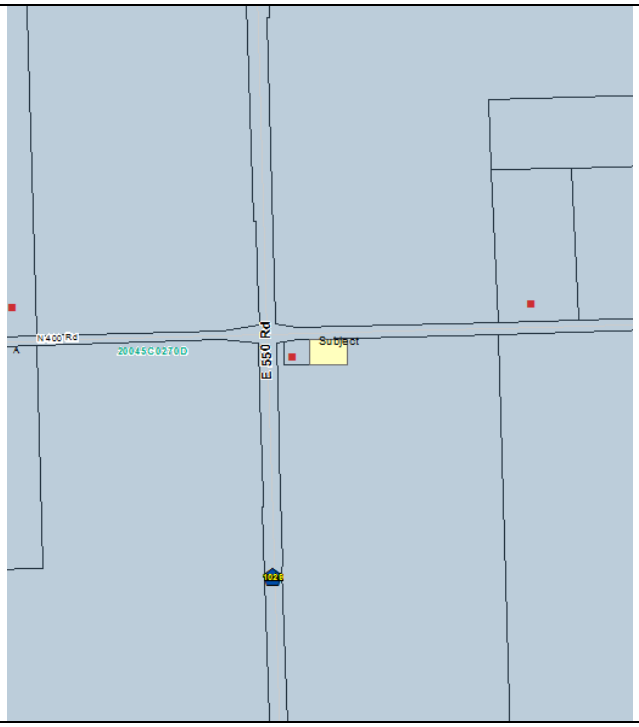


Figure 1a. Zoning of area. Subject property outlined.



Figure 1b. Land use of area.

Building Setbacks

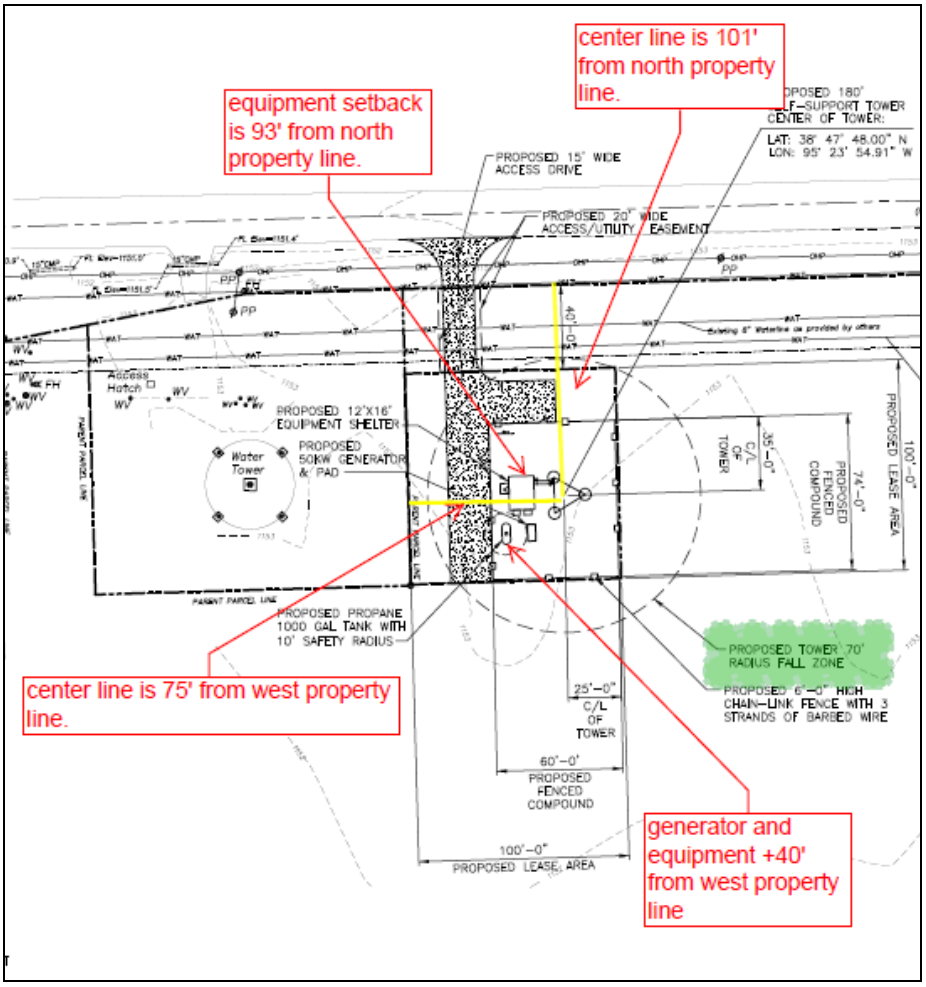


Figure 3

Douglas County 9-1-1 Emergency Communications

To: **Mr. David Corliss, Lawrence City Manager**
Mr. Craig Weinaug, Douglas County Administrator

From: **Scott W. Ruf, Director, DGCO Emergency Communications**

Date: **April 20, 2012**

Re: **P25 800 MHz Digital Radio Project**

The overarching goal of Douglas County Emergency Communications is to provide highly efficient, effective and interoperable public safety communications for city and county police, fire and EMS agencies and the citizens they serve. The Public Safety Radio System provides public safety two-way radio communications for Police, Fire, EMS, Public Works, and other county agencies that depend on reliable communications day-to-day and during crisis events. Replacement/upgrading of the existing Motorola network complies with our mission and goals by maintaining the County's capabilities to address homeland security issues and manmade / natural disasters through interoperable communications for all public safety agencies.

Over the years public safety radio communications has developed from a conventional voice radio system to a much more advanced system of voice and data technologies, supported by networks that deliver unprecedented levels of interoperability, capacity, coverage, bandwidth, and flexibility. Douglas County's current system is an aging system fast approaching its end of life that simply cannot deliver in today's advanced systems and technologies. State and federal mandates and changes have made it necessary for Douglas County to pursue alternatives to our current system that will greatly expand our capabilities and ensure that emergency responders can communicate as needed , on demand, and as authorized at all levels of government and across all disciplines.

The most pressing among existing problems and not unique to Douglas County is a lack of interoperability among public safety agencies. Public safety personnel from different agencies frequently lack the ability to communicate with one another, or with their counterparts in neighboring jurisdictions. A lack of interoperability within a region can severely hinder the ability of public safety agencies to provide a coordinated response to natural disasters, catastrophic accidents, or even routine public safety emergencies.

The ECC and 911 Advisory Board over the past year has worked to address concerns about increased radio coverage, the security of radio frequencies, and the ability for the Police

and Fire Departments to communicate with each other. As a result of these concerns, ECC and 911 Advisory Board solicited solutions to convert from an analog to a digital radio system, which for the first time will allow the public safety agencies in Douglas County to coordinate over the air the efforts of multiple agencies responding to an emergency.

Challenges & Limitations of Current System

The Public Safety Radio System is the mission critical system in the event of a man-made or natural disaster. The system must be renovated and upgraded to comply with existing laws and changes in technology. Given the current pace of technology, systems that were designed and installed as little as 10 years ago are now considered obsolete. Douglas County's system was installed in 1999 with an additional channel added to the system in 2004.

In short, the Douglas County Public Safety Radio System is getting old, is increasingly difficult to maintain, some vital terminal equipment can no longer be acquired, repaired, or maintained, and reliable spare equipment is hard to find. Critical trunking controller equipment is no longer supported and replacement equipment is essentially cost prohibitive. Analog technology is steadily being replaced with more flexible digital technology. The system is also at/close to capacity so the addition of Fire/EMS departments could overload the trunking system giving users a system "busy" which poses a threat to first responder safety.

In addition to the aging out of the system and its technology are the operational constraints resulting in limited capacity and lack of expandability. Capacity limits due to outdated usage requirements of the system could mean that personnel may not be able to get the system access they need. A lack of expandability means that problems with coverage, system load, and channel congestion cannot be easily addressed.

The current 800MHz radio system utilizes analog technology for the backbone transmitters and uses a mix of analog and digital handheld equipment. Although agency users can acquire analog radios, this legacy hand-held equipment is in its final period of support. Newly acquired radios use digital technology or a hybrid of both analog and digital. This move is consistent with the FCC transitioning from analog to digital television transmission in February 2009.

Analog radio works well. However, analog two-way radio has reached the limits of innovations. Some enterprises are finding they need more than the fundamentals that analog two-way radio delivers. Licensed channels are becoming crowded and more capacity is required. There is the need for more flexible ways to communicate with users both inside and outside our organizations.

Digital radio provides a powerful, flexible platform that DGCO can adapt to meet these needs and more. By migrating from analog to digital two-way radio communications, DGCO can fill immediate needs and build a strong technical foundation for adding new functionality in the future. Police, fire and emergency medical operations are more complex today than ever

before. With the introduction of new responsibilities such as community oriented policing and advanced life support emergency medical services, public safety personnel are taking on significant new duties and responsibilities placing more diverse requirements on our communications system.

A lack of interoperability is another critical operational constraint in Douglas County's system. This is caused by agencies using incompatible equipment, different frequency bands (in DGCO law enforcement and public works use 800 MHz and all fire/EMS use VHF), and unique operational protocols. Yet, the changing requirements of public safety have placed a greater emphasis on joint operations and task forces, thus the need for communications interoperability.

Other challenges associated with the radio system are the physical location and size of the Emergency Communications Center itself. The need to expand the system and increase its capacity is paramount we must also do the same in the dispatch center. In order to maintain acceptable service levels we must expand the center from six dispatch positions to eight (layout includes for future growth of up to 10). Failure to also grow the capacity and capabilities of the dispatch center will greatly hinder our ability to safely serve our public safety agencies and the community. It will also require us to revisit the issue within 2-4 years of upgrading the radio system costing significant amounts of money to achieve what can easily be achieved in a cost effective and efficient manner as part of this project.

System Overview

The current DGCO system is a 6 channel, 4 site (Lecompton, Stratford, Baldwin City & Eudora) analog 800 MHz Analog Trunked System for all DGCO law enforcement and public works departments. LDCFM and the rural township fire departments all operate on the same 4 site system but in the VHF radio spectrum. The system was installed and functional in September 1999 as a 5 channel, 3 site system. In 2004 a fourth channel was added to accommodate increase radio system usage. Finally, in fall of 2011 we added new 50' tower in Eudora to accommodate public safety concerns related to areas of Douglas County and Eudora with regard to system coverage issues. This location is strictly to expand coverage to the low lying areas of Eudora and the County along the river.

The DGCO ECC is currently set-up with 6 dispatch/call-taker positions and KU Public Safety has 3 dispatch/call-taker positions. We serve as each other's support and back-up if needed. Although I cannot speak directly for KU, DGCO ECC is poorly designed and has no easy way to expand to accommodate new technology and growth.

In addition to the aging out of the system and capacity issues the third is coverage. The County as well as areas of all three incorporated cities has coverage issues and "dead spots" where communication abilities are extremely limited. There is currently no interoperability between law enforcement and fire agencies.

Justification & Recommendation

The investment (approx. $7M) in the new P25 800 MHz Digital Radio System provides new and upgraded infrastructure to the personnel and agencies that desperately need it using modern technology and capabilities; this project removes and replaces the noncompliant portions of the existing DGCO radio infrastructure to provide a P25 standards based, AES encrypted capable, 800 MHz LMR system to a new, updated system; adds additional capacity to support the other components agencies require of the system and share those components; the ECC will continue to look for other cost effective technology as part of its strategic outlook.

As previously stated Douglas County's current radio system infrastructure is aging out and in need of replacement. Our current system has reached its limits and is not capable of growth now or in the future. With emerging and alternative technologies becoming available and necessary, coupled by state and federal authorities mandating interoperability and the migration to new spectrums there are little choices for us moving forward and the need to replace our radio infrastructure is necessary.

The question was presented with regard to the need/requirement for the City of Lawrence to have to invest in infrastructure costs associated with sites outside the City and in support of the other cities and county. Due to the proposed design and build out of the system as an autonomous cell or expansion of the KSDOT Radio System the proposed site locations (Flair & Globe) as well any upgrades to existing sites (i.e. Lecompton & Stratford) is a small part of the project. The real cost associated with this project is the need to expand to 8-channels and the technology associated with this expansion. This expansion is needed to accommodate public safety (LPD & LDCFM) and public service agencies (Public Works, Streets, Sanitation) from the City of Lawrence as well as the rural township fire departments (less than 2% of system usage). Lawrence Police, LDCFM and Lawrence Public Works account for over 80% of system usage and communication resources. The upgrade of the system to accommodate all the users and the technology needed to meet the need today and in the future as well as the building in of redundancies are the major factors driving the size and scope of the project.

It is the recommendation of myself in consultation with members of the P25 committee and the 9-1-1 Advisory Board to move forward with the proposal by Motorola Solutions in partnership with Kansas DOT. We believe this is the best and most efficient proposal providing Douglas County with the capabilities to fully utilize existing and new technologies in designing a system that will serve the ever-growing demands of our public safety users, providing greater interoperability and scalability taking us far into the future. The following are a few reasons for this recommendation:

- Motorola is one of only a few vendors in the country and state that has implemented a digital simulcast radio system in a county of comparable size;
- By using Motorola we will be able to expand/upgrade some already-existing infrastructure, preserving the County's prior investment;

- The County and many of the cities already own/utilize electronic equipment that is compatible with Motorola components;

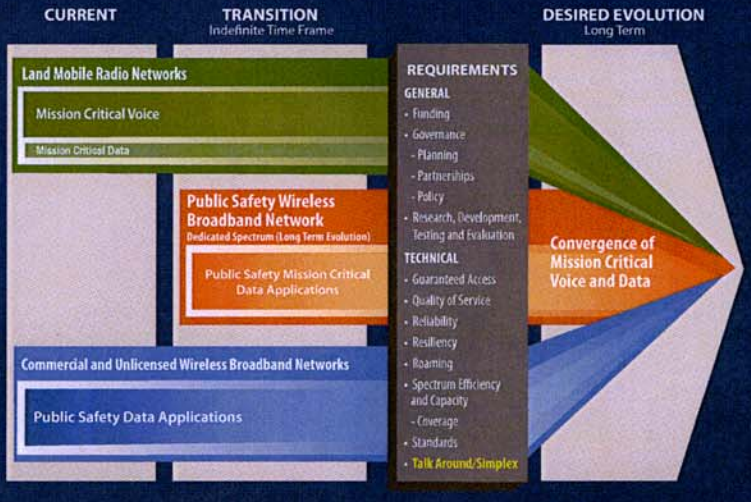
- Including all necessary equipment, services and construction on one contract enables the County to hold Motorola accountable for entire system-wide success should any individual aspect of it fail.

This recommendation and the estimated project cost of $7M is made based on our review of the current and future needs of all public safety as well as public service agencies in Douglas County. We have presented the best solution for Douglas County so that the decision-makers at all levels of county and city government can meet their obligation to make use of technology to ensure the public's safety and improve services to their citizens.



Public Safety Communications Evolution

November 2011



Homeland Security

Public Safety Communications Evolution

The Department of Homeland Security's Office of Emergency Communications (OEC) developed this brochure in collaboration with SAFECOM and the National Council of Statewide Interoperability Coordinators, with the support and input of public safety officials at multiple levels of government across the country. This brochure will 1) help educate the public safety community and elected and appointed officials about the future of emergency communications; 2) describe the evolution of emergency communications and how traditional land mobile radio (LMR) communications used today may converge with wireless broadband in the future if specific requirements are met; and 3) further discuss some of the most important requirements that must be met to achieve the desired long-term state of convergence.

The public safety community has made significant strides toward strengthening national preparedness and improving emergency communications capabilities. First responders, however, continue to be limited by fragmented networks and decades-old wireless technologies. Deploying a cost-effective, nationwide public safety wireless broadband network will provide public safety agencies with access to advanced, cutting edge technologies and applications to improve their emergency response capabilities. The nationwide public safety wireless broadband network needs to be closely aligned to commercial deployments of Long Term Evolution (LTE) wireless services to keep pace with changes in technology and leverage cost efficiencies. It must also deliver mission critical voice and data communications to public safety agencies in State, local, and tribal jurisdictions across the Nation, as well as Federal responders and secondary users (such as transportation or utilities). However, the transition from LMR to broadband will not occur overnight, and Federal, State, local, and private sector entities must work together to develop requirements and standards to assure mission critical operations.

In the near term, wireless broadband will complement LMR, not replace it. Wireless broadband does not currently meet the requirements for emergency response voice communications, therefore LMR will be around for years.

Investments in LMR will continue to be necessary now and well into the future. Even with the emergence of broadband, it will still be years before emergency responders can rely on broadband technologies for their mission critical communications. Public safety must continue LMR investments as appropriate in this context.

Public safety is using broadband today for data applications, but not for mission critical emergency response voice communications. Although initial data applications will not provide LMR type voice capabilities, they are vital and can dramatically improve emergency response.

In the future, broadband could support mission critical voice. However, requirements must be met and multiple challenges must be addressed. Some public safety agencies will use broadband for emergency response voice communications if requirements are met and solutions to these challenges are determined and implemented. Until broadband is technically capable of supporting emergency response voice communications and the nationwide public safety wireless broadband network is fully deployed, some agencies may need to continue to use LMR for their communications.

Public Safety Communications Today

Currently, the public safety community relies on traditional LMR systems to support mission critical communications. These radio systems provide a reliable means for personnel in the field to communicate with each other and with command and control centers. As LMR systems evolved over many decades, there are a number of varying, often incompatible systems in use nationwide. As a result, public safety has struggled to communicate across jurisdictional and agency lines.

In addition, public safety agencies use a combination of low bandwidth and high-speed broadband data (largely commercial networks) to support response efforts and perform functions such as digital dispatch, license plate queries, text messaging, and transmission of low resolution images. While important, the majority of current broadband data solutions have limited ability to support emergency responders because most are not interoperable or built to public safety standards.

What is Wireless Broadband?

Wireless broadband provides high-speed data communications in a mobile environment. Because of public safety's unique mission, emergency responders require wireless broadband services and devices with guaranteed access and a high level of reliability, coverage, and security not likely to be offered by commercial systems.

The Nationwide Pubic Safety Wireless Broadband Network

By providing mobile access to real-time, multimedia information, a nationwide public safety wireless broadband network holds the promise to drastically advance the public safety community's ability to communicate among response agencies and access the information necessary to make the most informed decisions possible. For example, public safety will be able to access video images of a crime in progress, download building plans of a burning building to a handheld device, or connect rapidly and securely with personnel from other towns and cities. Just as smartphones have changed the way businesses operate, these technology advancements will dramatically change the way emergency responders communicate and operate.

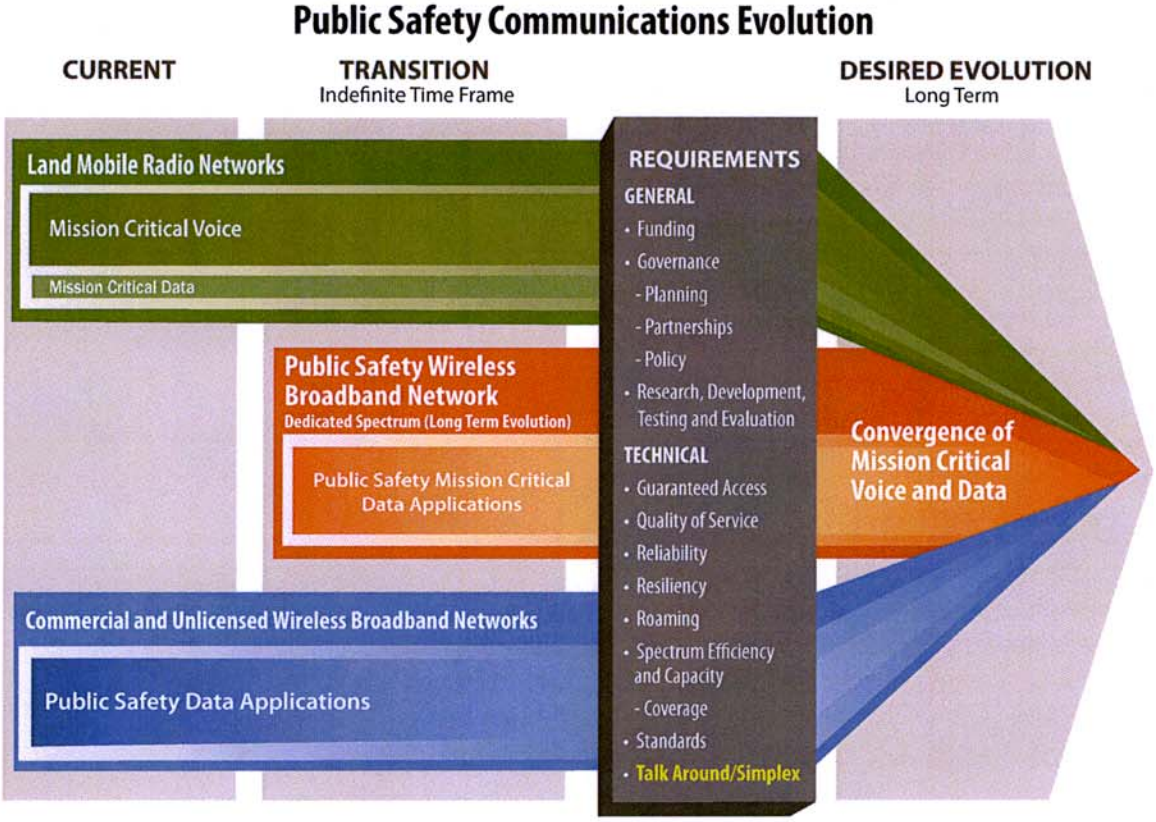


Figure 1: This graphic illustrates a public safety communications evolution by describing the long-term transition toward a desired converged future.

Recent advances in wireless data communications are increasing mobile access to applications and providing real-time information needed by public safety. Whether used in routine daily activities or large-scale responses, these new capabilities will improve emergency communications and response effectiveness. The Advanced Automatic Crash Notification example demonstrates how wireless broadband applications can provide instant actionable knowledge to emergency response personnel. The right information (e.g., weather reports, drivers' licenses and photos, prison records) provided to the right people at the right time will result in more effective emergency response. These and other emergency response applications are only possible with the support of high-speed wireless broadband.

While the public safety community has long recognized the importance of wireless broadband, they also recognize certain challenges must be overcome and requirements met for this technology to meet all of their communications needs. It will take time to address these requirements and integrate wireless broadband into public safety operations. In the future, the public safety wireless broadband network will dramatically enhance the capabilities of emergency responders if these requirements are met.

Advanced Automatic Crash Notification will provide pre-arrival information to hospitals and enable responders to make faster and well-informed decisions about resources to send to a scene. This will allow for faster diagnosis and treatment of patients by Emergency Medical Technicians (EMT) or even a virtual physician in the back of the ambulance to expedite proper lifesaving treatment.

The Nationwide Public Safety Wireless Broadband Network will allow first responders to match a subject's photograph (taken with a smartphone or Tablet PC) against databases such as the Department of Motor Vehicles or booking databases to determine identity.[1]

What about the SAFECOM Interoperability Continuum?

The five critical success elements outlined in the SAFECOM Interoperability Continuum (Governance, Standard Operating Procedures, Technology, Training and Exercise, and Usage) not only apply to LMR communications planning, but also to broadband and are important to consider when planning and implementing interoperability solutions for all public safety communications technologies. The Continuum will continue to be used as a guiding framework for interoperability planning.

Public Safety Communications Evolution

The community's vision of the evolution of public safety communications as it transitions from today's technology to the desired long term state of convergence is depicted in the graphic (Figure 1), which outlines a conceptual framework for building wireless broadband communications while maintaining LMR networks to support mission critical voice

1 United States, White House, The Benefits of Transitioning to a Nationwide Wireless Broadband Network for Public Safety, June 2011.

communications. This section describes the elements of this framework in more detail, including a description of the desired converged environment and the requirements that must be met to achieve this desired evolution.

In the current state of communications, LMR networks, commercial broadband networks, and a nationwide public safety wireless broadband network are evolving in parallel. As communications evolve, public safety will continue to use the reliable mission critical voice communications offered by traditional LMR systems; at the same time, agencies will begin to implement emerging wireless broadband services and applications. During the transition period, public safety will begin building out a dedicated public safety wireless broadband network and public safety organizations will begin to transition from commercial broadband services to the public safety dedicated network. If and when the technical and non-technical requirements can be met and are proven to achieve mission critical voice capability, it is desired that over time agencies will migrate entirely to this broadband technology. Since wireless broadband technology does not yet currently support a mission critical voice capability (talk around/simplex/direct mode), there will be a significant period of time where both wireless broadband and traditional LMR are necessary.

Land Mobile Radio Networks

Mission critical voice communications have historically been delivered using LMR systems built to public safety requirements and operated by individual agencies or jurisdictions.

Mission Critical Voice

Reliable voice communications are essential for day-to-day operations, large-scale responses, and other tactical situations. Voice communications provide emergency responders with instant, reliable, and continuous connectivity between dispatch agencies and responders and also among multiple responders. Presently, mission critical voice is achieved by dedicated LMR networks. The ability to talk responder to responder or one responder to many responders is a critical feature.

Mission Critical Data

The emergency response community uses limited data communications to complement mission critical voice communications. Emergency responders currently use data services for basic functions such as digital dispatch; license, vehicle, and wanted person queries; text messaging; and transmission of low resolution images. Emergency response agencies have achieved wireless data capabilities by either building their own systems or using a commercial wireless service. Although functional, current public safety data services are generally limited in speed and do not support advanced, real-time applications needed by emergency responders.

Public Safety Wireless Broadband Network

Public safety envisions a dedicated network built to public safety requirements using dedicated spectrum. The public safety community has identified LTE as the standard technology for development of this network. As this capability is built out using LTE technology, public safety will continue to work with industry and all levels of government to advance the technology and address the requirements necessary to reach the desired evolution. During the transition period, public safety will begin using LTE for mission critical data applications. In the meantime, the public safety community will be working to develop wireless broadband technology that can support all of public safety's mission critical communication needs including voice.

Commercial and Unlicensed Wireless Broadband Networks

Emergency responders are increasing the use of commercial and unlicensed broadband networks to augment their mission critical communications. Although not built to public safety standards, commercial and unlicensed networks are valuable as a complement to reliable LMR voice networks. As commercial broadband capabilities are made available, public safety agencies are beginning to use these services to complement their current LMR communications. Agencies will use their LMR networks for mission critical voice communications, and will use commercial wireless broadband for non-mission critical data communications. Over time, reliable public safety broadband networks based on LTE technology will be built to public safety requirements. As a nationwide public safety wireless broadband network is built out, real-time mission critical broadband applications will migrate to this network as their capabilities are validated by responders.

Requirements

General and technical requirements must be met for the desired evolution to be achieved.

General Requirements

Funding

Emergency response agencies face the challenge of having to support their current mission critical systems while planning for the build-out of emerging technologies, including wireless broadband. To successfully do so, Federal, State, and local funding will be needed to pay for the costs associated with the build-out and sustainment of a wireless broadband network. OEC is working to coordinate Federal grant guidance related to emergency communications via the Emergency Communications Preparedness Center. Coordinated grant guidance will help to ensure consistency in Federal grant policy, promote technical standards that improve interoperability, and ensure compatibility among Federally-funded investments. Coordinated and consistent guidance across all programs will also enable stakeholders to leverage grants from various agencies to support emergency communication improvement projects.

Governance—Planning, Partnerships, and Policy

Coordination and collaboration among interoperable communications stakeholders makes the success of any governance

structure possible. A nationwide interoperable public safety wireless broadband network requires a nationwide architecture and governance structure. In addition to technical and managerial competence, governance requires the active engagement of interoperable emergency communications stakeholders operating at the Federal, State, local, and tribal levels, across jurisdictions and disciplines.

Planning: It is critical that public safety stakeholders engage in nationwide, statewide, regional, and tactical planning. Planning and coordination among entities such as Statewide Interoperability Coordinators, Statewide Interoperability Governing Bodies, Regional Interoperability Committees, and Federal partners form an essential foundation for achieving statewide communications interoperability goals and initiatives.

Partnerships: The willingness of different disciplines and jurisdictions to partner on compatible solutions is often more important than the technologies they intend to use. As wireless broadband communications evolve, partnerships will continue to be critical, particularly with respect to developing and deploying a nationwide, open-standards network that aligns with commercial wireless broadband technologies and applications. Further, the development of a dedicated nationwide public safety wireless broadband network will require closer coordination and partnering between industry and government. Public safety agencies need to evaluate their governance bodies to ensure they include those stakeholders that rely on and deliver communications during emergencies as well as industry subject matter experts. The partnerships built through governance provide agencies with access to knowledge (e.g., best practices and lessons learned) and resources previously unavailable.

Policy: It is critical for all levels of government to proactively and collaboratively develop policies and plans for emerging emergency communications technologies. A nationwide public safety wireless broadband network, in particular, will require a nationwide governance structure, in collaboration with States, localities, and tribes to develop new initiatives, strategies, and time frames related to investments and deployment. These will need to be documented in the National Emergency Communications Plan and each State's Statewide Communication Interoperability Plan.

Research, Development, Testing, and Evaluation (RDT&E)

RDT&E efforts will ensure that emergency responders have reliable, effective, standardized, and interoperable wireless broadband capabilities and applications. Research and development are critical to determine how systems will meet emergency response requirements, and if these capabilities will sustain functionality in the harsh environments in which emergency responders work.

Technical Requirements

As wireless broadband networks evolve, the emergency response community will increasingly leverage these networks to support their operations. To achieve a converged evolution state, the nationwide public safety wireless broadband network will need to support the following technical requirements:

Guaranteed Access

Emergency responders must have guaranteed access to reliable and instantaneous communications at all times to effectively respond to emergency incidents. Guaranteed access is a critical feature for public safety, especially when using commercial networks.

Quality of Service (QoS)

Public safety requires a network that can guarantee a certain level of performance for critical applications. As all public safety communications move toward a converged broadband wireless environment, some data on the network will be more important than others and will need to be prioritized. In a network, QoS specifies how certain types of data are handled and how that data is prioritized among various users and applications. QoS ensures reliable performance.

Reliability

For emergency responders to be able to rely on a network for mission critical communications, it must be designed to minimize capacity loss and service degradation.

Resiliency

Systems that support emergency response must be developed with resiliency in mind. Highly reliable and redundant power, components, infrastructure, and communication paths must be included to reduce the possibility of disruption in service.

Roaming

To perform their jobs efficiently, emergency responders require the ability to seamlessly roam between public safety and commercial networks, as necessary.

Spectrum Efficiency and Capacity

The rapid growth of wireless broadband-enabled applications and services has placed constraints on available spectrum capacity in the commercial marketplace, sometimes rendering commercial networks slow and unresponsive. This can have major implications for emergency responders who require access to information to successfully accomplish their missions. Sufficient capacity and spectrum efficiency is needed if the nationwide public safety wireless broadband network is to meet the emergency response community's needs. In addition, public safety requires wireless signal coverage that ensures reliable operations in wide geographic regions including major population centers as well as rural areas.

Standards

Defining technical standards is critical to ensuring that interoperability and public safety-specific features are built into wireless broadband systems.

Standards-based systems will provide backwards compatibility, which will allow emergency responders to continue to communicate effectively on their current mission critical voice systems as wireless broadband networks and applications mature and are integrated into existing systems. As previously stated, the emergency response community has identified LTE as the technology standard for the proposed 700 megahertz (MHz) nationwide public safety wireless broadband network. LTE is a technology

standard widely adopted by the private sector and endorsed by the Federal Communications Commission for use in next generation commercial networks. The LTE standard has evolved based on commercial requirements; however, over time the standard could be enhanced to meet the public safety community's needs. Difficulties lie in public safety's ability to influence a global standard such as LTE because emergency responders represent a small percentage of the LTE consumer market.

Talk Around/Simplex/Direct Mode

Talk around, also known as simplex or direct mode, is the ability to talk device-to-device. This is an important feature for public safety operations because it allows a group of responders in the field to talk directly to each other when outside of the existing network infrastructure coverage or if the network infrastructure has been damaged. For example, this is a critical feature when firefighters respond to a wildfire that is outside of network coverage or to an incident in the basement of a burning building that may be beyond the network's coverage.

Convergence of Mission Critical Voice and Data

A "converged network," a dedicated public safety wireless broadband infrastructure capable of offering mission critical voice, data, and video to emergency responders, is important because it reduces costs of developing and maintaining systems and increases the effectiveness of emergency responders in the field. However, convergence will be a long term and gradual transition as agencies integrate new technologies, rather than replace existing systems. The pace of convergence will vary from agency to agency and will be influenced by operational requirements, existing systems, and funding levels. During this migration period, solutions for connecting traditional LMR with broadband systems will be necessary. Even when the nationwide public safety network is capable of meeting public safety requirements, some agencies may need to operate separate LMR systems until the public safety wireless broadband network is fully deployed in their regions. Broadband technology for mission critical voice is not currently in place and it is still too early to define the timeframe for such a transition. Therefore, additional investments will continue to be necessary for both LMR and a dedicated public safety wireless broadband network simultaneously.

SAFECOM is a communications program of the Department of Homeland Security. SAFECOM provides research, development, testing and evaluation, guidance, tools, and templates on interoperable communications-related issues to local, tribal, state, and Federal emergency response agencies. The Office of Emergency Communications (OEC) supports SAFECOM's development of grant guidance, policy, tools, and templates, and provides direct assistance to local, tribal, state, and Federal practitioners. The Office for Interoperability and Compatibility (OIC) supports SAFECOM's research, development, testing and evaluation, standards, and tools such as reports and guidelines. OEC is an office within the Directorate for National Protection and Programs. OIC is an office within the Science and Technology Directorate.

Homeland Security SAFECOM

Visit www.safecomprogram.gov or call 1-866-969-SAFE

Additional Information and Resources

Administration

- "The Benefits of Transitioning to a Nationwide Wireless Broadband Network for Public Safety" (June 2011)
  www.whitehouse.gov/sites/default/files/uploads/publicsafetyreport.pdf
- National Telecommunications and Information Administration, Comments, FCC Docket No. 06-229, "Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band." (June 10, 2011)
  http://fjallfoss.fcc.gov/ecfs/comment/view?id=6016823007

Federal Communications Commission National Broadband Plan

- www.broadband.gov/plan

National Public Safety Telecommunications Council

- http://www.npstc.org/broadband.jsp

Office of Emergency Communications

- Homepage: http://www.dhs.gov/xabout/structure/gc_1189774174005.shtm
- National Emergency Communications Plan: www.dhs.gov/files/publications/gc_1217521334397.shtm

Public Safety Communications Research Program

- www.pscr.gov

SAFECOM

- Homepage: www.safecomprogram.gov
- Interoperability Continuum:
  http://www.safecomprogram.gov/SiteCollectionDocuments/Interoperability_Continuum_Brochure_2.pdf

valmont
STRUCTURES

October 2, 2012

Mr. Brian White
Motorola, Inc.
1301 E. Algonquin Road
MS IL02, Post 17J
Schaumburg, IL 60196

SUBJECT: Valmont Tower Quotation # 180687-01, Model V-17.0 x 180' Self Support Tower
Site Location: Globe Site, Overton, KS

Thank you for your inquiry concerning tower design codes and practices as they relate to your requested tower designs.

Valmont Structures / Pirod has been designing and building guyed and self-supporting towers and monopoles since the early 1950's. During this time, we have sold thousands of towers ranging in height form as little as 50' high to in excess of 1400'. These towers were individually engineered to accommodate the loading requirements imparted by the design wind speed, ice considerations, antenna loading, and other factors dictated by the national code requirements existing at the time the tower was built.

The ANSI/TIA-222-G-2005 Standard represents the latest refinement of specific minimum requirements for tower engineers and manufacturers to follow to help assure that the tower structure and its foundations are designed to meet the most realistic conditions for local weather while assuring that the tower is designed to stringent factors of safety. This tower is designed to 90 MPH Basic Wind Speed with no ice, and 40 MPH Basic Wind Speed with 1.0" radial ice per ANSI/TIA-222-G-2005 criteria using Service Class III, Exposure C, and Topographical Category 1.

The "G" version of the code incorporates an escalating wind factor based on tower height. If 90 MPH 3 second gust is the basic design wind speed at the 10 meter height, then per the specification, this speed is then increased in stages up the tower. "Meeting the code" implies that the design will have all of the code requirements for safety factors intact at the wind speed specified. Thus, the ultimate survival speed would be considerably higher.

The foregoing is with specific reference to tower failures induced by extreme weather conditions. However, tower failure can also result from human misadventure or vandalism. Therefore, security fencing is advisable to protect against accident or vandalism.

valmont
STRUCTURES

While failure is extremely rare in any kind of tower, it is especially so for self supported towers and monopoles. In fact, only if a tower or monopole were subjected to a direct hit from a tornado or the severest of hurricanes would failure be predicted, and then usually only if hit by flying debris.

This specific tower is designed such that its first point of predicted failure is in the region above the 80' level. The predicted mode of wind induced failure would be a buckling of the tower legs in the region above the 80' level with the top 100' of the tower folding over about the intact 80' base. This would then effect a fall zone radius within 70' or less of the tower base.

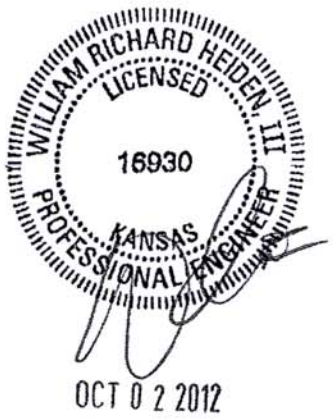
As Chief Engineer of the company and a registered P.E. in 48 states, I oversee all engineering and application of our towers. I am a graduate engineer from Purdue University and am assisted by two other registered professional engineers on our staff.

Valmont Structures / Pirod is an AISC approved shop. All Valmont Structures / Pirod welders are AWS qualified. Mathematical and physical tests are performed routinely on tower sections and designs as required. Our total design, engineer and build process has been quality audited by our customers including public utilities, telephone companies, government agencies, and of course Valmont is an AISC certified facility.

We trust the above and the attached will be helpful to you. If you should need anything else, please let us know at your convenience.

Sincerely,

William R. Heiden III, P.E.
Chief Engineer
Ext. #5243



OCT 0 2 2012

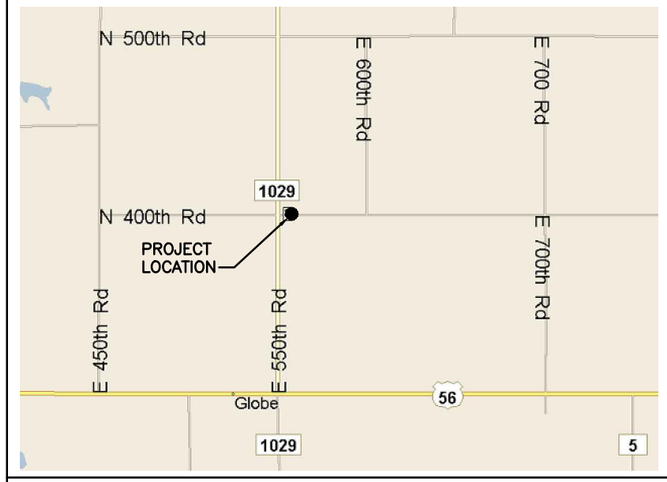
PiROD
MICROFLECT

Communications Division, Valmont Industries, Inc.
1545 Pidco Drive Plymouth, Indiana 46563-4005 USA
574-936-4221 Fax 574-936-6796 www.valmont.com

AREA MAP



VICINITY MAP



DRIVING DIRECTIONS

DRIVE TO DIRECTIONS AS FOLLOWS:

FROM THE JUNCTION OF I-35 & I-435 IN OVERLAND PARK, KANSAS. GO SOUTHWEST ON I-35 FOR (11.1 MI) TO US-56 W/W 175TH STREET. GO WEST ON US-56 W/W 175TH STREET FOR (29.1 MI) TO E 550 ROAD. GO NORTH ON E 550 ROAD FOR (1.0 MI) TO N 400 ROAD. GO EAST ON N 400 ROAD FOR (262 FT) TO SITE LOCATION.

CODE COMPLIANCE

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

1. INTERNATIONAL BUILDING CODE
2. INTERNATIONAL MECHANICAL CODE
3. ANSI/TIA-222 STRUCTURAL STANDARD
4. NFPA 780 – LIGHTNING PROTECTION CODE
5. INTERNATIONAL PLUMBING CODE
6. NATIONAL ELECTRICAL CODE

PROJECT INFORMATION

PROJECT ADDRESS: TBD N.400 ROAD
OVERBROOK, KANSAS 66524

PROPERTY OWNER: JERE McELHANEY
580 N 400TH ROAD
OVERBROOK, KANSAS 66524

STRUCTURAL INFORMATION:

LATITUDE:	38° 47' 48.00" N
LONGITUDE:	95° 23' 54.91" W
GROUND ELEV:	1153' AMSL
TOWER HT:	180'-0" AGL
ANTENNA BASE ELEVATION:	135'-0" AGL
MW ANTENNA CL:	120'-0" & 100'-0" AGL

APPLICANT: DOUGLAS COUNTY EMERGENCY COMMUNICATIONS
111 EAST 11TH STREET, UNIT 200
LAWRENCE, KANSAS 66044

CONTACT: SCOTT RUF
PHONE: (785)-838-2470

CONTRACTOR SHALL REFER TO HAYDEN TOWER SERVICE, INC FOR DETAILED SPECIFICATIONS FOR CELL SITES FOR ANY ITEMS OR WORK NOT LISTED OR DETAILED HEREON. STANDARD SPECIFICATIONS SHALL SUPERSEDE WHERE CONFLICTS OCCUR.

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE, AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

CONSULTING TEAM

ENGINEER: SSC, INC.
9900 WEST 109TH STREET, SUITE 300
OVERLAND PARK, KANSAS 66210
PHONE: (913) 438-7700
FAX: (913) 438-7777

M.L. OWENS - LEAD ENGINEER

S.D. KEISLING - LEAD ELECTRICAL

D.C. PELLAND - LEAD DESIGNER

APPROVALS

	PHONE	DATE
REAL ESTATE		
ZONING		
CONSTRUCTION		
RF		
OPERATIONS		
LANDLORD		

UTILITY INFORMATION

POWER:
COMPANY:

TELEPHONE
COMPANY:

KANSAS ONE-CALL SYSTEMS, INC.

CALL BEFORE YOU DIG – DRILL – BLAST
800-344-7233
(DIG-SAFE)
(316) 687-3753
(FAX)

KANSAS ONE CALL SYSTEM, INC.

THE UTILITIES AS SHOWN ON THIS SET OF DRAWINGS WERE DEVELOPED FROM THE INFORMATION AVAILABLE. THE INFORMATION PROVIDED IS NOT IMPLIED NOR INTENDED TO BE THE COMPLETE INVENTORY OF UTILITIES IN THIS AREA. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION OF ALL UTILITIES (WHETHER SHOWN OR NOT) AND PROTECT SAID UTILITIES FROM ANY DAMAGE CAUSED BY CONTRACTOR'S ACTIVITIES.

DRAWING INDEX

SHEET NUMBER	TITLE DESCRIPTION	REVISION	RESPONSIBLE DISCIPLINE
T-1	TITLE SHEET	C	SC/E
	TOPOGRAPHIC SURVEY		
A-1	OVERALL SITE PLAN	C	SC
A-2	ENLARGED SITE PLAN	C	SC
A-3	TOWER ELEVATION	C	SC

DOUGLAS COUNTY EMERGENCY COMMUNICATIONS

SITE NAME: GLOBE

Approved and Released

City of Lawrence
Douglas County
PLANNING & DEVELOPMENT SERVICES

Case No.
Approval Date:
Release Date:
Planner:
of Sheets
Asst./Director:

MOTOROLA SOLUTIONS

Hayden
TOWER SERVICE, INC.
2936 N
66618
785 232 1840
785 232 1877

SSC
9900 West 109th Street, Suite 300
Overland Park, Kansas 66210
Phone: 913-438-7700 Fax: 913-438-7777

NO	DATE	DESCRIPTION	BY
A	11/05/12	ISSUED FOR REVIEW	KLL
B	11/14/12	REISSUED FOR REVIEW	DCP
C	12/12/12	REVISED PER COUNTY COMMENTS	KLL

SITE NAME
GLOBE

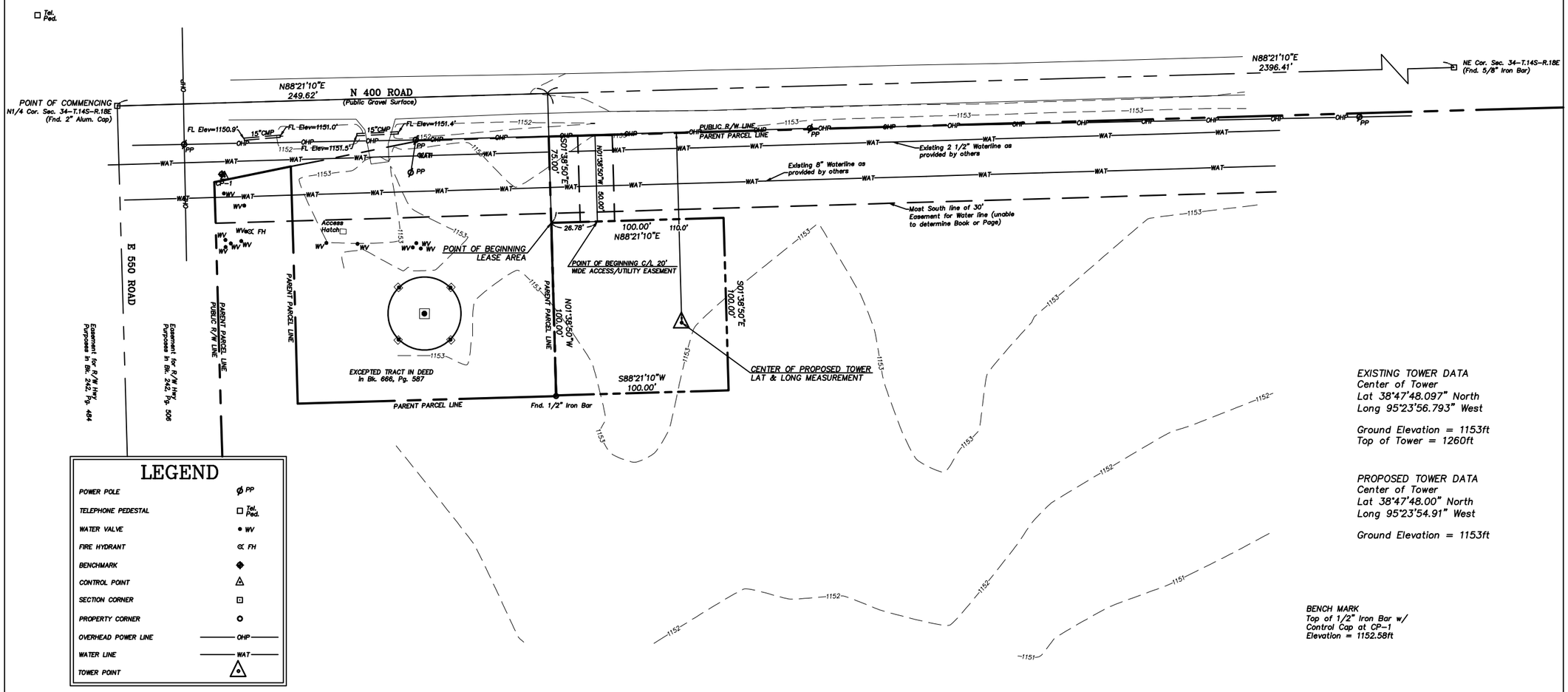
SITE NUMBER

SITE ADDRESS
TBD N. 400 ROAD
OVERBROOK, KANSAS
66524

SHEET DESCRIPTION
TITLE SHEET

SHEET NUMBER
T-1

GLOBE
PART OF SEC. 34, T. 14S, R. 18E, IN DOUGLAS COUNTY, KANSAS



EXISTING TOWER DATA
Center of Tower
Lat 38°47'48.097" North
Long 95°23'56.793" West

Ground Elevation = 1153ft
Top of Tower = 1260ft

PROPOSED TOWER DATA
Center of Tower
Lat 38°47'48.00" North
Long 95°23'54.91" West

Ground Elevation = 1153ft

BENCH MARK
Top of 1/2" Iron Bar w/
Control Cap at CP-1
Elevation = 1152.58ft

LEGEND

POWER POLE	ø PP
TELEPHONE PEDESTAL	□ Tel. Ped.
WATER VALVE	• WV
FIRE HYDRANT	FH
BENCHMARK	◆
CONTROL POINT	△
SECTION CORNER	⊡
PROPERTY CORNER	○
OVERHEAD POWER LINE	OHP
WATER LINE	WAT
TOWER POINT	⊙

Property information shown hereon was provided by Kansas Secured Title–Douglas County, Certificate No. 3122750, dated October 10, 2012 at 8:00 a.m..

Information affecting Lease Area is noted unless shown hereon.

Information not shown hereon:

Oil and Gas Lease in Bk. 130, Pg. 314. (Blanket in nature)

R/W Easement to Rural Water District No. 5 in Bk. 305, Pg. 77. (Undefined location)

R/W Easement to Rural Water District No. 5 in Bk. 686, Pg. 1822. (Undefined location)

R/W Easement to Rural Water District No. 5 in Bk. 686, Pg. 1824. (Undefined location)

R/W Easement to Rural Water District No. 5 in Bk. 963, Pg. 1362. (Undefined location)

Notes:

Bearings shown hereon are based on Kansas State Plane Coordinate System of 1983 (NAD 83).

Coordinates were derived using GPS Static Survey methods and post processed data with Magellan/Ashtech receivers and "Locus System" processor software.

Set 1/2" iron bar at Lease corners unless otherwise noted.

The purpose of this survey is to establish and describe a Lease Parcel and associated easements. This is not a boundary survey of the Parent Parcel.

The utilities as shown on this drawing were developed from the information available (existing utility maps, aboveground observations and or surface markings placed on the ground by the utility company or a representative thereof). This company has made no attempt to excavate or go below surface to locate utilities and does not extend or imply a guaranty or warranty as to the exact location of or complete inventory of utilities in this area. It shall be the contractors responsibility to verify the location and depth of all utilities (whether shown or not) prior to excavation or construction and to protect said utilities from damage.

PROPERTY DESCRIPTION: Parent Parcel as Provided

The West–One–half of the Northeast Quarter of Section 34, Township 14 South, Range 18 East of the 6th P.M., in Douglas County, Kansas, LESS AND EXCEPT a tract deed in Book 666, Page 587.

NOTE: The parent parcel graphically shown hereon, in full or in part, is the same as that described above.

PROPERTY DESCRIPTION: LEASE AREA AND ACCESS/UTILITY EASEMENT

A 100 foot by 100 foot Lease Area and a 20 foot wide Access/Utility Easement, situated in the West Half of the Northeast Quarter of Section 34, Township 14 South, Range 18 East of the 6th P.M., in Douglas County, Kansas, more particularly described as follows:

COMMENCING at the North Quarter Corner of said Section 34 (Fnd. 2" Alum. Cap); thence along the North line of said Northeast Quarter, North 88°21'10" East, a distance of 249.62 feet; thence leaving said North line, South 01°38'50" East, a distance of 75.00 feet to the POINT OF BEGINNING of said Lease Area; thence North 88°21'10" East, a distance of 100.00 feet; thence South 01°38'50" East, a distance of 100.00 feet; thence South 88°21'10" West, a distance of 100.00 feet (Fnd. 1/2" Iron Bar); thence North 01°38'50" West, a distance of 100.00 feet to the POINT OF BEGINNING. Containing 10,000 square feet (0.23 acres).

AND a 20 foot wide Access/Utility Easement, lying 10.00 feet on each side of the following described centerline:

COMMENCING at the North Quarter Corner of said Section 34 (Fnd. 2" Alum. Cap); thence along the North line of said Northeast Quarter, North 88°21'10" East, a distance of 249.62 feet; thence leaving said North line, South 01°38'50" East, a distance of 75.00 feet; thence North 88°21'10" East, a distance of 26.78 feet to the POINT OF BEGINNING of said centerline; thence North 01°38'50" West, a distance of 50.00 feet to the South Right of Way line of N 400 ROAD (Public R/W) and the POINT OF TERMINATION.

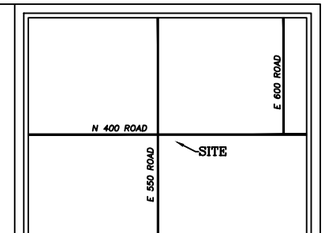
CERTIFICATION:

I HEREBY CERTIFY THAT A SURVEY WAS MADE BY ME, OR UNDER MY DIRECT SUPERVISION, ON THE GROUND OF THE LEASE AREA, LEASE ACCESS EASEMENT, AND LEASE UTILITY EASEMENT PREMISES HEREIN DESCRIBED, AND THE RESULTS OF SAID SURVEY ARE REPRESENTED HEREON. THIS SURVEY WAS EXECUTED IN ACCORDANCE WITH THE CURRENT MINIMUM STANDARDS FOR PROPERTY BOUNDARY SURVEYS OVER SAID LEASE PREMISES TO THE BEST OF MY PROFESSIONAL KNOWLEDGE AND BELIEF.

JEFFREY B. LOVELACE KS–LS1326

DATE: _____

11–13–12: REV. PER COMMENTS
11–05–12: ADDED A/E
10–23–12: ADDED WATER LINES
10–23–12: ADDED TITLE
10–01–12: ADDED PROPERTY

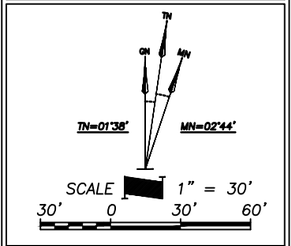


LOVELACE & ASSOCIATES
Land Surveying - Land Planning
Telecommunications Surveys
929 SE 3rd Street Lee's Summit, Missouri 64063
Phone: (816) 347-9997 Fax: (816) 347-9979

SURVEY COORDINATED BY:
LOVELACE AND ASSOCIATES, LLC
P.O. BOX 68,
LEE'S SUMMIT, MO 64063
TELEPHONE: 816–347–9997
FAX: 816–347–9979

SURVEY PROVIDED BY:
LOVELACE AND ASSOCIATES, LLC
P.O. BOX 68,
LEE'S SUMMIT, MO 64063
TELEPHONE: 816–347–9997
FAX: 816–347–9979

SURVEY PROVIDED FOR:
HAYDEN TOWER SERVICE, INC.
2836 NW HWY 24,
TOPEKA, KS 66618



FLOOD NOTE:
According to my interpretations of Community Panel No. 20045C0270D of the Flood Insurance Rate Map for Douglas County, Kansas, dated August 5, 2010 the subject property is in Flood Zone "X", ie. "areas determined to be Outside the 0.2% annual chance floodplain".

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(800-DIG-CALL)
(316) 687-3753
(FAX)
KANSAS ONE CALL SYSTEM, INC.

SITE NAME:
GLOBE

SITE LOCATION:
DOUGLAS COUNTY,
KANSAS

LA PROJECT NO.: 12380

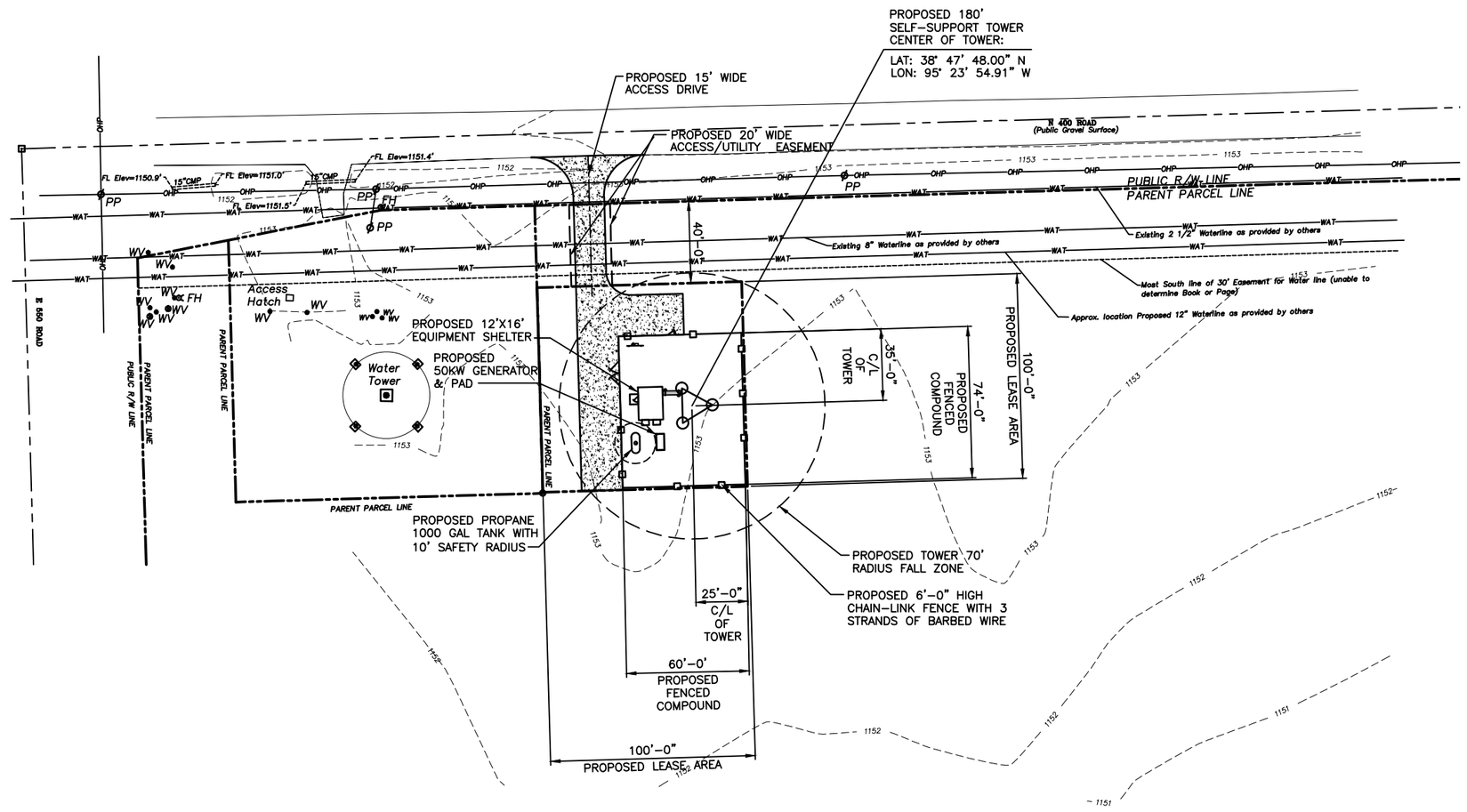
DRAWN BY: A.C.T.

CHECKED BY: J.B.L.

DATE: 09–20–12

FIELDWORK DATE: 09–17–12

SHEET NUMBER
1 OF 1



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(DIG-SAFE)
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(FAX)

KANSAS ONE CALL SYSTEM, INC.

THE UTILITIES AS SHOWN ON THIS SET OF DRAWINGS WERE DEVELOPED FROM THE INFORMATION AVAILABLE. THE INFORMATION PROVIDED IS NOT IMPLIED NOR INTENDED TO BE THE COMPLETE INVENTORY OF UTILITIES IN THIS AREA. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION OF ALL UTILITIES (WHETHER SHOWN OR NOT) AND PROTECT SAID UTILITIES FROM ANY DAMAGE CAUSED BY CONTRACTOR'S ACTIVITIES.

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0' 10' 20' 30' 60' 90'

OVERALL SITE PLAN | 1

MOTOROLA SOLUTIONS

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TOWER SERVICE, INC.
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SSC
9900 West 109th Street, Suite 300
Overland Park, Kansas 66210
Phone: 913-438-7700 Fax: 913-438-7777

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C	12/12/12	REVISED PER COUNTY COMMENTS	KLL

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OVERALL SITE PLAN

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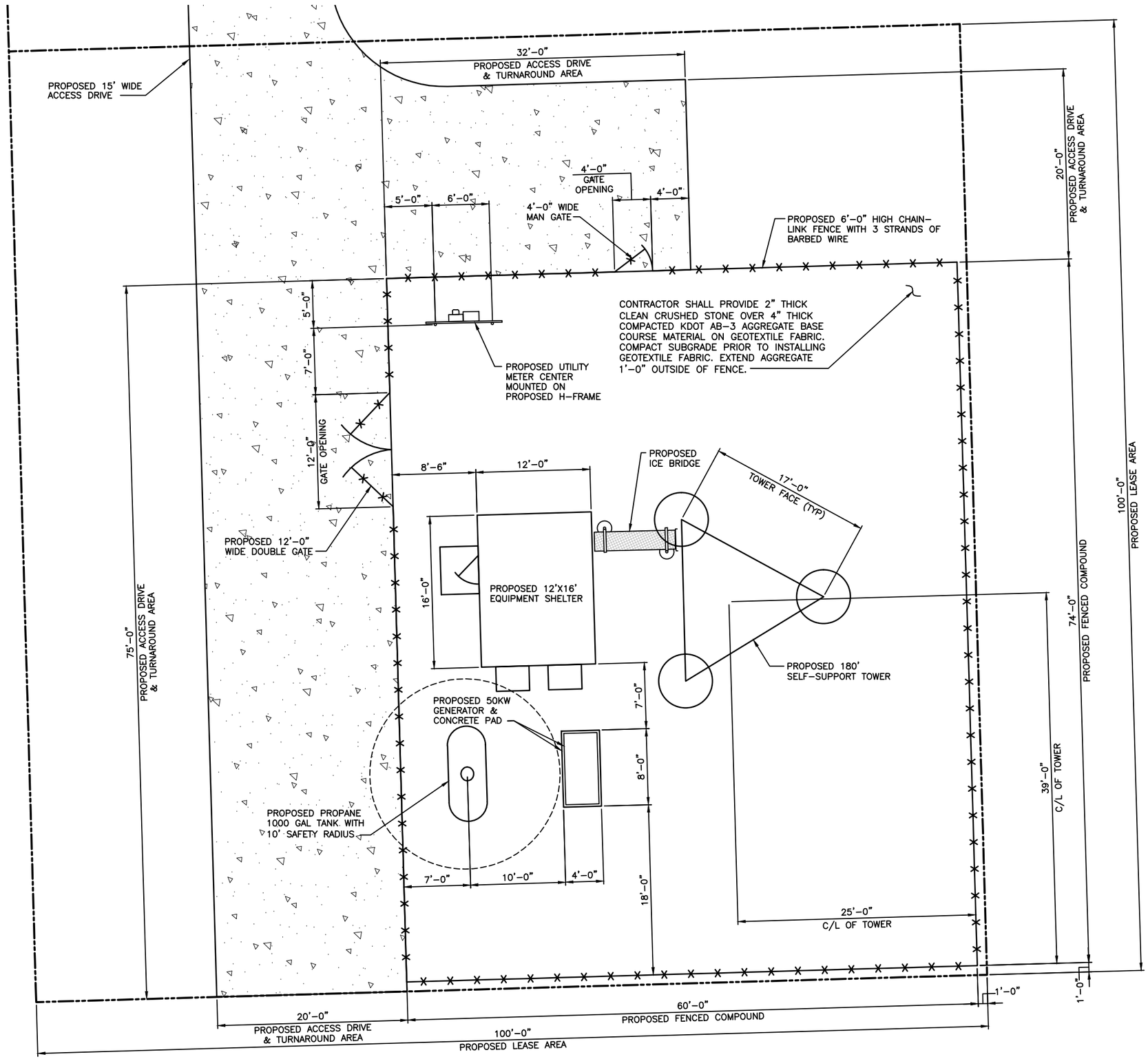

ENLARGED SITE PLAN | 1

MOTOROLA SOLUTIONS

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66524

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ENLARGED SITE PLAN

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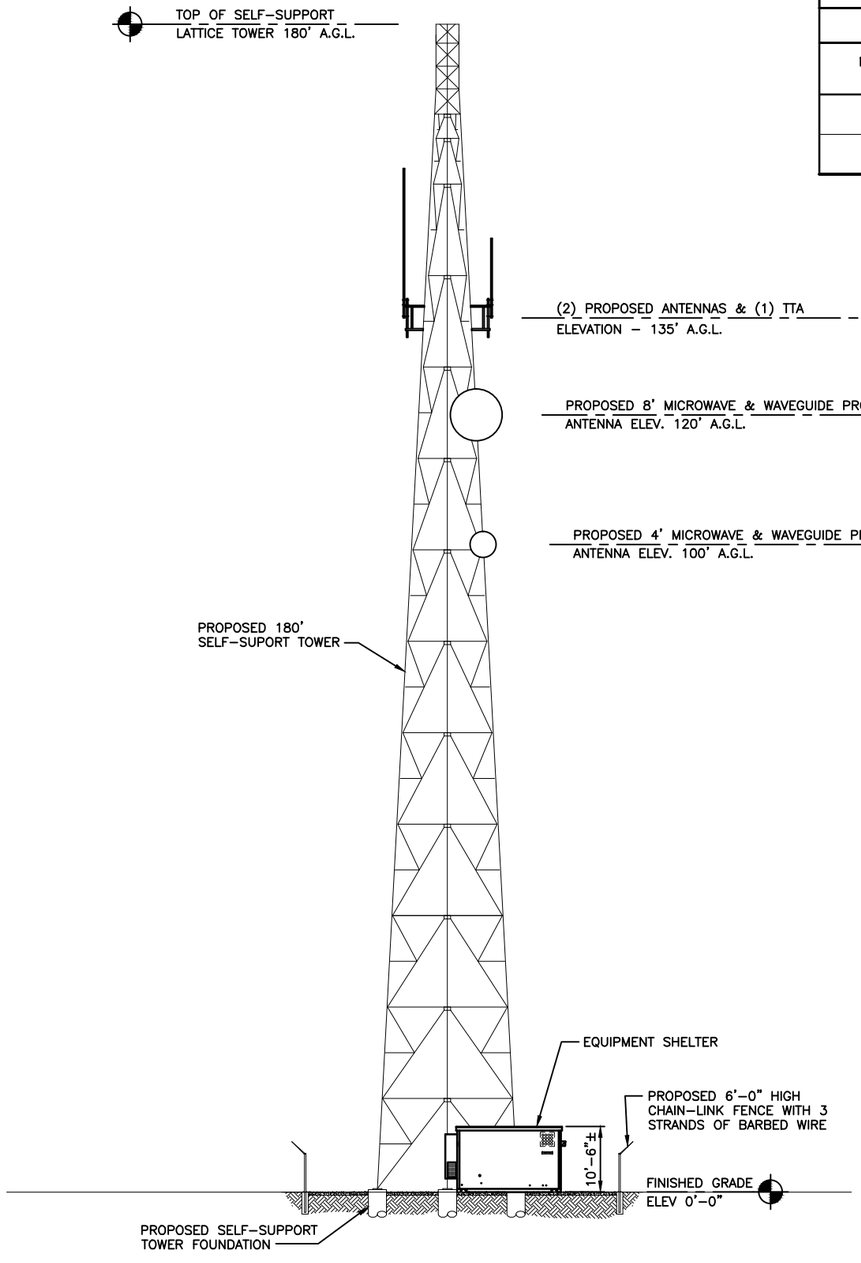
ANTENNA LOADING KEY

ANTENNA MODEL #	QTY.	ANTENNA BASE ELEVATION	LINE SIZE	LINE LENGTH	AZIMUTH	FREQUENCY	NEW OR EXISTING	MOUNT TYPE	SIDE ARM MOUNT	PROPOSED OR FUTURE LOADING
BMR10-0	1	135'-0"	1 1/4"	185'	TBD	TBD	N	6' STANDOFF	YES	PROPOSED
BMR10-B	1	135'-0"	7/8"	185'	TBD	TBD	N	6' STANDOFF	YES	PROPOSED
TTA	1	135'-0"	1/2"	185'	N/A	TBD	N	N/A	YES	PROPOSED

MICROWAVE LOADING KEY

MICROWAVE MODEL #	QTY.	MICROWAVE ANTENNA C/L ELEVATION	LINE SIZE	LINE LENGTH	AZIMUTH	FREQUENCY	RADOME	DISH SIZE	DISH MOUNT	PROPOSED OR FUTURE LOADING
TBD	1	120'-0"	CNT400	TBD	350.73°	TBD	YES	8'	YES	PROPOSED
TBD	1	100'-0"	CNT400	TBD	60.37°	TBD	YES	4'	YES	PROPOSED



NOTES:

1. ALL TOWER INFORMATION SHOWN IS FOR ILLUSTRATION PURPOSES ONLY, AND MAY DIFFER FROM THE FINAL DESIGN PROVIDED BY THE TOWER MANUFACTURER. THE CONTRACTOR SHALL CONSTRUCT THE TOWER, FOOTINGS, AND ALL OTHER RELATED COMPONENTS IN ACCORDANCE WITH THE TOWER MANUFACTURER'S DRAWINGS AND SPECIFICATIONS.
2. THE CONTRACTOR SHALL DOCUMENT THE AS-BUILT CONDITION OF THE TOWER.

TOWER ELEVATION | 1

MOTOROLA SOLUTIONS

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OVERBROOK, KANSAS
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TOWER ELEVATION

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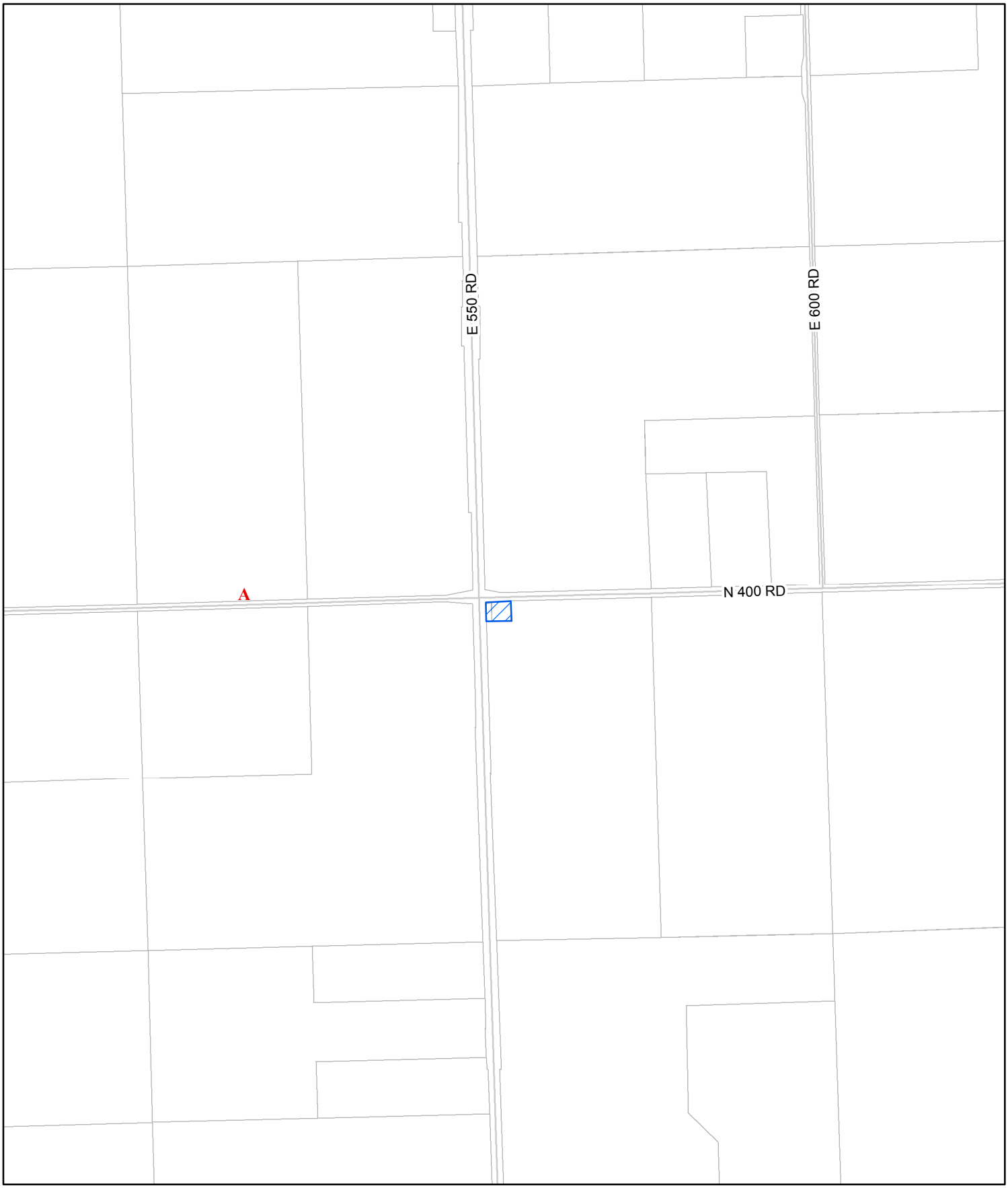

CUP-12-00287: Conditional Use Permit for Douglas County Emergency Communications System 180' tower 580 N 400 Rd

Lawrence-Douglas County Planning Office

January 2013

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Area Requested

Scale: 1 Inch = 1000 Feet

Memorandum
City of Lawrence
Planning Department

TO: **Lawrence Douglas County Planning Commission**

FROM: **Sandra Day, AICP, Planning Staff**

CC: **Applicant**

Date: **January 14, 2013**

RE: **Item No. 3: Langston Heights Residential Development**

Item No. 3A: PP-12-00228; Preliminary Plat
Item No. 3B: Z-12-00229; UR to RM12D
Item No. 3C: Z-12-00231; UR to RS7
Item No. 3D: Z-12-002323; UR to RM12
Item No. 3E: Z-13-00013: UR to RS5 as a lesser change of a portion of the RM12D application.

Attachments:
1. Revised Preliminary Plat
2. West of K10 Area Plan
3. Concept build-out plan

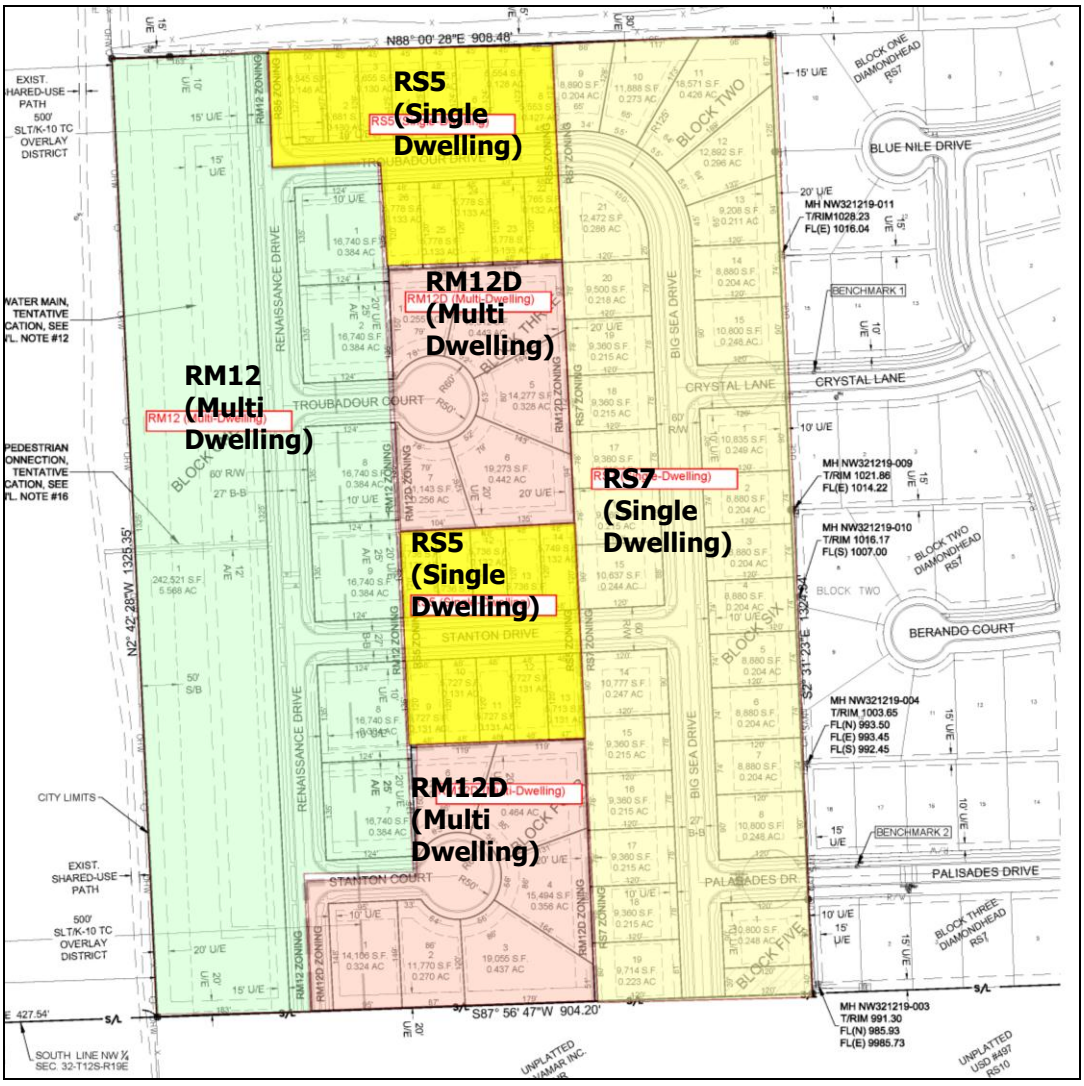
The purpose of this memo is to update the Commission on changes to the proposed development in response to comments from the December Planning Commission Meeting. The public hearing conducted in December resulted in a deferral of the proposed development applications with direction to address the following specific concerns.

- Increase presence of single-dwelling detached units and demonstrate the development is "predominantly single-dwelling residential" to comply with language found in the *6th Street and K-10 Highway Nodal Plan.*
- Explore providing additional access to Renaissance Drive to the south or north to alleviate the traffic impact of the proposed project. Associated to this is the issue of single loading Renaissance Drive as a design option.
- The effect of this development on future development to the south.

Presence of Single-Family
Significant changes have been made to the project that increase the overall percentage of detached residential units and reduce the total number of units proposed for this development. The revised project includes a request for 3.88 acres of RS5 zoning. The proposed development has, using a "lesser change", reduced the amount of RM12D to incorporate RS5 zoning. Section 20-1303 of the Development Code allows the modification of an application when the request is reduced in a manner specified by the Development Code.

The applicant has requested the Planning Commission consider a revision to the RM12D request to change a portion of the published RM12D request to RS5. This revision meets the requirements of the Lesser Change Table as highlighted below. Staff has assigned a specific case file number to the RS5 portion of the development request for tracking purposes.

The development request specifically amends the RM12D application to reduce the overall area from 8.33 acres of RM12D to 4.582 acres. The remaining 3.88 of the original request is proposed, as a lesser change, to RS5. The RS5 district is a single-dwelling residential district. This district is similar to the RS7 district in terms of uses. The RS5 district allows smaller lots with the minimum lot area established at 5,000 SF. The subdivision has been reconfigured to include the RS5 zoning and revised the interior street network to provide more separation between the development to the east and the multi-dwelling proposed to the west. The following graphic highlights the areas to be rezoned to the four different districts.



The following table provides a lot and density summary for the proposed Langston Heights development to show the changes between the previous plan and the current proposal. The December application included only 9.2 acres of detached housing as RS7 zoning. The revised application includes an additional 3.8 acres of detached housing as RS5 zoning.

	December 2012	January 2013
Gross RS7 District Acres	9.206	9.122
ROW Acres Tract	2.33	2.245 .109
Net RS7 Area Acres	6.873	6.768
Total Lots/Units	29/29	29/29
Density	4.219	4.285
Gross RM12D District Acres	8.33	4.582
ROW Acres	1.664	.723
Net RM12D area Acres	6.669	3.856
Total Lots/Units	25/50	11/22
Density	7.497	5.701
Gross RS5 District Acres		3.880
ROW Acres		.885
Net RS5 Area Acres		3.025
Total Lots/Units		23/23
Density		7.603
Gross RM12 District Acres	10.025	9.980
ROW Acres	2.11	2.107
Net RM12 Area Acres	7.908	7.873
Total Lots/Units	7/86	7/86
Density	10.875	10.923
Total Area	27.564	27.564
Total Units	165	160
Total Density	5.986	5.805

Table 1: Area Summary by Zoning District

The total number of units has been reduced by 5 and the overall density has been slightly reduced. Both the RS7 and the RS5 zoning districts represent single-dwelling detached residential development. The total number of detached housing proposed has increased from 29 in the December 2012 plan to 52 units in the current plan. The total number of duplex units has decreased from 50 units to 22 units. The RS7 district and the RM12 Districts have remained static between the two plans with no change in the total number of units and minor changes to the gross area of the two districts.

Land Use Development Pattern

Area	Acres	Percent
Total Area:	**186.45**	**100**
Developed Area:	43.38	23%
Proposed Development:	27.57	15%
Vacant Area:	115.5	62%

Table 2A: Summary of Developed and Undeveloped Land

Use	Acres	Percent
Single Family:	74.37	40%
Duplex:	14.89	20%
Multi-Dwelling:	22.76	12%
Commercial:	43.30	23%
UR	18.75	10%
Public	12.38	7%
Total	186.45	100%

The following information shows the existing and developing land use pattern for the area west of George Williams Way between W. 6th Street and Bob Billings Parkway [Diamondhead Neighborhood]. A substantial portion of the area is zoned for detached residential development. Based on the existing and proposed zoning and known land uses the Diamondhead Neighborhood area includes 74.4 acres of detached residential development and zoning. Table 2 summarizes the existing and proposed housing types for this area based on existing and proposed zoning.

A significant portion of the area is defined by the existing development pattern and zoning. The above image shows the existing and proposed development pattern and includes the future street connection between Bob Billings Parkway and Ken Ridge Drive. The 18 acres of UR is likely to be reconfigured into several zoning districts in the future including commercial and multi-dwelling. The proposed subdivision street connections from the Langston Heights Development would support the continuation of a detached housing pattern to the south. The following map shows graphically the existing and proposed housing types for this area based on the existing and proposed zoning.

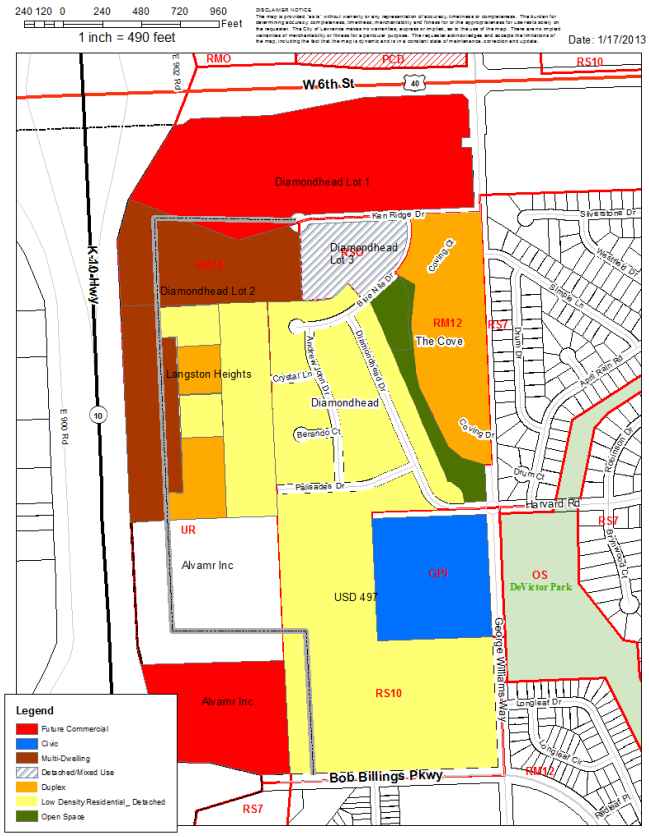


Figure 1 Map of Land Use

Renaissance Drive:

The location of Renaissance Drive provides the greatest buffer between K10 Highway to the west and the lower density residential development to the east. The design of the street provides the ability to develop on both sides of the street. Single loaded streets are generally inefficient in terms of construction and maintenance costs. This design provides the ability to provide development backing up to the highway that will provide

both a visual and noise buffer between the highway and the residential development to the east. Development both north and south will be required to extend Renaissance Drive north to Ken Ridge Drive and to the south to Bob Billings Parkway. Both streets have identified connection points. The connection to Bob Billings Parkway is being actively designed because of the K10 highway interchange to be constructed in the next year.

Access to Bob Billings Parkway:

KDOT, City Engineers, property owners and USD 497 have been working to establish designated access points as they relate to the pending interchange improvements of the SLT interchange with Bob Billings Parkway. This information is critical to the development of the property between Diamondhead Subdivision to the north and Bob Billings Parkway to the south. The access point is designated approximately 990' east of the intersection to avoid conflicts within the interchange and ramps. Access is intended to provide connectivity to the undeveloped parcels north of Bob Billings Parkway and connect to Renaissance Drive to the north. The finalized alignment will be platted based upon executed agreements of all parties and through the Subdivision Regulation process. The following exhibit shows the connection between Bob Billings Parkway and the proposed development to the north. This concept includes the subdivision design as of November 2012. The location of Renaissance Drive between the December and January versions has not changed. Renaissance Drive is proposed as a "double loaded" local connector street within the neighborhood.

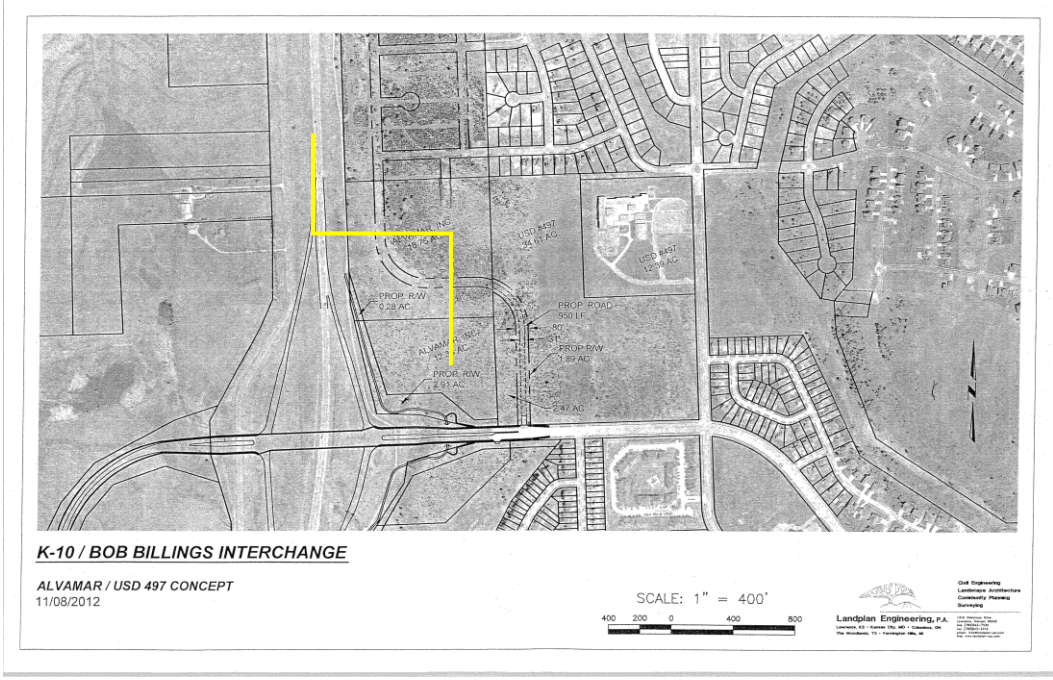


Figure 2: Renaissance Drive Extended South

The base document used in the concept includes the previous subdivision plat arrangement. The internal street connections to the Langston Heights subdivision have been revised since this concept plan was prepared. However, the location of Renaissance Drive and the access point to Bob Billings Parkway have not changed throughout this project.

Effect on future development to South
The proposed Subdivision extends the local street network to the south via Renaissance Drive and Big Sea Drive. The basic alignment of Renaissance Drive south of the subject property is being developed with KDOT and City staff and the adjacent property owners. The property along Bob Billings Parkway has been zoned for specific uses (PCD and RS10). The commercial use located on the northeast corner of Bob Billings Parkway and the SLT is likely to be requested for an expansion to the north and possibly east filling the gap created by the street alignment. The long-range land use plan (West of K10 Plan) indicates this area as suitable for future neighborhood commercial uses. Regional detention will also be required on this corner as the area develops. This will further reduce the developable land for commercial uses at the immediate intersection.

USD 497 owns acreage on the northwest corner of Bob Billings Parkway and George Williams Way. This area is zoned RS10 and may be developed with expanded school facilities or could also be developed residentially given the existing zoning. There remains 18 acres of UR zoning between the neighborhood commercial and the proposed Langston Heights development. The proposed subdivision extends Big Sea Drive to the south property line that accommodates an extension of the detached residential pattern to the south. This street could be extended to intersect Renaissance Drive or could terminate in a T or cul-de-sac intersection. A small area would remain between the highway and Renaissance Drive that could be developed with a transitional use between the proposed multi-dwelling and the neighborhood commercial use depending on the requirements for regional detention for the area. The townhouse pattern could be extended in this area with significant landscaping along areas that abut the commercial development.

The attached exhibit highlights one concept for future development to the south.

West of K-10 Plan
The area south of the Langston Heights Development is located within the boundary of the West of K10 Plan area. The plan recommends low-density residential land use between the highway and George Williams Way with the exception of the area designated for neighborhood commercial uses at the intersection of K10 and Bob Billings Parkway.

The residential land uses recommended in the plan state:

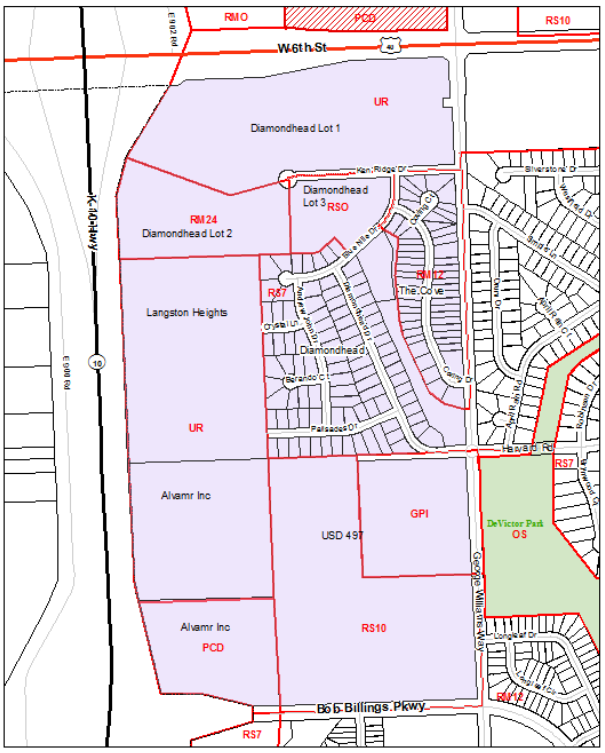
> ***Residential- Low Density***
> *The intent of the low-density residential use is to allow for single-dwelling, duplex and attached dwellings but emphasis is placed on residential type uses. Development in this area should be compatible with single-family character, which could include such uses as churches, small–scale daycares and institutional uses.*

The plan notes the primary uses as "*Detached dwellings, attached dwellings, duplex, group home, public and civic uses."* Applicable zoning districts include RS10, RS7, RS5 RM12D and PD. The Plan further states the maximum density recommended for areas recommended for low-density residential development is 6 dwelling units per acre.

Future Land Use Development Pattern

Based on the recommended land uses found in *Horizon 2020*, *West of K10 Highway Plan*, and the recent discussions with the Commission and the applicant staff prepared an example of a possible development pattern for the remaining undeveloped tracts of land. This concept plan is attached.

Land Use Summary Diamondhead Neighborhood Area						
Area/Description	**Acres**	**Zoning**	**Land Use**	**Density**	**Total Units**	**Subject Area**
Lot 1 Diamondhead	31	UR	vacant		0	
Lot 2 Diamondhead	12.78	RM24	vacant	24	306	
Lot 3 Diamondhead	6.07	RSO	vacant	15	91	
The Cove	10.3	RM12[1]	duplex	5.8	60	
Diamondhead Residential	20.7	RS7	sfr	4.2	89	
Langston Heights	***9.12***	***RS7***	***Sfr – Proposed***	***4.2***	***29***	
Langston Heights	***3.88***	***RS5***	***Sfr – Proposed***	***7.6***	***23***	
Langston Heights	***4.59***	***RM12D***	***Duplex-Proposed***	***5.7***	***22***	
Langston Heights	***9.98***	***RM12[2]***	***Multi - Proposed***	***10.92***	***86***	
Alvamar Inc	18.75	UR	vacant			
Alvamar Inc	12.3	PCD[3]	vacant	35	430	
USD 497	12.38	GPI	public	0	0	
USD497	34.6	RS10	vacant	4.3	148	
Total Area	**186.45**				**578**	



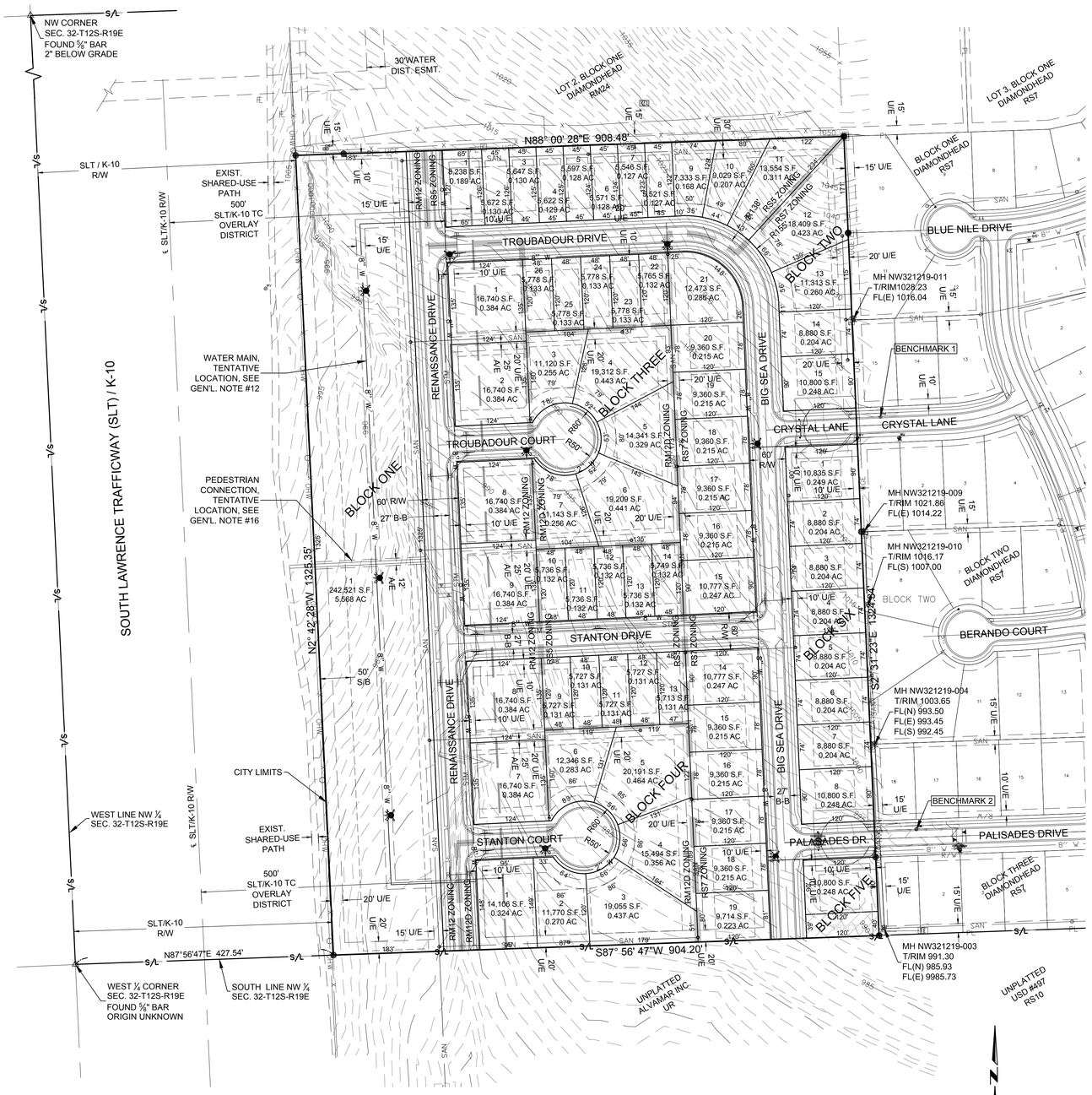
- Total Land Area 186.45 AC
- Developed Area 43.38 AC
- Vacant Land

Table 3: Land Use Summary by parcel/Subdivision

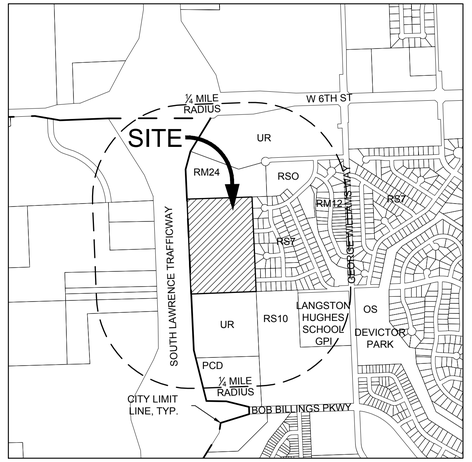
[1] RM12 zoning allows multi-dwelling units. The Cove Subdivision is being developed to a less dense pattern with only two units (duplex housing) per lot.

[2] RM12 zoning allows a total of 119 units. Proposed application is restricted to a lower density than district would allow by right.

[3] PCD allows 35 dwelling units per acre. Typical PCD zoning has not included a residential component or only a small percentage when present.



LOCATION MAP:



LEGAL DESCRIPTION:

A TRACT OF LAND IN THE NORTHWEST QUARTER OF SECTION 32, TOWNSHIP 12 SOUTH, RANGE 19 EAST OF THE SIXTH PRINCIPAL MERIDIAN, IN DOUGLAS COUNTY, KANSAS, DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF SAID QUARTER SECTION, THENCE ON A MEASURED BEARING OF NORTH 87°56'47" EAST ALONG THE SOUTH LINE OF SAID QUARTER SECTION, 427.54 FEET TO THE EAST RIGHT-OF-WAY LINE OF THE SOUTH LAWRENCE TRAFFICWAY TO THE POINT OF BEGINNING; THENCE ON A MEASURED BEARING OF NORTH 02°42'28" WEST ALONG SAID EAST RIGHT-OF-WAY LINE, 1325.35 FEET TO THE SOUTHWEST CORNER OF LOT 2, BLOCK ONE, DIAMONDHEAD, A SUBDIVISION IN THE CITY OF LAWRENCE, DOUGLAS COUNTY, KANSAS; THENCE ON A MEASURED BEARING OF NORTH 88°00'28" EAST, ALONG THE SOUTH LINE OF SAID LOT 2, A MEASURED DISTANCE OF 908.48 FEET TO THE NORTHWEST CORNER OF LOT 10, BLOCK ONE IN SAID SUBDIVISION; THENCE ON A MEASURED BEARING OF SOUTH 02°31'23" EAST AND MEASURED DISTANCE OF 1324.34 FEET, ALONG THE WEST LINE OF SAID SUBDIVISION TO THE SOUTH LINE OF SAID NORTHWEST QUARTER; THENCE ON A MEASURED BEARING OF SOUTH 87°56'47" WEST AND MEASURED DISTANCE OF 904.20 FEET ALONG SAID SOUTH LINE TO THE POINT OF BEGINNING. CONTAINS 27.564 ACRES, MORE OR LESS.

GENERAL NOTES:

1. OWNER: LANGSTON HEIGHTS, LC, 611 SAINT ANDREWS DRIVE, LAWRENCE, KANSAS 66047
2. LAND PLANNER/ CIVIL ENGINEER/ SURVEYOR: LANDPLAN ENGINEERING, P.A., 1310 WAKARUSA DRIVE, LAWRENCE, KANSAS 66049
3. TOPOGRAPHIC INFORMATION SHOWN WAS OBTAINED FROM A FIELD SURVEY PERFORMED BY LANDPAN ENGINEERING, P.A., OCTOBER 1, 2012.
4. EXISTING ZONING: UR
5. PROPOSED ZONING: RS7, RS5, RM12D, RM12
6. EXISTING LAND USE: VACANT
7. PROPOSED LAND USE: DETACHED DWELLING, DUPLEX, ATTACHED DWELLING
8. THE SUBJECT PROPERTY DOES LIE WITHIN A SPECIAL FLOOD HAZARD AREA AS DEFINED BY FLOOD INSURANCE RATE MAP (FIRM); PANEL NO. 154, MAP NUMBER 20045C0154D, DOUGLAS COUNTY, KS., BEARING AN EFFECTIVE DATE OF AUGUST 5, 2010.
9. TYPICAL SOIL TYPES: SOGN-VINLAND COMPLEX, 3 TO 25% SLOPES; MARTIN SILTY CLAY LOAM, 1 TO 3% SLOPES; MARTIN SILTY CLAY LOAM, 3 TO 7% SLOPES; OSKA SILTY CLAY LOAM, 3 TO 6% SLOPES; VINLAND COMPLEX, 3 TO 7% SLOPES; VINLAND-MARTIN COMPLEX, 7 TO 15% SLOPES
10. PROPOSED UTILITY LOCATIONS AND SIZES ARE PRELIMINARY AND WILL BE FINALIZED AT THE TIME OF SITE ENGINEERING.
11. THIS SITE IS DESIGNATED LOW-DENSITY RESIDENTIAL IN HORIZON 2020, DATED 7/1/11, AND THE WEST OF K-10 PLAN, DATED 1/7/08.
12. A WATER MAIN LOOP AND ASSOCIATED UTILITY EASEMENT IS TENTATIVELY LOCATED ACROSS LOT 1, BLOCK ONE. THE FINAL LOCATION OF THE WATER MAIN AND DEDICATION OF THE ASSOCIATED EASEMENT SHALL BE DETERMINED AT THE TIME OF SITE PLAN REVIEW FOR THE PROPOSED MULTI-FAMILY DEVELOPMENT.
13. LANDSCAPING SHALL NOT BE PLACED WITHIN UTILITY EASEMENTS, WITHIN 8 FEET OF THE WATER MAIN, OR WITHIN 8 FEET OF THE SANITARY SEWER MAIN.
14. UTILITIES WILL BE UNDERGROUND PER SEC. 20-809 (f)(4)(iv).
15. A PLANNING COMMISSION VARIANCE IS REQUESTED FROM THE REQUIREMENT IN SECTION 20-811(c) OF THE SUBDIVISION REGULATIONS SO AS TO PERMIT SIDEWALKS ON ONLY ONE SIDE OF CRYSTAL LANE AND PALISADES DRIVE.
16. A PEDESTRIAN CONNECTION AND ASSOCIATED PUBLIC ACCESS EASEMENT IS TENTATIVELY LOCATED ACROSS LOT 1, BLOCK ONE IN ACCORDANCE WITH SECTIONS 20-810(d)(2)(i)(a) and 20-810(h)(1) OF THE SUBDIVISION REGULATIONS. THE FINAL LOCATION OF THE CONNECTION AND DEDICATION OF THE ASSOCIATED EASEMENT SHALL BE DETERMINED AT THE TIME OF SITE PLAN REVIEW FOR THE PROPOSED MULTI-FAMILY DEVELOPMENT.
17. LOTS DEVELOPED WITHIN THE SLT/K10-TC SHALL BE DESIGNED TO COMPLY WITH THE MINIMUM DESIGN STANDARDS OF SECTION 20-307(c)(1).
18. BUILDING PERMITS FOR STRUCTURES IN LOT 1, BLOCK ONE WILL NOT BE MADE AVAILABLE UNTIL SUCH TIME THAT RENAISSANCE DRIVE IS CONSTRUCTED AND COMPLETE SOUTH TO BOB BILLINGS PARKWAY.

LEGEND:

- EXISTING WATER LINE
- PROPOSED WATER LINE
- EXISTING SANITARY SEWER
- PROPOSED SANITARY SEWER
- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- FENCE LINE
- BUILDING SETBACK LINE
- UNDERGROUND ELECTRIC LINE
- OVERHEAD WIRE
- EXISTING WATER BLOWOFF
- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- PROPOSED FIRE HYDRANT
- EXISTING MANHOLE
- EXISTING SANITARY SEWER MANHOLE
- PROPOSED SANITARY SEWER MANHOLE
- EXISTING STORM SEWER MANHOLE
- PROPOSED STORM SEWER MANHOLE
- PROPOSED STORM SEWER END SECTION
- EXISTING IRON BAR
- BENCHMARK
- ELECTRIC BOX
- GUY ANCHOR
- SIGN
- SECTION CORNER

BENCHMARKS:

BENCHMARK 1: CHISELED SQUARE ON BACK OF CURB NORTH SIDE OF CRYSTAL LANE 50' +/- EAST OF EXISTING CURB (MIDDLE OF LOT 15, BLOCK ONE DIAMONDHEAD SUBDIVISION)
ELEV: 1023.18

BENCHMARK 2: CHISELED SQUARE ON BACK OF CURB SOUTH OF COMMON LINE OF LOTS 17 AN D18, BLOCK TWO DIAMONDHEAD SUBDIVISION
ELEV: 996.78

SITE SUMMARY:

GROSS AREA:	1,200,694 SF / 27.564 AC
RIGHTS-OF-WAY:	258,286 SF / 5.929 AC
TRACTS:	4,742 SF / 0.109 AC
NET AREA:	937,666 SF / 21.526 AC
TOTAL LOTS:	70
AVERAGE LOT SIZE:	13,395 SF / 0.308 AC

BLOCK ONE

NET AREA:	242,521 SF / 5.568 AC
TOTAL LOTS:	1
AVERAGE LOT AREA:	242,521 SF / 5.568 AC
MINIMUM LOT AREA:	242,521 SF / 5.568 AC
MAXIMUM LOT AREA:	242,521 SF / 5.568 AC

BLOCK TWO

NET AREA:	126,732 SF / 2.909 AC
TOTAL LOTS:	15
AVERAGE LOT AREA:	8,449 SF / 0.194 AC
MINIMUM LOT AREA:	5,521 SF / 0.127 AC
MAXIMUM LOT AREA:	18,409 SF / 0.423 AC

BLOCK THREE

NET AREA:	269,703 SF / 6.192 AC
TOTAL LOTS:	26
AVERAGE LOT AREA:	10,373 SF / 0.238 AC
MINIMUM LOT AREA:	5,736 SF / 0.132 AC
MAXIMUM LOT AREA:	19,312 SF / 0.443 AC

BLOCK FOUR

NET AREA:	212,995 SF / 4.890 AC
TOTAL LOTS:	19
AVERAGE LOT AREA:	11,210 SF / 0.257 AC
MINIMUM LOT AREA:	5,713 SF / 0.131 AC
MAXIMUM LOT AREA:	20,191 SF / 0.464 AC

BLOCK FIVE

NET AREA:	10,800 SF / 0.248 AC
TOTAL LOTS:	1
AVERAGE LOT AREA:	10,800 SF / 0.248 AC
MINIMUM LOT AREA:	10,800 SF / 0.248 AC
MAXIMUM LOT AREA:	10,800 SF / 0.248 AC

BLOCK SIX

NET AREA:	74,915 SF / 1.720 AC
TOTAL LOTS:	8
AVERAGE LOT AREA:	9,364 SF / 0.215 AC
MINIMUM LOT AREA:	8,880 SF / 0.204 AC
MAXIMUM LOT AREA:	10,835 SF / 0.249 AC

ZONING SUMMARY:

RS7

GROSS AREA:	361,588 SF / 8.301 AC
RIGHTS-OF-WAY:	93,739 SF / 2.152 AC
TRACTS:	4,742 SF / 0.109 AC
NET AREA:	263,107 SF / 6.040 AC
TOTAL LOTS:	26
AVERAGE LOT AREA:	10,120 SF / 0.232 AC
MINIMUM LOT AREA:	8,880 SF / 0.204 AC
MAXIMUM LOT AREA:	18,409 SF / 0.423 AC
TOTAL UNITS:	26
UNIT DENSITY:	4.305 UNITS/AC

RS5

GROSS AREA:	204,778 SF / 4.701 AC
RIGHTS-OF-WAY:	41,268 SF / 0.947 AC
NET AREA:	163,510 SF / 3.754 AC
TOTAL LOTS:	26
AVERAGE LOT AREA:	6,289 SF / 0.144 AC
MINIMUM LOT AREA:	5,521 SF / 0.127 AC
MAXIMUM LOT AREA:	13,554 SF / 0.311 AC
TOTAL UNITS:	26
UNIT DENSITY:	6.926 UNITS/AC

RM12D

GROSS AREA:	199,594 SF / 4.582 AC
RIGHTS-OF-WAY:	31,505 SF / 0.723 AC
NET AREA:	168,089 SF / 3.859 AC
TOTAL LOTS:	11
AVERAGE LOT AREA:	15,281 SF / 0.351 AC
MINIMUM LOT AREA:	10,982 SF / 0.252 AC
MAXIMUM LOT AREA:	20,191 SF / 0.464 AC
TOTAL UNITS:	22
UNIT DENSITY:	5.701 UNITS/AC

RM12

GROSS AREA:	434,735 SF / 9.980 AC
RIGHTS-OF-WAY:	91,774 SF / 2.107 AC
NET AREA:	342,961 SF / 7.873 AC
TOTAL LOTS:	7
AVERAGE LOT AREA:	48,994 SF / 1.125 AC
MINIMUM LOT AREA:	16,740 SF / 0.384 AC
MAXIMUM LOT AREA:	242,521 SF / 5.568 AC
TOTAL UNITS:	86
UNIT DENSITY:	10.923 UNITS/AC

GROSS SUBDIVISION UNIT DENSITY = 160 UNITS / 27.564 AC = 5.805 UNITS/AC

PROVISION AND FINANCING OF ROADS, SEWER AND OTHER PUBLIC SERVICES:

1. THE SUBDIVISION WILL INCLUDE THE DEDICATION OF RIGHTS-OF-WAY ASSOCIATED WITH ALL INTERNAL ROADS SHOWN.
2. THE SUBDIVISION WILL PROVIDE CONNECTIONS TO THE CITY OF LAWRENCE WATER SYSTEM VIA TWO EXISTING 8-INCH LINES: ONE ON THE SOUTH SIDE OF PALISADES DRIVE, AND A SECOND ON SOUTH SIDE OF CRYSTAL LANE, BOTH TO THE EAST OF THE SUBJECT PROPERTY.
3. THE SUBDIVISION WILL PROVIDE CONNECTIONS TO THE CITY OF LAWRENCE SANITARY SEWER SYSTEM VIA TWO EXISTING 8-INCH MAINS: ONE THAT RUNS SOUTH BETWEEN MANHOLES NW3212219-010 AND NW3212219-003 AND LIES ADJACENT TO THE SUBJECT PROPERTY'S EAST BOUNDARY IN A 15-FOOT UTILITY EASEMENT; AND A SECOND THAT RUNS SOUTHWEST ORIGINATING AT MANHOLE SW3212219-015 LOCATED WEST OF THE EXISTING BOB BILLINGS PARKWAY TERMINUS.
4. PURCHASERS OF THE LOT IN THE SUBDIVISION MAY OR MAY NOT BE SUBJECT TO SPECIAL ASSESSMENTS OR OTHER COSTS OF STREETS, ROADS, WATER LINES AND TREATMENT, AND/OR WASTEWATER LINES AND TREATMENT.
5. THE PROVISION OF IMPROVED ROADS, WATER SERVICE AND/OR WASTEWATER SERVICE WILL NOT DEPEND IN ANY WAY ON A VOTE, PETITION OR OTHER COLLECTIVE ACTION OF PROPERTY OWNERS IN THE SUBDIVISION.

Civil Engineering
Landscape Architecture
Community Planning
Surveying

Landplan Engineering, P.A.
Lawrence, KS • Kansas City, MO • Columbia, OH
The Woodlands, TX • Farmington Hills, MI

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Web: www.landplan-pa.com

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PRELIMINARY PLAT OF LANGSTON HEIGHTS ADDITION CITY OF LAWRENCE DOUGLAS COUNTY, KANSAS

REV	DATE	DESCRIPTION
1	11/14/12	PER DEPT. COMMENTS
2	11/29/12	ZONING BNDARIES
3	1/14/13	PER NEIGHBOR INPUT

DATE:	10/08/12
PROJECT NO.:	20121218
DESIGNED BY:	LPE/TAH
DRAWN BY:	BS
CHECKED BY:	CMS

ISSUE	SHEET NO.
	1
	OF 1 SHEETS

FILE NAME: Q:\20121218\CAD\Planning\PP\121218C-PP.dwg LAST SAVED BY: Brian Sturm SAVED DATE: 1/14/2013 8:37 AM PLOTTED: 1/14/2013 10:29 AM

250 125 0 250 500 750 1,000 Feet

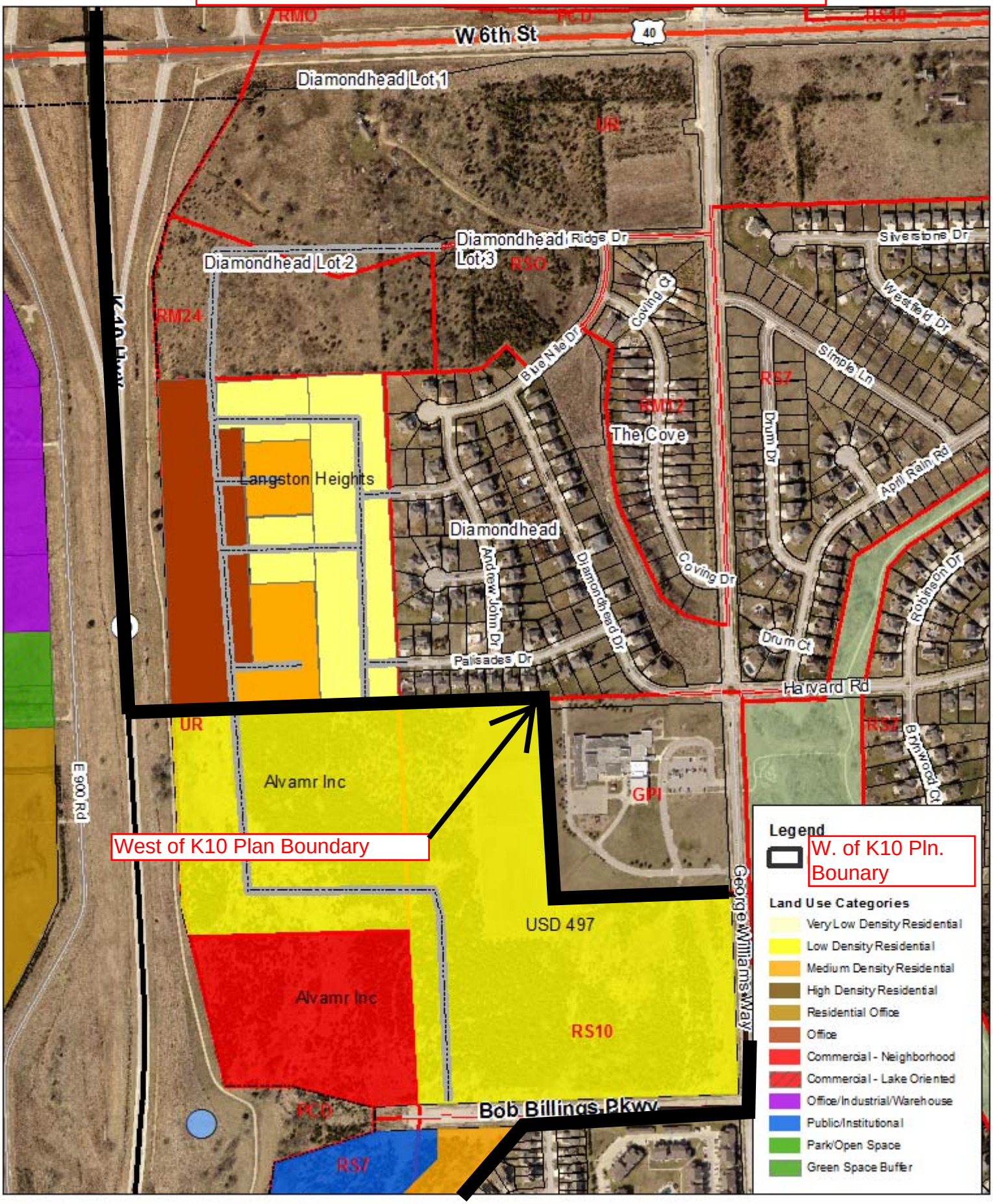
1 inch = 500 feet

DISCLAIMER NOTICE

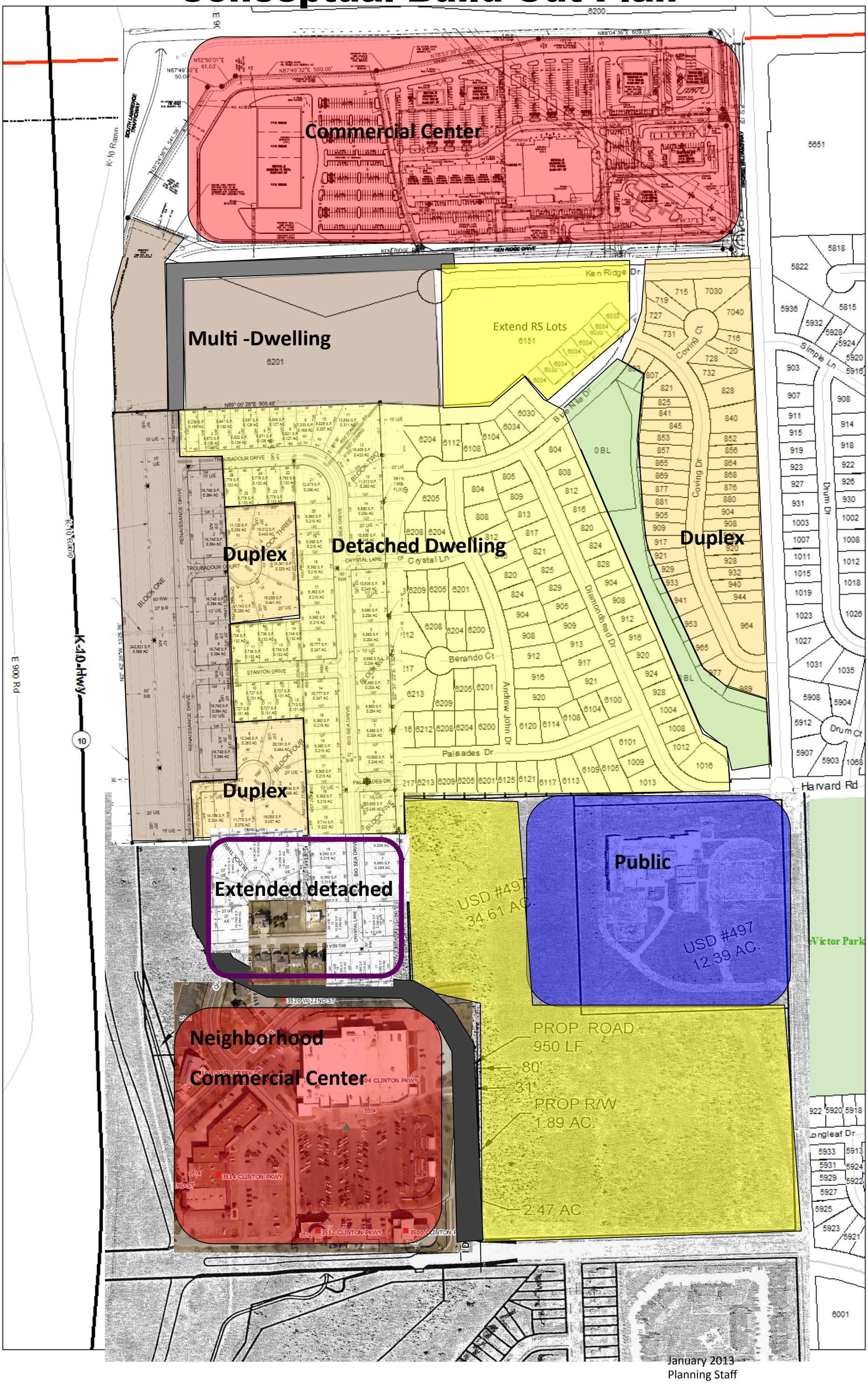
The map is provided "as is" without warranty or any representation of accuracy, timeliness or completeness. The burden for determining accuracy, completeness, timeliness, merchantability and fitness for or the appropriateness for use rests solely on the requester. The City of Lawrence makes no warranties, express or implied, as to the use of the map. There are no implied warranties of merchantability or fitness for a particular purpose. The requester acknowledges and accepts the limitations of the map, including the fact that the map is dynamic and is in a constant state of maintenance, correction and update.

Date: 1/18/2013

Proposed Land Uses and West of K10 Planning Area



Conceptual Build Out Plan



January 2013
Planning Staff

RECEIVED
JAN 28 2013
City County Planning Office
Lawrence, Kansas

LEAGUE OF WOMEN VOTERS®
OF LAWRENCE/DOUGLAS COUNTY

January 27, 2013

President
Melinda Henderson

President-Elect
David Burress

Vice President
Milton Scott

Secretary
Caleb Morse

Treasurer
Marjorie Cole

Directors
Margaret Arnold
Bonnie Dunham
James Dunn
Sally Hayden
Cille King
Ruth Lichtwardt
Marlene Merrill

Mr. Bruce Liese, Chairman
Members
Lawrence-Douglas County Metropolitan Planning Commission
City Hall
Lawrence, KS 66044

RE: ITEM NO. 3: PRELIMINARY PLAT AND REZONINGS FOR LANGSTON HEIGHTS ADDITION: E SIDE OF K-10 AND S OF W 6TH ST. (SLD)

Dear Chairman Liese and Planning Commissioners:

After studying the new Preliminary Plat and proposed rezonings for Langston Heights, we hope you will consider our original thoughts on this issue again. For your convenience, we have attached our original letter to you.

We do acknowledge that the issue of traffic from the multiple family development on Block One, Lot One has been alleviated to an extent. The restriction on Block One, Lot One development, until the connection to Bob Billings Parkway is opened, will help. This is the most intensive multiple family area. However, this issue still remains for traffic headed east and north from Block One, Lot One.

Also, the lack of predictability in the development of our neighborhoods is still a major problem in Lawrence. This is caused, among other reasons, by designations in our Comprehensive Plan of density only in the Area Plans coupled with the lack of definition of housing type in our multiple family districts. We describe this better in our attached letter.

We hope that you will consider our comments again because we believe they continue to apply here. Thank you.

Sincerely yours,

David Burress
President-Elect

Alan Black, Chairman
Land Use Committee

Attachment

PO BOX 1072 • LAWRENCE KS 66044-1072
league@sunflower.com • www.lawrenceleague.com
www.facebook.com/lwvldc • www.twitter.com/lwvldc

ATTACHMENT

LEAGUE OF WOMEN VOTERS®
OF LAWRENCE/DOUGLAS COUNTY

RECEIVED
DEC 19 2012
City County Planning Office
Lawrence, Kansas

December 10, 2012

To: Lawrence/Douglas County Planning Commission:

Re: Langston Heights, Items 5A, 5B, 5D

President
Melinda Henderson

President-Elect
David Burress

Vice President
Milton Scott

Secretary
Caleb Morse

Treasurer
Marjorie Cole

Directors

Margaret Arnold

Bonnie Dunham

James Dunn

Sally Hayden

Cille King

Ruth Lichtwardt

Marlene Merrill

The League of Women Voters of Lawrence/Douglas County has strong positions on neighborhood planning. We believe that "the primary urban planning unit should be the neighborhood, large enough to support the location of a nursery-elementary school, park...and should reduce to a minimum the use of the private car within each neighborhood." Therefore, we are concerned about the proposal for the multiple family lot configurations of the Langston Heights Addition and their proposed rezoning to RM districts.

We strongly support designing neighborhoods with housing types suited to families with children that are close to elementary schools with pedestrian ways designed for safe walking, and believe that it is very poor planning to locate multiple family housing that is not appropriately designed for this near our schools. Multiple family housing types can be designed for families with children, but must have the needed amenities such as privacy, open space and other facilities to make such units attractive for family life, which this proposed development does not have. Additionally, we support staff's recommendation to deny the applicant's request for a variance to allow sidewalks on only one side of streets.

Because of the effect this multiple family housing would have on the future development of the adjacent vacant land to the south of this tract, it can be predicted that this land also would become multiple family and not attractive for families with children. Because of the proximity that these two tracts have to Langston Hughes Elementary School, we believe that this would be very poor urban planning and a serious waste of potential that these two properties would have to reduce automobile use and utilize these valuable areas for encouraging families to live within walking distance to the school.

We believe that the reason that this type of poor urban planning is not uncommon in Lawrence is because of some serious deficiencies in our Land Development Code and how it leads to the interpretation of *Horizon 2020*:

- The multiple family districts do not specify housing type.
- The only distinction in our Comprehensive Plan (CP) in the designation of residential areas is based on density. Because of the long-standing interpretation of our CP, it is possible to allow all types of multiple family units from tall apartments to duplexes to achieve the gross densities that are typical for detached single family housing. Therefore, the density designation in our CP is not an appropriate prediction of use.
- The CP does not include the same goal that *Plan '95* did, which emphasized that development should be designed for the ultimate user and not to satisfy only the needs of the developer.

These factors eliminate the essential predictability that homeowners need to be able to have confidence in the stability and future of their neighborhoods when they make the substantial investment for living in a community. It tends to reduce the trust needed for a growing and thriving city to attract new residents. We ask that you take these factors into consideration when making your decision on this rezoning request. The future of our city depends on good urban planning. We would look forward to a discussion about making the necessary changes to our Land Development Code and *Horizon 2020* to create the predictability in our neighborhoods that we need.

Thank you for your consideration of these issues.

Melinda Henderson
President

Alan Black, Chair
Land Use Committee

PO BOX 1072 • LAWRENCE KS 66044-1072
league@sunflower.com • www.lawrenceleague.com
www.facebook.com/lwvldc • www.twitter.com/lwvldc

From: Andrew Pitts [mailto:APitts@TreanorArchitects.com]
Sent: Friday, January 25, 2013 8:29 AM
To: Brian Sturm
Cc: Christopher Storm; phils@LANDPLAN-PA.COM; bobdennsan@gmail.com; douglas.raney@gmail.com; timaherndon@att.net; Sandra Day
Subject: RE: Langston Heights Addition - revised Concept Plan

Brian-

Thank you for the revised concept. As I mentioned, we have been circulating the revision throughout the neighborhood. We had hoped this type of dialogue could have happened prior to our last meeting, but appreciate the developer continuing to review and refine the concept.

Honestly, the change still causes great discomfort amongst most of the neighborhood. One of the biggest issues still is the density. While there was a change from duplexes to the RS-5, this is an undesirable zoning adjacent to the RS-7. This will not change density (as is indicated in the staff report) and will lower the property values of the area. The type of home built in RS-5, regardless that it is a single-family detached home, will be long and narrow and out of context and scale with the balance of the neighborhood.

Another issue continues to be the four-plex development. These are extremely undesirable.

While I have only spoken to a few and do not know how well this would be received, I would offer the following ideas for your consideration:

1. In lieu of the RS-5, continue the RS-7 zoning down both Troubadour Drive and Stanton Drive to Renaissance Drive. This would be similar to the plan, but would remove the four-plexes at the end of those roads.

2. The other idea would be to continue the duplexes on both Troubadour Ct and Stanton Ct. to Renaissance Drive. This would remove the four-plexes and have each of these cul-de-sacs being only duplexes.

3. The street network and row-housing would remain as designed.

I believe these types of changes could find favor among some in the neighborhood. These changes, coupled with your agreement to not build the multi-family until the completion of Renaissance Drive could be very positive. Again, these are my ideas in an effort to continue the dialogue and try to move this project forward and not a denial. I cannot guarantee if any other neighbors would agree, but think this could bring a positive response.

Please consider these ideas and let me know if you have any questions.

Thanks,

Andy Pitts

From: Andrew Pitts [mailto:APitts@TreanorArchitects.com]
Sent: Wednesday, January 23, 2013 9:44 AM
To: Brian Sturm
Cc: Christopher Storm; phils@LANDPLAN-PA.COM; bobdennsan@gmail.com; douglas.raney@gmail.com; timaherndon@att.net; Sandra Day
Subject: RE: Langston Heights Addition - revised Concept Plan

Thank you. We have been circulating and trying to gather our comments.

Andrew Pitts

From: Brian Sturm [mailto:brians@LANDPLAN-PA.COM]
Sent: Monday, January 21, 2013 1:15 PM
To: Andrew Pitts
Cc: Christopher Storm; phils@LANDPLAN-PA.COM; bobdennsan@gmail.com; douglas.raney@gmail.com; timaherndon@att.net; sday@lawrenceks.org
Subject: Langston Heights Addition - revised Concept Plan

Andy,
As a follow-up to our last meeting on Thursday, 1/10/13, please find attached an electronic copy of the revised Concept Plan for Langston Heights Addition. Last week, Landplan submitted to the City a revised Preliminary Plat and zoning district boundaries based upon this concept. Most all of the features shown in the plan discussed at our meeting on the 10th remain as components in this concept:

- An overall reduction in units (160 down from 165)
- Phasing that prohibits the construction of the 62-unit row home community until Renaissance Drive is constructed and complete south to Bob Billings Parkway.
- A street layout that promotes traffic calming and minimizes interaction between traffic generated by the single-family and multi-family components of the project.

The developer chose to make one additional change following our meeting: replacement of 26 duplex units with 23 single-family units adjacent to Stanton Drive and Troubadour Drive. The comment issued by you and your neighbors that the concept easily allowed for the extension of the single-family component down these two streets spoke loudly to us. Ultimately the developer sees great merit in using a single-family detached product to define the look of the eastern half of the neighborhood while transitioning to the SLT with a spectrum of multi-family products. I hope that the residents of the Diamondhead neighborhood also see this change as an improvement.

In regards to the traffic generated by this new concept, I have prepared below a table that breaks down the trips generated by the Langston Heights development per street. This table examines each of the proposed plats for this project (the one approved in 2006, the one submitted last October, as well as this latest revision) and then based on our trip distribution model assigns the number of trips that would travel down each of the three access streets (Crystal Lane, Palisades Drive and Renaissance Drive) during the critical peak period (afternoon peak-hour on a typical weekday).

Street	**2006 Plat**	**2012 Plat**	**2013 Plat, Phase 1**	**2013 Plat, Phase 2**
Crystal Ln.	45 (45%)	60 (45%)	41 (45%)	62(45%)
Palisades Dr.	56 (55%)	74 (55%)	51 (55%)	30 (22%)
Renaissance Dr.	N/A	N/A	N/A	45 (33%)
Total Trips	**101 (100%)**	**134 (100%)**	**92 (100%)**	**137 (100%)**

I will say a few things about the information in this table:

- The phasing built into this latest Concept Plan ensures that the volume of Langston Heights traffic cutting through the Diamondhead neighborhood will remain below the levels exhibited with the plat approved in 2006 (92 down from 101).

- The total volume of trips generated by this latest Concept Plan is higher than that associated with the plat submitted last October (137 up from 134). This slight uptick is due to the proposed increase in single-family units (52 up from 29) and decrease in multi-family units (108 down from 136).
- Let me know if you would like to review a copy of the full addendum to the Traffic Impact Study that Landplan submitted to the City.

The Planning Commission will resume their consideration of the Preliminary Plat and rezoning requests at their meeting next Monday, the 28th. Don't hesitate to let me know if you or your neighbors have any questions or comments concerning the above information. Your efforts, thus far to continue the dialogue associated with this development, have helped produce a stronger design.
Thanks,

Brian Sturm, RLA, ASLA, LEED AP
Project Landscape Architect
Licensed in KS

Landplan Engineering, P.A.
1310 Wakarusa Drive
Lawrence, Kansas 66049
v. 785.843.7530
f. 785.843.2410

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Lawrence Public Schools
110 McDonald Drive
Lawrence, Kansas 66044-1063
Telephone: (785) 832-5000

LAWRENCE
PUBLIC SCHOOLS

January 16, 2013

Lawrence-Douglas County Planning Commission
ATT: Bruce Liese, Chair
City Hall, 6 East 6th Street
Lawrence, KS 66044

RE: Langston Heights Rezoning Applications
Z-12-0029, Z-12-00231 and Z-12-00232

Dear Planning Commissioners:

Unified School District No. 497 traditionally does not take positions on neighborhood developments. The school district is here to serve all children attending public schools and has no position regarding the merits of the proposed development or any other development. With that said, Principal Jackie Mickel has expressed concerns about a potential traffic increase near Langston Hughes Elementary School at the intersection of Harvard Road and George Williams Way.

Please be advised that the applicant's revised proposal is a reasonable attempt to remedy those traffic concerns. The connection of Renaissance Drive to Bob Billings Parkway is viewed as an ideal solution to presently existing traffic issues in and around Langston Hughes Elementary School. The district is discussing opportunities to create another entrance/exit using Renaissance Drive. We are appreciative of the input from all concerned stakeholders, as it appears to have resulted in meaningful progress on those subjects.

Sincerely,

Dr. Rick Doll
Superintendent of Schools

Lawrence Douglas County Planning Commissionors January 19, 2013
Bruce Liese, Chair
Scott McCullough, Director Planning and Development Services
Sandra Day, Current Planner

The Diamondhead Neighborhood, the neighborhood, is writing to request that the Lawrence Douglas County Planning Commission deny RSR Development, LLC, the developer, a request to re-zone Langston Heights Development during the upcoming January 28 meeting. The neighborhood feels the plat changes offered thus far by the developer are not dramatic enough to warrant acceptance by the neighborhood. We received the plan attached, LangstonHeights2.pdf on January 10. This is the result following a meeting on December 20. At the meeting on the 20th we discussed opportunities the neighborhood felt would make for a viable solution and at this time we do not feel we are seeing enough change in the attached plan.

We appreciate the opportunity awarded us by the planning commission to be a part of this process, but we feel the developer has not met specific needs: A need for reduction in density, a focus on traffic issues, and improvement to the overall character of the neighborhood.

We share Commissioner Lamer and Blaser's concern during the December 10 planning commission meeting that RM12 and RM12D do not constitute single family zoning within Langston Heights. We agree that the type of zoning within Langston Heights will effect the future development of land to the south, which will have a bearing on the overall character of the entire neighborhood. Horizon 2020 calls for expectations to be set for neighborhoods. Our neighborhood had the expectations established in the 2006 plat, which called for single-family homes with a small concentration of duplex units. Keeping in mind that the planning commission also predicts single-family housing to be developed in the land to the south, the expectation is there for Langston Heights to be developed as a single-family development. Commissioner Josserand also expressed concern for the amount of multifamily dwellings planned for Langston Heights. During a December 20 meeting at Landplan Engineering, Inc. we shared similar concerns with the developer, but we do not see our concerns reflected in the revised plat LangstonHeights2.pdf.

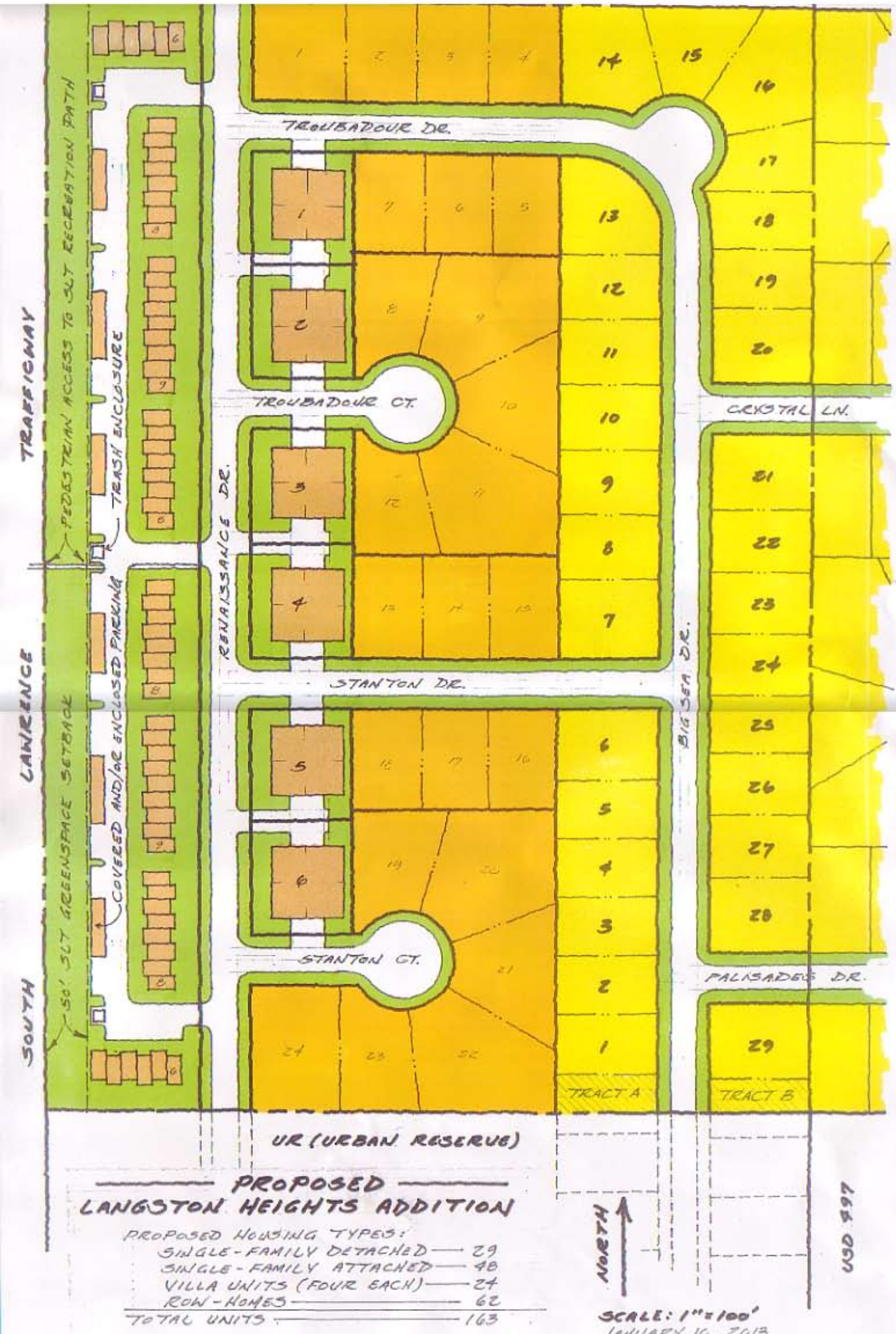
We also agree with Commissioners Josserand and Britten that high density traffic flowing into single family residence through Crystal Lane and Palisades Drive is a large problem. Without Renaissance Drive effectively connecting to 6th street and Bob Billings Drive, a traffic pattern through the existing neighborhood will establish. This traffic pattern has the potential to create unnecessary traffic that would not exist if Renaissance Drive were established at the beginning of the project.

As to the overall character, our neighborhood agrees with Commissioner Liese that this development should not be treated as an experiment. The concept of placing high-density housing flowing into single family residence remains in the revised plan for Langston Heights. A concept that is not seen anywhere else in Lawrence. Reconfiguration of roads was added to the revised plot, but the amount of high density still remains and although the overall average across the entire plat remains at 6 units per acre, the fact remains that the amount of high and medium density has not reduced.

Our neighborhood agrees with Commissioner Blaser that we are not giving respect to the land south of Langston Heights. The location of Reniasance Drive south and the decision on what is built in Langston Heights will effect the types of building planned for the land to the south, therefore setting the stage for the overall character of a high density neighborhood, which is not the expectation of the neighborhood, the West Lawrence Neighborhood Association, Horizon 2020 or the understanding of the Planning Commission members as stated during the December 10 meeting.

There is no reason why land east of K-10, south of 6th street and north of Bob Billings cannot receive the same level of respect as the design offered within the West of K-10 Plan. With new developments to Rock Chalk Park to the north of 6th street and George Williams Way and recent developments to acquire land to the south of Langston Heights by the developer, we feel it is time to create an East of K-10 comprehensive Plan. Therefore we respectively ask that you deny RSR Development, LLC the request to re-zone Langston Heights with the current plan LangsonHeights2.pdf.

Diamondhead Neighborhood



PROPOSED
LANGSTON HEIGHTS ADDITION

PROPOSED HOUSING TYPES:

SINGLE-FAMILY DETACHED	29
SINGLE-FAMILY ATTACHED	48
VILLA UNITS (FOUR EACH)	24
ROW-HOMES	62
TOTAL UNITS	163

SCALE: 1" = 100'
JANUARY 10, 2013

Sandra Day, AICP City/County Planner, City of Lawrence

RE: Landplan Engineering Informational Session December 3, 2012 Langston Heights Development

We are writing to ask you to consider deferring the rezoning of Langston Heights (Parcel west and south of Diamondhead) from UR to RM12 and RM12D in order to provide for a more agreeable development. The increase in traffic, decreased in property values and changes to the original 2006 plat are issues that need to be addressed.

The new plan proposal is to build a total of 165 housing units on 61 lots. With only 2 streets (Crystal Lane and Palisades Drive) servicing current and additional units, traffic will be heavier than originally planned for these two streets. This plan shows this with the numerous traffic calming devices located on the expanded Crystal Lane. Crystal Lane and Palisades were originally developed as a lead in to other single family housing, not medium density apartments. Typically, medium density housing is at the front of subdivisions, leading farther in to low density housing, this proposal is the exact opposite of that. Palisades already has issues on school days due to drop off and pick up from Langston Hughes Elementary School; it can't handle the additional traffic flow. Even when the future "proposed" access to 15th street and George Williams Way get added, traffic from this development will still be pushed through low density housing in nearly every direction. The Horizon 2020 plan specifically discourages this action with numerous aspects outlined in the bottom of this letter.

Should this plan be approved, due to the direct impact of the medium density housing, property values in the Diamondhead subdivision will decrease. When we bought our home back in 2007, we knew additional low density housing would soon follow to our west. This was based on the Planning Commission approval in January 2006 of single family homes in the Langston Heights area. We never would have bought our new home in this location had we known apartments and duplexes were to be built, and future potential home owners will feel the same way. We all based our decisions off this approved 2006 zoned plat for single family homes.

As you will see at the December 10th meeting, the Diamondhead subdivision is a unique neighborhood with a large population of kids. Traditions such as our July 4th parade, Easter egg hunts, neighborhood cookouts, and the general family feel among neighbors will be lost if this proposal passes.

Please see to it that this proposal does not go any further without modifications. We are not against the expansion of our subdivision to the west, we are against the medium density zoning; we would happily approve of low density zoning, which would expand on this great neighborhood.

Thank you for your time.

Sincerely,

Brian and Jennifer McCall

6201 Berando Court

Horizon 2020 Plan that relate to this proposal: Low-Density Residential Land Use

GOAL 3: Neighborhood Conservation (page 5-15, 5-16) Policy 3.3: Encourage Compatible infill Development Policy 3.4: Minimize Traffic Impact through Neighborhoods GOAL 4: Criteria for location of Low-Density Residential Development (page 5-17) Policy 4.2: Protect Areas Planned for Low-Density Development GOAL 5: Create a Functional and Aesthetic Living Environment (page 5-19, 5-20) Policy 5.5: Ensure Convenient and Logical Street/Road System Design

Medium and higher Density Residential Land use

GOAL 1: Criteria for Location of Medium and Higher Density Residential

Development

Policy 1.3: Identify Suitable Sites (page 5-23)□Policy 1.5: Ensure Adequate Infrastructure (page 5-24)□Policy 1.6: Consider Access (page 5-24)□Policy 1.7: Adhere to Designated Land Uses (page 5-24) GOAL 2:

Create a Functional and Aesthetic Living Environment Policy 2.6: Consider Residential Density and Intensity of Use (page 5-26) GOAL 4: Transportation Considerations (page 5-30, 5-31) ALL OF THEM

November 28, 2012

Sandra Day, AICP City/County Planner, City of Lawrence

RE: Landplan Engineering Informational Session December 3, 2012
Langston Heights Development

As a member of the Diamonhead subdivision (6th and George Williams Way), I and over 50 households in our neighborhood are concerned by the recent application to change the Langston Heights development. When our family purchased into our neighborhood our builder, Neal Ezel, told us the design of the subdivision to the west would be low-density housing similar to ours. I want to thank the Lawrence Planning Department for their hard work in developing our neighborhoods and their insightful design of planned unit developments. So I hope you will understand my concerns for changes in the current plan.

The 270% increase in family units to the new Langston Heights subdivision creates an increase in pressure on property values, traffic, children's safety and schools in our neighborhood. see below*

The Lawrence Planning Department has laid out a solid plan for adding a single-family Langston Heights Subdivision into the existing Diamondhead Subdivision creating a flow of single family homes into an existing single family neighborhood. The addition of high-density development causes high density traffic to flow into the existing low-density neighborhood. The Lawrence Planning Department exercises good design in neighborhoods that include high-density developments close to main arteries to the city and single family low-density located on the interior of a development. The revisions to Langston Heights do not show good design.

It is with great concern for our young children, our property values and the quality of our neighborhood that we ask you to defer from the revisions to Langston Heights Development.

Sheri and Mark Crabtree
820 Andrew John Drive

*Using the "Preliminary Plat Langston Heights" and the "Concept Plan Langston Heights" document, a summary of the change in units follows:

Number of Lots Block	Preliminary	Concept	
1	1	62	
2	21	36	
3	24	48	
4	4	8	
5	3	3	
6	8	8	
	61	165	270.49% increase

December 03, 2012

Ms. Day,

I'd like to take the opportunity to express my concerns about the proposed rezoning of the Langston Heights area in West Lawrence. My chief concern with the rezoning of the area is the multi-family units that are proposed at the site.

My family currently resides at 6201 Crystal Lane which is in the Diamondhead Subdivision. We have lived at this location for nearly two years and have thoroughly enjoyed the quality of life in our home. After much domestic debate we chose this location to build our new home based on a variety of different factors. First, the neighborhood is in a very close proximity to Langston Hughes School where our children would be afforded the opportunity to walk safely to school on a daily basis. Second, we researched the original platting of the area west of our home and it was all originally platted and zoned for what we thought was low-density residential dwellings. Finally and most importantly, the character and makeup of the neighborhood itself drew us to this area. As soon as we selected our site we were invited and included in neighborhood picnics, parades, parties and Easter-egg hunts. Our children routinely play with other neighborhood children in the area and are constantly riding bicycles and crossing streets in the neighborhood.

I feel the rezoning of this area to include multi-family living will dramatically increase the amount of through traffic flow through our neighborhood streets. The main traffic flow of these 165 units will run past many residences and sidewalks that children utilize on a daily basis. I don't believe rezoning this area would contribute to the greater good of the area or the community. I would strongly disagree with anyone who believed otherwise.

I'd like to comment on a couple of points:

First, when the area was rezoned from Agriculture District (A) to Duplex – Residential District (RM-D) in 2005 there was concern expressed from Planning Commissioner Haase that he would support the motion but was "losing his appetite for RM-D zoning because it had been abused in other parts of the community." Was Commissioner Haase a visionary as to what was on the horizon for this area with his comments? I would agree with Commissioner Haase that the placement of muti-dwelling living with the only means of access through a residential neighborhood is an abuse of what those neighborhoods are designed to provide. The traffic that will come with the rezoning will diminish the quality of life and safety of those in our neighborhood. In that very same planning meeting in 2005, Betty Lichtwardt with the League of Women Voters expressed her concern for pedestrian access to the school. I feel her concerns voiced in 2005 echo loudly today.

Second, I do not feel that rezoning an area to include 165 multi-family units with the only access being residential, neighborhood streets is a common practice in the city. With the current proposed plan of the area, the only access to these units would be on Palisades Drive or Crystal Lane. The precedent of

accessing multi-family units through established residential neighborhoods is not one I am aware of at any other area of the city. Generally, it is my understanding that higher density zoned areas would be zoned close to larger artery and collector streets. This planned area would be close to neither. This plan would also direct this traffic through a residential area that is frequented by our children whom walk to school daily.

Finally, I struggle with the necessity for the re-zoning of areas in Lawrence to multi-family if there are any concerns on what effects it may have on the surrounding residents and neighborhoods. A recent article in the Journal-World noted a developer whom recently pulled plans to construct an apartment complex off of 31st Street. The developer was quoted "We were very excited about that market at one time, but we have tempered that excitement." According to this developer, there is capacity in the muli-family living market in city. Why would it be in the best interest of city to re-zone the area where is could have an adverse affect on an already thriving neighborhood community? I unwaveringly feel this development would have an adverse affect on the neighborhood in which we reside.

I want to be clear that I understand the importance of thoughtful expansion and development of neighborhoods in our community. I however believe that multi-family living units should be concentrated in areas that are easily accessible to major thoroughfares. Rezoning this area would accomplish just the opposite. The amount of traffic this action will generate would be a danger to the residents and children of our neighborhood.

I do appreciate the opportunity to comment on this issue. I would ask that you please include these comments for the Planning Commission to review. Thank You for your time.

Sincerely,

Ryan, Tiffany, Lillian and Jackson Fike

6201 Crystal Lane

From: Rick Hird [mailto:rhird@petefishlaw.com]
Sent: Thursday, November 29, 2012 8:21 AM
To: Matt Gudenkauf
Cc: Scott McCullough
Subject: RE: Langston Heights Rezoning

Dear Matt,

This will confirm that I have received and read your letter regarding the zoning of Langston Heights. I truly appreciate your input in the process. I have copied Scott McCullough on this email so he can circulate your email to the Staff and all of the Planning Commissioners.

Rick

Richard W. Hird
Petefish, Immel, Heeb & Hird, LLP
842 Louisiana
P.O. Box 485
Lawrence, KS 66044
785-843-0450
785-843-0407 fax

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From: Matt Gudenkauf [mailto:mattgudenkauf@gmail.com]
Sent: Wednesday, November 28, 2012 8:52 PM
To: Rick Hird
Subject: Langston Heights Rezoning

Dear Richard:

We are writing to ask you to consider deferring the rezoning of Langston Heights (Parcel west and south of Diamondhead) from UR to RM12 and RM12D in order to provide for a more agreeable development. The increase in traffic, decreased in property values and changes to the original 2006 plat are issues that need to be addressed.

The new plan proposal is to build a total of 165 housing units on 61 lots. With only 2 streets (Crystal Lane and Palisades Drive) servicing current and additional units, traffic will be heavier than originally planned for these two streets. This plan shows this with the numerous traffic calming devices located on the expanded Crystal Lane. Crystal Lane and Palisades were originally developed as a lead in to other single family housing, not medium density apartments. Typically, medium density housing is at the front of subdivisions, leading farther in to low density housing, this proposal is the exact opposite of that. Palisades already has issues on school days due to drop off and pick up from Langston Hughes Elementary School; it can't handle the additional traffic flow. Even when the future "proposed" access to 15th street and George Williams Way get added, traffic from this development will still be pushed through low density housing in nearly every direction. The Horizon 2020 plan specifically discourages this action with numerous aspects outlined in the bottom of this letter.

Should this plan be approved, due to the direct impact of the medium density housing, property values in the Diamondhead subdivision will decrease. When we built our home back in 2008, we knew additional low density housing would soon follow to our west. This was based on the Planning Commission approval in January 2006 of single family homes in the Langston Heights area. We never would have built our new home

in this location had we known apartments and duplexes were to be built, and future potential home owners will feel the same way. We all based our decisions off this approved 2006 zoned plat for single family homes.

As you will see at the December 10th meeting, the Diamondhead subdivision is a unique neighborhood with a large population of kids. Traditions such as our July 4th parade, Easter egg hunts, neighborhood cookouts, and the general family feel among neighbors will be lost if this proposal passes.

Please see to it that this proposal does not go any further without modifications. We are not against the expansion of our subdivision to the west, we are against the medium density zoning; we would happily approve of low density zoning, which would expand on this great neighborhood.

Thank you for your time

Matthew and Erica Gudenkauf
6204 Crystal Lane
Lawrence, KS 66049
(785)830-9802

Horizon 2020 Plan that relate to this proposal:

Low-Density Residential Land Use

GOAL 3: Neighborhood Conservation (page 5-15, 5-16)
- Policy 3.3: Encourage Compatible infill Development
- Policy 3.4: Minimize Traffic Impact through Neighborhoods

GOAL 4: Criteria for location of Low-Density Residential Development (page 5-17)
- Policy 4.2: Protect Areas Planned for Low-Density Development

GOAL 5: Create a Functional and Aesthetic Living Environment (page 5-19, 5-20)
- Policy 5.5: Ensure Convenient and Logical Street/Road System Design

Medium and higher Density Residential Land use

GOAL 1: Criteria for Location of Medium and Higher Density Residential Development
- Policy 1.3: Identify Suitable Sites (page 5-23)
- Policy 1.5: Ensure Adequate Infrastructure (page 5-24)
- Policy 1.6: Consider Access (page 5-24)
- Policy 1.7: Adhere to Designated Land Uses (page 5-24)

GOAL 2: Create a Functional and Aesthetic Living Environment
- Policy 2.6: Consider Residential Density and Intensity of Use (page 5-26)

GOAL 4: Transportation Considerations (page 5-30, 5-31)
- ALL OF THEM

November 27, 2012

Sandra Day, AICP
City/County Planner
6 East 6th street
Lawrence, KS 66044

RE: Langston Heights Addition
Planning Commission Agenda Items on December 10, 2012

Sandra,

We are writing to express our concerns associated with the four items on the Planning Commission agenda for December 10th for the Langston Heights development. We are responding to the material that has been currently submitted to the City for the application (application, plat, concept plans, etc.) The applicant and developer are holding a meeting with the neighborhood, but have scheduled this meeting (December 3rd) with limited to no time to be able to respond prior to the issuance of the staff report. We are submitting this prior to that meeting in order to be reviewed prior to the completion of the staff report and for inclusion on the packet to the Planning Commission.

The comments below represent the views and opinions of many within our neighborhood concerning the proposed zoning request and preliminary plat for the Langston Heights Addition. While many of us would welcome the proposed land to remain an open area, we all recognized that it would be developed as an extension of our neighborhood. Many of us, and those specifically on Palisades Drive and Crystal Lane, reviewed the current plans for this parcel of land prior to purchasing our home. While often there is limited knowledge of undeveloped area adjacent to a development, this was not the case with our neighborhood. There was a plat developed and approved by the Planning Commission and City Commission for this parcel of land. While the plat was never signed or recorded, it still provided a glimpse to the intentions of the land owner of their vision for this parcel of land.

We have attempted to address each specific agenda item individually but many of these issues crossover between items. Where this occurs we have indicated reference notes as appropriate.

PP-12-00228 Preliminary Plat for Langston Heights Addition: There are many concerns with the proposed plat and the proposed layout and land uses. Many of these concerns could be addressed should the land to the north and south of the proposed area be developed prior to or at the same time as this development. Obviously this is unrealistic to assume and the plat must be considered as development would not occur for some time to the north or south. Items of note include:

1. This is the second plat filed for this parcel of land. The first was approved in early 2006. This plat indicated 67 single-family and 18 duplex residential lots. While it is our understanding that is was never fully executed, it still provides reference to an alternate concept by the same land owner for this land.
2. Horizon 2020 indicates this area to be low-density residential. The application indicates that the Lawrence future land use map does not specifically designate a land use for this property. This is incorrect. The Nodal Plan for the Intersection of West 6th and KS 10 address this area as low-density. We understand that the project, as it relates to density, is using the entire land area to calculate the number of units per acre. We would caution the continued use of this method as it has recently caused conflicts in other areas of our community.

3. The plat indicates the extension of two local residential streets (Palisades Drive and Crystal Lane.) These two streets will be the only access point into the new development. Section 20-204 (e) of the Land Development Code indicates that "RM Districts are intended for implementation along Residential Collector, Collector and some Arterial Streets." Neither of these streets meets this requirement.
4. Renaissance Drive in the 2006 plat, the 2012 plat draft and on the concept plan (submitted by the applicant) all have indicated that this street would be a collector street. The current plat has changed this street to a local street. Should the RM zoning designation remain then the district should be accessed in accordance to the Development Code and Renaissance Drive shall remain as a collector street.
5. Renaissance Drive appears to be the proposed "connector" street from George Williams (via Ken Ridge) to the north and Bob Billings Parkway to the south. The use of this street in this manner is logical and would serve as a residential collector street for these neighborhoods and future development. As noted above though, it is unknown when this street would be completed and until such time, would not serve as a collector street. Regardless, this street should remain as a collector or residential collector street,
6. Should the RM zoning designation remain then a condition to the plat should be added that, until such time that Renaissance Drive is completed to either the north or the south, the RM zoning district should **not** be allowed to be developed. This would allow the collector street to be developed as required by the development code.
7. The request for variance on the sidewalks should be denied. While regulation may have changed from the time the adjacent land was developed and sidewalks were not installed on both sides of the local streets, this should not prevent the owner from providing walks per the Development Code. Sidewalks add to the "live-able" character of a neighborhood. In addition, as a neighborhood with many young children, sidewalks on both sides of a street eliminate the need to cross the street as often. Most of the children in this neighborhood enjoy the opportunity to walk to elementary school, and with the increased vehicle traffic of the development, the sidewalks on both streets would add to the safety of the neighborhood.
8. A traffic calming device, similar to the roundabout at Crystal Lane and Big Sea Drive, should be installed at Palisades and Big Sea Drive. While there is a speed hump in the mid block of Palisades this device does not appear to reduce the speed of vehicles in the neighborhood on this street or the adjacent streets.

Item Z-12-00220: Rezone to RM12D

1. RM Districts are intended for implementation along Residential Collector, Collector and some Arterial Streets. As noted above, neither Palisades Drive nor Crystal Lane qualifies as these street types.
2. The medium density zoning will be accessed through an existing low-density residential area and a proposed low-density residential area. There are no recent developments in Lawrence where this occurs. All other RM12 zoning is accessed from an adjacent collector street and not through a lower density residential neighborhood on a local street.
3. This zoning will pre-determine a portion of the land use to the south. The RM12D zoning adjacent to the southern edge will pre-determine RM12D zoning adjacent. The application specifically states, in Item 2, that this zoning change will develop "precedent for adjacent vacant properties." It can only be assumed, given the relationship of the developer of this parcel of land to the land owner to the south, that it is the intention to continue medium density residential to the south. This is counter to the future land uses indicated in Horizon 2020 for low-density residential.
4. Item 3 in the application indicates that the rezoning "will pose no detrimental effect to the nearby properties." This statement is unfounded. The increased traffic with medium density zoning and the unknown level of quality of the development could directly impact the adjacent property uses and land values. Unless the owner proposes restrictions to the type of development that could occur, materials

5. If this rezoning is to be considered in concert with the other two rezoning applications then a Planned Unit Development (PUD) should be required to ensure the type of development proposed with the plat is the actual development.
6. Item 6 of application indicates that "denial of this application will perpetuate the vacancy of this land." This statement is unfounded. This is the second plat for this portion of land by the same developer. There are obvious multiple uses for this parcel of land. Denial will not perpetuate vacancy. It is obvious that this parcel will be developed, but the question is whether the medium density zoning is appropriate.

Item Z-12-00231 : There is no opposition to Item Z-12-00231 to rezone land from UR to RS7. This land change is the expected zoning for this parcel of land considering the existing adjacent land uses. This zoning change is also expected as it represents the intention of a plat developed by the same land owner, Langston Heights L.C. in 2006. This plat was a document many of us referenced prior to purchasing our home.

Item Z-12-00232: Rezone to RM12

1. Many of the issues for this development are identical to the issues associated with the RM12D rezoning. Please refer to items 1, 2,4,5, and 6.
2. This zoning will pre-determine a portion of the land use to the south. The location of Renaissance Drive and its connection to the South, along with the RM12, will predetermine the land south of this development and west of Renaissance Drive to continue the RM12 or higher zoning designation. This, coupled with the RM12D predetermined zoning, will raise the density from low density residential to medium-density residential. This is counter to the indication of the Horizon 2020 land uses for this area. The application specifically states, in Item 2 that this zoning change will develop "precedent for adjacent vacant properties." It can only be assumed, given the relationship of the developer of this parcel of land to the land owner to the south, that it is the intention to continue medium density residential to the south. This is counter to the future land uses indicated in Horizon 2020.
3. Item 3 in the application indicates that the rezoning "will pose no detrimental effect to the nearby properties." This statement is unfounded. The increased traffic with medium density zoning and the unknown level of quality of the development could directly impact the adjacent property uses and land values.

We apologize for the length and depth of this letter, but the quantity of items to be considered and the complexity of each issue requires a proper response. We look forward to being able to hear from the applicant and owner at their presentation next week and will respond accordingly should the situation dictate.

We hope that you consider these issues prior to the completion of the staff report and, as previously noted, include this correspondence in the packet to the Planning Commission.

Respectfully submitted,

Andy and Debbie Pitts
6212 Palisades Drive

From:	Michael Whittlesey
To:	Sandra Day
Subject:	Langston Heights
Date:	Thursday, November 29, 2012 10:41:55 PM

Dear Sandra:

I am writing in opposition to the possible re-zoning of the Langston Heights development from a low density plan to a high density plan. The ramifications of this re-zoning would drastically effect the entire community and safety of the Diamondhead Development and the Langston Hughes Elementary school. The increase in traffic on Crystal lane and Palisades Dr that would come with the high density development would be approximately an additional 400 cars on streets that directly feed an elementary school. The majority of the residence in the Diamondhead Development built in the area under the knowledge that the original zoning of the Langston Heights was a low density plan. We all built in the area with the idea that it would remain a safe place to raise our children and with easy and safe access to Langston Hughes Elementary. Palisades Dr access to Diamondhead Dr is the main route that parents take daily to drop of their children to LH Elementary. Diamondhead Dr has become a one lane road as parents, in not only the Diamondhead Development but from other neighborhoods, use the access that Diamondhead Dr has to Langston Hughes Elementary to drop of their children. The design and road infrastructure of the Diamondhead Development was not built to handle the additional increase in traffic proposed with the re-zoning of the Langston Heights Development to a high density design. The infrastructure of the road might be able to handle the increase traffic but the density of housing projected in the traffic planning of the roads was for single family homes in the adjacent land use. Diamondhead development has sidewalks on only one side of the road as the design of the neighborhood and future development would not have the traffic load that would require sidewalks on both sides of the road. We all knew the Langston Heights would be developed but as a low density project with additional single family homes. Please consider the safety, quality of life, and infrastructure ramifications to all three communities Langston Heights, Diamondhead and Langston Hughes Elementary that this re-zoning would cause.

My wife and most in our immediate community actually commute out of Lawrence daily. However, we choose to build in this development because of the current residence, the sense of community, and the safety of the current planning of this area. We looked into the future planning of this development and where told it was zoned as single family to continue the continuity of the current development. As parents of 2 young children this was the ideal neighborhood considering safety, community togetherness, other children to play with and the closeness of schools. Rezoning this plot would drastically impact the safety of all these children playing in the area.

Thank you for your time and service.

Michael Whittlesey
6209 Crystal Lane
Lawrence KS

Sent from my iPad

Sandra L. Day, AICP, *City/County Planner*
Planning Division
P.O. Box 708, Lawrence, KS 66044
Office (785) 832-3161 | Fax (785) 832-3160
RE: Land plan Engineering Informational Session December 3, 2012
Langston Heights Development
December 5, 2012

Dear Sandra Day:

As a member of the Diamondhead subdivision, my husband and I are very concerned by the recent application to change the Langston Heights development. When we purchase our home, we were told that the design of the subdivision to the west would be low-density housing similar to ours. We want to thank the Lawrence Planning Department for their hard work in developing our neighborhoods and their insightful design of planned unit developments. We hope you will understand our concerns for changes in the current plan.

The 270% increase in family units to the new Langston Heights subdivision creates an increase in pressure on property values, traffic, children's safety and schools in our neighborhood. We feel that the proposed zoning does not guarantee any specific types of building. We feel left in the dark with the current proposal. We want to know if this design has worked well in other neighborhoods in Lawrence. If it has not, why our neighborhood should be a test case for what appears to be bad design.

We are not against the expansion of our subdivision to the west, we are against the medium density zoning; we would happily approve of low density zoning which would expand on this great neighborhood.

It is with great concern for our young children, our property values and the quality of our neighborhood that we ask you to defer from the revisions to Langston Heights Development.

Please include our letter in the Langston Heights Planning Packet!

Thank you very much for your time and consideration!

Sincerely,

Xiufen Bi and Gary Jiang
824 Diamondhead Dr.

From: Andrew Pitts [APitts@TreanorArchitects.com]
Sent: Wednesday, December 05, 2012 12:52 PM
To: Scott McCullough
Cc: markandsheri; lhanna@HNTB.com; ryanlfike@gmail.com; Boedeker; carisa@freshsound.com; tiffanyfike@gmail.com; donherbel@att.net; mattgudenkauf@gmail.com; dltate180@gmail.com; Bradley R. Finkeldei; Crabtree, Mark A.; dustin@freshsound.com; ahanna356@gmail.com; Home; Erica Gudenkauf; bigalcowles@gmail.com; lindalh2009@att.net; nate@lawrencewesleyan.com; shubhshar@gmail.com; mcsparky45@yahoo.com; thepitts@sunflower.com
Subject: December 10th Planning Commission: Langston Heights Agenda Items

Scott-

On behalf of our family and numerous others within the Diamondhead Neighborhood we are requesting consideration of moving Agenda Items No 5A, 5B, 5C and 5D to earlier in the Planning Commission meeting.

We ask this in order to accommodate the members of our neighborhood that wish to speak on these items. A significant portion of our neighborhood are families with children and a significant portion of these children are elementary or younger. While we have coordinated babysitting for neighborhood families at neighbors homes, we have parents that will need to leave to be able to ensure our children are in bed at a reasonable hour, especially on a school night.

This was best illustrated at the public meeting held this last Monday evening at Langston Hughes Elementary school. The meeting started at 7pm and we had approximately 50 neighbors in attendance. By 8pm many needed to leave to be able to attend to their children's needs.

We recognize the importance of the agenda items prior to this item and the amount of public or commission discussion that may occur. But we also believe that it would be a disservice for those that would like to address this item should the discussion linger on the later in the evening.

I want to thank you for your consideration on this item and look forward to the meeting on Monday.

Sincerely,

Andrew Pitts

December 6, 2012

Sandra Day, AICP
City/County Planner
6 East 6th street
Lawrence, KS 66044

RE: Langston Heights Addition
Additional Correspondence for
Planning Commission Agenda Items on December 10, 2012

Sandra,

Please accept the following correspondence to supplement our prior letter. This letter shall address items addressed at the neighborhood meeting held by the applicant and developer and the recently issued staff report.

On December 3rd, the applicant and developer held a neighborhood meeting at Langston Hughes Elementary School to address this proposal. Approximately 50 people were in attendance, and a majority of these were residents of the Diamondhead neighborhood. It was a very spirited discussion of the issues. There were many comments by the developer of opening a dialogue with the neighborhood of their concerns and issues with this proposal. We all welcomed this proposition. From the start of this process we have all supported development; the concern has, and continues to be, the type of zoning that is proposed. Unfortunately no dialogue has occurred.

Repeatedly the developer spoke of involving the neighborhood in decisions. They indicated the neighborhood would have a say in covenants associated with the multi-family. Unless this discussion occurs prior to the re-zoning then there would be not guarantee of compliance with this statement. Often the applicant and developer contradicted themselves in statements throughout the evening.

Items of note include:

1. The applicant continually stated that this development was in compliance with Horizon 2020. This caused confusion since their application stated that the future land use map and Horizon 2020 did "not specifically designate a land use for the subject property." The staff report correctly identified that the West 6th / K10 Nodal Plan addresses this area. But the staff report seems to interpret the document broadly, only referencing certain sections and failing to reference others.

2. The Nodal plan specifically addresses the Diamondhead and Langston Heights area. The nodal plan indicates that "this intersection is envisioned as a multiple-use activity center of low-, medium-, and high-density residential development; commercial, office, research, and industrial activities; public, semi-public, and institutional uses; and parks, recreational, and green/open space opportunities." It further states for the Southeast Corner, that the corner provides an opportunity for a variety of residential, commercial, and office activities. This nodal plan "also designates the majority of its residential uses appropriate for low-

density, **single-family** neighborhoods with a **small** portion considered appropriate for medium-density residential development. This medium-density development serves as primary buffer between single-family neighborhoods and commercial activities." It further states that "This nodal plan anticipates more low-density, single-family residential development in the areas surrounding this corner and therefore much of this corner was designated appropriate for similar development to maintain compatibility of surrounding land uses." The staff report quotes specific sections but fails to address the statement "appropriate for low-density, single-family neighborhoods." It only constantly quotes "a mixture of housing types… should be encouraged." We do not dispute the need for a mixture of housing types, but the question is whether this proposal is the correct mixture or the correct location? The developer and applicant admitted at the neighborhood meeting that this type and mix of development "has not been tried or developed in Lawrence." Why is this established successful neighborhood the place to try this experiment?

3. The staff report also discounts the traffic issues associated with the increased density that have been addressed by the neighborhood and accepts the traffic report by its "data and numbers". City development documents discuss the required need for neighborhood connectivity. It states that "streets within the various neighborhoods of this area shall be connected to each other. …Connected streets provide multiple route options for vehicles which can help eliminate the choke points that are created when cars are forced onto a limited amount of streets that carry traffic in and out of neighborhoods." We would concur with this statement. Without the complete development of the north/south road (Renaissance Drive) then all of the development traffic would be forced onto two local streets. The applicant has produced a traffic study that states the traffic counts are within the City requirements. We do not argue this fact. But neither the traffic study nor the staff report takes into account the impact of a neighborhood elementary school and its dramatic impact on the traffic pattern.

   Every morning and afternoon Diamondhead Drive becomes a double loaded drop off and pick up location. Children must maneuver between parked and slowly moving vehicles. The applicant, at the public meeting, stated that this issue was a minor "blip" in the traffic study. This "blip" has been one of the primary focuses of the Langston Hughes Site Council for numerous years. The site council has pushed for additional crossing guards, no parking restrictions, a school zone, and, most recently, added a fence to help limit pedestrian traffic from Diamondhead. Issues still persist.

   With the additional traffic associated with the increased density, the poor planned lack of sidewalks on both sides of the street (and specifically on the side of the street adjacent to the school,) this "blip" could be devastating if a child is injured because of this poor planning. Traffic studies, numbers, computer simulations will not depict the accurate scenario that we see every day in our neighborhood. The additional traffic associated with the increased density will compound this issue. As local traffic avoids the Diamondhead / Harvard round-a-bout at various times of day, all traffic will be focused to Ken Ridge Drive. This will create a significant choke point at this intersection.

4. Much in the staff report speaks of the desire of a mix of housing types within each neighborhood. We would support this guiding principal. The current zoning to the east of the Diamondhead development is an excellent development of RM12 Duplex homes. To the north of the neighborhood is existing zoning of RM24. This will provide a transition from the RS7 single family development to the future planned office / commercial development to the north. It has been discussed by the applicant and in the staff report of the need to "buffer" K10 with higher density multi-family housing. It has been discussed by the applicant the need to buffer the RM24 to the north. Other solutions are viable solutions to this proposal and examples can be found in the West of K10 Plan.

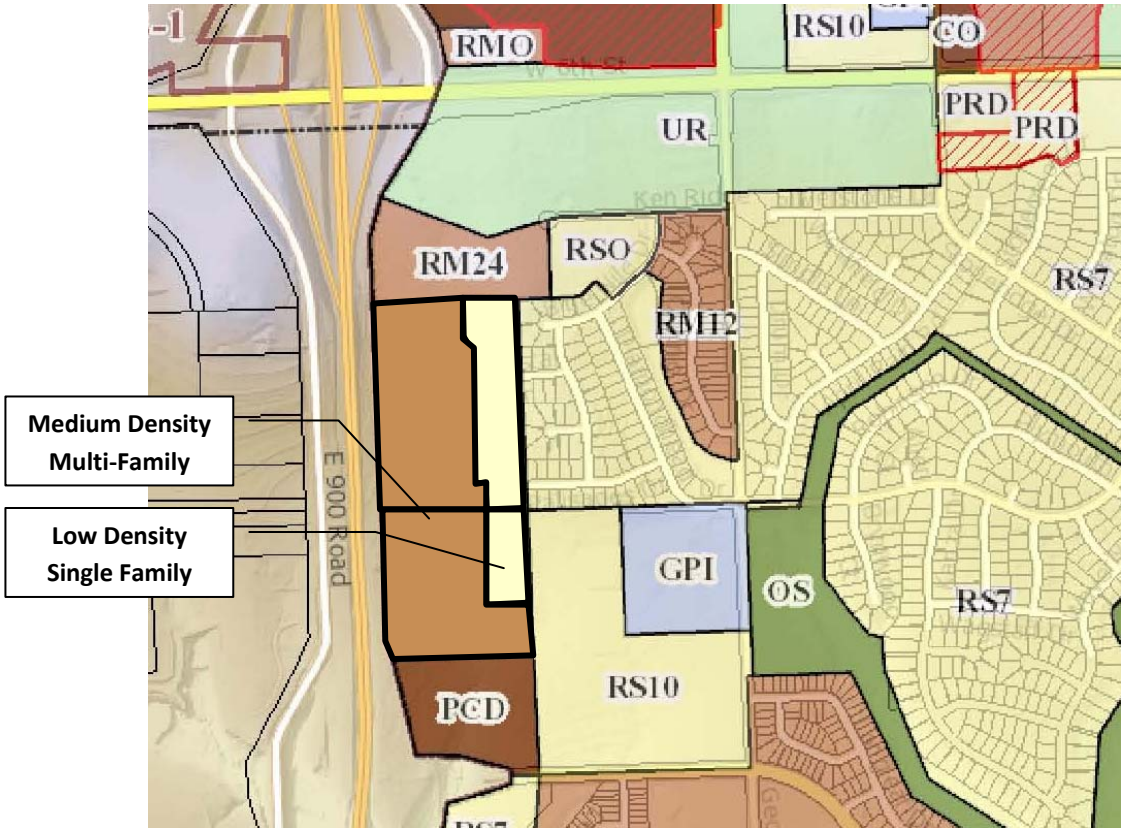
The staff report suggests that a variety of "step down" developments are required to appropriately transition the single-family development to the north and the west. As one of our most recent planning documents, the West of K10 Plan provides current planning ideas and guidelines for all new development in this area. It presents the concepts of "Traditional Neighborhood Design" (TND) versus the conventional land use development concepts. The document speaks about the challenges that arise when placing new developments adjacent to existing development. "Compatible land uses should be located adjacent to each other…" This document also presents concepts on buffering the K10 corridor counter to the proposed development. The concept illustrates an "outer" road concept with a green space to buffer commercial and residential development to K10. Per the SLT/K10 Transportation Corridor Overlay, this green space would be landscaped to screen the residential development. This method, a part of the 2006 plat, should be explored prior to acceptance of this request.



5. The applicant states in the application that the approval of this zoning will "set a developmental precedent for adjacent vacant parcels." The adjacent parcels indicated refer to the land to the south of the proposed development. Since the applicant specifically references this parcel and indicates that this will set a precedent, then the West of K10 Plan should be used as a guiding document as it addresses this parcel of land. This plan, adopted in 2009, is one of the latest planning documents and combines many of the current planning guidelines. Again, this document indicates the land south of the proposed development to be low-density development.

   As the applicant has indicated, the proposed development will be setting a precedent for future land uses. Should this be the case, then a majority of the land uses to the south will be predetermined to be multi-family, medium density land uses (see map below). This is supported by the proposed location of the Renaissance Drive as the applicant would more than likely propose multi-family between the road and K10. The proposed location and its connection point to Bob Billings will encourage medium density development. The map below begins to indicate the pre-determined extent of the southern land and, the quantity of medium density zoning, and is counter to the current adopted land use documents for this area.

The applicant and developer indicated in the neighborhood public meeting that they are currently in negotiations to control the use of the southern land. This statement reinforces the land uses will be pre-determined with the approval of the northern land uses.



6. Finally, the developer continually spoke at the meeting that this was "the only financially viable project for this land." This argument has been tried and failed before in Lawrence. The excuse of their inability to "make a project financially viable" should not be an excuse to discount the approved planning guidelines and documents. We all recognize the economic climate that our City and area have been in the last few years, and we would welcome a change. But this should not be an excuse to discard our planning principals and develop whatever the developer wants on this land.

We are not opposed to development. We encourage and want development on this land. The correct type of development will enhance our neighborhood and community. The correct type of road network, with connections to the north and south, would enhance and correct traffic issues. We would welcome an actual dialogue with the applicant and developer to discuss a compromise development.

We request, on all items associated with the Langston Heights Development, a deferral so that a dialogue may occur between the City, Developer, Applicant, and Neighborhood.

Respectfully submitted,

Andy and Debbie Pitts
6212 Palisades Drive

Diamondhead Residents Opposed to Langston Heights

Presented to the

City of Lawrence
KANSAS

December 10, 2012

History

The residents of the Diamondhead neighborhood in west Lawrence have united in our opposition to the rezoning required for proposed Langston Heights development. Some 35 families representing more than a hundred residents have signed on to lobby the Planning Commission.

The following pages detail our concerns. We start with our general belief that the area in which we chose to build and purchase our homes was in a single family neighborhood. The area's first plat, approved in 2006, indicated 67 single-family and 18 duplex residential lots. The new application proposes a 94% increase in dwelling units from the initial 2006 plan due to 24 four-plex units and 62 row houses.



The construction as proposed would require egress through two residential streets - Palisades Dr. and Crystal Ln as Renaissance Dr. would not be completed until some unknown future date. The developers themselves recognized that this would be the first instance in Lawrence where non-residential traffic would be forced through a residential area. Brian Sturm, spokesman for Landplan Engineering, likened it to an experiment at the December 3, 2012 informational meeting. The residents of this neighborhood would prefer not to be test subjects in a developer's experiment, nor should the Planning Commission allow that to be the case.

Horizon 2020

Brian Sturm in addressing the community, repeatedly referenced Horizon 2020 as justification for the proposed rezoning. A review of the document shows the proposed rezoning to be in direct conflict with the comprehensive plan. Horizon 2020 indicates this area to be low-density residential, and the document twice states a need to “Protect Areas Planned for Low-Density Development”.

Landplan Engineering, P.A.

Specific policy statements within Horizon 2020 counteract the statements and design of Landplan Engineering and the other applicants:

Policy 3.4: Minimize Traffic Impact through Neighborhoods

- The site design of a residential development should accommodate multiple points of access (direct and indirect) with attention to directing vehicular traffic to and from a development to collector and/or arterial street/roads.

Policy 3.6: Promote Neighborhood Identity

- Preserve and enhance the visual and environmental character of existing neighborhoods.

Policy 4.1 Levels of Service

- "The construction of new medium- or high-density residential development or the expansion of existing medium- or higher density residential development shall not be approved until the surrounding street/road system can provide an acceptable level of service"

Policy 4.3

- "Discourage the diversion of traffic to or from medium- and higher-density residential developments onto local residential street/roads through low-density residential neighborhoods."

Horizon 2020 also calls for the sites recommended for new medium-density residential development occupy transitional locations between single-family neighborhoods and office/commercial areas. But there are not areas for commercial development for which the medium-density housing could provide a buffer.

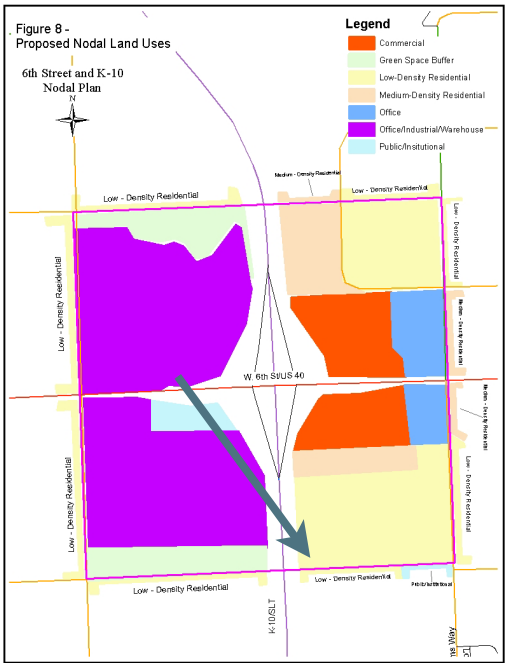
Furthermore, the Planning Commission has previously expressed concerns with this interpretation of the plan:

PC Minutes 11/16/05

“Comm. Hass indicated he would support the motion, but stated that he was losing his appetite for RM-D zoning because it has been abused in other parts of the community.”

6th & K-10 Nodal Plan

Additional planning documents address the area in more specificity. A Nodal Plan for the Intersection of West 6th Street & Kansas Highway 10 (K-10) designates the entire Diamondhead neighborhood as low density residential as detailed in the figure below. The plan defines low-density "to allow for single family dwelling, duplex, and attached dwellings but emphasis is placed on the residential uses." The zoning classifications indicate RS7 and RM12D but includes RM12 under the medium density classification.



The applicant states in the application that the approval of this zoning will "set a developmental precedent for adjacent vacant parcels." The adjacent parcels indicated refer to the land to the south of the proposed development.

As the applicant has indicated, the proposed development will be setting a precedent for future land uses. Should this be the case, then a majority of the land uses to the south will be predetermined to be multi-family, medium density land uses. This is supported by the location proposed of the street (Renaissance Drive) as the applicant would propose multi-family between the road and K10. The proposed location and its connection point to Bob Billings will encourage medium density development, which would conflict with the Nodal Plan.

West of K-10 Plan

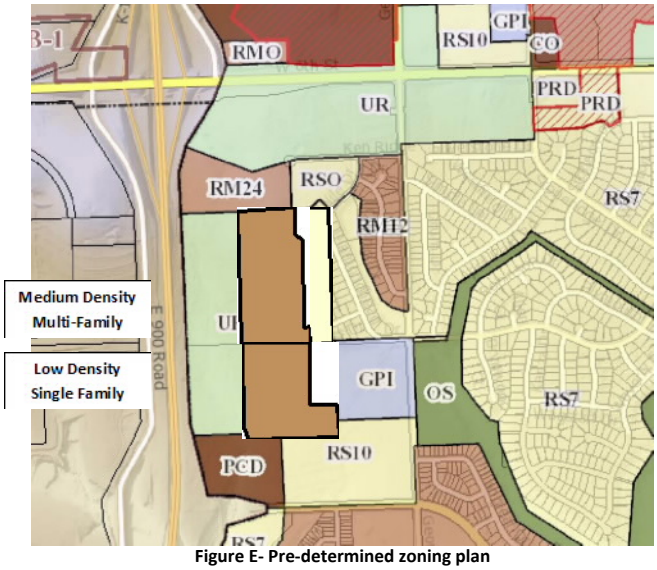


Figure E- Pre-determined zoning plan

The map at left indicates the pre-determined extent of the southern land and, the quantity of medium density zoning, is counter to the current adopted land use documents.

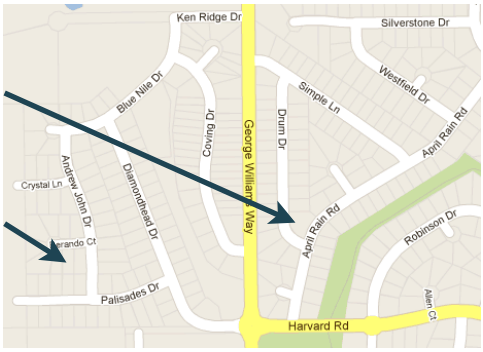
The applicant and developer indicated in the neighborhood public meeting that they are currently in negotiations to control the use of the southern land. This statement reinforces the land uses will be pre-determined with the approval of the northern land uses.

Precedent

Similar requests for rezoning adjacent to the Dlamondhead neighborhood have been denied for all the rationale presented in the preceding pages:

Denied

In Question



PC Minutes 1/25/06

Staff Finding

- The character of the area is a low-density, single family residential neighborhood. The area west of George Williams Way is planned as a mixed development including multiple types of residential development.

Staff Finding

- The subdivision layout and land use requests in the immediate area have conveyed a continuation of established low-density, single-family detached development pattern for this neighborhood. Development around the subject property has begun with an expectation of single-family detached development for the subject property. Property owners have made decisions based on recent previous actions for this area.

Staff Finding

- The property has been planned and platted for single-family development. If the request is denied the applicant still retains the ability to develop the property with single family homes. Approval would double the density and traffic generated[2] from the area.

- The Plan anticipates that low-density residential development will “continue to be the predominate land use in the City.” The most common method to assure compatibility is to extend or continue a particular zoning district. The approved and published RS-2 (Single-Family Residence) District expanded the low-density residential district in this area and was found to be consistent with the generalized land use expectation for residential development in 2004 per Z-4-15-04 and reaffirmed this decision in July 2005 per Z-06-35-05]. A subdivision plat for single-family residential development was approved and recorded as the Green Tree Subdivision in October 2004 as a requirement of the zoning.

- If approved, the result will be to sandwich a small pocket of duplex development along the east side of George Williams Way.

Staff Finding

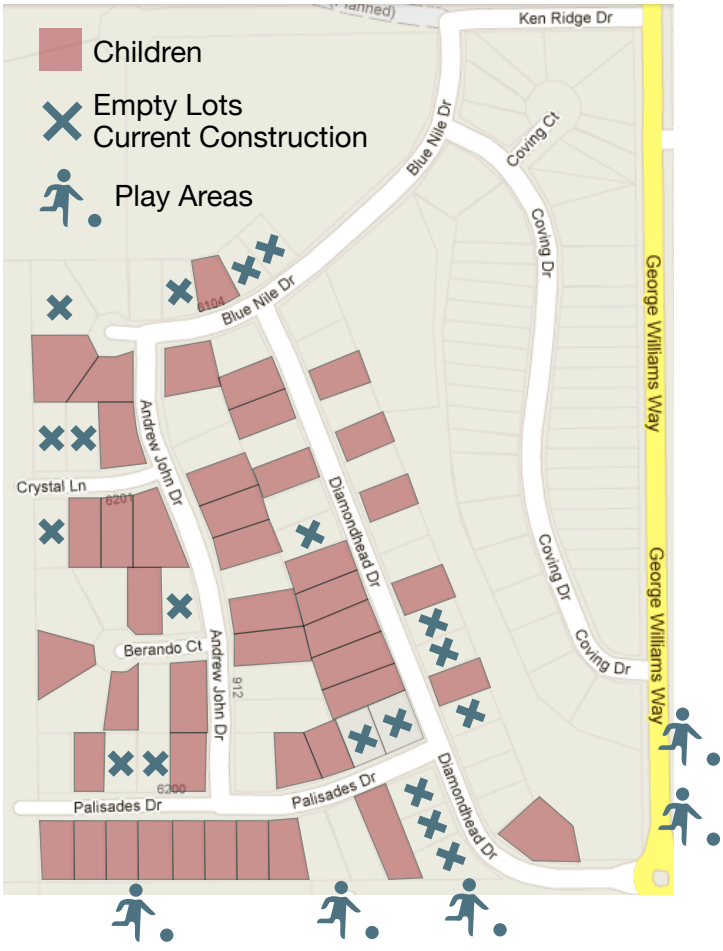
- The proposed request is not in conformance with Horizon 2020.

Traffic Safety

The citizens of the Diamondhead neighborhood are most concerned about the safety and well-being of our children. We believe that increased traffic, especially that of the younger and single type of residents that the developers expect to attract will unnecessarily put children at risk.

As Palisades Dr. and Crystal Ln. will be the only access to the row houses and multi-plexes, it invites the potential for a tragedy. The Diamondhead area is filled with with children of all ages and will be for many years to come.

The applicant references a traffic study that states the traffic counts are within the City requirements. The neighborhood was promised a copy of that study at the 12/3 informational meeting, but to date, it has not been provided. We are concerned the study does not take into account the impact of a neighborhood elementary school and multiple parks and their dramatic impact on the traffic pattern.



The map at left demonstrates the density of children in the neighborhood.

There exist a number of areas in and around the neighborhood where children would play. These have been marked just off the map and include:

- Two Separate Playgrounds
- Sports Fields
- Log Climbing Park
- Walking Trail

Also notice that not a single street in the community is a straight line. Considering the elevation change running along Andrew John Dr. one can envision the problems with sight lines for any driver, let alone one that is not used to driving in a family heavy residential neighborhood with children at play.

Traffic Congestion

In addition to the safety concerns, there remains the question of access. The streets in and around the neighborhood become congested on a daily basis along George Williams and at the Harvard roundabout in the morning and along Palisades Dr. each afternoon and any time there is an evening event at the Langston Hughes Elementary School. The applicant's cite a traffic study with peak times between 4pm and 6pm having adequate traffic flow. The peak times for this area are actually 8am to 9am and 3pm to 4pm due to school drop off and pickup.







The West of K-10 Plan, adopted July 2009, addresses neighborhood connectivity: "Streets within the various neighborhoods of this area shall be connected to each other. … connected streets provide multiple route options for vehicles which can help eliminate the choke points that are created when cars are forced onto a limited amount of streets that carry traffic in and out of neighborhoods."

Similar language is found within Horizon 2020: "Street systems that do not permit connections isolate neighbors and force traffic to concentrate on collectors. This type of street circulation should be avoided."

But the submitted rezoning application would increase residency in the area by 96% over the current zoning while not addressing any of the underlying problems with the current traffic situation. It would force more trips through Palisades Dr. and Crystal Ln.

Infrastructure

The current zoning has meant that the Diamondhead neighborhood was developed as single family with the future plan for a limited number of duplexes only. As such the lighting, sidewalks, crosswalks, signage, and other infrastructure have been implemented based on that plan.

The proposed rezoning for Langston Heights would require retrofitting the existing neighborhood with a variety of items. There currently exists sidewalks on a single side of the streets throughout the neighborhood and no crosswalks except for the roundabout at the intersection of Harvard and George Williams. As illustrated previous, the Diamondhead area is filled with children out at play and such a significant increase in residency and traffic would seem to necessitate changes to the existing layout.

None of the intersections in the community feature traffic signage. The applicants count at least 138 additional trips per hour with the traffic study, but fail to demonstrate its effect within the existing layout. We have already discussed the potential for pedestrian accidents, but the limited sight-lines and lack of any stop or yield signs is an invitation to traffic accidents.

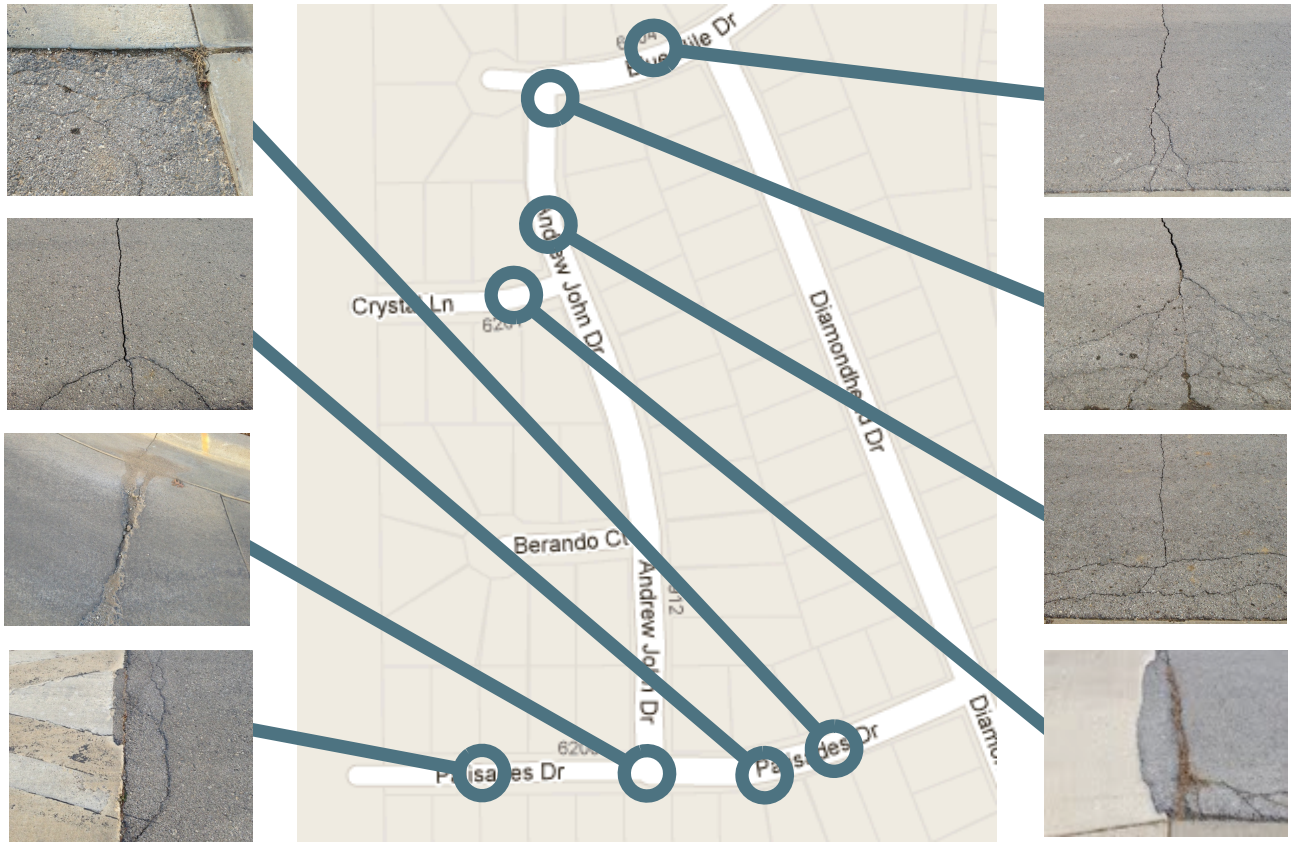
The streetlights throughout the area have similarly been installed for use in single family housing. The inclusion of additional multi-family housing could be cause for increased lighting. The residents of the area however are not keen on the idea of the additional lighting shining through their windows all night.

The roads too have been laid out for use in a low density area. The width in Diamondhead is 23', and with parking allowed on both sides, the streets can easily become unintended one-way's. Surely this is not appropriate for the style envisioned by the applicants.

Construction

In October, 2008 the City Auditor issued a Pavement Condition Summary. In this document both Palisades Dr and Crystal Lane received ratings of poor for the curbs and gutters while the pavement was rated 91.5 out of 100.

Since the issuing of the report four years ago, the conditions of our neighborhood streets have deteriorated. Below are images with their locations indicated on a map. The images shown reflect only a portion of the degradation of both the asphalt and concrete on the two proposed egresses.





It seems reasonable to expect that construction traffic will exasperate this problem. Heavy equipment, trucks carrying forms and supplies, concrete trucks, pouring cranes and endless trips by skilled laborers will serve to further decay the only egress through Palisades Dr. and Crystal Lane.

Marketplace

The applicants expressed at the 12/3 informational meeting that economic forces were the main rationale for changing the current zoning. While this may be true on a national, or even a regional level, a closer examination at West Lawrence reveals a different picture.

A recent headline and story get to the heart of the matter:

LAWRENCE JOURNAL-WORLD

Landlords trying to fill growing number of rental vacancies

There are also more apartment units. Since 2008, 997 apartment units have been built in Lawrence, with 55 built so far this year. Other projects in the works include a seven-story, 55-bedroom building on the corner of Ninth and New Hampshire streets and a 300-apartment complex on Sixth Street and Queens Road. Aug 13, 2011

The last complex mentioned is Hunter's Ridge, which is set to open soon. Plans filed this week by Lindsey Management call for a 630-unit apartment complex adjacent to Hunters Ridge. This area is a mere half mile from Diamondhead

Two additional complexes within a mile- Prairie Commons and Park West Gardens - plus current construction and vacancies on Coving Drive, a block over, would lead one to conclude that the area is saturated with medium and high density housing.

In a report published this September, The National Association of Realtors said that the median time a home was listed for sale on the market was 69 days in July. This represented a significant drop from both July 2011 and June 2012.

The homes in Diamondhead have been selling even faster - measured in weeks, not months. A local McGrew Real Estate agent said this week that "Houses have been moving really well in the Diamondhead area and that market in particular is strong for single family home sales.There was one there that sold in a day."

When you combine weak demand for higher density housing around the Diamondhead area with better than average sales of single family homes, it paints a clear picture. **This market needs more low density zoning, not less.**

The applicants should not be allowed to fundamentally and permanently alter the well-being of this neighborhood based on rationale that is suspect.

Community

The residents of our neighborhood have grown into a tight knit community. As most all neighbors do, we stop to talk with each other when we meet on the street. But more than that, we actively seek out each other's company, and welcome our neighbors into our homes. We plan activities to come together as a group and grow the sense of community that has developed here.



Annual Neighborhood Easter Egg Hunt



Halloween



Annual 4th of July Parade

Throughout the year, we gather together to participate in a variety of seasonal activities. Some are spontaneous as group sledding in the winter, or kids bike rides on sunny days. But many are planned in advance:

- Summer Cookout
- Easter Egg Hunt
- 4th of July Bike Parade
- Trick-or-Treating

We have come to think of the folks here as more than neighbors, they are our friends. We certainly welcome new faces to our neighborhood, however, we fear that the rezoning and subsequent construction of multi-plexes and row houses will alter the nature of the neighborhood and fragment our sense of community. Again we reference policy 3.6 of the Horizon 2020 plan which strives to "preserve and enhance the visual and environmental character of existing neighborhood.

The applicants' target market for their housing are not families, by and large it is younger singles. In addition to all of the issues the development would create with traffic, safety, and living conditions, it would alter the very fabric of the neighborhood we have all bought into.

Allied Entities

It is not just the residents of the Diamondhead neighborhood who oppose this application, there are also a number of groups who feel this would be the wrong move for our children, our families, our neighborhood, and our town. The following have expressed their opposition to the applicant's plan:

Langston Hughes Elementary School
Jackie Mickel, Principal

Langston Hughes Parent-Teacher Organization

West Lawrence Neighborhood Association, Incorporated
Alan Cowles, President

12/4/12

RECEIVED
DEC 06 2012
City County Planning Office
Lawrence, Kansas

Sandra Day, AICP/County Planner, City of Lawrence

RE: Landplan Engineering Informational Session December 3, 2012
Langston Heights Development

After attending the informational meeting last evening at Langston Hughes school, we are writing to ask you to consider deferring the rezoning of Langston Heights (Parcel west and south of Diamondhead) from UR to RM12 and RM12D. The increase in traffic, decrease in property values and changes to the 2006 plat are issues that need to be addressed. The new plan proposal is to build a mixture of single family homes, duplexes, and row houses. With only two streets (Crystal Lane and Palisades Drive) servicing current and additional units, traffic will be heavier than originally planned for these two streets. Crystal Lane and Palisades Drive were originally developed as a lead into other single family housing, not multifamily housing. Palisades already has issues on school days due to drop off and pick up from Langston Hughes Elementary School. Currently three new homes are being built on Diamondhead close to the school. That will mean new driveways from which residents will enter Diamondhead and reduce the amount of room for parents to park when dropping off and picking up children. Then add congestion at the round-a-bout on George Williams. I don't care what your traffic study says, the additional traffic will create safety problems. With undeveloped land to the south and north of the new plan, no one was able to tell us if, and when, any connecting access to the new development would be provided. Even if it did, traffic will still be pushed through low density housing. The Horizon 2020 plan specifically discourages this action.

Should this plan be approved, due to the direct impact of the multi family housing, property values in the Diamondhead subdivision will decrease. When we purchased our home in 2007, we knew additional low density housing would soon follow ot the west. This was based on the planning commission approval in January 2006 of single family homes in the Langston Heights area. We never would have purchased in this area has we known apartments and duplexes were to be built, and future potential home owners will feel the same.

Please see that this proposal does not go any further without modifications. We are not against the expansion of our subdivision to the west, but we are against the medium density zoning.

Thank you,

Edward C. Burrichter
6113 Palisades Dr

Colleen A. Burrichter
6113 Palisades Dr. Lawrence

From: Amy Miller
Sent: Thursday, December 06, 2012 6:54 PM
To: Sandra Day
Subject: Langston Heights Communications

Sandy,

Rod Laing came in today and wanted me to pass along his thoughts on the Langston Heights Subdivision PP and Zoning cases for inclusion as part of the communications on the project. He suggested that a condition could be placed on the multi-family residential zoning west of Renaissance Drive that building permits may not be issued on those dwellings until such time that Renaissance Drive connects to Bob Billings Parkway or the major street to the north. He thought that this would ease potential traffic concerns. Please include the above statement in the communications that go to the Planning Commission as part of their packet.

Thank you,

Amy Miller, AICP, CFM *Long-Range Planner*

From: Brian Sturm [mailto:brians@LANDPLAN-PA.COM]
Sent: Friday, December 07, 2012 2:27 PM
To: Sandra Day
Cc: bobdennsan@gmail.com; douglas.raney@gmail.com; RCJPHJ@me.com; Christopher Storm
Subject: PP-12-00228 - variance withdrawal; temp const esmt

Sandy,
On behalf of the applicant, I would like to incorporate the following two (2) items into the Planning Commissioners' packets for Monday's meeting regarding item #5A, the Preliminary Plat for Langston Heights Addition:

1. The applicant wishes to withdraw their request for a variance from Sec. 20-811(c). While the developer still has concerns about installing sidewalks that would essentially terminate in mid-block locations on Palisades Drive and Crystal Lane, they would rather design a subdivision that conforms to the current Subdivision Regulations and complete street policy. It's my understanding that the sidewalks to be shown on the south sides of Palisades Drive and Crystal Lane can be added to the Preliminary Plat as a condition of approval. It is also my understanding that the applicant can work with the City Engineer on an acceptable way to terminate these sidewalks on the east edge of the subdivision during the public improvement plan review process.
2. The applicant wishes to add, as a communication, the attached letter of intent which upon execution by both parties would allow for the creation of a temporary construction access easement over and across land owned by Alvamar, Inc. The developer understands the concerns neighbors in the Diamondhead subdivision have regarding potential construction traffic traveling through their neighborhood. This agreement, once signed by both parties, would allow that construction traffic to pass entirely across the ground presently owned by Alvamar on the south side of the subject property. With such an access easement in place, dump trucks, excavators and the like could pass from Bob Billings Parkway to the subject property without travelling on City streets, namely those in the Diamondhead subdivision. It is the developer's hope to have this letter executed by the time of Monday evening's PC meeting.

Please let me know if you have any questions regarding the above items.
Thank you,

Brian Sturm, RLA, ASLA, LEED AP
Project Landscape Architect
Licensed in KS

Landplan Engineering, P.A.
1310 Wakarusa Drive
Lawrence, Kansas 66049
v. 785.843.7530
f. 785.843.2410

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Letter of Intent

This letter reflects the mutual intentions of Langston Heights Development, LLC, and Alvamar, Inc. to enter into an agreement to create a temporary construction access road from Bob Billings Parkway to the property known as Langston Heights through property currently owned by Alvamar. Both parties intend for the road to be built before construction begins on Langston Heights. Alvamar agrees to provide an easement for this road and Langston Heights Development agrees to pay for the costs associated with building this road before construction begins. Langston Heights Development also agrees to pay one dollar ($1.00) to Alvamar as part of the agreement, regardless of whether construction begins.

_____ _____

Robert Santee Date

Officer, Langston Heights Development

_____ _____

Robert C. Johnson Date

Chairman of the Board, Alvamar, Inc.

LEAGUE OF WOMEN VOTERS®
OF LAWRENCE/DOUGLAS COUNTY

RECEIVED
DEC 19 2012
City County Planning Office
Lawrence, Kansas

December 10, 2012

To: Lawrence/Douglas County Planning Commission:

Re: Langston Heights, Items 5A, 5B, 5D

President
Melinda Henderson

President-Elect
David Burress

Vice President
Milton Scott

Secretary
Caleb Morse

Treasurer
Marjorie Cole

Directors

Margaret Arnold

Bonnie Dunham

James Dunn

Sally Hayden

Cille King

Ruth Lichtwardt

Marlene Merrill

The League of Women Voters of Lawrence/Douglas County has strong positions on neighborhood planning. We believe that "the primary urban planning unit should be the neighborhood, large enough to support the location of a nursery-elementary school, park...and should reduce to a minimum the use of the private car within each neighborhood." Therefore, we are concerned about the proposal for the multiple family lot configurations of the Langston Heights Addition and their proposed rezoning to RM districts.

We strongly support designing neighborhoods with housing types suited to families with children that are close to elementary schools with pedestrian ways designed for safe walking, and believe that it is very poor planning to locate multiple family housing that is not appropriately designed for this near our schools. Multiple family housing types can be designed for families with children, but must have the needed amenities such as privacy, open space and other facilities to make such units attractive for family life, which this proposed development does not have. Additionally, we support staff's recommendation to deny the applicant's request for a variance to allow sidewalks on only one side of streets.

Because of the effect this multiple family housing would have on the future development of the adjacent vacant land to the south of this tract, it can be predicted that this land also would become multiple family and not attractive for families with children. Because of the proximity that these two tracts have to Langston Hughes Elementary School, we believe that this would be very poor urban planning and a serious waste of potential that these two properties would have to reduce automobile use and utilize these valuable areas for encouraging families to live within walking distance to the school.

We believe that the reason that this type of poor urban planning is not uncommon in Lawrence is because of some serious deficiencies in our Land Development Code and how it leads to the interpretation of *Horizon 2020*:

- The multiple family districts do not specify housing type.
- The only distinction in our Comprehensive Plan (CP) in the designation of residential areas is based on density. Because of the long-standing interpretation of our CP, it is possible to allow all types of multiple family units from tall apartments to duplexes to achieve the gross densities that are typical for detached single family housing. Therefore, the density designation in our CP is not an appropriate prediction of use.
- The CP does not include the same goal that *Plan '95* did, which emphasized that development should be designed for the ultimate user and not to satisfy only the needs of the developer.

These factors eliminate the essential predictability that homeowners need to be able to have confidence in the stability and future of their neighborhoods when they make the substantial investment for living in a community. It tends to reduce the trust needed for a growing and thriving city to attract new residents. We ask that you take these factors into consideration when making your decision on this rezoning request. The future of our city depends on good urban planning. We would look forward to a discussion about making the necessary changes to our Land Development Code and *Horizon 2020* to create the predictability in our neighborhoods that we need.

Thank you for your consideration of these issues.

Melinda Henderson
President

Alan Black, Chair
Land Use Committee

PO BOX 1072 • LAWRENCE KS 66044-1072
league@sunflower.com • www.lawrenceleague.com
www.facebook.com/lwvldc • www.twitter.com/lwvldc

December 7, 2012

Sandra Day, AICP City/ County Planner, City of Lawrence:

RE: Rezoning Langston Heights

We are writing in opposition of the rezoning of Langston Heights. Our main areas of concern are traffic and child safety.

Our family moved to the Diamondhead subdivision 3 years ago. We chose the area based on several factors: the proximity to the elementary school, the community, and that the adjacent Langston Heights would be a similar neighborhood based on the 2006 plat.

Many families built in Diamondhead because the neighborhood to the West would be comparable. Langston Heights' preliminary plat of 2006 contained 67 single family homes and 18 duplexes. The new plat proposed by Land Plan would increase units by 94% in comparison to the 2006 plat. A 94% increase would greatly increase the amount of traffic on our residential streets.

Palisades and Crystal Lane are currently the only two inlets for Langston Heights. The roads leading to Langston Heights are narrow winding routes through residential areas with poor site lines.

At the December 3, informational meeting held by "Land Plan Engineering," Brian Sturm discussed the traffic study that was completed in September of 2012. The study claimed that the residential roads could support the rezoning of Langston Heights. Brian Sturm stated that the traffic study was done during the peak hours of traffic, 4:00 p.m. to 6:00 p.m. A traffic study done between 4:00 p.m. & 6:00 p.m. does not take into account the traffic at the school's dismissal hour. One of the main in-let/out-lets of Langston Heights is adjacent to a large elementary school. A traffic study done during the school's dismissal hour would provide more accurate information. 63% of the current Diamondhead households have children attending school. 63% of our neighborhood will be walking or driving during school arrival and dismissal times.

The sidewalks in the Diamondhead neighborhood would not support the 94% increase of population. Sidewalks in Diamondhead are only on one side of the street. Upon leaving Langston Hughes Elementary my children must cross Diamondhead Dr. (one of the only in-let/out-lets) This is the only intersection that contains a crosswalk. After walking up Diamondhead they must cross it again. They continue their walk home up Palisades, where they must cross Andrew John Dr. to reach the sidewalk. They walk north on Andrew John crossing Berando Ct. until they come upon Crystal Lane. (one of the other only in-let/outlets) To reach home they cross Andrew John Dr. again. Within a 3 block walk home, our children cross the street 5 times, encountering these soon to be heavily traveled roads. The future children of the Langston Heights neighborhood would also be traveling this dangerous route to their new home. Not only are we concerned about the safety of our own children, but the safety of the new families that will move into the Langston Heights development.

We love living in Lawrence and we love it because it gives us the small town feel we grew up with. We grew up in a town of 1500 where it was safe to walk down the street and everyone treated you like family. Our family has been searching for this sense of community for a while now and finally found it in Diamondhead. Our little neighborhood of all ages come together for an annual Memorial Day BBQ, 4th of July Parade, Pumpkin Carving, and Easter Egg Hunt. Children ride bikes, enjoy a game of basketball, and play tag outside. Neighbors help transport children, share recipes, help with heavy lifting, cook you meals when you're down, or let out the dog when you're away. Increasing the units by 96% from the 2006 plat to the proposed rezoning would only erode at the community we've created.

Lawrence is nationally known as a highly desirable community to live in. We need to continue to reflect on what drives people to Lawrence. Is it the multiple options of housing provided in a development, or is it the feeling of community we ALL provide?

Thank you for taking the time to read our concerns. We appreciate the opportunity to express our thoughts in the matter.

Sincerely,
Carisa, Dustin, Avery, & Sydney Stejskal

From: lauri di routh [mailto:lauridi@hotmail.com]
Sent: Monday, December 10, 2012 8:52 AM
To: Sheila Stogsdill
Subject: Comments for planning commission meeting 12/11/12

Ms. Stogsdill,

Please accept these comments for tonight's Planning Commission meeting. I respectfully request that these be shared with the Planning Commissioners and staff, and be included in the public record for tonight's meeting.
Please note that my comments herein are not intended to represent any organization or group. I offer these comments solely as an individual citizen and taxpayer.

RE: Long range planning work program, as submitted to the planning commission by Scott McCullough in November 2012.
I wish to express my concern about the City and County opting to postpone implementation of the environmental chapter of H2020 to a work schedule beyond 2013. This plan was crafted over the course of several years, and both citizens and the Sustainability Advisory Board play a role. I am troubled that this plan is being mothballed, at a time when we need it most. Given the current drought and its impact on both the built and natural environment, tending to our community's natural resources is more important now than ever. I ask that the PC make implemenation of the environmental chapter of H2020 a priority for 2013.

RE: Variances requested for the site plan and plat of the proposed Rock Chalk Village Park
I am troubled to see that the developer is requesting variances to the street connection requirements of the code, and also the sidewalk requirement of the code. Both of these items are integral to the City's Complete Streets plan, which was recently approved. While I appreciate the developer's stated intention of preserving trees on the property, without an inventory of said trees or any requirement for monitoring of tree preservation or removal during project construction, using trees as an excuse to minimize developer costs seems a bit disingenuous. In regard to street connectivity, it seems to me that allowing George William Way to remain a dead end street at the north end creates a bottleneck for the City's future rec center, and may create massive traffic problems on the property when large events are held at the KU facilities. At the very least, this variance should be reviewed and vetted, first, by traffic planners, to assess its impact. I believe that the requirements for sidewalks on both sides of the street should be upheld, and the developer's request for variances denied.

RE: Diamondhead Neighborhood Comments
I support the Diamondhead Neighborhood's right to preserve the nature and safety of their neighborhood. I ask that the PC reject the Landplan plat proposal as it would greatly expand the development of duplex and multifamily residential dwellings in this area, to the detriment of the existing neighborhood.

RE: planning commission packet structure

In reviewing the packet for this week's meeting, it is noted that the packet size of 57 MB makes it very difficult to load and open on a standard home computer. I had several people tell me that they had not even tried to do so, for fear that it would crash their computer system. While I understand that the files therein are large, I would like to see the PC use the City Commission's method of transmitting meeting information, using imbedded, topic-specific links on the agenda. This way, individual topic information can be opened and reviewed without the need to download the entire packet of 50+ MB of information. By breaking the packet up into managable chunks, it will make it easier for the public to access needed information and share with others who may wish to comment. Certainly, the PC wants to engage and solicit feedback from the public. I believe that the best way to do this would be to use imbedded links on the agenda, thereby reducing an evident barrier to accessing information.

I appreciate your consideration of my comments.

Sincerely,

Laura Routh
2235 East Drive
Lawrence, KS
979-3918

PLANNING COMMISSION REPORT
REGULAR AGENDA

PC Staff Report
1/28/2013

ITEM NO 3A: PRELIMINARY PLAT FOR LANGSTON HEIGHTS ADDITION; (SLD)

PP-12-00228: Consider a Preliminary Plat for Langston Heights Addition, a ~~61 lot~~ **70-lot** subdivision that includes detached, duplex and multi-family residential lots. ~~This subdivision includes a variance request from Section 20-811 (c) of the Subdivision Regulations that requires sidewalks on both sides of streets.~~ The property is along the east side of K-10 Highway and south of W. 6th Street, north and south of Crystal Lane and Palisades Drive extended to the west. Submitted by Landplan Engineering, for Langston Heights, LC, property owner of record. **Deferred from the December 2012 Planning Commission Meeting.**

STAFF RECOMMENDATIONS:

~~Staff recommends approval of the Preliminary Plat of the Langston Heights Addition subject to the following conditions of approval:~~

~~1. Provide a revised DSSA for review and approval by the City Utility Staff for the final configuration that has some lots connecting to existing manholes to the east.~~
~~2. Provide a revised preliminary plat with the following changes:~~
   a. ~~Show lot number for "Block 1".~~ ***(Provided on revised drawing dated 1.15.13)***
   ~~b. Label the proposed sanitary sewer main between Lots 18 and 19, Block 3 and along Lots 6-8, Block 6.~~
   ~~c. Show a 15' wide utility easement for the sanitary sewer main on the west side of Lots 6-8, Block 6.~~
   ~~d. The building setback for Lots 18 & 19 of Block 3 is shown within the proposed 15' utility easement. Please note that the proposed U/E width may need to be increased based on actual depth of sanitary sewer.~~
   ~~e. The routing of the proposed sanitary sewer main for Lots 1-3, Block 2 is not desirable since it places several service tees in the right-of-way. Provide service for Lot 3, Block 2 from the sanitary sewer main along the east property line that also provides service to Lot 4.~~
   ~~f. Extend a sanitary sewer main along the rear of Lots 1 & 2, Block 2 to eliminate two manholes.~~

Staff Recommendations: January 2013:
Staff recommends approval of the Preliminary Plat of the Langston Heights Addition subject to the following conditions of approval:

1. **Provide a revised DSSA for review and approval by the City Utility Staff.**
2. **Provision of a revised Preliminary Plat that shows the following notes and changes:**
   a. **Provision of a total of 15' wide utility easement for the sanitary sewer main on the west side of Lots 1-5 of Block Six.**
   b. **The building setbacks for Lots 1-11 of Block Two are shown within the**

proposed 30' utility easement.

c. **Label the proposed sanitary sewer main on the east side of Lots 12-15 of Block Two.**

d. **Revise Note 3 under "Provision and Financing of Roads, Sewer, and Other Public Service" to identify a third connection to the existing sanitary sewer system via main extension connecting to manhole NW321219-011.**

Note: Revised Language is shown in **blue bold** text. There is no longer a variance associated with this request. That section of the report has been removed.

KEY POINTS

- Proposed preliminary plat reflects an overall gross density of ~~5.9~~ **5.809** dwelling units per acre consistent with low-density development of the comprehensive plan.
- The proposed preliminary plat represents the proposed zoning boundaries.
- Proposed preliminary plat extends the local street network east of K-10 Highway.
- ~~Project includes variance request for sidewalks on only one side of some streets~~.
- This property was evaluated for compliance with the preservation of natural areas through the Sensitive Lands regulations outlined in Article 11 of the Development Code. A sensitive lands site plan and required preservation of open space is not applicable to this property.
- **The preliminary plat has been revised since the December 2012 Planning Commission meeting to increase the presence of detached single-dwelling units in the overall development and has revised the internal street network to reduce the direct connectivity to the Diamondhead development to the east by adding "T" intersections along Big Sea Drive.**

SUBDIVISION CITATIONS TO CONSIDER

- This application is being reviewed under the Subdivision Regulations for Lawrence and Unincorporated Douglas County, effective Jan 1, 2007.

ASSOCIATED CASES/OTHER ACTION REQUIRED

- Z-12-00229: ~~8.333 acres~~ **4.582 acres** from UR (Urban Reserve) to RM12D (Multi-Dwelling Residential)
- Z-12-00231: ~~9.206 acres~~ **9.122 acres** from UR (Urban Reserve) to RS7 (Single-Dwelling Residential)
- Z-12-00232: ~~10.025 acres~~ **9.980 acres** from UR (Urban Reserve) to RM12 (Multi-Dwelling Residential)
- **Z-13-00015: 3.88 acres from UR (Urban Reserve) to RS5 (Single-Dwelling Residential) as a lesser change from a portion of the proposed RM12D application.**
- Submittal of final plat for administrative approval.
- Placement of final plat on City Commission agenda for acceptance of dedication of easements and rights-of-way.
- Recordation of the final plat with the Douglas County Register of Deeds.

PLANS AND STUDIES REQUIRED

- *Traffic Study* – Study provided and accepted.

- *Downstream Sanitary Sewer Analysis* - Provided and generally acceptable. Provide a revised DSSA for the final configuration that has some lots connecting to existing manholes to the east.
- *Drainage Study* – The drainage letter dated 10-8-2012 meets the specified requirements and is approved.
- *Environmentally Sensitive Lands Study* – Evaluation of existing trees was completed by applicant and reviewed by staff. The existing trees do not meet the minimum size requirements defined in Article 11 of the Development Code.

ATTACHMENTS

- Proposed Preliminary Plat December 2012.
- **Revised Preliminary Plat January 2013.**
- Previously approved preliminary plat.
- Conceptual layout for 4-plex lot development.
- Concept Plan December 2012
- Revised Concept Plan January 2013.

PUBLIC COMMENT

- Communications are attached.

Site Summary		
	December 2012	**January 2013**
Gross Area: Number of Existing Lots: Number of Proposed Lots:	27.564 acres Unplatted tract of land 61 lots	**27.564 acres** **Unplatted tract of land** **70 lots**
RS7	9.2 acres 29 lots	**9.2 acres** **29 lots**
RS5	0 acres 0 lots	**3.880 acres** **23 lots**
RM12D	8.333 acres 25 lots (50 units)	**4.582 acres** **11 lots (22 units)**
RM12	10.025 acres 7 lots (86 units)	**9.980 acres** **7 lots (86 units)**

GENERAL INFORMATION

Current Zoning and Land Use: UR (Urban Reserve) District and TC (SLT/K10 Major Transportation Corridor Overlay) District; undeveloped property.

Surrounding Zoning and Land Use: To the north: RM24 (Multi-Dwelling Residential) District; undeveloped land.

To the east: RS7 (Single-Dwelling Residential) District; developing residential subdivision with detached housing.

To the south: UR (Urban Reserve) District undeveloped land.

To the west: A (Agricultural) County District; K-10 Highway.

STAFF REVIEW

This property is proposed for residential development with a variety of lot sizes and housing structure types. The subdivision extends existing local streets to the west. Additional connections north and south will be completed as adjacent properties develop. This property is located along K-

10 Highway and is subject to specific development standards for buffering along the west property line as they pertain to Transportation Corridor Overlay District requirements. Additionally, a variance is proposed with this application to allow sidewalks on only one side of certain streets. The review of this preliminary plat is considered concurrently with the requests for zoning three residential zoning districts.

A plan revised and submitted on November 29, 2011 modified the lot configuration for the proposed RM12D portion of the development. The district boundary of the RM12D and the RM12 proposed district was slightly modified to accommodate the lot changes in the preliminary plat. If changes are made to the proposed zoning district boundaries the preliminary plat would likely be revised to accommodate the changes.

In response to comments and concerns made at the Planning Commission meeting on December 10, 2012 the applicant has submitted a revised preliminary plat and associated rezoning descriptions for the proposed development – Langston Heights. Significant changes include the following:

1. **Increase in the number of proposed detached dwelling lots through the use of the RS5 district.**
2. **Reduction of the proposed RM12D (Multi-Dwelling) lots.**
3. **Addition of "T" intersections along Big Sea Drive to reduce direct connectivity between the Diamondhead Subdivision to the east and Renaissance Drive to the west.**
4. **Addition of a phasing restriction to limit the development of Lot 1, Block 1 until Renaissance Drive is constructed south to Bob Billings Parkway.**

Zoning and Land Use
The property is proposed for RS7, **RS5, a reduced amount of** RM12D**,** and RM12 zoning. This application is being reviewed and considered concurrently with the associated zoning applications. Each proposed zoning district is discussed separately. The proposed subdivision design establishes the framework for the district boundaries. The subdivision is designed to accommodate a mix of housing types. Lots meet the minimum area and size requirements per the proposed district boundaries. The zoning districts establish a Base Density that is applied to each lot for development purposes. Density is a measure used to express the intensity of residential development. Base Density is defined as:

> *The number of dwelling units that can be developed on a subject property, rather than the number of dwelling units that are permitted for the zoning district. Base density is the number of units that can be developed given the size of the parcel, the area required for street rights-of-way or infrastructure, the density and dimensional standard of section 20-601 (a), the environmental protection standards, as well as topographical or other features unique to the property.* [Section 20-1701].

For the purposes of this report the Base Density is referred to as the net density or what can be physically developed on individual lots. Gross density refers to the development within the total district boundary. Additionally, when considering a maximum limit such as density the Development Code disregards the fraction and only the smallest applicable whole number shall be considered. For this reason the density summary is rounded down. If the zoning requests are modified or denied then it is likely that, the configuration of this subdivision would also be revised. This application includes two concept drawings to demonstrate the planned development for the duplex and 4-plex units that could be accommodated on the proposed lots.

The west portion of this property is encumbered by a Major Transportation Corridor Overlay District for the SLT/K10 highway. Several other major corridors are also subject to an overlay district. These districts are listed in Section 20-307 of the Development code. At this time, only the SLT/K10 overlay district includes development standards.

The boundary of the SLT/K10 Overlay District extends 500 feet on either side of the centerline of the right-of-way within the City of Lawrence. The overlay does not, at this time, extend into unincorporated areas. The preliminary plat shows this boundary as extended to the east side of Renaissance Drive and into the adjacent lots approximately 45'. The standards include an extraordinary setback of 50' as shown on the preliminary plat. Buildings and improvements are prohibited in this setback. Additional standards will be considered with future site plans for affected properties.

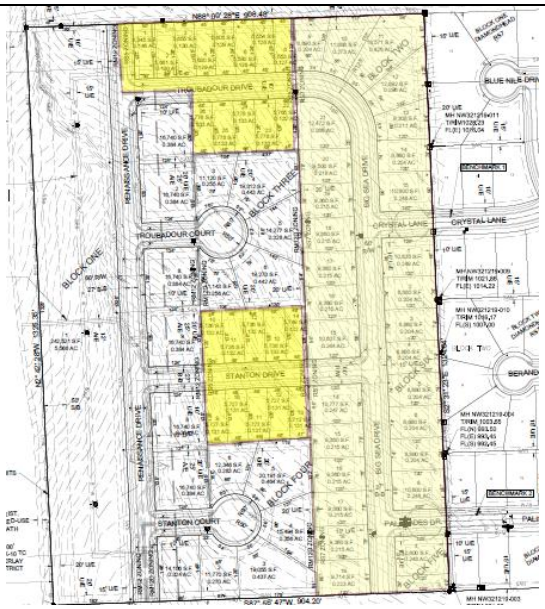
Lot and Block Arrangement
A previous plat for this area was approved in 2005. This approval was extended. The developer did not complete the process by recording the final plat with the Register of Deeds Office and allowed the approval to expire. The previous plan included a similar arrangement to the proposed preliminary plat with grid streets. However, the western most street Renaissance Drive was designed with lots on only one side of the street.

This subdivision extends **a modified** grid street pattern west. Cul-de-sacs are used to orient detached housing and duplex housing lots back-to-back.

Detached Dwelling Development:
Big Sea Drive, in the eastern portion of the development, is fronted with the RS7 lots. **This street is extended to intersect Troubadour Drive, in the north portion of the subdivision, in a continuation of the single-dwelling detached housing pattern. Stanton Drive between Big Sea drive and Renaissance Drive is a new street addition to the subdivision design that also extends the single-dwelling detached housing pattern to the west. RS5 zoning is used as an extension of the detached pattern and provides additional land use transition within the development while increasing the predominance of detached housing in the subdivision.**

Lots exceed the minimum area requirement. The net density of this portion of the subdivision is comparable to the existing subdivision to the east at 4 dwelling units per acre.

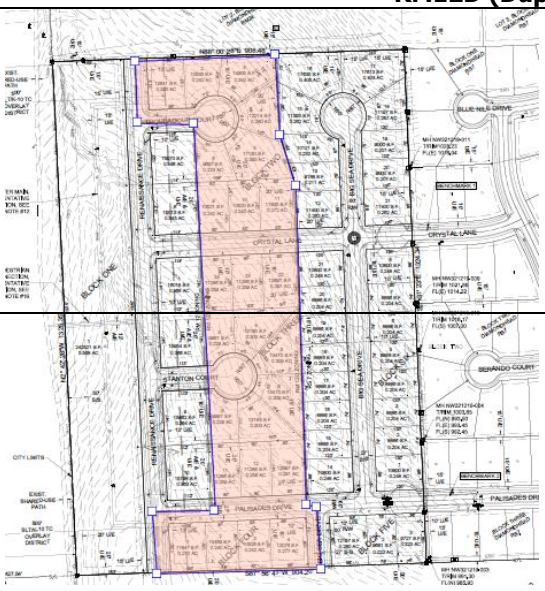
RS Development Area		
	Development Area	9.206 Acres
	ROW:	2.333 Acres
	Lots/Total Units:	29 lots /29 units
	Minimum District Lot Area:	7,000 SF
	Minimum Lot Area:	8,886 SF
	Maximum Lot Area:	17,635 SF
	Average Lot Area:	10,3224 SF
	Gross Density	3 units per acre
	Net Unit Density (Proposed):	4 units per acre
	District Density (Allowed):	6 units per acre

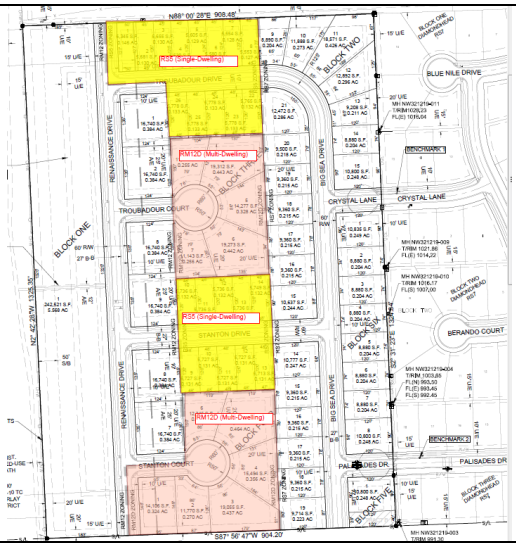


RS7 Area: Z-12-00231	
December 2012 Version	
Development Area RS7 Development Area RS5 Total Area	9.122 Acres 3.880 Acres 13.002
ROW RS7: ROW RS5	2.333 Acres 0.855 Acres
Lots/Total Units RS7: Lots/Total Units RS5: Total Detached Lots/units	29 lots /29 units 23 lot / 23 units 52/52
Minimum District Lot Area RS7: Minimum District Lot Area RS5:	7,000 SF 5,000 SF
Minimum Lot Area RS7: Minimum Lot Area RS5:	8,880 SF 5,553 SF
Maximum Lot Area RS7: Maximum Lot Area RS5:	18,571 SF 6,345 SF
Average Lot Area RS7: Average Lot Area RS5:	10,166 SF 7,187 SF
Gross Density RS7 Gross Density RS5	3 units per acre 6 units per acre
Net Unit Density (Proposed): Net Unit Density (Proposed): Total Detached	4.2 units per acre 7.6 units per acre 3.9 units per acre
District Density (Allowed) RS7: District Density (Allowed) RS5:	6 units per acre 8 units per acre
RS7 Area: Z-12-00231 RS5 Area: Z-13-00013 **January 2013 Version**	

The center portion of the subdivision **was** ~~is~~ designed for duplex lots. **The previous plan showed** Crystal Lane and Palisades Drive extended as part of the grid street pattern. **The revised plan extends both Palisades and Crystal Lane only one lot deep to intersect with Big Sea Drive. Connecting streets are off-set as a future distinction between individual land uses. The RM12D area is significantly reduced in the revised preliminary plat. The applicant has, through the use of a lesser change provision of the Development Code, proposed RS5 zoning for portions of the previously proposed RM12D area.** These lots exceed the minimum area requirement for the proposed RM12D zoning. The net density within the central segment of the subdivision is 7 dwelling units per acre.

RM12D (Duplex Development Area	
Development Area	8.333 Acres
ROW:	1.664 Acres
Lots/Total Units:	25 Lots / 50 units
Minimum District Lot Area:	6,000 SF
Minimum Lot Area:	9,552 SF
Maximum Lot Area:	15,997 SF
Average Lot Area:	11,620 SF
Gross Density	6 units per acre
Net Unit Density (Proposed):	7 units per acre
District Density (Allowed):	12 units per acre



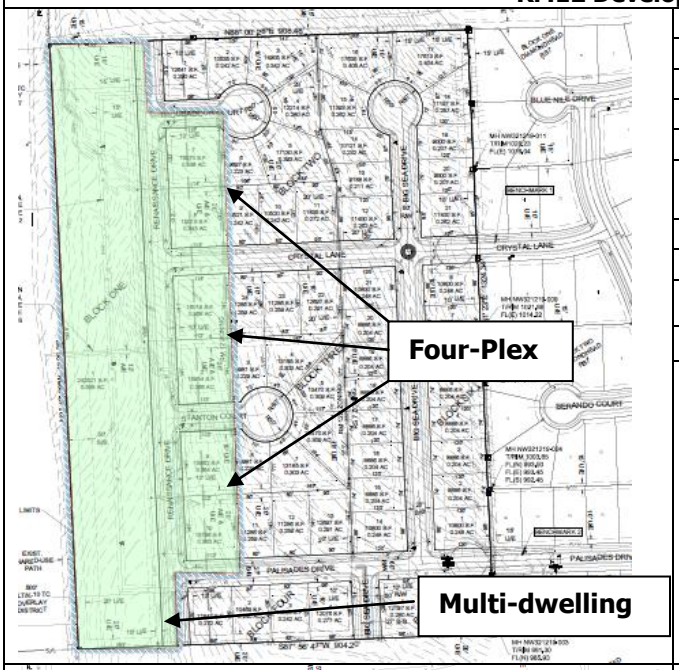


RM12D Area: Z-12-00229 **December 2012 Version**	
Development Area	4.582 Acres
ROW:	0.723 Acres
Lots/Total Units:	Lots /22 units
Minimum District Lot Area:	6,000 SF
Minimum Lot Area:	10,982 SF
Maximum Lot Area:	20,191 SF
Average Lot Area:	15,281 SF
Gross Density	4.8 units per acre
Net Unit Density (Proposed):	5.7 units per acre
District Density (Allowed):	12 units per acre
RM12D Area: Z-12-00229	

The revised preliminary plat significantly reduces the overall density of the duplex type housing within the development.

The western portion of the subdivision is designed to accommodate multi-dwelling units with two types of lots. One large lot is proposed along the highway right-of-way. Six smaller, corner lots are designed to accommodate a maximum of four units per lot. The net density of the western portion of the subdivision is 11 dwelling units per acre. **The site summary has been slightly revised as a result of other changes to the overall subdivision. The following table reflects the previous and revised summary. The general boundary and lot arrangement has not been altered. However, the interior street connections between Renaissance Drive and the east property line of the subject property have been revised.**

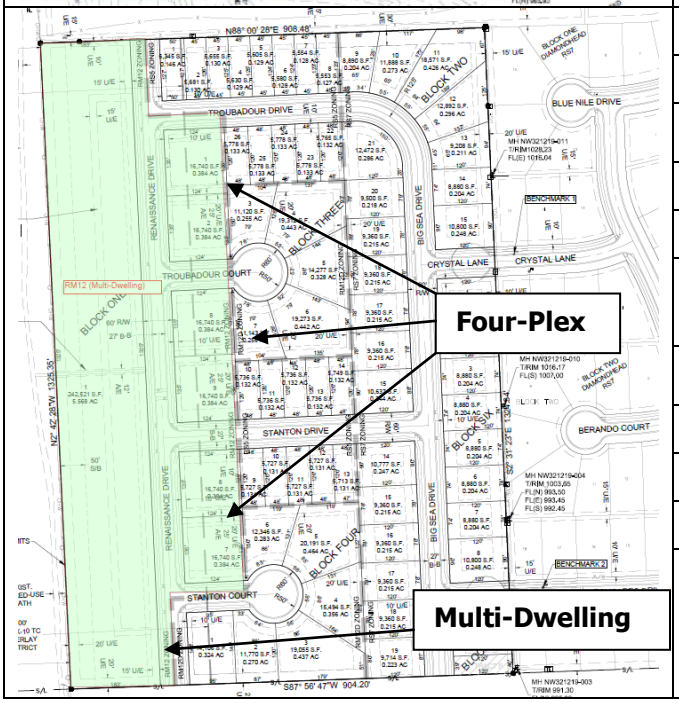
RM12 Development Area



Development Area	10.025 Acres
ROW:	2.117 Acres
Lots/Total Units:	7 Lots / 86 Units
Minimum District Lot Area:	6,000 SF
Minimum Lot Area:	15,070 SF
Maximum Lot Area:	242,521 SF adjacent to highway
Average Lot Area:	48,034 SF
Gross Density: *(per 86 units)*	8.6 Units per Acre
Unit Density (Proposed):	11 Units per Acre
District Density (Allowed):	12 units per Acre

RM12 Area: Z-12-00232

December 2012 Version



Development Area	**9.980 Acres**
ROW:	**2.107 Acres**
Lots/Total Units:	7 Lots / 86 Units **No Change**
Minimum District Lot Area:	6,000 SF
Minimum Lot Area:	**16,740 SF**
Maximum Lot Area:	242,521 SF adjacent to highway **No Change**
Average Lot Area:	48,034 SF **48,994 SF**
Gross Density: *(per 86 units)*	8.6 Units per Acre
Unit Density (Proposed):	**10.923 Units per Acre**
District Density (Allowed):	12 units per Acre

RM12 Area: Z-12-00232

December 2012 Version

Excluding the one large lot located along the highway, the lots for the 4-plex development exceed 15,000 SF each and represent approximately 11 dwelling units per acre. The exhibit provided by the applicant shows a conceptual development of the lots with 4 units, each with 2 bedrooms that complies with the applicable building and parking setback requirements of the proposed RM12 District.

A significant change to the preliminary plat is the addition of a restriction, as shown in General Note 18 on the face of the drawing. Development of Lot 1, Block 1 is restricted until such time that Renaissance Drive is constructed south to Bob Billings Parkway. The addition of phasing limitations tied to specific public improvements is intended to

reduce the impact of the project on the existing development to the east. It was noted during the review that the building setback extends into the utility easement along the north property line (Lots 1-8, Block 2). The preliminary plat should be revised to show a building envelop that does not conflict with the utility easement. Building within the utility easement is not permitted. This change is reflected in the conditions of approval.

Streets and Access

The proposed subdivision extends the local street network for the area west of a developing subdivision and along the east side of K-10 Highway. Stub street connections are provided to the north and south to undeveloped land for future connection to Ken Ridge Drive to the north and Bob Billings Parkway to the south. As the adjacent properties are developed, additional street connections to the north and south will be made in this area.

The development of the surrounding parcels to the north and south of Langston Heights is discussed in the cover memo attached to this report. The proposed street arrangement of Big Sea Drive extended to the south property line suggests the extension of this land use pattern to the south.

The proposed subdivision does not modify the right-of-way for the South Lawrence Trafficway.

In addition to the extension of the public street network, a parallel and coordinating pedestrian network of public sidewalks will be extended with this subdivision. The proposed development includes a connection through Lot 1, Block 1 from Renaissance Drive to the shared use path along the west side of the subdivision. This connection will provide neighborhood connectivity to the shared use path.

Based on the revised Preliminary Plat street configuration, three additional speed humps will be needed along Big Sea Drive as noted by the City's Traffic Engineer. These elements will be required in applicable public improvement plans for the subdivision.

The overall street configuration is, in the opinion of the City Engineer, better suited to direct traffic to use Renaissance Drive. The proposed plan will result in less direct travel on Crystal Lane and Palisades Drive. The plan retains connectivity between the existing and proposed subdivisions using off-set intersections.

As part of the subdivision review process appropriate traffic calming will be included in the review of any public improvement plans for this proposed development. This may include speed humps or other devices along Big Sea Drive. This discussion in included to advise the developer of the concern following the re-submittal of the preliminary plat with an altered interior street arrangement. A plat condition is not required since a separate set of plan reviews will be conducted for the public streets as a technical process. No additional right-of-way would be necessary to accommodate traffic calming along Big Sea Drive.

Utilities and Infrastructure

The following Utility Discussion was based on the plan submitted for the December Planning Commission consideration. Recommendations related to the utility easements are specific to the previous preliminary plat. A revised Downstream Sanitary Sewer Study Analysis was provided to staff and is being reviewed. Additional easements and minor changes to the proposed utility configuration are recommended. These are reflected as conditions of approval.

The Location of fire hydrants will be reviewed with the public improvement plans for this development. Additional hydrants will be noted if needed during that review. The applicant has been advised if basic design concerns such as adequate separation between water and sanitary sewer lines. No changes to the proposed preliminary plat are needed for these items.

This subdivision includes utility easements around the perimeter of the subdivision and interior lots for utility access. In some sections, easements are proposed along the front of lots to accommodate sanitary sewer. Front utility easements are also intended for private service such as gas, electric, cable and other utilities. Any utility boxes associated with these services shall be located in the side and rear yards. Utilities will be extended to serve this development.

Additional review of the placement and screening of mechanical equipment will be included for those lots subject to site plan review (RM12 lots).

The preliminary plat currently includes a utility easement for water line though Lot 1, Block 1. This location is conceptual at this time since detailed development plans are not known. The Developer anticipates that this easement would be finalized with a future site plan for the lot.

Staff has also noted that some changes and labeling to proposed utility easements are needed or may be needed depending on the final design of the public improvements. These elements will be further reviewed with the submittal of a final plat. These concerns are reflected as conditions of approval. Changes include adjusting the drawing to show a sanitary sewer main located in the center of utility easements and additional labeling of the utility in various places on the drawing.

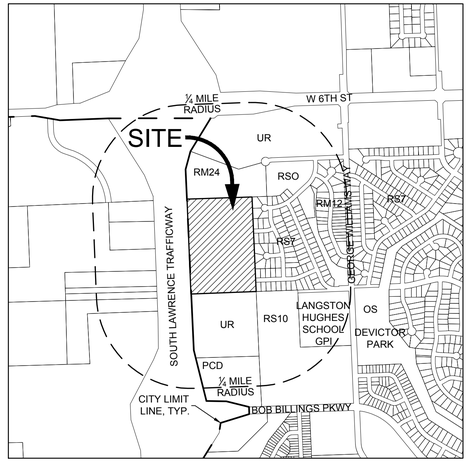
Utility Staff also noted some changes to easements that may be required as public improvement plans are finalized. Deeper sewer lines may require a wider easement in a portion of Block 3. This could potentially affect the building setback if the easement is wider than the allowed district setback. The placement of a building with regard to setback and easement is reviewed as part of applicable building permits for single-dwelling and duplex development and as part of the site plan review for multi-dwelling developments.

Lastly, Utility staff noted changes that are recommended for the routing of the sanitary sewer service for this development to reduce the number of lots that are served from the front. The addition of sanitary sewer lines to the front of a lot hinders the ability to locate street trees and co-locate other infrastructure. A sanitary sewer design that provides rear lot service access is preferred.

Conformance
The Comprehensive Plan recognizes the need for mixed housing options and the need to provide adequate land use transition between more intense uses and less intense uses. The proposed Major Subdivision will accommodate the creation of mixed housing in this location and is in conformance with the recommendations in *Horizon 2020.* The preliminary plat is in conformance with the standards and requirements of the Subdivision Regulations and the Development Code.



LOCATION MAP:



LEGAL DESCRIPTION:

A TRACT OF LAND IN THE NORTHWEST QUARTER OF SECTION 32, TOWNSHIP 12 SOUTH, RANGE 19 EAST OF THE SIXTH PRINCIPAL MERIDIAN, IN DOUGLAS COUNTY, KANSAS, DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF SAID QUARTER SECTION, THENCE ON A MEASURED BEARING OF NORTH 87°56'47" EAST ALONG THE SOUTH LINE OF SAID QUARTER SECTION, 427.54 FEET TO THE EAST RIGHT-OF-WAY LINE OF THE SOUTH LAWRENCE TRAFFICWAY TO THE POINT OF BEGINNING; THENCE ON A MEASURED BEARING OF NORTH 02°42'28" WEST ALONG SAID EAST RIGHT-OF-WAY LINE, 1325.35 FEET TO THE SOUTHWEST CORNER OF LOT 2, BLOCK ONE, DIAMONDHEAD, A SUBDIVISION IN THE CITY OF LAWRENCE, DOUGLAS COUNTY, KANSAS; THENCE ON A MEASURED BEARING OF NORTH 88°00'28" EAST, ALONG THE SOUTH LINE OF SAID LOT 2, A MEASURED DISTANCE OF 908.48 FEET TO THE NORTHWEST CORNER OF LOT 10, BLOCK ONE IN SAID SUBDIVISION; THENCE ON A MEASURED BEARING OF SOUTH 02°31'23" EAST AND MEASURED DISTANCE OF 1324.34 FEET, ALONG THE WEST LINE OF SAID SUBDIVISION TO THE SOUTH LINE OF SAID NORTHWEST QUARTER; THENCE ON A MEASURED BEARING OF SOUTH 87°56'47" WEST AND MEASURED DISTANCE OF 904.20 FEET ALONG SAID SOUTH LINE TO THE POINT OF BEGINNING. CONTAINS 27.564 ACRES, MORE OR LESS.

GENERAL NOTES:

1. OWNER: LANGSTON HEIGHTS, LC
   611 SAINT ANDREWS DRIVE
   LAWRENCE, KANSAS 66047
2. LAND PLANNER/ CIVIL ENGINEER/ SURVEYOR: LANDPLAN ENGINEERING, P.A.
   1310 WAKARUSA DRIVE
   LAWRENCE, KANSAS 66049
3. TOPOGRAPHIC INFORMATION SHOWN WAS OBTAINED FROM A FIELD SURVEY PERFORMED BY LANDPAN ENGINEERING, P.A., OCTOBER 1, 2012.
4. EXISTING ZONING: UR
5. PROPOSED ZONING: RS7, RM12, RM12D
6. EXISTING LAND USE: VACANT
7. PROPOSED LAND USE: DETACHED DWELLING, DUPLEX, ATTACHED DWELLING
8. THE SUBJECT PROPERTY DOES LIE WITHIN A SPECIAL FLOOD HAZARD AREA AS DEFINED BY FLOOD INSURANCE RATE MAP (FIRM); PANEL NO. 154, MAP NUMBER 20045C0154D, DOUGLAS COUNTY, KS., BEARING AN EFFECTIVE DATE OF AUGUST 5, 2010.
9. TYPICAL SOIL TYPES: SOGN-VINLAND COMPLEX, 3 TO 25% SLOPES
   MARTIN SILTY CLAY LOAM, 1 TO 3% SLOPES
   MARTIN SILTY CLAY LOAM, 3 TO 7% SLOPES
   OSKA SILTY CLAY LOAM, 3 TO 6% SLOPES
   VINLAND COMPLEX, 3 TO 7% SLOPES
   VINLAND-MARTIN COMPLEX, 7 TO 15% SLOPES
10. PROPOSED UTILITY LOCATIONS AND SIZES ARE PRELIMINARY AND WILL BE FINALIZED AT THE TIME OF SITE ENGINEERING.
11. THIS SITE IS DESIGNATED LOW-DENSITY RESIDENTIAL IN HORIZON 2020, DATED 7/1/11, AND THE WEST OF K-10 PLAN, DATED 1/7/08.
12. A WATER MAIN LOOP AND ASSOCIATED UTILITY EASEMENT IS TENTATIVELY LOCATED ACROSS LOT 1, BLOCK ONE. THE FINAL LOCATION OF THE WATER MAIN AND DEDICATION OF THE ASSOCIATED EASEMENT SHALL BE DETERMINED AT THE TIME OF SITE PLAN REVIEW FOR THE PROPOSED MULTI-FAMILY DEVELOPMENT.
13. LANDSCAPING SHALL NOT BE PLACED WITHIN UTILITY EASEMENTS, WITHIN 8 FEET OF THE WATER MAIN, OR WITHIN 8 FEET OF THE SANITARY SEWER MAIN.
14. UTILITIES WILL BE UNDERGROUND PER SEC. 20-809 (f)(4)(iv).
15. A PLANNING COMMISSION VARIANCE IS REQUESTED FROM THE REQUIREMENT IN SECTION 20-811(c) OF THE SUBDIVISION REGULATIONS SO AS TO PERMIT SIDEWALKS ON ONLY ONE SIDE OF CRYSTAL LANE AND PALISADES DRIVE.
16. A PEDESTRIAN CONNECTION AND ASSOCIATED PUBLIC ACCESS EASEMENT IS TENTATIVELY LOCATED ACROSS LOT 1, BLOCK ONE IN ACCORDANCE WITH SECTIONS 20-810(d)(2)(i)(a) and 20-810(h)(1) OF THE SUBDIVISION REGULATIONS. THE FINAL LOCATION OF THE CONNECTION AND DEDICATION OF THE ASSOCIATED EASEMENT SHALL BE DETERMINED AT THE TIME OF SITE PLAN REVIEW FOR THE PROPOSED MULTI-FAMILY DEVELOPMENT.
17. LOTS DEVELOPED WITHIN THE SLT/K10-TC SHALL BE DESIGNED TO COMPLY WITH THE MINIMUM DESIGN STANDARDS OF SECTION 20-307(c)(1).

BENCHMARKS:

BENCHMARK 1: CHISELED SQUARE ON BACK OF CURB NORTH SIDE OF CRYSTAL LANE 50' +/- EAST OF EXISTING CURB (MIDDLE OF LOT 15, BLOCK ONE DIAMONDHEAD SUBDIVISION)
ELEV: 1023.18

BENCHMARK 2: CHISELED SQUARE ON BACK OF CURB SOUTH OF COMMON LINE OF LOTS 17 AN D18, BLOCK TWO DIAMONDHEAD SUBDIVISION
ELEV: 996.78

SITE SUMMARY:

GROSS AREA:	1,200,694 SF / 27.564 AC
RIGHTS-OF-WAY:	266,352 SF / 6.115 AC
NET AREA:	934,342 SF / 21.449 AC
TOTAL LOTS:	61
AVERAGE LOT SIZE:	15,317 SF / 0.352 AC

BLOCK ONE

NET AREA:	242,521 SF / 5.568 AC
TOTAL LOTS:	1
AVERAGE LOT AREA:	242,521 SF / 5.568 AC
MINIMUM LOT AREA:	242,521 SF / 5.568 AC
MAXIMUM LOT AREA:	242,521 SF / 5.568 AC

BLOCK TWO

NET AREA:	258,028 SF / 5.924 AC
TOTAL LOTS:	21
AVERAGE LOT AREA:	12,287 SF / 0.282 AC
MINIMUM LOT AREA:	9,000 SF / 0.207 AC
MAXIMUM LOT AREA:	17,635 SF / 0.405 AC

BLOCK THREE

NET AREA:	282,355 SF / 6.303 AC
TOTAL LOTS:	24
AVERAGE LOT AREA:	11,440 SF / 0.263 AC
MINIMUM LOT AREA:	8,886 SF / 0.204 AC
MAXIMUM LOT AREA:	17,429 SF / 0.400 AC

BLOCK FOUR

NET AREA:	44,918 SF / 1.031 AC
TOTAL LOTS:	4
AVERAGE LOT AREA:	11,230 SF / 0.258 AC
MINIMUM LOT AREA:	10,469 SF / 0.240 AC
MAXIMUM LOT AREA:	12,076 SF / 0.277 AC

BLOCK FIVE

NET AREA:	31,605 SF / 0.726 AC
TOTAL LOTS:	3
AVERAGE LOT AREA:	10,535 SF / 0.242 AC
MINIMUM LOT AREA:	9,681 SF / 0.222 AC
MAXIMUM LOT AREA:	12,917 SF / 0.280 AC

BLOCK SIX

NET AREA:	74,915 SF / 1.720 AC
TOTAL LOTS:	8
AVERAGE LOT AREA:	9,364 SF / 0.215 AC
MINIMUM LOT AREA:	8,886 SF / 0.204 AC
MAXIMUM LOT AREA:	10,800 SF / 0.248 AC

ZONING SUMMARY:

RS7

GROSS AREA:	401,026 SF / 9.206 AC
RIGHTS-OF-WAY:	101,644 SF / 2.333 AC
NET AREA:	299,382 SF / 6.873 AC
TOTAL LOTS:	29
AVERAGE LOT AREA:	10,324 SF / 0.237 AC
MINIMUM LOT AREA:	8,886 SF / 0.204 AC
MAXIMUM LOT AREA:	17,635 SF / 0.405 AC
TOTAL UNITS:	29
UNIT DENSITY:	4.219 UNITS/AC

RM12D

GROSS AREA:	362,991 SF / 8.333 AC
RIGHTS-OF-WAY:	72,503 SF / 1.664 AC
NET AREA:	290,488 SF / 6.669 AC
TOTAL LOTS:	25
AVERAGE LOT AREA:	11,620 SF / 0.267 AC
MINIMUM LOT AREA:	9,552 SF / 0.219 AC
MAXIMUM LOT AREA:	15,997 SF / 0.367 AC
TOTAL UNITS:	50
UNIT DENSITY:	7.497 UNITS/AC

RM12

GROSS AREA:	436,678 SF / 10.025 AC
RIGHTS-OF-WAY:	92,205 SF / 2.117 AC
NET AREA:	344,473 SF / 7.908 AC
TOTAL LOTS:	7
AVERAGE LOT AREA:	49,210 SF / 1.130 AC
MINIMUM LOT AREA:	16,329 SF / 0.375 AC
MAXIMUM LOT AREA:	242,521 SF / 5.568 AC
TOTAL UNITS:	86
UNIT DENSITY:	10.875 UNITS/AC

GROSS SUBDIVISION UNIT DENSITY = 165 UNITS / 27.564 AC
= 5.986 UNITS/AC

PROVISION AND FINANCING OF ROADS, SEWER AND OTHER PUBLIC SERVICES:

1. THE SUBDIVISION WILL INCLUDE THE DEDICATION OF RIGHTS-OF-WAY ASSOCIATED WITH ALL INTERNAL ROADS SHOWN.
2. THE SUBDIVISION WILL PROVIDE CONNECTIONS TO THE CITY OF LAWRENCE WATER SYSTEM VIA TWO EXISTING 8-INCH LINES: ONE ON THE SOUTH SIDE OF PALISADES DRIVE, AND A SECOND ON SOUTH SIDE OF CRYSTAL LANE, BOTH TO THE EAST OF THE SUBJECT PROPERTY.
3. THE SUBDIVISION WILL PROVIDE CONNECTIONS TO THE CITY OF LAWRENCE SANITARY SEWER SYSTEM VIA TWO EXISTING 8-INCH MAINS: ONE THAT RUNS SOUTH BETWEEN MANHOLES NW321219-010 AND NW321219-003 AND LIES ADJACENT TO THE SUBJECT PROPERTY'S EAST BOUNDARY IN A 15-FOOT UTILITY EASEMENT; AND A SECOND THAT RUNS SOUTHWEST ORIGINATING AT MANHOLE SW321219-015 LOCATED WEST OF THE EXISTING BOB BILLINGS PARKWAY TERMINUS.
4. PURCHASERS OF THE LOT IN THE SUBDIVISION MAY OR MAY NOT BE SUBJECT TO SPECIAL ASSESSMENTS OR OTHER COSTS OF STREETS, ROADS, WATER LINES AND TREATMENT, AND/OR WASTEWATER LINES AND TREATMENT.
5. THE PROVISION OF IMPROVED ROADS, WATER SERVICE AND/OR WASTEWATER SERVICE WILL NOT DEPEND IN ANY WAY ON A VOTE, PETITITION OR OTHER COLLECTIVE ACTION OF PROPERTY OWNERS IN THE SUBDIVISION.

LEGEND:

8"W — EXISTING WATER LINE	WV EXISTING WATER VALVE
8"W — PROPOSED WATER LINE	EXISTING FIRE HYDRANT
SAN — EXISTING SANITARY SEWER	PROPOSED FIRE HYDRANT
SAN — PROPOSED SANITARY SEWER	MH EXISTING MANHOLE
STM — EXISTING STORM SEWER	EXISTING SANITARY SEWER MANHOLE
STM — PROPOSED STORM SEWER	PROPOSED SANITARY SEWER MANHOLE
X — FENCE LINE	EXISTING STORM SEWER MANHOLE
BUILDING SETBACK LINE	PROPOSED STORM SEWER MANHOLE
UGE — UNDERGROUND ELECTRIC LINE	PROPOSED STORM SEWER END SECTION
OHW — OVERHEAD WIRE	EXISTING IRON BAR
EXISTING WATER BLOWOFF	BM BENCHMARK
	E ELECTRIC BOX
	GA GUY ANCHOR
	SIGN
	SECTION CORNER

Civil Engineering
Landscape Architecture
Community Planning
Surveying

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PRELIMINARY PLAT OF LANGSTON HEIGHTS ADDITION CITY OF LAWRENCE DOUGLAS COUNTY, KANSAS

REV	DATE	DESCRIPTION
1	11/14/12	PER DEPT COMMENTS
2	11/29/12	ZONING BOUNDARIES

DATE:	10/08/12
PROJECT NO.:	20121218
DESIGNED BY:	LPE/TAH
DRAWN BY:	BS
CHECKED BY:	CMS

ISSUE	SHEET NO.
	1
	OF 1 SHEETS

FILE NAME: Q:\2012\12180\CAD\Planning\PP\121218C-PP.dwg LAST SAVED BY: Brian Sturm SAVED DATE: 11/28/2012 2:40 PM PLOTTED: 11/29/2012 2:58 PM
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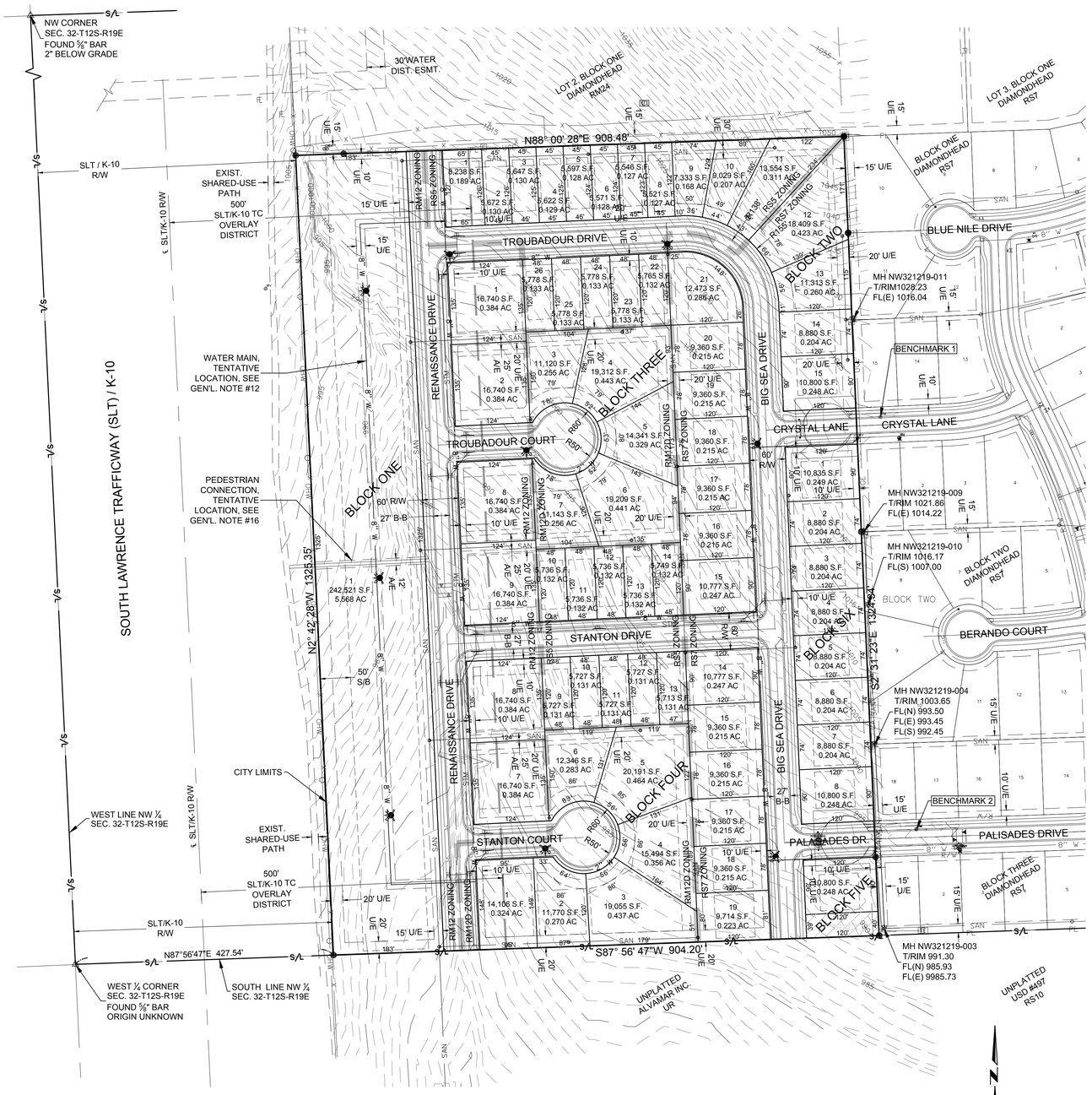
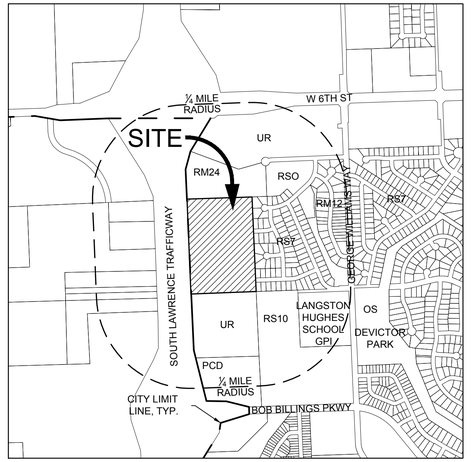


LOCATION MAP:



LEGAL DESCRIPTION:

A TRACT OF LAND IN THE NORTHWEST QUARTER OF SECTION 32, TOWNSHIP 12 SOUTH, RANGE 19 EAST OF THE SIXTH PRINCIPAL MERIDIAN, IN DOUGLAS COUNTY, KANSAS, DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF SAID QUARTER SECTION, THENCE ON A MEASURED BEARING OF NORTH 87°56'47" EAST ALONG THE SOUTH LINE OF SAID QUARTER SECTION, 427.54 FEET TO THE EAST RIGHT-OF-WAY LINE OF THE SOUTH LAWRENCE TRAFFICWAY TO THE POINT OF BEGINNING; THENCE ON A MEASURED BEARING OF NORTH 02°42'28" WEST ALONG SAID EAST RIGHT-OF-WAY LINE, 1325.35 FEET TO THE SOUTHWEST CORNER OF LOT 2, BLOCK ONE, DIAMONDHEAD, A SUBDIVISION IN THE CITY OF LAWRENCE, DOUGLAS COUNTY, KANSAS; THENCE ON A MEASURED BEARING OF NORTH 88°00'28" EAST, ALONG THE SOUTH LINE OF SAID LOT 2, A MEASURED DISTANCE OF 908.48 FEET TO THE NORTHWEST CORNER OF LOT 10, BLOCK ONE IN SAID SUBDIVISION; THENCE ON A MEASURED BEARING OF SOUTH 02°31'23" EAST AND MEASURED DISTANCE OF 1324.34 FEET, ALONG THE WEST LINE OF SAID SUBDIVISION TO THE SOUTH LINE OF SAID NORTHWEST QUARTER; THENCE ON A MEASURED BEARING OF SOUTH 87°56'47" WEST AND MEASURED DISTANCE OF 904.20 FEET ALONG SAID SOUTH LINE TO THE POINT OF BEGINNING. CONTAINS 27.564 ACRES, MORE OR LESS.

GENERAL NOTES:

1. OWNER: LANGSTON HEIGHTS, LC, 611 SAINT ANDREWS DRIVE, LAWRENCE, KANSAS 66047
2. LAND PLANNER/ CIVIL ENGINEER/ SURVEYOR: LANDPLAN ENGINEERING, P.A., 1310 WAKARUSA DRIVE, LAWRENCE, KANSAS 66049
3. TOPOGRAPHIC INFORMATION SHOWN WAS OBTAINED FROM A FIELD SURVEY PERFORMED BY LANDPAN ENGINEERING, P.A., OCTOBER 1, 2012.
4. EXISTING ZONING: UR
5. PROPOSED ZONING: RS7, RS5, RM12D, RM12
6. EXISTING LAND USE: VACANT
7. PROPOSED LAND USE: DETACHED DWELLING, DUPLEX, ATTACHED DWELLING
8. THE SUBJECT PROPERTY DOES LIE WITHIN A SPECIAL FLOOD HAZARD AREA AS DEFINED BY FLOOD INSURANCE RATE MAP (FIRM); PANEL NO. 154, MAP NUMBER 20045C0154D, DOUGLAS COUNTY, KS., BEARING AN EFFECTIVE DATE OF AUGUST 5, 2010.
9. TYPICAL SOIL TYPES: SOGN-VINLAND COMPLEX, 3 TO 25% SLOPES; MARTIN SILTY CLAY LOAM, 1 TO 3% SLOPES; MARTIN SILTY CLAY LOAM, 3 TO 7% SLOPES; OSKA SILTY CLAY LOAM, 3 TO 6% SLOPES; VINLAND COMPLEX, 3 TO 7% SLOPES; VINLAND-MARTIN COMPLEX, 7 TO 15% SLOPES
10. PROPOSED UTILITY LOCATIONS AND SIZES ARE PRELIMINARY AND WILL BE FINALIZED AT THE TIME OF SITE ENGINEERING.
11. THIS SITE IS DESIGNATED LOW-DENSITY RESIDENTIAL IN HORIZON 2020, DATED 7/1/11, AND THE WEST OF K-10 PLAN, DATED 1/7/08.
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15. A PLANNING COMMISSION VARIANCE IS REQUESTED FROM THE REQUIREMENT IN SECTION 20-811(c) OF THE SUBDIVISION REGULATIONS SO AS TO PERMIT SIDEWALKS ON ONLY ONE SIDE OF CRYSTAL LANE AND PALISADES DRIVE.
16. A PEDESTRIAN CONNECTION AND ASSOCIATED PUBLIC ACCESS EASEMENT IS TENTATIVELY LOCATED ACROSS LOT 1, BLOCK ONE IN ACCORDANCE WITH SECTIONS 20-810(d)(2)(i)(a) and 20-810(h)(1) OF THE SUBDIVISION REGULATIONS. THE FINAL LOCATION OF THE CONNECTION AND DEDICATION OF THE ASSOCIATED EASEMENT SHALL BE DETERMINED AT THE TIME OF SITE PLAN REVIEW FOR THE PROPOSED MULTI-FAMILY DEVELOPMENT.
17. LOTS DEVELOPED WITHIN THE SLT/K10-TC SHALL BE DESIGNED TO COMPLY WITH THE MINIMUM DESIGN STANDARDS OF SECTION 20-307(c)(1).
18. BUILDING PERMITS FOR STRUCTURES IN LOT 1, BLOCK ONE WILL NOT BE MADE AVAILABLE UNTIL SUCH TIME THAT RENAISSANCE DRIVE IS CONSTRUCTED AND COMPLETE SOUTH TO BOB BILLINGS PARKWAY.

LEGEND:

- EXISTING WATER LINE
- PROPOSED WATER LINE
- EXISTING SANITARY SEWER
- PROPOSED SANITARY SEWER
- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- FENCE LINE
- BUILDING SETBACK LINE
- UNDERGROUND ELECTRIC LINE
- OVERHEAD WIRE
- EXISTING WATER BLOWOFF
- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- PROPOSED FIRE HYDRANT
- EXISTING MANHOLE
- EXISTING SANITARY SEWER MANHOLE
- PROPOSED SANITARY SEWER MANHOLE
- EXISTING STORM SEWER MANHOLE
- PROPOSED STORM SEWER MANHOLE
- PROPOSED STORM SEWER END SECTION
- EXISTING IRON BAR
- BENCHMARK
- ELECTRIC BOX
- GUY ANCHOR
- SIGN
- SECTION CORNER

BENCHMARKS:

BENCHMARK 1: CHISELED SQUARE ON BACK OF CURB NORTH SIDE OF CRYSTAL LANE 50' +/- EAST OF EXISTING CURB (MIDDLE OF LOT 15, BLOCK ONE DIAMONDHEAD SUBDIVISION)
ELEV: 1023.18

BENCHMARK 2: CHISELED SQUARE ON BACK OF CURB SOUTH OF COMMON LINE OF LOTS 17 AN D18, BLOCK TWO DIAMONDHEAD SUBDIVISION
ELEV: 996.78

SITE SUMMARY:

GROSS AREA:	1,200,694 SF / 27.564 AC
RIGHTS-OF-WAY:	258,286 SF / 5.929 AC
TRACTS:	4,742 SF / 0.109 AC
NET AREA:	937,666 SF / 21.526 AC
TOTAL LOTS:	70
AVERAGE LOT SIZE:	13,395 SF / 0.308 AC

BLOCK ONE

NET AREA:	242,521 SF / 5.568 AC
TOTAL LOTS:	1
AVERAGE LOT AREA:	242,521 SF / 5.568 AC
MINIMUM LOT AREA:	242,521 SF / 5.568 AC
MAXIMUM LOT AREA:	242,521 SF / 5.568 AC

BLOCK TWO

NET AREA:	126,732 SF / 2.909 AC
TOTAL LOTS:	15
AVERAGE LOT AREA:	8,449 SF / 0.194 AC
MINIMUM LOT AREA:	5,521 SF / 0.127 AC
MAXIMUM LOT AREA:	18,409 SF / 0.423 AC

BLOCK THREE

NET AREA:	269,703 SF / 6.192 AC
TOTAL LOTS:	26
AVERAGE LOT AREA:	10,373 SF / 0.238 AC
MINIMUM LOT AREA:	5,736 SF / 0.132 AC
MAXIMUM LOT AREA:	19,312 SF / 0.443 AC

BLOCK FOUR

NET AREA:	212,995 SF / 4.890 AC
TOTAL LOTS:	19
AVERAGE LOT AREA:	11,210 SF / 0.257 AC
MINIMUM LOT AREA:	5,713 SF / 0.131 AC
MAXIMUM LOT AREA:	20,191 SF / 0.464 AC

BLOCK FIVE

NET AREA:	10,800 SF / 0.248 AC
TOTAL LOTS:	1
AVERAGE LOT AREA:	10,800 SF / 0.248 AC
MINIMUM LOT AREA:	10,800 SF / 0.248 AC
MAXIMUM LOT AREA:	10,800 SF / 0.248 AC

BLOCK SIX

NET AREA:	74,915 SF / 1.720 AC
TOTAL LOTS:	8
AVERAGE LOT AREA:	9,364 SF / 0.215 AC
MINIMUM LOT AREA:	8,880 SF / 0.204 AC
MAXIMUM LOT AREA:	10,835 SF / 0.249 AC

ZONING SUMMARY:

RS7

GROSS AREA:	361,588 SF / 8.301 AC
RIGHTS-OF-WAY:	93,739 SF / 2.152 AC
TRACTS:	4,742 SF / 0.109 AC
NET AREA:	263,107 SF / 6.040 AC
TOTAL LOTS:	26
AVERAGE LOT AREA:	10,120 SF / 0.232 AC
MINIMUM LOT AREA:	8,880 SF / 0.204 AC
MAXIMUM LOT AREA:	18,409 SF / 0.423 AC
TOTAL UNITS:	26
UNIT DENSITY:	4.305 UNITS/AC

RS5

GROSS AREA:	204,778 SF / 4.701 AC
RIGHTS-OF-WAY:	41,268 SF / 0.947 AC
NET AREA:	163,510 SF / 3.754 AC
TOTAL LOTS:	26
AVERAGE LOT AREA:	6,289 SF / 0.144 AC
MINIMUM LOT AREA:	5,521 SF / 0.127 AC
MAXIMUM LOT AREA:	13,554 SF / 0.311 AC
TOTAL UNITS:	26
UNIT DENSITY:	6.926 UNITS/AC

RM12D

GROSS AREA:	199,594 SF / 4.582 AC
RIGHTS-OF-WAY:	31,505 SF / 0.723 AC
NET AREA:	168,089 SF / 3.859 AC
TOTAL LOTS:	11
AVERAGE LOT AREA:	15,281 SF / 0.351 AC
MINIMUM LOT AREA:	10,982 SF / 0.252 AC
MAXIMUM LOT AREA:	20,191 SF / 0.464 AC
TOTAL UNITS:	22
UNIT DENSITY:	5.701 UNITS/AC

RM12

GROSS AREA:	434,735 SF / 9.980 AC
RIGHTS-OF-WAY:	91,774 SF / 2.107 AC
NET AREA:	342,961 SF / 7.873 AC
TOTAL LOTS:	7
AVERAGE LOT AREA:	48,994 SF / 1.125 AC
MINIMUM LOT AREA:	16,740 SF / 0.384 AC
MAXIMUM LOT AREA:	242,521 SF / 5.568 AC
TOTAL UNITS:	86
UNIT DENSITY:	10.923 UNITS/AC

GROSS SUBDIVISION UNIT DENSITY = 160 UNITS / 27.564 AC = 5.805 UNITS/AC

PROVISION AND FINANCING OF ROADS, SEWER AND OTHER PUBLIC SERVICES:

1. THE SUBDIVISION WILL INCLUDE THE DEDICATION OF RIGHTS-OF-WAY ASSOCIATED WITH ALL INTERNAL ROADS SHOWN.
2. THE SUBDIVISION WILL PROVIDE CONNECTIONS TO THE CITY OF LAWRENCE WATER SYSTEM VIA TWO EXISTING 8-INCH LINES: ONE ON THE SOUTH SIDE OF PALISADES DRIVE, AND A SECOND ON SOUTH SIDE OF CRYSTAL LANE, BOTH TO THE EAST OF THE SUBJECT PROPERTY.
3. THE SUBDIVISION WILL PROVIDE CONNECTIONS TO THE CITY OF LAWRENCE SANITARY SEWER SYSTEM VIA TWO EXISTING 8-INCH MAINS: ONE THAT RUNS SOUTH BETWEEN MANHOLES NW3212219-010 AND NW3212219-003 AND LIES ADJACENT TO THE SUBJECT PROPERTY'S EAST BOUNDARY IN A 15-FOOT UTILITY EASEMENT; AND A SECOND THAT RUNS SOUTHWEST ORIGINATING AT MANHOLE SW3212219-015 LOCATED WEST OF THE EXISTING BOB BILLINGS PARKWAY TERMINUS.
4. PURCHASERS OF THE LOT IN THE SUBDIVISION MAY OR MAY NOT BE SUBJECT TO SPECIAL ASSESSMENTS OR OTHER COSTS OF STREETS, ROADS, WATER LINES AND TREATMENT, AND/OR WASTEWATER LINES AND TREATMENT.
5. THE PROVISION OF IMPROVED ROADS, WATER SERVICE AND/OR WASTEWATER SERVICE WILL NOT DEPEND IN ANY WAY ON A VOTE, PETITION OR OTHER COLLECTIVE ACTION OF PROPERTY OWNERS IN THE SUBDIVISION.

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Community Planning
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PRELIMINARY PLAT OF LANGSTON HEIGHTS ADDITION CITY OF LAWRENCE DOUGLAS COUNTY, KANSAS

REV	DATE	DESCRIPTION
1	11/14/12	PER DEPT. COMMENTS
2	11/29/12	ZONING BNDINARES
3	1/14/13	PER NEIGHBOR INPUT

DATE:	10/08/12
PROJECT NO.:	20121218
DESIGNED BY:	LPE/TAH
DRAWN BY:	BS
CHECKED BY:	CMS

ISSUE	SHEET NO.
	1
	OF 1 SHEETS

FILE NAME: Q:\20121218\CAD\Planning\PP\121218C-PP.dwg LAST SAVED BY: Brian Sturm SAVED DATE: 1/14/2013 8:37 AM PLOTTED: 1/14/2013 10:29 AM

extra

LEGAL DESCRIPTION

A TRACT OF LAND IN THE NORTHWEST QUARTER OF SECTION 32, TOWNSHIP 12 SOUTH, RANGE 19 EAST OF THE SIXTH PRINCIPAL MERIDIAN, IN DOUGLAS COUNTY, KANSAS, DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHEAST CORNER OF THE SOUTHWEST QUARTER OF SAID QUARTER SECTION, SAID POINT BEING THE SOUTHWEST CORNER OF LOT 1, BLOCK THREE, DIAMONDHEAD, A SUBDIVISION IN THE CITY OF LAWRENCE, DOUGLAS COUNTY, KANSAS; THENCE SOUTH 87°56'28" WEST, ALONG THE SOUTH LINE OF SAID QUARTER SECTION, 904.24 FEET TO THE EAST RIGHT-OF-WAY LINE OF THE SOUTH LAWRENCE TRAFFICWAY; THENCE NORTH 02°42'21" WEST, ALONG SAID EAST RIGHT-OF-WAY LINE, 1325.35 FEET TO THE SOUTHWEST CORNER OF LOT 2, BLOCK ONE, IN SAID DIAMONDHEAD SUBDIVISION; THENCE NORTH 88°00'33" EAST, ALONG THE SOUTH LINE OF SAID LOT 2, 908.63 FEET TO THE NORTHWEST CORNER OF LOT 10, BLOCK ONE IN SAID SUBDIVISION; THENCE SOUTH 02°31'00" EAST, ALONG THE WEST LINE OF SAID SUBDIVISION, 1324.23 FEET TO THE POINT OF BEGINNING. CONTAINS 27.566 ACRES, MORE OR LESS.

DEDICATION

BE IT KNOWN TO ALL MEN THAT I (WE), THE UNDERSIGNED OWNER(S) OF THE ABOVE DESCRIBED TRACT OF LAND, HAVE HAD CAUSE FOR THE SAME TO BE SURVEYED AND PLATTED UNDER THE NAME OF "LANGSTON HEIGHTS" AND HAVE CAUSED THE SAME TO BE SUBDIVIDED INTO LOTS AND STREETS AS SHOWN AND FULLY DEFINED ON THIS PLAT. ALL STREETS, DRIVES, ROADS, ETC. SHOWN ON THIS PLAT AND NOT HERETOFORE DEDICATED TO PUBLIC USE ARE HEREBY SO DEDICATED. AN EASEMENT IS HEREBY GRANTED TO THE CITY OF LAWRENCE AND PUBLIC UTILITY COMPANIES TO ENTER UPON, CONSTRUCT AND MAINTAIN UTILITIES UPON, OVER, AND UNDER THOSE AREAS OUTLINED ON THIS PLAT AS "UTILITY EASEMENT" OR "U/E" AND "DRAINAGE EASEMENT" OR "D/E" AND "ACCESS EASEMENT" OR "A/E."

LANGSTON HEIGHTS, L.C., A KANSAS LIMITED LIABILITY COMPANY
BY BEVERLY SMITH BILLINGS, PRESIDENT OF ALVAMAR, INC., MANAGER

ACKNOWLEDGEMENT

STATE OF KANSAS
COUNTY OF DOUGLAS

BE IT REMEMBERED THAT ON THIS ____ DAY OF _____, 2006, BEFORE ME, THE UNDERSIGNED, A NOTARY PUBLIC, IN AND FOR SAID COUNTY AND STATE, CAME BEVERLY SMITH BILLINGS, PRESIDENT OF ALVAMAR, INC., MANAGER, LANGSTON HEIGHTS, L.C., A KANSAS LIMITED LIABILITY COMPANY, WHO IS (ARE) PERSONALLY KNOWN TO ME TO BE THE SAME PERSON(S) WHO EXECUTED THE FOREGOING INSTRUMENT OF WRITING AND DULY ACKNOWLEDGE THE EXECUTION OF THE SAME.

IN WITNESS WHEREOF, I HAVE HEREUNTO SET MY HAND AND AFFIXED MY SEAL ON THE DAY AND YEAR LAST WRITTEN ABOVE.

NOTARY PUBLIC _____ MY COMMISSION EXPIRES _____

ENDORSEMENTS

APPROVED BY
LAWRENCE-DOUGLAS COUNTY
PLANNING COMMISSION
DOUGLAS COUNTY, KANSAS

CHAIR _____ DATE
TERRY RIORDAN

CITY CLERK _____ DATE
FRANK S. REED

RIGHTS-OF-WAY AND EASEMENTS
ACCEPTED BY
CITY COMMISSION
LAWRENCE, KANSAS

MAYOR _____ DATE
DENNIS HIGHBERGER

REVIEWED IN COMPLIANCE
WITH K.S.A. 58-2005.

MICHAEL D. KELLY, P.L.S. #869
DOUGLAS COUNTY SURVEYOR

FILING RECORD

STATE OF KANSAS
COUNTY OF DOUGLAS

THIS IS TO CERTIFY THAT THIS INSTRUMENT WAS FILED FOR RECORD IN THE OFFICE OF THE DOUGLAS COUNTY REGISTER OF DEEDS ON THIS ____ DAY OF _____, 2006, AND IS DULY RECORDED AT _____ AM/PM, IN PLAT BOOK ____ PAGE _____.

REGISTER OF DEEDS
KAY PESNELL

CERTIFICATION

I HEREBY CERTIFY THAT THE PLATTED AREA AND THE LOCATION MAP SHOWN HEREON ARE THE TRUE AND ACCURATE RESULTS OF A FIELD SURVEY PERFORMED UNDER MY DIRECT SUPERVISION IN THE MONTH OF DECEMBER, 2005 AND THAT THE PLAT IS A CLOSED TRAVERSE.

JOHN E. SELK, P.E., P.L.S. #610
1310 WAKARUSA DRIVE
LAWRENCE, KANSAS 66049
(785) 843-7530

PLAT PREPARED DECEMBER, 2005

LOCATION MAP



NOTES

STREET TREES SHALL BE PROVIDED IN ACCORDANCE WITH THE MASTER STREET TREE PLAN FILED WITH THE REGISTER OF DEEDS. BOOK ____, PAGE ____.

THE CITY IS HEREBY GRANTED A TEMPORARY RIGHT OF ENTRY TO PLANT THE REQUIRED STREET TREES PURSUANT TO CHAPTER 21, ARTICLE 7, SECTION 21-706a OF THE CITY SUBDIVISION REGULATIONS.

BASIS OF BEARINGS FOR THIS PLAT IS NAD83-MODIFIED STATE PLANE COORDINATES. (KANSAS NORTH ZONE)

ERROR OF CLOSURE = 1 : 874,990.

SOILS INVESTIGATIONS SHALL BE PERFORMED BEFORE PRIMARY STRUCTURES ARE ERECTED ON LOTS WITH SLOPES GREATER THAN 3:1, OR NON-ENGINEERED FILL GREATER THAN 12 INCHES. A SOILS ENGINEER LICENSED BY THE STATE OF KANSAS SHALL PERFORM INVESTIGATIONS, AND A REPORT OF THE INVESTIGATION SHALL BE SUBMITTED TO THE CITY OF LAWRENCE CODES ENFORCEMENT DIVISION. OTHER LOTS MAY BE REQUIRED TO BE INVESTIGATED WHERE EXCAVATION REVEALS INDICATIONS OF UNSUITABLE CONDITIONS.

CURVE TABLE

CURVE	LENGTH	RADIUS	CHORD	BEARING
C1	31.58	200.00	31.44	N34°40'15"W
C2	9.07	1000.00	9.07	N57°40'33"E
C3	31.30	220.00	31.28	N56°08'35"W
C4	43.14	50.00	40.90	S71°19'44"W
C5	48.67	50.00	46.77	N36°28'33"W
C6	53.12	50.00	49.80	N01°08'21"E
C7	52.63	50.00	48.72	N52°43'01"E
C8	54.54	50.00	51.88	S36°09'07"E
C9	18.51	170.00	18.50	N08°58'22"W
C10	8.93	970.00	8.93	N01°46'32"E
C11	2.35	1330.00	2.35	N17°40'32"E

LOT TABLE

	LOT	SQ. FT.	ACRES
BLOCK ONE	1	11,476	0.263
	2	10,813	0.248
	3	10,478	0.240
	4	10,470	0.240
	5	10,461	0.240
	6	10,455	0.240
	7	10,448	0.239
	8	10,848	0.249
	9	20,337	0.467
	10	18,591	0.426
	11	17,018	0.390
	12	12,128	0.278
	13	8,233	0.189
	14	7,474	0.171
	15	7,474	0.171
	16	8,065	0.185
BLOCK TWO	1	11,049	0.253
	2	10,399	0.238
	3	10,399	0.238
	4	10,399	0.238
	5	10,724	0.246
	6	11,374	0.261
BLOCK THREE	7	11,049	0.253
	8	5,424	0.216
	9	8,449	0.193
	10	8,449	0.193
	11	8,449	0.193
	12	8,449	0.193
	13	10,074	0.231
	1	11,279	0.258
	2	9,375	0.215
	3	9,375	0.215
	4	9,375	0.215
	5	9,375	0.215
	6	9,375	0.215
	7	9,869	0.226
	8	10,221	234
	9	11,584	0.275
	10	11,584	0.275
	11	10,221	0.234
	12	9,869	0.226
	13	9,375	0.215
	14	9,375	0.215
	15	9,375	0.215
BLOCK FOUR	16	9,375	0.215
	17	9,375	0.215
	18	11,279	0.258
BLOCK FIVE	1	11,279	0.258
	2	9,375	0.215
	3	9,375	0.215
	4	9,375	0.215
	5	9,375	0.215
	6	9,375	0.215
	7	9,859	0.226
	8	10,221	0.234
	9	11,984	0.275
	10	11,984	0.275
	11	10,221	0.234
	12	9,869	0.226
	13	9,375	0.215
	14	9,375	0.215
	15	9,375	0.215
	16	9,375	0.215
	17	9,375	0.215
	18	11,279	0.258
BLOCK SIX	1	9,229	0.211
	2	8,449	0.193
	3	8,449	0.193
	4	8,449	0.193
	5	9,099	0.208
	6	9,424	0.216
	7	11,049	0.253
BLOCK SEVEN	1	8,477	0.194
	2	8,449	0.193
	3	8,449	0.193
	4	9,845	0.226
	1	10,655	0.244
	2	8,224	0.188
	3	8,210	0.188
	4	8,198	0.188
	5	8,182	0.187
	6	8,168	0.187
	7	8,154	0.187
	8	8,140	0.186
	9	10,624	0.243



GRAPHIC SCALE

(IN FEET)
1 inch = 100 ft.

MONUMENTATION

- ○ SET 1/2" IRON BAR WITH CAP "PLS 610" ENCASED IN CONCRETE
- ● 1/2" BAR W/CAP "PLS 610" FOUND IN CONCRETE (ORIGINAL SUBDIVISION CORNER)

NOTE: 1/2" X 24" BAR W/CAP "PLS 610" TO BE SET AT ALL INTERIOR LOT CORNERS WITHIN 12 MONTHS OF RECORDING OF THIS PLAT, AND ACCORDING TO SEC. 21-302.2 OF THE CITY OF LAWRENCE SUBDIVISION REGULATIONS.

A FINAL PLAT OF LANGSTON HEIGHTS

A SUBDIVISION IN THE CITY OF LAWRENCE, DOUGLAS COUNTY, KANSAS

NW 1/4, SEC. 32-T12S-R19E

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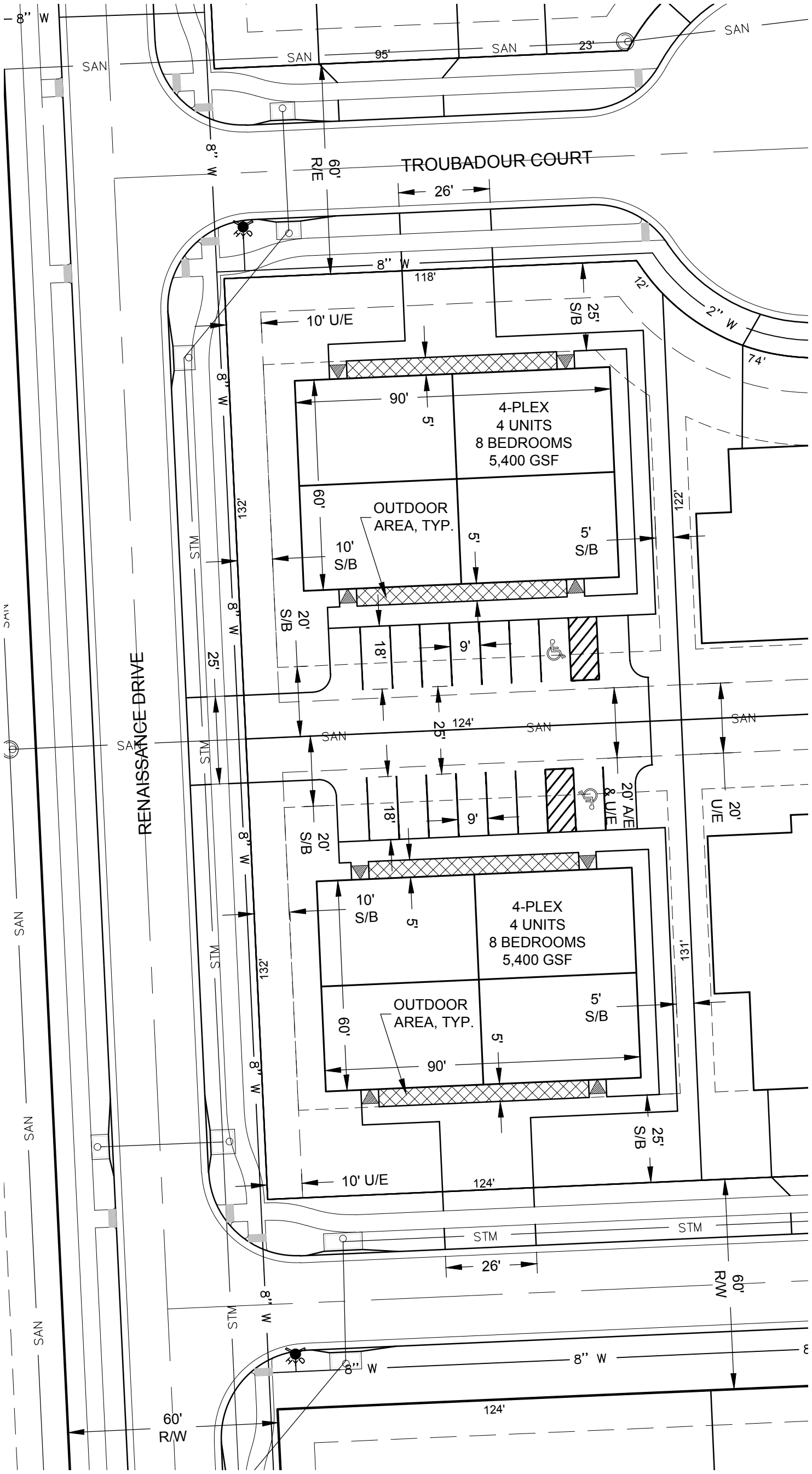

LOT 7, BLOCK TWO

SITE SUMMARY
BLDG. - 5,400 SF (33%)
PVMT. - 4,974 SF (30%)
IMPERVIOUS - 10,374 SF (63%)
PERVIOUS - 5,974 SF (37%)
TOTAL - 16,348 SF (100%)

OUTDOOR AREA SUMMARY
REQUIRED: 50 SF/UNIT
50 x 4 = 200 SF
PROVIDED: 600 SF

PARKING SUMMARY
REQUIRED: 1/BR + 1/10 UNITS
8+1 = 9 SPACES
PROVIDED: 9 SPACES

LOT 8, BLOCK TWO

SITE SUMMARY
BLDG. - 5,400 SF (33%)
PVMT. - 4,974 SF (30%)
IMPERVIOUS - 10,374 SF (63%)
PERVIOUS - 5,955 SF (37%)
TOTAL - 16,329 SF (100%)

OUTOOR AREA SUMMARY
REQUIRED: 50 SF/UNIT
50 x 4 = 200 SF
PROVIDED: 600 SF

PARKING SUMMARY
REQUIRED: 1/BR + 1/10 UNITS
8+1 = 9 SPACES
PROVIDED: 9 SPACES

LANGSTON HEIGHTS ADDITION

FOURPLEX EXHIBIT

LOTS 7 & 8, BLOCK TWO

NOVEMBER 29, 2012

SCALE: 1" = 30'

30 15 0 30 60

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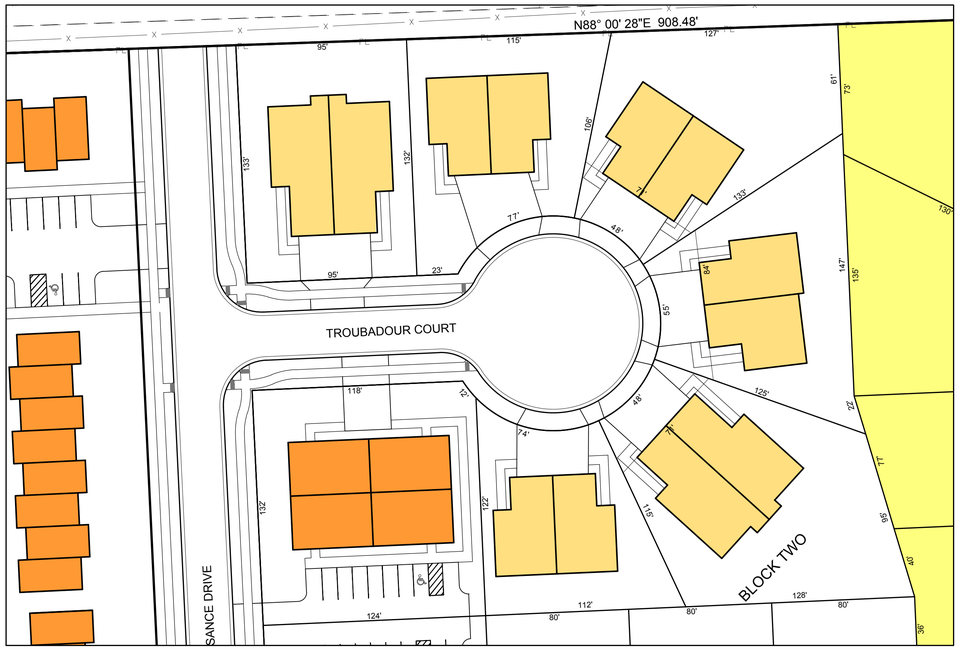
SCALE: 1" = 100'

100 50 0 100 200

N

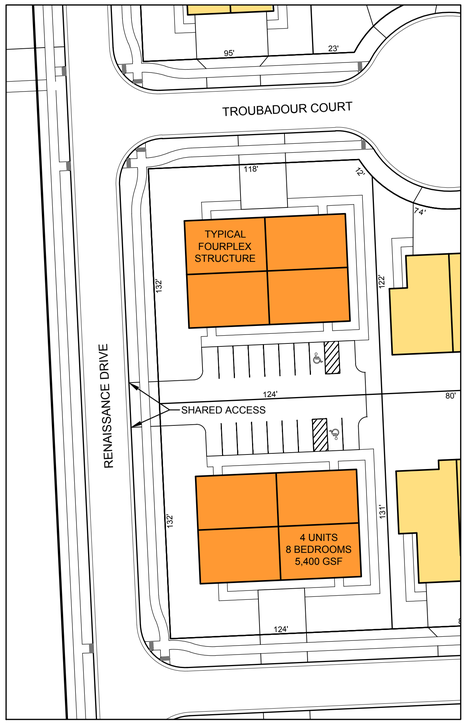


TYPICAL DUPLEX LAYOUT

BUILDING SUMMARY:

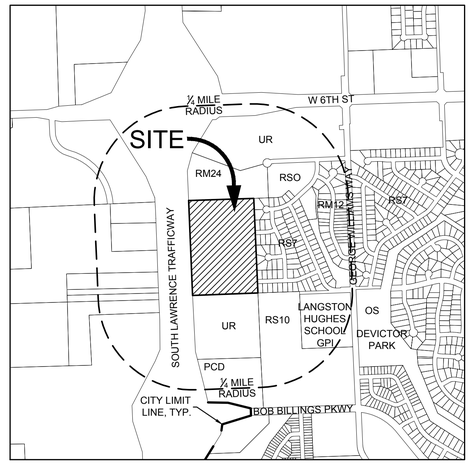
PRODUCT TYPE	QUANTITY	UNITS	BEDROOMS
SINGLE-FAMILY HOME	29	29	N/A
DUPLEX	25	50	N/A
FOURPLEX	6	24	48
ROW HOME	62	62	124

***GROSS SUBDIVISION UNIT DENSITY = 165 UNITS / 27.564 AC = 5.986 UNITS/AC**



TYPICAL FOURPLEX LAYOUT

LOCATION MAP:



GENERAL NOTES:

1. OWNER: LANGSTON HEIGHTS, LC, 611 SAINT ANDREWS DRIVE, LAWRENCE, KANSAS 66047
2. LAND PLANNER/ CIVIL ENGINEER/ SURVEYOR: LANDPLAN ENGINEERING, P.A., 1310 WAKARUSA DRIVE, LAWRENCE, KANSAS 66049
3. EXISTING ZONING: UR
4. PROPOSED ZONING: RS7, RM12, RM12D
5. EXISTING LAND USE: VACANT
6. PROPOSED LAND USE: DETACHED DWELLING, DUPLEX, ATTACHED DWELLING
7. THE SUBJECT PROPERTY DOES LIE WITHIN A SPECIAL FLOOD HAZARD AREA AS DEFINED BY FLOOD INSURANCE RATE MAP (FIRM); PANEL NO. 154, MAP NUMBER 20045C0154D, DOUGLAS COUNTY, KS., BEARING AN EFFECTIVE DATE OF AUGUST 5, 2010.
8. THIS SITE IS DESIGNATED LOW-DENSITY RESIDENTIAL IN HORIZON 2020, DATED 7/1/11, AND THE WEST OF K-10 PLAN, DATED 1/7/08.
9. LOTS DEVELOPED WITHIN THE SLT/K10-TC SHALL BE DESIGNED TO COMPLY WITH THE MINIMUM DESIGN STANDARDS OF SECTION 20-307(c)(1).

ZONING SUMMARY:

RS7
GROSS AREA:	401,026 SF / 9.206 AC
RIGHTS-OF-WAY:	101,644 SF / 2.333 AC
NET AREA:	299,382 SF / 6.873 AC
TOTAL LOTS:	29
AVERAGE LOT AREA:	10,324 SF / 0.237 AC
MINIMUM LOT AREA:	8,886 SF / 0.204 AC
MAXIMUM LOT AREA:	17,635 SF / 0.405 AC
TOTAL UNITS:	29
UNIT DENSITY:	4.219 UNITS/AC

RM12D
GROSS AREA:	362,991 SF / 8.333 AC
RIGHTS-OF-WAY:	72,503 SF / 1.664 AC
NET AREA:	290,488 SF / 6.669 AC
TOTAL LOTS:	25
AVERAGE LOT AREA:	11,620 SF / 0.267 AC
MINIMUM LOT AREA:	9,552 SF / 0.219 AC
MAXIMUM LOT AREA:	15,997 SF / 0.367 AC
TOTAL UNITS:	50
UNIT DENSITY:	7.497 UNITS/AC

RM12
GROSS AREA:	436,678 SF / 10.025 AC
RIGHTS-OF-WAY:	92,205 SF / 2.117 AC
NET AREA:	344,473 SF / 7.908 AC
TOTAL LOTS:	7
AVERAGE LOT AREA:	49,210 SF / 1.130 AC
MINIMUM LOT AREA:	16,329 SF / 0.375 AC
MAXIMUM LOT AREA:	242,521 SF / 5.568 AC
TOTAL UNITS:	86
UNIT DENSITY:	10.875 UNITS/AC

***GROSS SUBDIVISION UNIT DENSITY = 165 UNITS / 27.564 AC = 5.986 UNITS/AC**

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CONCEPT PLAN
LANGSTON HEIGHTS ADDITION, CITY OF LAWRENCE DOUGLAS COUNTY, KANSAS

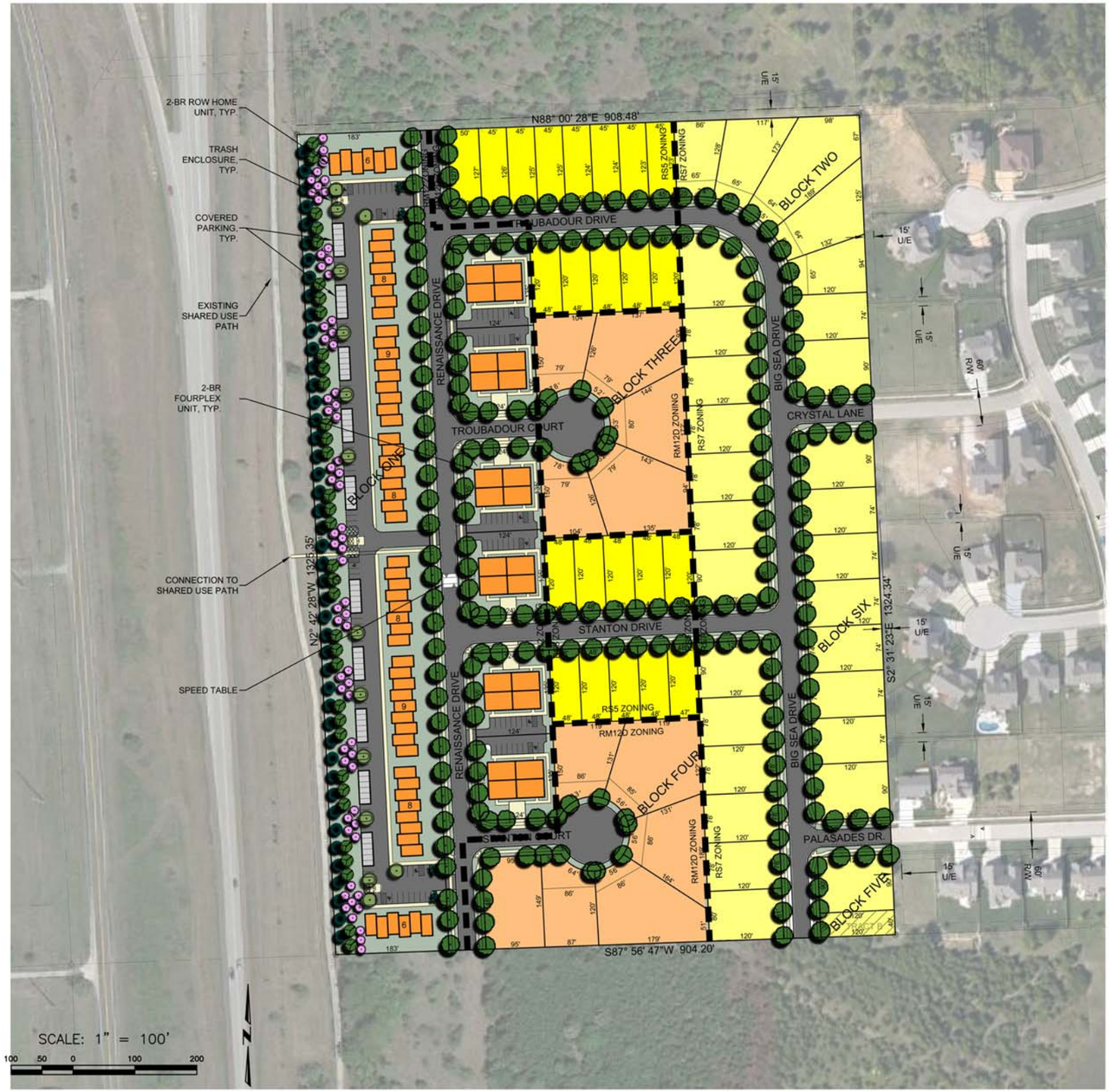
REV	DATE	DESCRIPTION

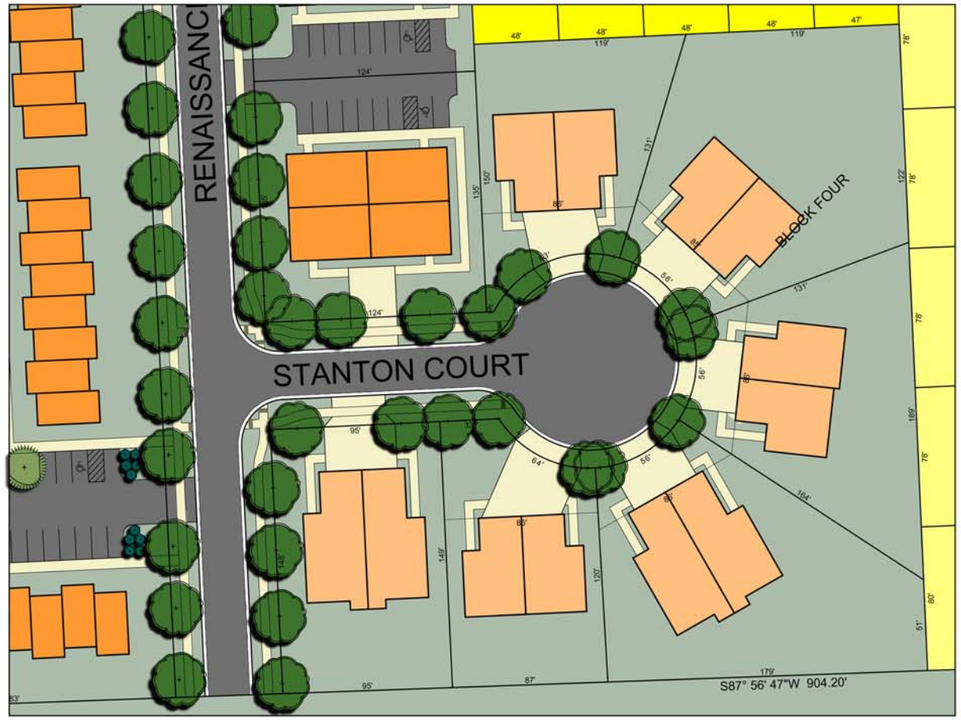
DATE:	11/29/12
PROJECT NO.:	20121218
DESIGNED BY:	TAH/LPE
DRAWN BY:	BS
CHECKED BY:	CMS

ISSUE	SHEET NO.
	1

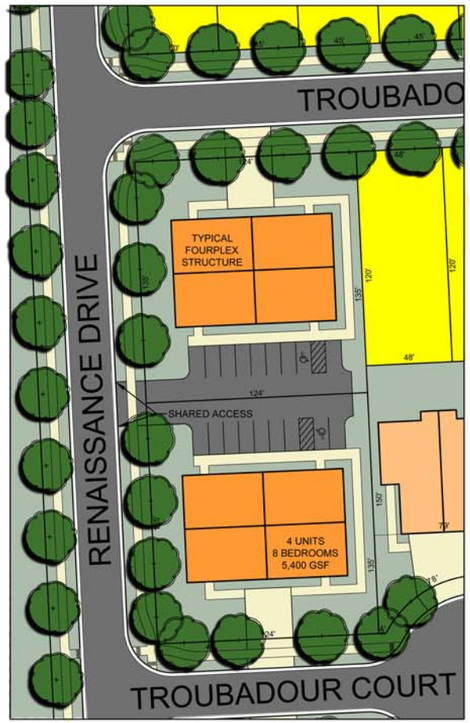
OF 1 SHEETS

FILE NAME: Q:\20121218\CAD\Concept-Exhibits\CONCEPT.dwg LAST SAVED BY: Brian Sturm SAVED DATE: 11/29/2012 2:55 PM PLOTTED: 11/29/2012 2:55 PM





TYPICAL DUPLEX LAYOUT



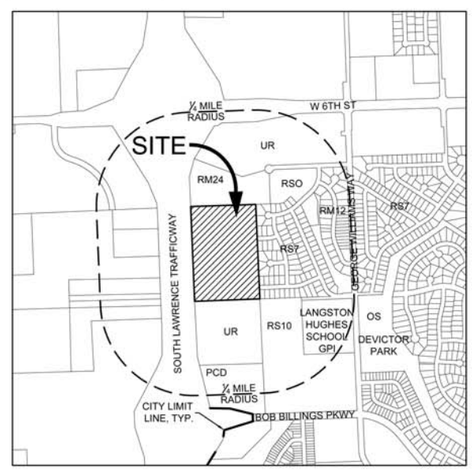
TYPICAL FOURPLEX LAYOUT

BUILDING SUMMARY:

PRODUCT TYPE	QUANTITY	UNITS	BEDROOMS
SINGLE-FAMILY HOME	52	52	N/A
DUPLEX	11	22	N/A
FOURPLEX	6	24	48
ROW HOME	62	62	124

**GROSS SUBDIVISION UNIT DENSITY = 160 UNITS / 27.564 AC = 5.805 UNITS/AC*

LOCATION MAP:



GENERAL NOTES:

1. OWNER: LANGSTON HEIGHTS, LC, 611 SAINT ANDREWS DRIVE, LAWRENCE, KANSAS 66047
2. LAND PLANNER/ CIVIL ENGINEER/ SURVEYOR: LANDPLAN ENGINEERING, P.A., 1310 WAKARUSA DRIVE, LAWRENCE, KANSAS 66049
3. EXISTING ZONING: UR
4. PROPOSED ZONING: RS7, RS5, RM12D, RM12
5. EXISTING LAND USE: VACANT
6. PROPOSED LAND USE: DETACHED DWELLING, DUPLEX, ATTACHED DWELLING
7. THE SUBJECT PROPERTY DOES NOT LIE WITHIN A SPECIAL FLOOD HAZARD AREA AS DEFINED BY FLOOD INSURANCE RATE MAP (FIRM); PANEL NO. 154, MAP NUMBER 20045C0154D, DOUGLAS COUNTY, KS., BEARING AN EFFECTIVE DATE OF AUGUST 5, 2010.
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TRACTS: 4,742 SF / 0.109 AC
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TOTAL LOTS: 29
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RIGHTS-OF-WAY: 31,505 SF / 0.723 AC
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Memorandum
City of Lawrence
Planning Department

TO: **Lawrence Douglas County Planning Commission**

FROM: **Sandra Day, AICP, Planning Staff**

CC: **Applicant**

Date: **January 14, 2013**

RE: **Item No. 3: Langston Heights Residential Development**

Item No. 3A: PP-12-00228; Preliminary Plat
Item No. 3B: Z-12-00229; UR to RM12D
Item No. 3C: Z-12-00231; UR to RS7
Item No. 3D: Z-12-002323; UR to RM12
Item No. 3E: Z-13-00013: UR to RS5 as a lesser change of a portion of the RM12D application.

Attachments:
1. Revised Preliminary Plat
2. West of K10 Area Plan
3. Concept build-out plan

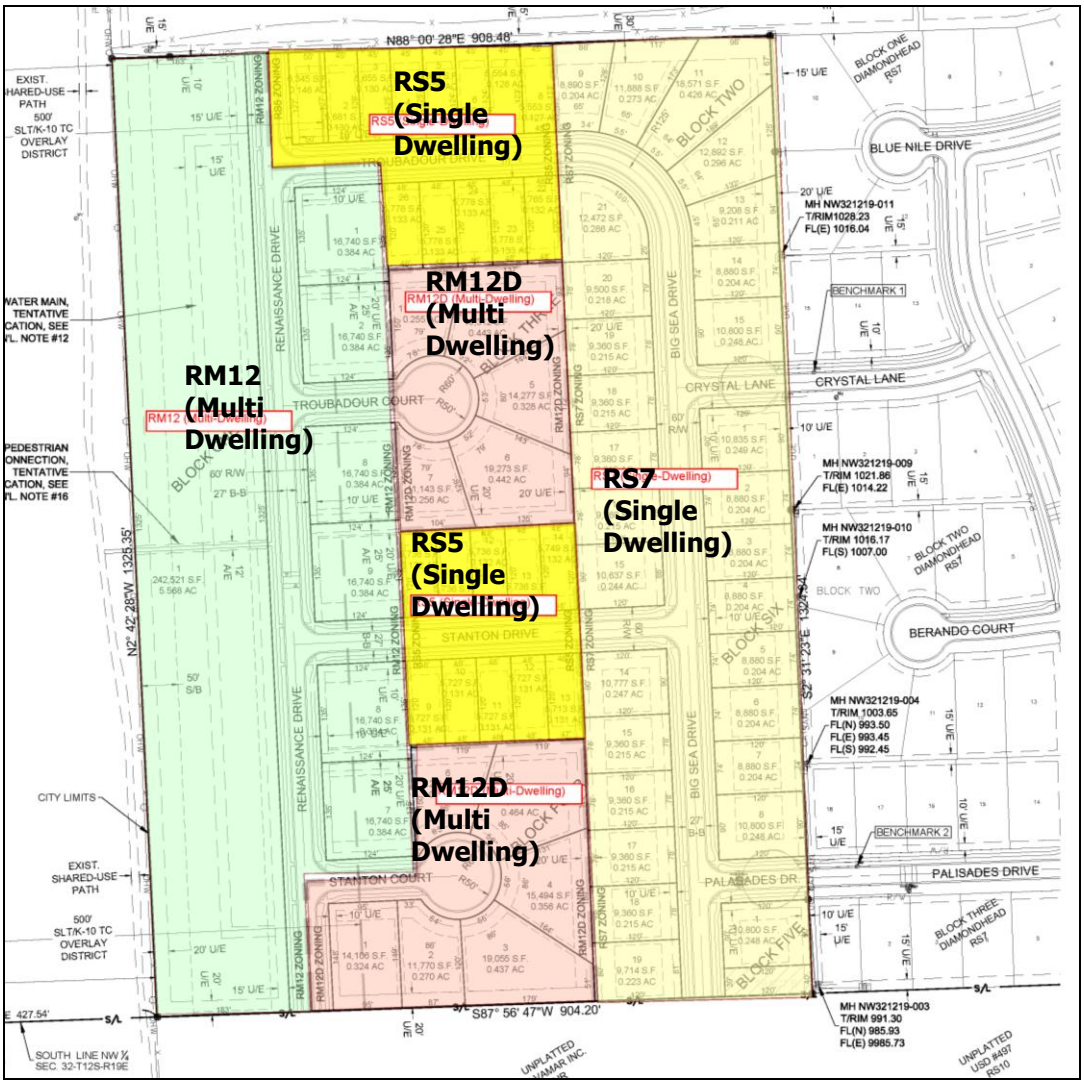
The purpose of this memo is to update the Commission on changes to the proposed development in response to comments from the December Planning Commission Meeting. The public hearing conducted in December resulted in a deferral of the proposed development applications with direction to address the following specific concerns.

- Increase presence of single-dwelling detached units and demonstrate the development is "predominantly single-dwelling residential" to comply with language found in the *6th Street and K-10 Highway Nodal Plan.*
- Explore providing additional access to Renaissance Drive to the south or north to alleviate the traffic impact of the proposed project. Associated to this is the issue of single loading Renaissance Drive as a design option.
- The effect of this development on future development to the south.

Presence of Single-Family
Significant changes have been made to the project that increase the overall percentage of detached residential units and reduce the total number of units proposed for this development. The revised project includes a request for 3.88 acres of RS5 zoning. The proposed development has, using a "lesser change", reduced the amount of RM12D to incorporate RS5 zoning. Section 20-1303 of the Development Code allows the modification of an application when the request is reduced in a manner specified by the Development Code.

The applicant has requested the Planning Commission consider a revision to the RM12D request to change a portion of the published RM12D request to RS5. This revision meets the requirements of the Lesser Change Table as highlighted below. Staff has assigned a specific case file number to the RS5 portion of the development request for tracking purposes.

The development request specifically amends the RM12D application to reduce the overall area from 8.33 acres of RM12D to 4.582 acres. The remaining 3.88 of the original request is proposed, as a lesser change, to RS5. The RS5 district is a single-dwelling residential district. This district is similar to the RS7 district in terms of uses. The RS5 district allows smaller lots with the minimum lot area established at 5,000 SF. The subdivision has been reconfigured to include the RS5 zoning and revised the interior street network to provide more separation between the development to the east and the multi-dwelling proposed to the west. The following graphic highlights the areas to be rezoned to the four different districts.



The following table provides a lot and density summary for the proposed Langston Heights development to show the changes between the previous plan and the current proposal. The December application included only 9.2 acres of detached housing as RS7 zoning. The revised application includes an additional 3.8 acres of detached housing as RS5 zoning.

	December 2012	January 2013
Gross RS7 District Acres	9.206	9.122
ROW Acres Tract	2.33	2.245 .109
Net RS7 Area Acres	6.873	6.768
Total Lots/Units	29/29	29/29
Density	4.219	4.285
Gross RM12D District Acres	8.33	4.582
ROW Acres	1.664	.723
Net RM12D area Acres	6.669	3.856
Total Lots/Units	25/50	11/22
Density	7.497	5.701
Gross RS5 District Acres		3.880
ROW Acres		.885
Net RS5 Area Acres		3.025
Total Lots/Units		23/23
Density		7.603
Gross RM12 District Acres	10.025	9.980
ROW Acres	2.11	2.107
Net RM12 Area Acres	7.908	7.873
Total Lots/Units	7/86	7/86
Density	10.875	10.923
Total Area	27.564	27.564
Total Units	165	160
Total Density	5.986	5.805

Table 1: Area Summary by Zoning District

The total number of units has been reduced by 5 and the overall density has been slightly reduced. Both the RS7 and the RS5 zoning districts represent single-dwelling detached residential development. The total number of detached housing proposed has increased from 29 in the December 2012 plan to 52 units in the current plan. The total number of duplex units has decreased from 50 units to 22 units. The RS7 district and the RM12 Districts have remained static between the two plans with no change in the total number of units and minor changes to the gross area of the two districts.

Land Use Development Pattern

Area	Acres	Percent
Total Area:	**186.45**	**100**
Developed Area:	43.38	23%
Proposed Development:	27.57	15%
Vacant Area:	115.5	62%

Table 2A: Summary of Developed and Undeveloped Land

Use	Acres	Percent
Single Family:	74.37	40%
Duplex:	14.89	20%
Multi-Dwelling:	22.76	12%
Commercial:	43.30	23%
UR	18.75	10%
Public	12.38	7%
Total	186.45	100%

The following information shows the existing and developing land use pattern for the area west of George Williams Way between W. 6th Street and Bob Billings Parkway [Diamondhead Neighborhood]. A substantial portion of the area is zoned for detached residential development. Based on the existing and proposed zoning and known land uses the Diamondhead Neighborhood area includes 74.4 acres of detached residential development and zoning. Table 2 summarizes the existing and proposed housing types for this area based on existing and proposed zoning.

A significant portion of the area is defined by the existing development pattern and zoning. The above image shows the existing and proposed development pattern and includes the future street connection between Bob Billings Parkway and Ken Ridge Drive. The 18 acres of UR is likely to be reconfigured into several zoning districts in the future including commercial and multi-dwelling. The proposed subdivision street connections from the Langston Heights Development would support the continuation of a detached housing pattern to the south. The following map shows graphically the existing and proposed housing types for this area based on the existing and proposed zoning.

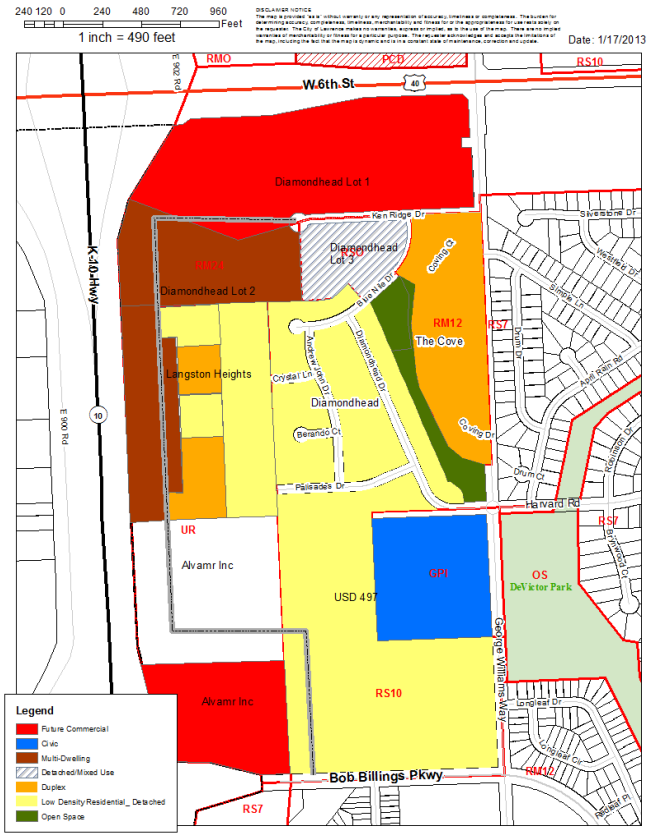


Figure 1 Map of Land Use

Renaissance Drive:

The location of Renaissance Drive provides the greatest buffer between K10 Highway to the west and the lower density residential development to the east. The design of the street provides the ability to develop on both sides of the street. Single loaded streets are generally inefficient in terms of construction and maintenance costs. This design provides the ability to provide development backing up to the highway that will provide

both a visual and noise buffer between the highway and the residential development to the east. Development both north and south will be required to extend Renaissance Drive north to Ken Ridge Drive and to the south to Bob Billings Parkway. Both streets have identified connection points. The connection to Bob Billings Parkway is being actively designed because of the K10 highway interchange to be constructed in the next year.

Access to Bob Billings Parkway:

KDOT, City Engineers, property owners and USD 497 have been working to establish designated access points as they relate to the pending interchange improvements of the SLT interchange with Bob Billings Parkway. This information is critical to the development of the property between Diamondhead Subdivision to the north and Bob Billings Parkway to the south. The access point is designated approximately 990' east of the intersection to avoid conflicts within the interchange and ramps. Access is intended to provide connectivity to the undeveloped parcels north of Bob Billings Parkway and connect to Renaissance Drive to the north. The finalized alignment will be platted based upon executed agreements of all parties and through the Subdivision Regulation process. The following exhibit shows the connection between Bob Billings Parkway and the proposed development to the north. This concept includes the subdivision design as of November 2012. The location of Renaissance Drive between the December and January versions has not changed. Renaissance Drive is proposed as a "double loaded" local connector street within the neighborhood.

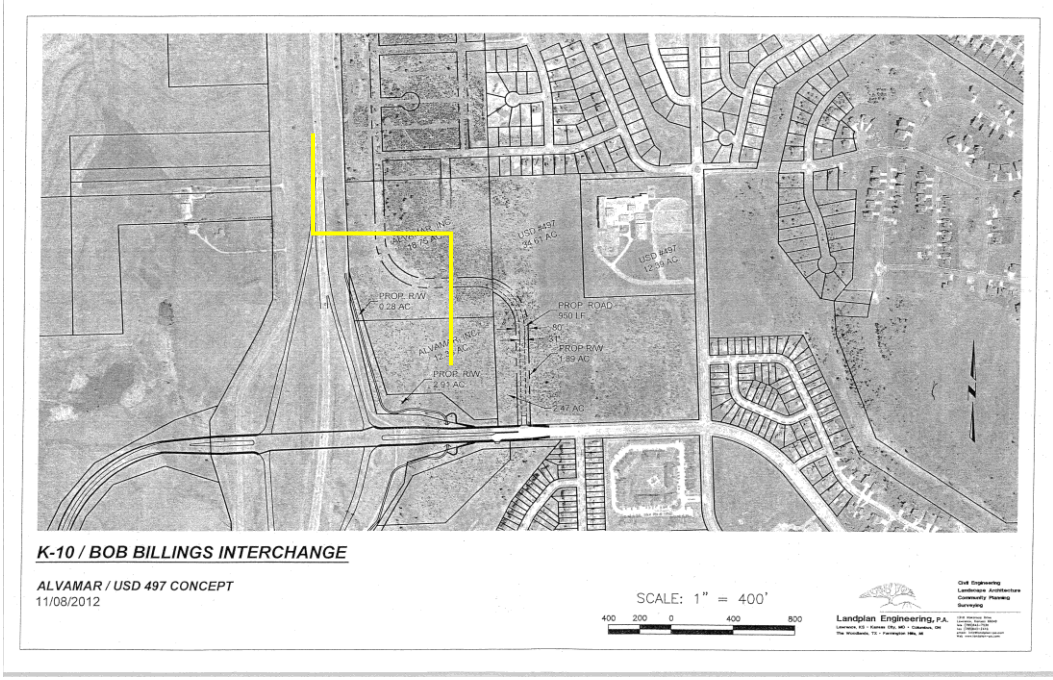


Figure 2: Renaissance Drive Extended South

The base document used in the concept includes the previous subdivision plat arrangement. The internal street connections to the Langston Heights subdivision have been revised since this concept plan was prepared. However, the location of Renaissance Drive and the access point to Bob Billings Parkway have not changed throughout this project.

Effect on future development to South
The proposed Subdivision extends the local street network to the south via Renaissance Drive and Big Sea Drive. The basic alignment of Renaissance Drive south of the subject property is being developed with KDOT and City staff and the adjacent property owners. The property along Bob Billings Parkway has been zoned for specific uses (PCD and RS10). The commercial use located on the northeast corner of Bob Billings Parkway and the SLT is likely to be requested for an expansion to the north and possibly east filling the gap created by the street alignment. The long-range land use plan (West of K10 Plan) indicates this area as suitable for future neighborhood commercial uses. Regional detention will also be required on this corner as the area develops. This will further reduce the developable land for commercial uses at the immediate intersection.

USD 497 owns acreage on the northwest corner of Bob Billings Parkway and George Williams Way. This area is zoned RS10 and may be developed with expanded school facilities or could also be developed residentially given the existing zoning. There remains 18 acres of UR zoning between the neighborhood commercial and the proposed Langston Heights development. The proposed subdivision extends Big Sea Drive to the south property line that accommodates an extension of the detached residential pattern to the south. This street could be extended to intersect Renaissance Drive or could terminate in a T or cul-de-sac intersection. A small area would remain between the highway and Renaissance Drive that could be developed with a transitional use between the proposed multi-dwelling and the neighborhood commercial use depending on the requirements for regional detention for the area. The townhouse pattern could be extended in this area with significant landscaping along areas that abut the commercial development.

The attached exhibit highlights one concept for future development to the south.

West of K-10 Plan
The area south of the Langston Heights Development is located within the boundary of the West of K10 Plan area. The plan recommends low-density residential land use between the highway and George Williams Way with the exception of the area designated for neighborhood commercial uses at the intersection of K10 and Bob Billings Parkway.

The residential land uses recommended in the plan state:

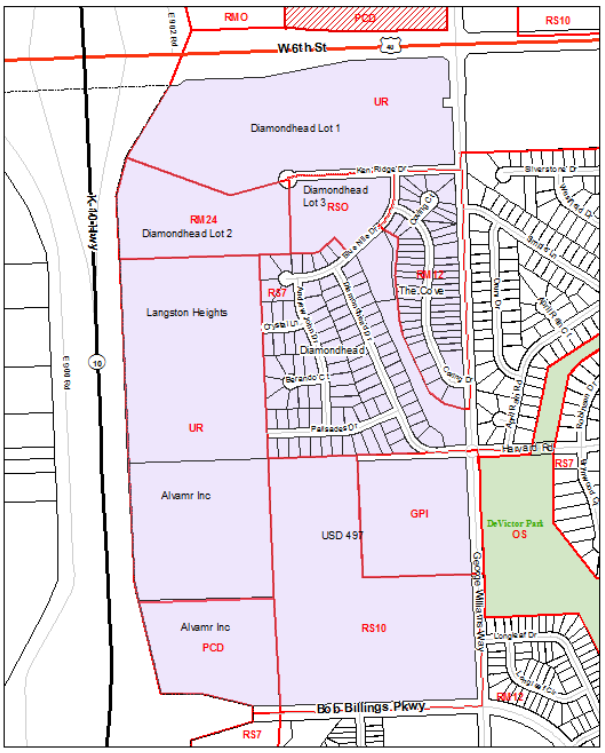
> ***Residential- Low Density***
> *The intent of the low-density residential use is to allow for single-dwelling, duplex and attached dwellings but emphasis is placed on residential type uses. Development in this area should be compatible with single-family character, which could include such uses as churches, small–scale daycares and institutional uses.*

The plan notes the primary uses as "*Detached dwellings, attached dwellings, duplex, group home, public and civic uses."* Applicable zoning districts include RS10, RS7, RS5 RM12D and PD. The Plan further states the maximum density recommended for areas recommended for low-density residential development is 6 dwelling units per acre.

Future Land Use Development Pattern

Based on the recommended land uses found in *Horizon 2020*, *West of K10 Highway Plan*, and the recent discussions with the Commission and the applicant staff prepared an example of a possible development pattern for the remaining undeveloped tracts of land. This concept plan is attached.

Land Use Summary Diamondhead Neighborhood Area						
Area/Description	**Acres**	**Zoning**	**Land Use**	**Density**	**Total Units**	**Subject Area**
Lot 1 Diamondhead	31	UR	vacant		0	
Lot 2 Diamondhead	12.78	RM24	vacant	24	306	
Lot 3 Diamondhead	6.07	RSO	vacant	15	91	
The Cove	10.3	RM12[1]	duplex	5.8	60	
Diamondhead Residential	20.7	RS7	sfr	4.2	89	
Langston Heights	***9.12***	***RS7***	***Sfr – Proposed***	***4.2***	***29***	
Langston Heights	***3.88***	***RS5***	***Sfr – Proposed***	***7.6***	***23***	
Langston Heights	***4.59***	***RM12D***	***Duplex-Proposed***	***5.7***	***22***	
Langston Heights	***9.98***	***RM12[2]***	***Multi - Proposed***	***10.92***	***86***	
Alvamar Inc	18.75	UR	vacant			
Alvamar Inc	12.3	PCD[3]	vacant	35	430	
USD 497	12.38	GPI	public	0	0	
USD497	34.6	RS10	vacant	4.3	148	
Total Area	**186.45**				**578**	



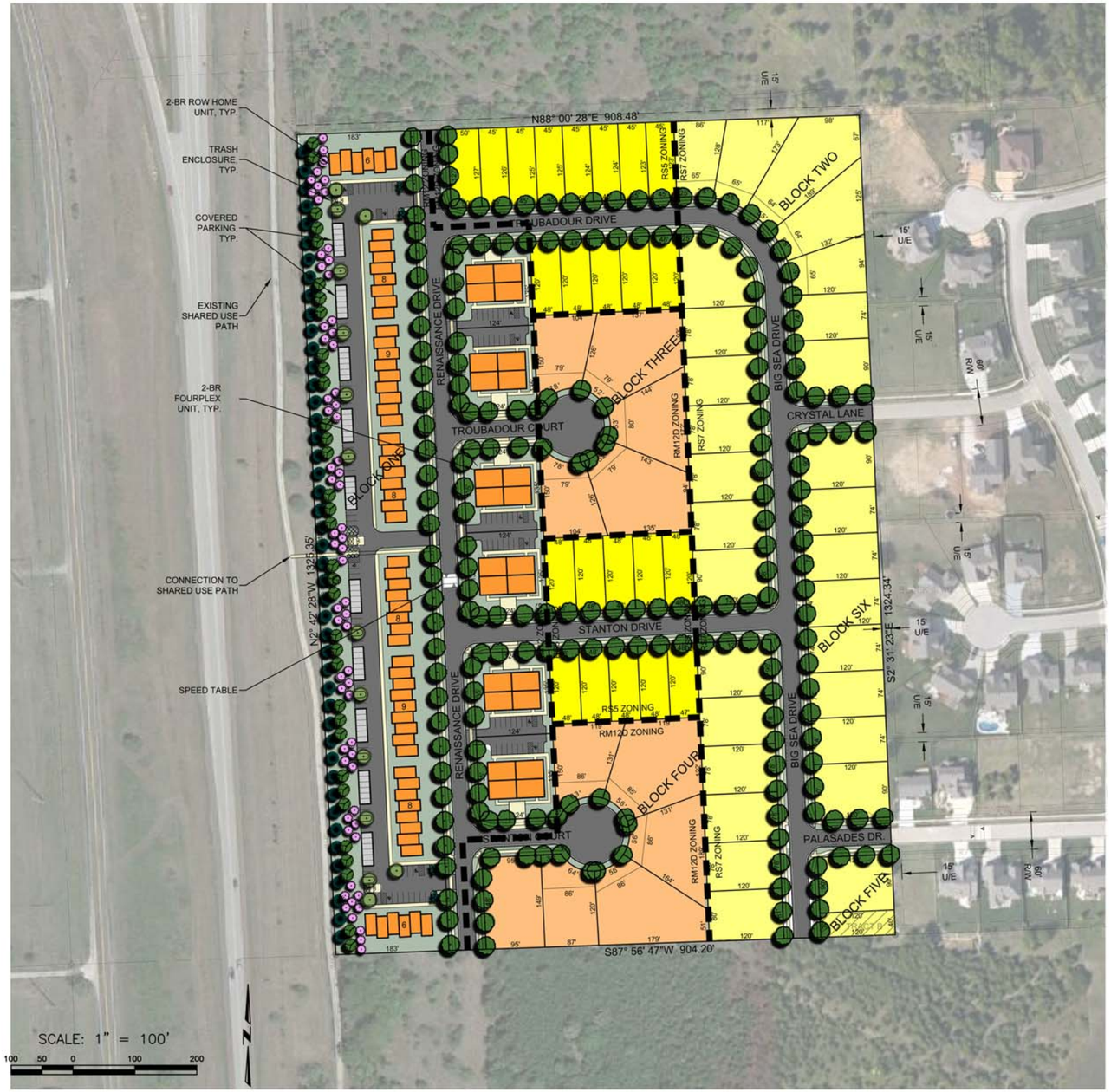
- Total Land Area 186.45 AC
- Developed Area 43.38 AC
- Vacant Land

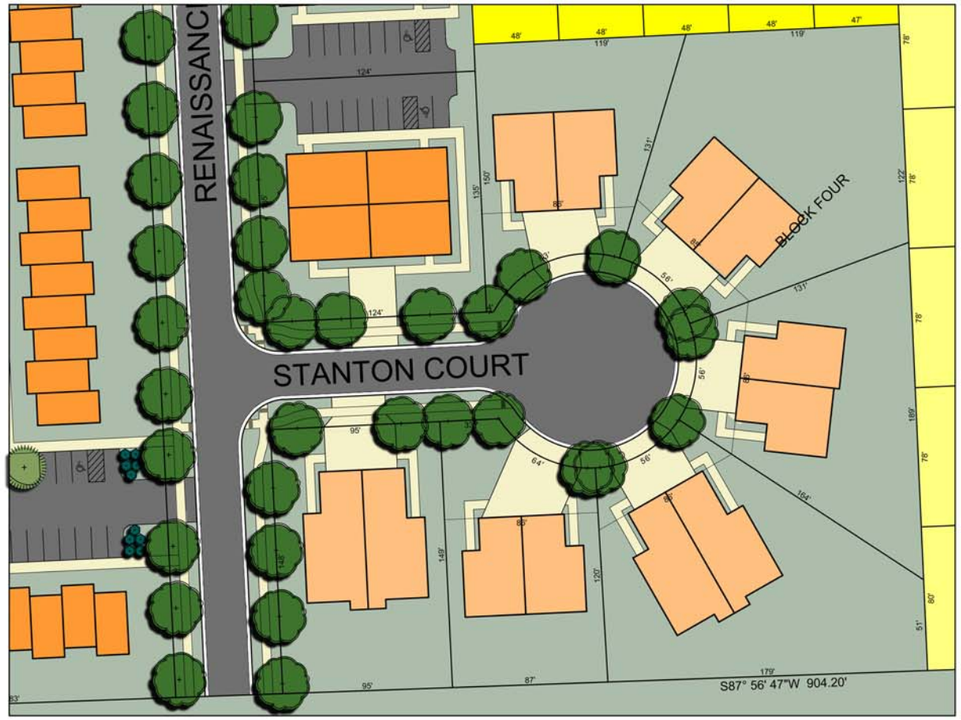
Table 3: Land Use Summary by parcel/Subdivision

[1] RM12 zoning allows multi-dwelling units. The Cove Subdivision is being developed to a less dense pattern with only two units (duplex housing) per lot.

[2] RM12 zoning allows a total of 119 units. Proposed application is restricted to a lower density than district would allow by right.

[3] PCD allows 35 dwelling units per acre. Typical PCD zoning has not included a residential component or only a small percentage when present.





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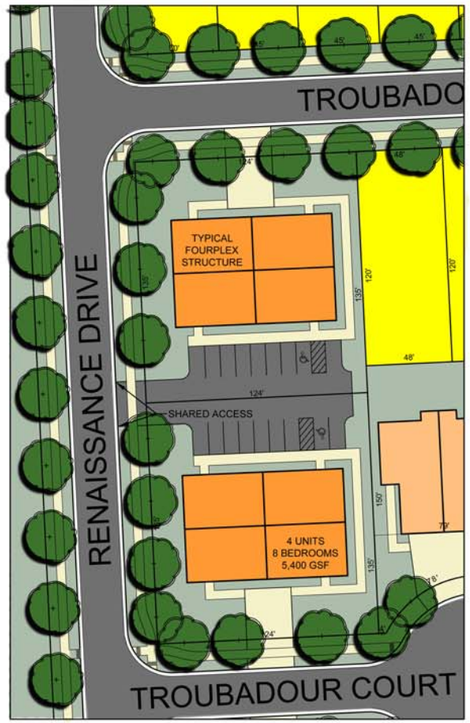

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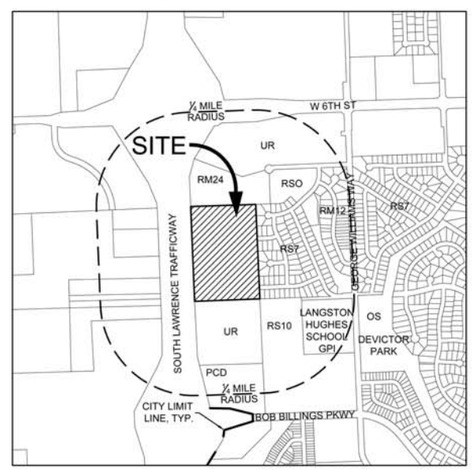

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ISSUE
SHEET NO. 1 OF 1 SHEETS

FILE NAME: Q:\20121218\CAD\Concept-Exhibits\CONCEPT.dwg LAST SAVED BY: Brian Sturm SAVED DATE: 1/18/2013 3:01 PM PLOTTED: 1/18/2013 3:02 PM

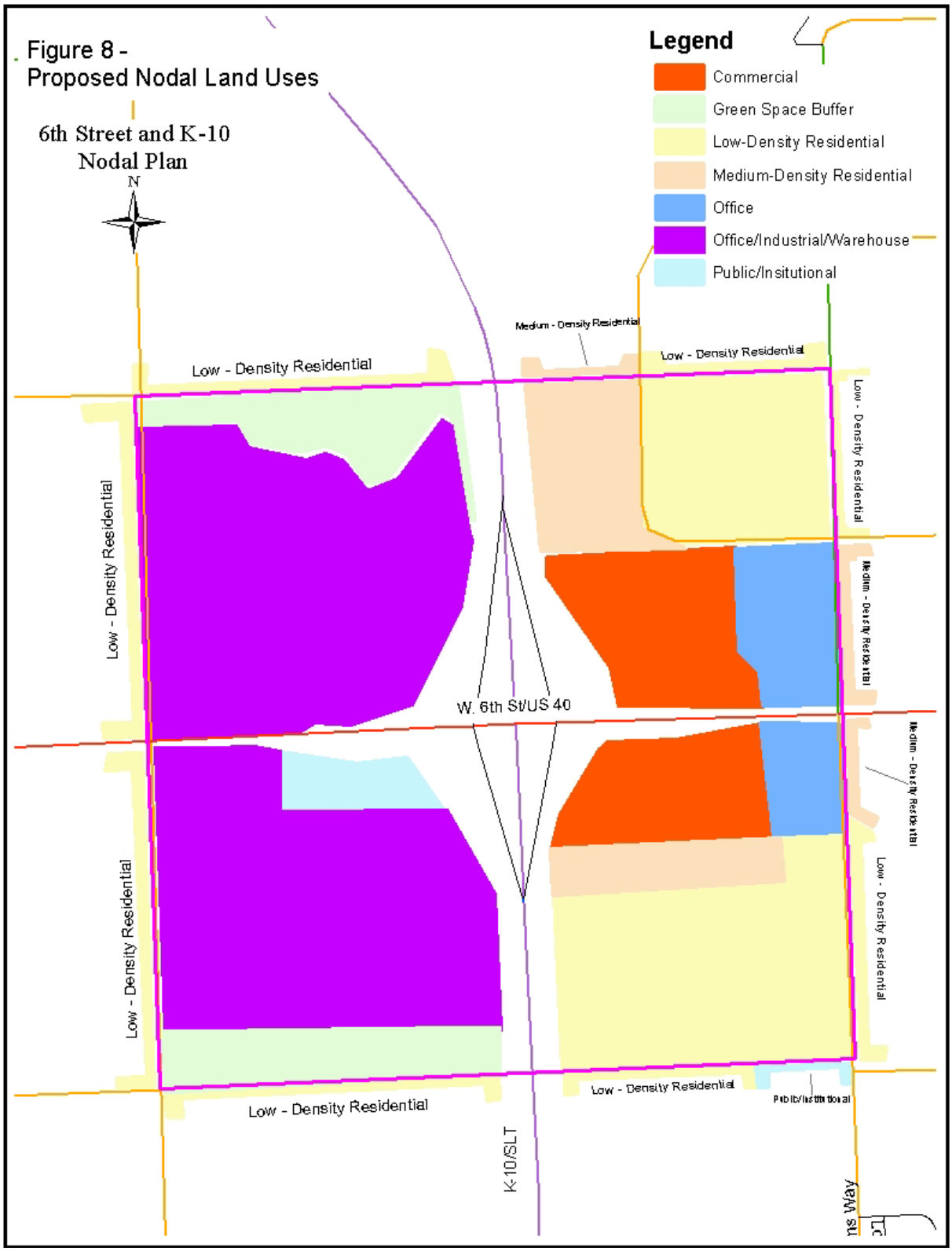


Figure 8 -
Proposed Nodal Land Uses
6th Street and K-10
Nodal Plan
N
Legend
Commercial
Green Space Buffer
Low-Density Residential
Medium-Density Residential
Office
Office/Industrial/Warehouse
Public/Insitutional
Low - Density Residential
Medium - Density Residential
Low - Density Residential
Low - Density Residential
Low - Density Reeidential
W. 6th St/US 40
Low - Density Residential
Low - Density Residential
Low - Density Residential
K-10/SLT

Memorandum
City of Lawrence
Planning Department

TO: **Lawrence Douglas County Planning Commission**

FROM: **Planning Staff**

CC: **Applicant**

Date: **January 18, 2013**

RE: **Item No. 3 Langston Heights Development**

- **Item No. 3B: Z-12-00229; UR to RM12D**
- **Item No. 3E: Z-13-00013: UR to RS5 as a lesser change of a portion of the RM12D application.**

Application of the Lesser Change Table

Section 20-1303 of the Development Code allows the modification of an application when the request is reduced in a manner specified by the Development Code. The Code states:

…any zoning district listed in the right-hand column of the Lesser Change Table that follows shall be considered a "lesser change " than a change to the Zoning District listed in the left–hand column of the same row of the table; in accordance with the cited section, a recommendation or action to amend the zoning map to assign the "lesser change" Zoning District to the land, rather than the Zoning District advertised in the notice, shall not require further notice."

This provision allows the Planning Commission to consider or to recommend changes to a specific zoning request without additional publication. In the specific case of the Langston Heights development application, the applicant is proposing to reduce a portion of the proposed RM12D district to RS5. The table below indicates all RS districts, with the exception of the RSO district are considered a lesser change from the RM12/RM12D Districts.

The application for RM12D has been revised to reduce the overall area and to consider a portion of the original request to be considered a lesser change to RS5 as discussed in the attached staff report.

Table of Lesser Changes	
Advertised/Proposed Zoning District	**Districts to be Considered a "Lesser Change"**
RS40	None
RS20	RS40
RS10	RS20 or RS40
RS7	RS10, RS-20 or RS40
RS5	Any other RS except RS3 or RSO
RS3	Any other RS except RSO
RSO	Any other RS except RS-3
RM12, RM12D	Any RS except RSO
RM15	RM12 or any RS except RSO
RM24	RM15, RM12 or any RS except RSO
RM32	Any RM or any RS
RMG	Any RM or any RS
RMO	RM15, RM12 or any RS
CN1	None
CN2	CN1, RSO or RMO
CD	CN1, CN2 or CC200
CC200	CN1 or CN2
CC400	CC200 or CN2
CR	CC400 or CC200
CS	CN1, CN2 or CO
IBP	None
IL	IBP or CN2
IM	IBP or IL
IG	IL, IM, IBP, or CN2
Other Zoning Districts	Not Applicable

PLANNING COMMISSION REPORT
Regular Agenda - Public Hearing Item

PC Staff Report
1/28/2013

ITEM NO 3B: Z-12-00229 UR (Urban Reserve) District to RM12D (Multi-Dwelling Residential) District; ~~8.564~~ 8.333 acres (SLD) AND

ITEM NO 3E: UR TO RS5; 3.88 ACRES; E SIDE OF K-10 & S OF W 6TH ST (SLD)

Z-12-00229: Consider a request to rezone approximately ~~8.564~~ 8.333 acres from UR (Urban Reserve) to RM12D (Multi-Dwelling Residential), located north and south of Crystal Lane and Palisades Drive extended, as shown in the preliminary plat of Langston Heights Addition. Submitted by Landplan Engineering, for Langston Heights, LC, property owner of record. **Deferred from the December 2012 Planning Commission Meeting.**

Note: Revised Language is shown in **blue bold** text.

Z-13-00015: Consider a request to rezone approximately 3.88 acres from UR (Urban Reserve) to RS5 (Single-Dwelling Residential), located along the east side of K-10 highway south of W. 6th Street and along the west side of a proposed street known as Renaissance Drive, as shown in the preliminary plat of Langston Heights Addition. Submitted by Landplan Engineering, for Langston Heights, LC, property owner of record.

This request has been modified to reduce the total area included in the proposed RM12D District from 8.33 acres to 4.582 acres. The balance of the acreage (3.88 acres) included in the original application is requested to be considered for RS5 (Single-Dwelling Residential) District zoning as a lesser change per section 20-1303 (c) of the Development Code. A memo regarding the use of the lesser change table has been included with this packet.

STAFF RECOMMENDATION: Staff recommends approval of the request to rezone approximately 4.582 acres from UR (Urban Reserve) District to RM12D (Multi Dwelling Residential) District based on the findings presented in the staff report and forwarding it to the City Commission with a recommendation for approval.

And

STAFF RECOMMENDATION: Staff recommends approval of the request to rezone approximately 3.88 acres from UR (Urban Reserve) District to RS5 (Single-Dwelling Residential) District based on the findings presented in the staff report and forwarding it to the City Commission with a recommendation for approval.

Reason for Request: *The developer, RSR, Inc., intends to subdivide and rezone the subject property to support duplex development (see attached concept plan).*

KEY POINTS
- Request is part of an overall development package that includes RS7 and RM12 Zoning and a preliminary plat.
- This district serves as a transitional use between the lower density development to the east and the proposed higher density and highway to the west.

ASSOCIATED CASES/OTHER ACTION REQUIRED
- Z-12-00229: ~~8.564 acres~~ **4.582 acres** from UR (Urban Reserve) to RM12D (Multi-Dwelling Residential)
- Z-12-00231: ~~9.206 acres~~ **9.122 acres** from UR (Urban Reserve) to RS7 (Single-Dwelling Residential)
- Z-12-00232: ~~10.025 acres~~ **9.980 acres** from UR (Urban Reserve) to RM12 (Multi-Dwelling Residential)
- **Z-13-00015: 3.88 acres from UR (Urban Reserve) to RS5 (Single-Dwelling Residential) as a lesser change from a portion of the proposed RM12D application.**
- PP-12-00228: Preliminary Plat Langston Heights

PLANS AND STUDIES REQUIRED
- *Traffic Study* – Not required for rezoning
- *Downstream Sanitary Sewer Analysis* – Not required for rezoning
- *Drainage Study* – Not required for rezoning
- *Retail Market Study* – Not applicable to residential request

ATTACHMENTS
- Area map
- Concept plan
- 6th & K-10 land use map
- **Lesser Change Table memo**

PUBLIC COMMENT RECEIVED PRIOR TO PRINTING
- Communications are attached.

Project Summary:
Proposed request is for ~~8.333~~ **4.582** acres to accommodate duplex development. This district is defined in Section 20-201 of the Development Code as corresponding to a "Medium-Density" comprehensive plan designation. This request is intended to be considered concurrently with the preliminary plat, PP-12-00228 Langston Heights. The preliminary plat lot configuration creates a net density of ~~7.4~~ **5.7** units per acres. This is a lower-density development pattern than the allowable density conveyed by the base zoning district. The RM12D district provides a land use transition between the detached residential portion of the subdivision to the east and the planned higher density development along the highway to the west.

This request has been modified to include a portion of the original 8.333 acres as RS5. The revised request extends detached dwelling lots along connector street within the overall development. The remaining duplex portion of the original application is concentrated around specific cul-de-sac street within the development.

1. CONFORMANCE WITH THE COMPREHENSIVE PLAN

Applicant's Response: *the Lawrence future Land Use Map (3-2) in Horizon 2020 does not specifically designate a land use for this subject property. The request conforms to the Residential Development Strategy (pg. 5-1) of providing appropriate transition zones between low-density residential land uses and more intensive residential development. When considered with the two (2) other rezoning applications accompanying this one, all three conform to the Residential Development Strategy (pg. 5-1) of providing a mixture of housing types, styles and economic levels for new residential development.*

This property is located within the boundary of the *6th Street and K-10 Nodal Plan*. This request is part of a package of requests that includes medium-density residential zoning in the form of duplex and multi-dwelling zoning districts and a preliminary plat that establishes the integrated layout of the overall development pattern planned for this area. The Nodal Plan, amended into the Comprehensive Plan, shows this area to be developed with low-density residential uses except for an area located along the south side of W. 6th Street and a portion of highway south of W. 6th Street. **The area plan land use map is attached to this report.**

The nodal plan provides a narrative description of the recommended land use development for each quadrant of the intersection of w. 6th Street and K-10 Highway. The plan states:

> ***The Southeast Corner***
>
> *Like its northern counterpart, this corner provides opportunity for a variety of residential, commercial, and office activities. This nodal plan designates the majority of this corner appropriate for residential development and the remaining area appropriate for commercial and office uses. This nodal plan also designates the majority of its residential uses appropriate for low-density, single-family neighborhoods with a small portion considered appropriate for medium-density residential development. This medium-density development serves as primary buffer between single-family neighborhoods and commercial activities. The commercial and office activities of the southeast corner along West 6th Street mirror those of the northeast corner - the majority of such activities are designated appropriate for commercial with the remainder for office uses.*
>
> *This nodal plan anticipates more low-density, single-family residential development in the areas surrounding this corner and therefore much of this corner was designated appropriate for similar development to maintain compatibility of surrounding land uses. Open space areas are also highly encouraged to serve as buffers between residential, commercial, and office land use activities, as well as provide opportunities for linkages to the surrounding neighborhoods to the southeast of this nodal study area.*

While the Nodal Plan specifically designates medium-density residential development appropriately as a buffer between single-family neighborhood and commercial activities, the proposed RM12 district request boundary employs this same concept to serve as a buffer between the single-family development to the east and the highway to the west. The **revised** RM12D/**RS5** request serves as the transitional use between the RS7 and the RM12 Districts. **The intent of the RS5 areas are to provide an increased presence of detached dwelling units on individual lots within the overall subdivision.**

In addition to density recommendations, *Horizon 2020* provides key strategies that are applicable to this development request and the related applications. They are:

- *Infill residential development should be considered prior to annexation of new residential areas.*
- *A mixture of housing types, styles and economic levels should be encouraged for new residential and infill developments.*
- *Compatible densities and housing types should be encouraged in residential neighborhoods by providing appropriate transition zones between low-density residential land uses and more intensive residential development, and between higher density residential uses and non-residential land uses.*
- *The character and appearance of existing residential neighborhoods should be protected and enhanced. Infill development, rehabilitation or reconstruction should reflect architectural qualities and styles of existing neighborhoods.*

This request represents infill development and the first step in a plan to provide a transition of uses between the existing development and the Highway. The proposed RM12D zoning is a medium-density residential district. **This request has been reduced with the revised preliminary plat from 8.462 acres to 4.5 acres. Additionally, an area originally intended for duplex development in the RM12D portion of the project has been revised to RS5 to accommodate detached housing on individual lots. The RS5 zoning district can be considered either a low density or medium density residential district (20-201) depending on the specific subdivision design.** When considering the proposed **requests for RM12D and RS5** ~~request for RM12D~~ concurrently with the preliminary plat, the impact of the **development proposal** is significantly reduced with a gross density of ~~only 6~~ **5.3** units per acre. **This area (8.462 acres) includes 22 duplexes and 23 detached units per the proposed subdivision (45 total units). The previous plan included 50 duplex units.** ~~Excluding the public right-of-way and including only the actual lots, the development density is approximately 7 dwelling units per acre for the RM12D portion of the development request.~~

Commercial areas and major traffic corridors are both considered high intensity uses. They both have a high traffic flow characteristic as well as noise and light that can impact lower intensity land uses. Future development of the subject property includes a 50' setback along the west property line to enhance the buffering of land use adjacent to the K-10 Highway. Of the land use plans completed along the edges of the existing city limits, uses along the K-10 Highway are predominantly higher intensity land uses. In some instances, the highway is abutted by open space which is typical of the regulatory floodplain in those sections. Higher intensity uses are appropriately located along highways with land use transitions provided to lower-intensity land uses.

The implementation of the land use recommendations of the comprehensive plan are implemented through the Development Regulations including zoning and subdivision design. The proposed request, when considered concurrently with the preliminary plat, complies with the low-density residential land use recommendations contained in the Nodal Plan.

Land Uses adjacent to K-10 Highway

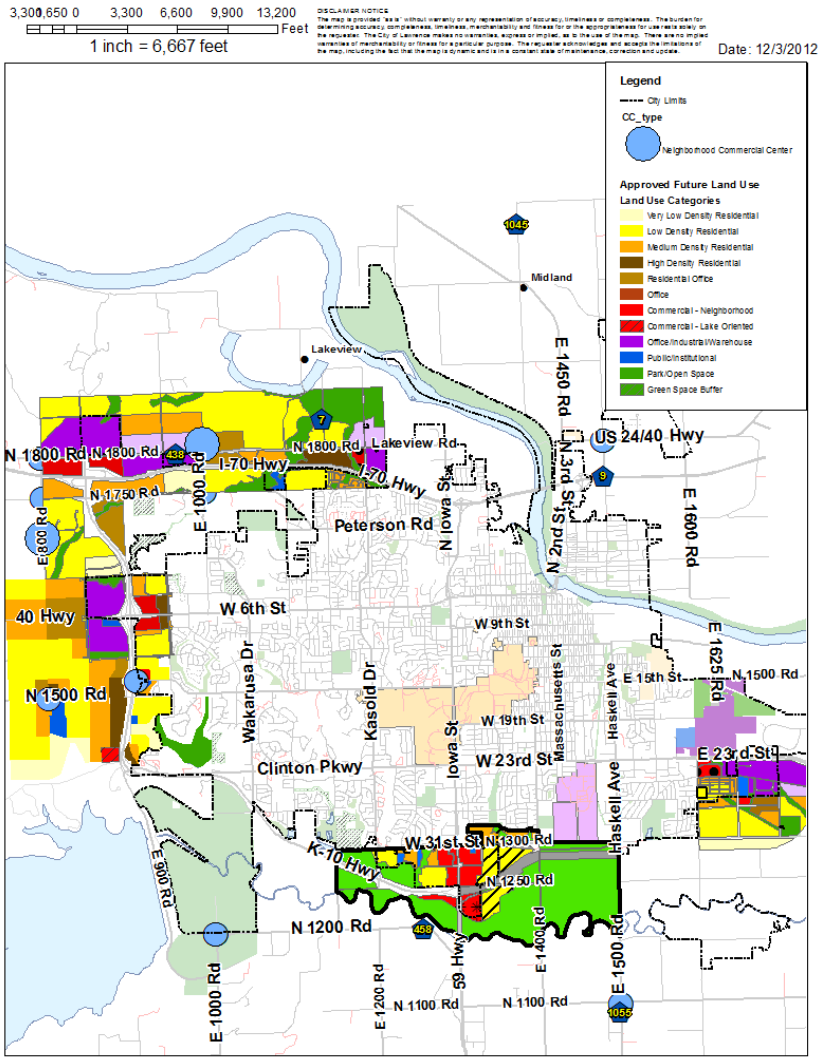


Figure 1: Land Uses

Staff Finding – This request, when considered with the proposed preliminary plat of Langston Height, complies with the low-density land use recommendations and provides a land use transition east to west for this area. **The revised request increases the presence of detached single-dwelling units in this development.**

2. ZONING AND USE OF NEARBY PROPERTY, INCLUDING OVERLAY ZONING

Current Zoning and Land Use:	UR (Urban Reserve) District; undeveloped property.
Surrounding Zoning and Land Use:	RM24 (Multi-Dwelling Residential) District to the north. Undeveloped land.
	Proposed RS7 (Single-Dwelling Residential) District to

the east. Developing residential subdivision to the east of the proposed development area.

UR (Urban Reserve) District to the south. Undeveloped land.

Existing UR (Urban Reserve) District and Proposed RM12 (Multi-Dwelling Residential) District to the west; undeveloped land. K-10 Highway is the west boundary of the development site.

Staff Finding – The proposed RM12D **and RS5** districts represent the central portion of the development area. Land to the immediate north, south, east and west are undeveloped. Land to the immediate east and west is proposed for detached and multi-dwelling development as part of this development request.

3. CHARACTER OF THE NEIGHBORHOOD

Applicant's Response: *The subject property is a vacant piece of abandon farmland. It is bordered to the west by the SLT right-of-way, which also includes the SLT recreation path. To the north lies vacant ground platted as part of the Diamondhead subdivision and zoned RM24. To the east lie properties platted under the Diamondhead subdivision, zoned RS7 and developed as detached single-family homes, all constructed within the past 5-7 years. To the south rests vacant unplatted property zoned UR and of similar natural character to the subject property. Langston Hughes School is a short distance to the southeast.*

The west portion of the development site abuts K-10 Highway (higher density proposed). The east portion of the development site abuts developing single-dwelling subdivision known as Diamondhead Subdivision. This requested RM12D district provides a transition of land use between the proposed detached and multi-dwelling structures.

This property is located within the West Lawrence Neighborhood. This section of the neighborhood includes several undeveloped parcels to the north and south along K-10 Highway. This neighborhood is characterized by the dominance of residential use, primarily low-density detached housing. Higher intensity uses are located along major streets in the neighborhood. Existing and planned non-residential uses are located at major intersections throughout the neighborhood.

Staff Finding – The overall neighborhood is characterized by residential uses. The area is bounded by K-10 Highway on the west and by George Williams Way, a collector street, on the east. Higher density zoning is located along the arterial streets of W. 6th Street to the north and Bob Billings Parkway to the south. The immediately surrounding areas, north and south, are undeveloped. Areas east of George Williams Way along W. 6th Street and Bob Billings Parkway have developed with higher intensity land uses expected along these types of arterial streets. **There are no changes to this finding of fact.**

4. PLANS FOR THE AREA OR NEIGHBORHOOD, AS REFLECTED IN ADOPTED AREA AND/OR SECTOR PLANS INCLUDING THE PROPERTY OR ADJOINING PROPERTY

As noted above this area is located within the boundary of the *6th Street and K-10 Highway Nodal Plan*. The area is generally recommended for low-density residential development with a small portion considered appropriate for medium density residential development. **This application has**

been revised to reduce the area intended for duplex development and increase the amount of detached housing in the central portion of the proposed development. The density of the central portion of the development has been reduced by the inclusion of the RS5 district. The overall proposed density within the central portion of the development has been reduced from 7.4 (medium density) to 5.3 (low-density) dwelling units per acre. This **revised** request is consistent with that land use recommendation.

Staff Finding – The **reduced area** proposed RM12D **with the proposed RS5** zoning is consistent with the low-density residential land use recommended in the nodal plan applicable to this area when reviewed concurrently with the preliminary plat.

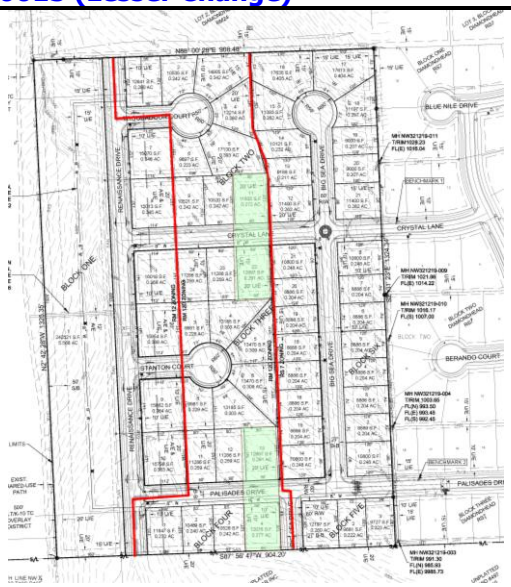
5. SUITABILITY OF SUBJECT PROPERTY FOR THE USES TO WHICH IT HAS BEEN RESTRICTED UNDER THE EXISTING ZONING REGULATIONS

Applicant's Response: *The UR district has served this vacant ground adequately but will not permit new development of any kind. Development that provides an appropriate transition from the existing RS7 neighborhood to the east, the future RM32 development to the north and the existing SLT to the west requires a new zoning classification*

Staff concurs that the UR zoning is no longer desirable given plans to develop the property. The current zoning serves as a holding zone until property is ready for development. **Following the December Planning Commission meeting, staff met with the applicant to identify specific concerns expressed in the public hearing. Expressed concerns identified the need to increase the presence of single-dwelling housing type and to provide an appropriate phasing for the multi-dwelling portion of the project through a street connection to Bob Billings Parkway. The original request included the central portion as a duplex development area as a transition between the single-family and multi-dwelling along the highway. The subdivision arrangement facilitated a direct connection between the proposed subdivision and the existing development to the east. This arrangement was found to be unsuitable.** ~~The proposed request is for RM12D to accommodate duplex development.~~

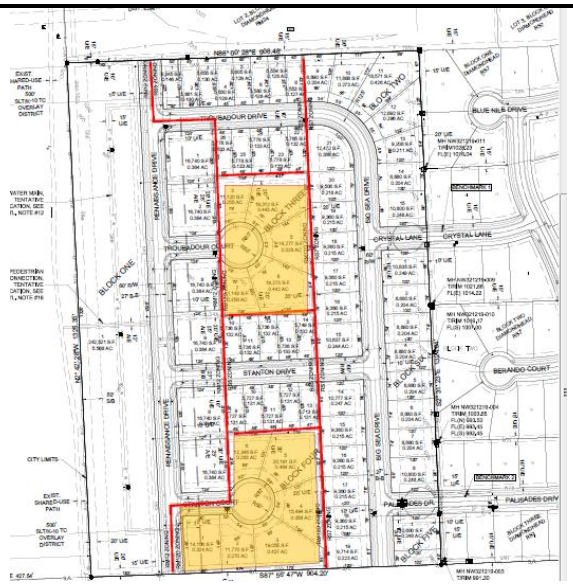
The proposed RM12D request has been modified by the applicant and reduced in area as discussed above. The overall density in the central portion of the development has been reduced and the project includes more detached housing lots than the previous arrangement. Considered concurrently with the preliminary plat **and the RS5 portion of the reduced request**, this specific development has a comparable, but slightly higher, overall density to the developed area to the east.

Approval of the request facilitates infill development and the provision of additional housing choices in this area. The suitability is made compatible to the area by providing larger duplex lots**, reducing the area proposed for duplex development, increasing the area for detached housing development,** and maintains a back-to-back relationship of the RM12D and RS7 **and RS5** districts.



Subdivision shows lot orientations with generally back-to-back development patterns.

Figure 2A: District Boundary December 2012



Subdivision shows reduced duplex development area.

Figure 2B: District Boundary January 2012

The RM12D is commonly referred to as "duplex zoning". The maximum density allowed in this district is 12 dwelling units per acre; however, the lot standards yield a practical density of **5.7 dwelling units per acre in this revised application.** The use of the RM12D district in this application facilitates an appropriate land use transition between low-density residential development and proposed higher-density residential development. The proposed request, when considered concurrently with the preliminary plat is at the lowest range of a medium-density residential development.

As part of the revised request the 3.888 acres has been proposed as RS5 in the central section of the development. The zoning district changes with the revised lot configuration provide greater transition within the development between the highway to the west and the developing subdivision to the east. This revised request improves the suitability for low-density residential development in this area.

Staff Finding – The existing UR (Urban Reserve) District is no longer a suitable zoning district for this property since development applications have been made. The **combined proposal of RM12D and RS5 districts** is intended as a land use transition between the existing and proposed detached residential development to the east and the highway and higher density development proposed to the west. This is a suitable use of the RM12D **and the RS5** district.

6. LENGTH OF TIME SUBJECT PROPERTY HAS REMAINED VACANT AS ZONED

Applicant's Response: *the property has remained vacant since being annexed into the City in the early 2000's.*

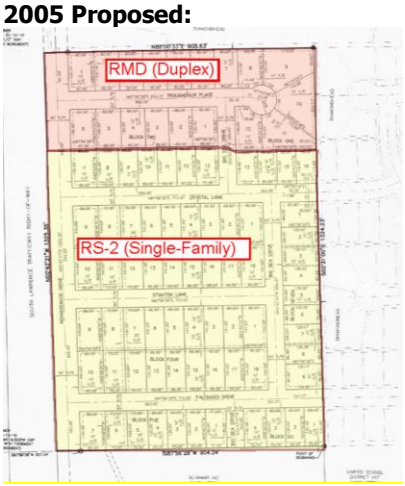
This property is undeveloped (vacant). The existing zoning, UR, was established in 2006 with the adoption of the Development Code. Prior to that time the property was zoned A (Agricultural). The surrounding area to the north and east (Diamondhead) was annexed and rezoned for various uses in October 1998.

Z-12-00015 (Lesser Change)

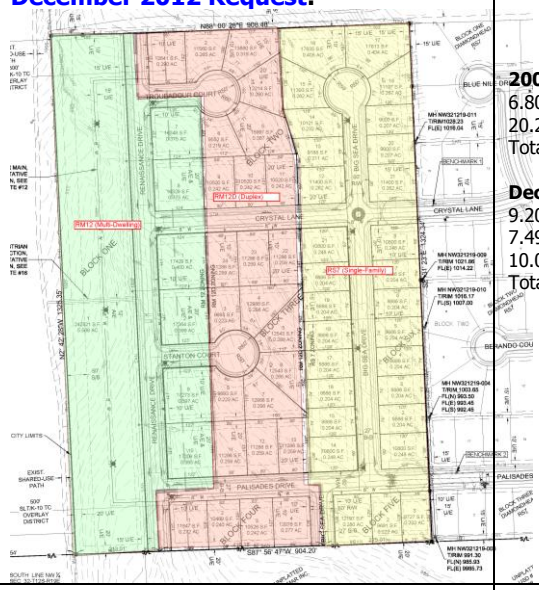
This property was part of a 27.23-acre request for RS-2 zoning submitted in October 2002 (Z-10-39-02) but later withdrawn and replaced by two later applications in 2005. (Z-9-63-05 and Z-9-64-05). The 2005 requests were for 6.8 acres of RMD (Duplex Residential District) and 20.77 Acres of RS-2 (Single-Family Residential District).

Development Density Comparison

2005 Proposed:



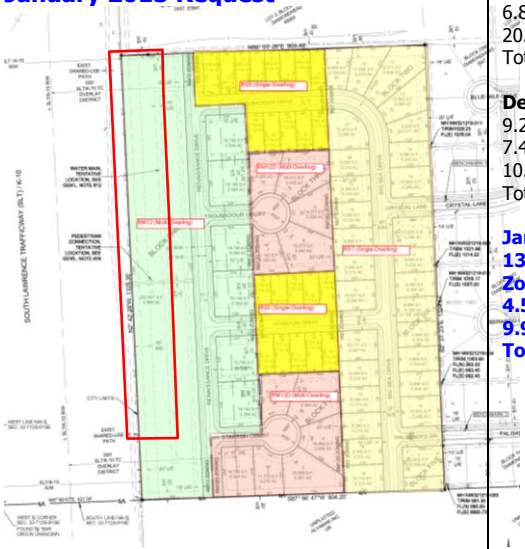
December 2012 Request:



2005 Proposed:
6.80 Acres – Duplex Zoning
20.22 Acres – Detached Residential Zoning
Total Units -104

December 2012 Request:
9.20 Acres – Detached Residential Zoning
7.49 Acres – Duplex Zoning
10.02 Acres – Multi-Dwelling Zoning.
Total Units - 165

January 2013 Request



Note: Lot 1, Block 1, outlined in red will not be developed until connection of Renaissance Drive to the south to Bob Billings Parkway, refer to Preliminary Plat.

2005 Proposed:
6.80 Acres – Duplex Zoning
20.22 Acres – Detached Residential Zoning
Total Units 104

December 2012 Request:
9.20 Acres – Detached Residential Zoning
7.49 Acres – Duplex Zoning
10.02 Acres – Multi-Dwelling Zoning.
Total Units - 165

January 2013 Request:
13.002 Acres – Detached Residential Zoning [9.122 + 3.88)
4.582 Acres – Duplex Zoning
9.980 Acres – Multi-Dwelling Zoning
Total Units – 160

Table 1: Summary of Land Use

These requests were approved by the Planning Commission on November 16, 2005. They were accompanied by a preliminary plat that included connected grid streets. The approval was subject to the recording of a final plat for the property. The Final Plat for the property was approved in 2006 and the approval was extended in 2008. The property owner did not complete the requirements and record the final plat. Therefore, the zoning was never published and made

effective. The 2005 request for RMD included the north portion of the subject property that abutted the RM24 zoning. The previous preliminary plat included only one block of duplex lots terminating in a cul-de-sec in the north portion of the 27-acre parcel. The highway was abutted by Renaissance Drive and included lots on only side of the street as a buffer to K-10 Highway.

Staff Finding – The area is undeveloped. The property was zoned A (Agricultural) from 1966 to 2006. The UR district was established in 2006 and remains to the present. **There are no changes to this finding of fact.**

7. EXTENT TO WHICH APPROVING THE REZONING WILL DETRIMENTALLY AFFECT NEARBY PROPERTIES

Applicant's Response: *Approving this rezoning will pose no detrimental effect to nearby properties. Approval will facilitate appropriate residential development adjacent to the SLT and set a development precedent for adjacent vacant parcels.*

Note: Staff has received significant communication from nearby property owners and residents, in advance of the December 2012 Planning Commission Meeting, with regard to the proposed development. A separate summary of concerns expressed by the immediate neighborhood is attached was attached to the December 2012 staff report ~~to this report~~ and is also applicable to Z-12-00232 (UR to RM12). New communications received for the January 28, 2013 meeting are attached to this report and applicable to the related requests.

The area to the north and south is undeveloped. As such, no direct detrimental impacts are anticipated for these properties. Approval of the rezoning request facilitates the extension of streets and utilities to this area. As the areas to the north and south develop, street connections will be made that connect the proposed development with the adjacent properties. Development of this property extends a benefit to the undeveloped properties by the extension infrastructure.

Refer to attached memo regarding development potential to the undeveloped land to the north and south. Additional information has been provided to staff regarding the extension of Renaissance Drive south to Bob Billings Parkway.

A concern related to this request as it could potentially impact nearby properties is expressed by residents of the developed area to the east. Previous land use approvals conveyed an expectation for continued low-density development in the form of detached dwelling units on individual lots. This request alters that expectation by moving the proposed duplex use from the north portion of the site to the central portion of the site.

Existing residences will experience an increase in traffic since the local streets currently dead-end at undeveloped property. An increase in traffic should be expected. The local street network has capacity to service this area even with the addition of the proposed development. There are no future collector streets planned for the area between George Williams Way and K-10 Highway between W. 6th Street and Bob Billings Parkway. Traffic generated from this area will utilize the local street network to access the larger collector and arterial street network per approved plans. Increased traffic on existing local streets should be expected. As the area develops, additional street connections will be made dispersing some local street traffic.

The proposed subdivision has been revised to alter the internal street network pattern. This is reflected in the boundaries of the associated zoning districts. The revised street

pattern reduces the direct connectivity between the proposed subdivision and the existing subdivision to the east while maintaining a minimal level of connection between the two subdivisions. This revised design will further reduce the impact of traffic in the area.

Updated traffic information was provided to City Staff and reviewed by the City's Traffic Engineer, City Engineer, and Senior Traffic Planner. Staff's conclusion of the traffic study is that with the connection of Renaissance Drive to Bob Billings Parkway and the internal street configuration the development is consistent with the regional MPO planning. The intensity of the proposed development will not have any unexpectedly high traffic impacts on the regionally significant road lines of W. 6th Street, Bob Billings Parkway and George Williams Way. The addition of the street connection to the south has the added benefit of providing a secondary access option to Langston Hughes Elementary School that will alleviate internal traffic concerns for the surrounding neighborhood streets.

Staff Finding – Detrimental impacts associated with this request are related to an increase in traffic. However, traffic generated by this project is within the parameters of local street traffic expected for the area. Other impacts such as value are related to other forces outside of the zoning analysis such as perception and construction quality.

The revised request includes a phasing of development of the multi-dwelling portion of the request that limits development until Renaissance Drive is connected to Bob Billings Parkway. This will reduce the overall traffic generated by the development though the existing local street connections. The revised rezoning requests also result in a reduction of the total number of units from 165 to 160 and increase the total number of detached housing consistent with the developing land use pattern of the area to the east.

8. THE GAIN, IF ANY, TO THE PUBLIC HEALTH, SAFETY AND WELFARE DUE TO THE DENIAL OF THE APPLICATION, AS COMPARED TO THE HARDSHIP IMPOSED UPON THE LANDOWNER, IF ANY, AS A RESULT OF DENIAL OF THE APPLICATION

Applicant's Response: *the gains to public welfare proposed by this application are the gains associated with creating appropriate transitional residential development adjacent to established neighborhoods and highway corridors. Denial of this application will perpetuate the vacancy of this land.*

Evaluation of this criterion includes weighing the benefits to the public versus the benefit of the owners of the subject property. Benefits are measured based on anticipated impacts of the rezoning request on the public health, safety, and welfare.

This request facilitates the development of vacant property for residential purposes. The project extends the city's infrastructure within the existing boundaries of the city as infill development. As streets are constructed additional connectivity to this area west of George Williams Way will be added.

This application has been specifically revised in response to comments made at the December 2012 Planning Commission meeting. This revised request reduces the area allocated to duplex development (RM12D) and increases the presence of detached

housing (RS5) within the proposed subdivision. The revised subdivision design and zoning pattern extend the opportunity for additional detached housing to the south.

If this application is denied, the applicant could seek a request for a different zoning district. Development of the property is anticipated for residential development since 2002. Development of this area is one of timing as it relates to the developer's schedule. There are no impediments to extending public infrastructure to this area. Development of the site facilitates vehicular and pedestrian connectivity.

The overall project has also been revised to limit the multi-dwelling portion of the request (RM12) until Renaissance Drive is connected to Bob Billings Parkway. This connection provides alternative access to the neighborhood to the street network with more direct connections to the collector and arterial street network.

Staff Finding – Approval of the request facilitates infill residential development between George Williams Way and K-10 Highway and the efficient extension of public services and utilities. **The revised request benefits the public by providing an appropriate land use transition, expanding the housing options in the immediate neighborhood, and increasing the presence of the detached housing pattern in the area consistent with development expectations for the area.**

9. PROFESSIONAL STAFF RECOMMENDATION

The purpose of the RM12D district is found in Section 20-204 of the Development Code. This district is included with all other RM districts. The Development Code states:

> *The primary purpose of the RM districts is to accommodate multi-dwelling housing. The districts are intended to create, maintain and promote higher density housing opportunities in areas with good transportation access.*

The RM12D district is further distinguished from other RM districts *"on the basis of building type and the maximum allowed net density. In the RM12D district, the building type is restricted to duplex or attached dwellings of 2 units. Only one principal building per lot is permitted in this District."*

Both the RM12D and the RM12 have the same density and dimensional standards. However, the RM12D district is generally used for duplex development or 2 dwelling units per lot. Each lot must be sufficiently large enough to accommodate a minimum of two units, applicable building setbacks and off-street parking. **This request has been revised and the RM12D portion has been reduced from 8.333 acres to 4.582 acres. The remaining acreage, as a lesser change, is proposed as RS5.**

The purpose of the RS5 district is found in Section 20-202 of the Development Code. The Development Code states:

> ***The primary purpose of the RS Districts is to accommodate predominantly single Detached Dwelling Units on individual Lots. The District are intended to create, maintain and promote housing opportunities for individual households, although they do permit nonresidential uses that are compatible with residential neighborhoods.***

The RS5 District is distinguished by having a minimum lot area of 5,000 SF and reduced yard setbacks. The RS5 District has a corresponding Comprehensive Plan Designation as either low-density or medium-density depending on the specific lot arrangement (20-201).

Staff has received numerous calls regarding the proposed Langston Heights development project specifically as it relates to the use of the RM12D and RM12 zoning districts. A key consideration in **this revised application is the** concurrent application of, **the reduced area intended for duplex development, the addition of the RS5 District, and the revised** preliminary plat that is used to define the boundary of each district of the request.

Previous applications provided either full development of the subject property for single-dwelling detached lots or provided duplex zoning as a transition from north to south. The only transition provided for K-10 Highway was a public street with a single row of lots facing the highway. The **revised** request provides a reasonable transition of land uses with back-to-back lot orientations and a decrease in intensity east of the highway. The RM12D portion of the request provides the specific buffer between the **multi-dwelling and single dwelling districts. The RS5 portion of the request provides transition between the RM12D and the** RS7 District.

CONCLUSION

The proposed use of **the reduced area of** RM12D zoning **and the addition of the RS5 zoning** is a reasonable approach for land use transition between existing development and the highway **when considered concurrently with the revised preliminary plat**. This request is part of a larger development request that integrates the land use, density and subdivision design for property. The project facilitates infill development and the efficient extension of utilities.

Proposed Land Use Transition – December 2012

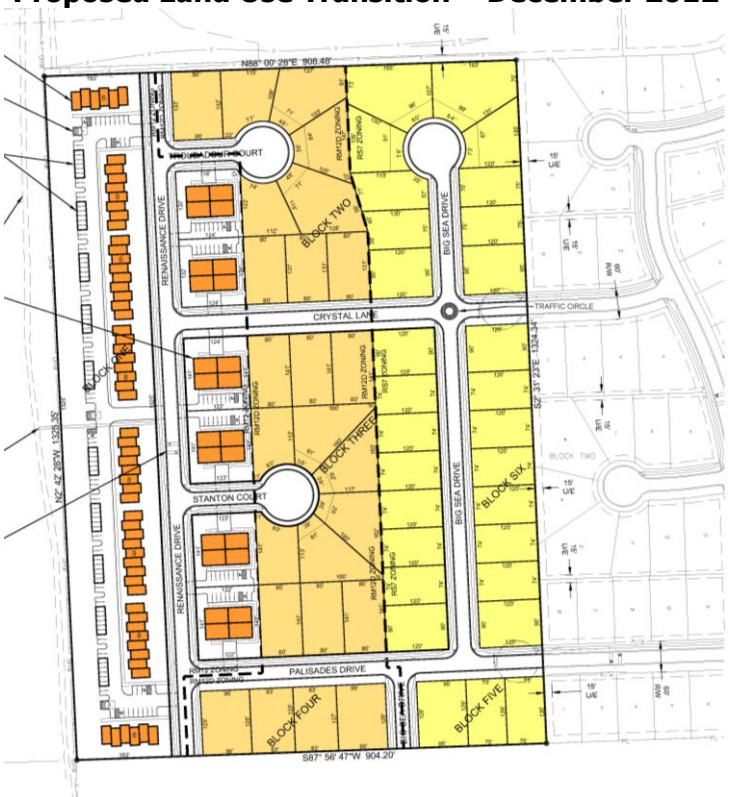
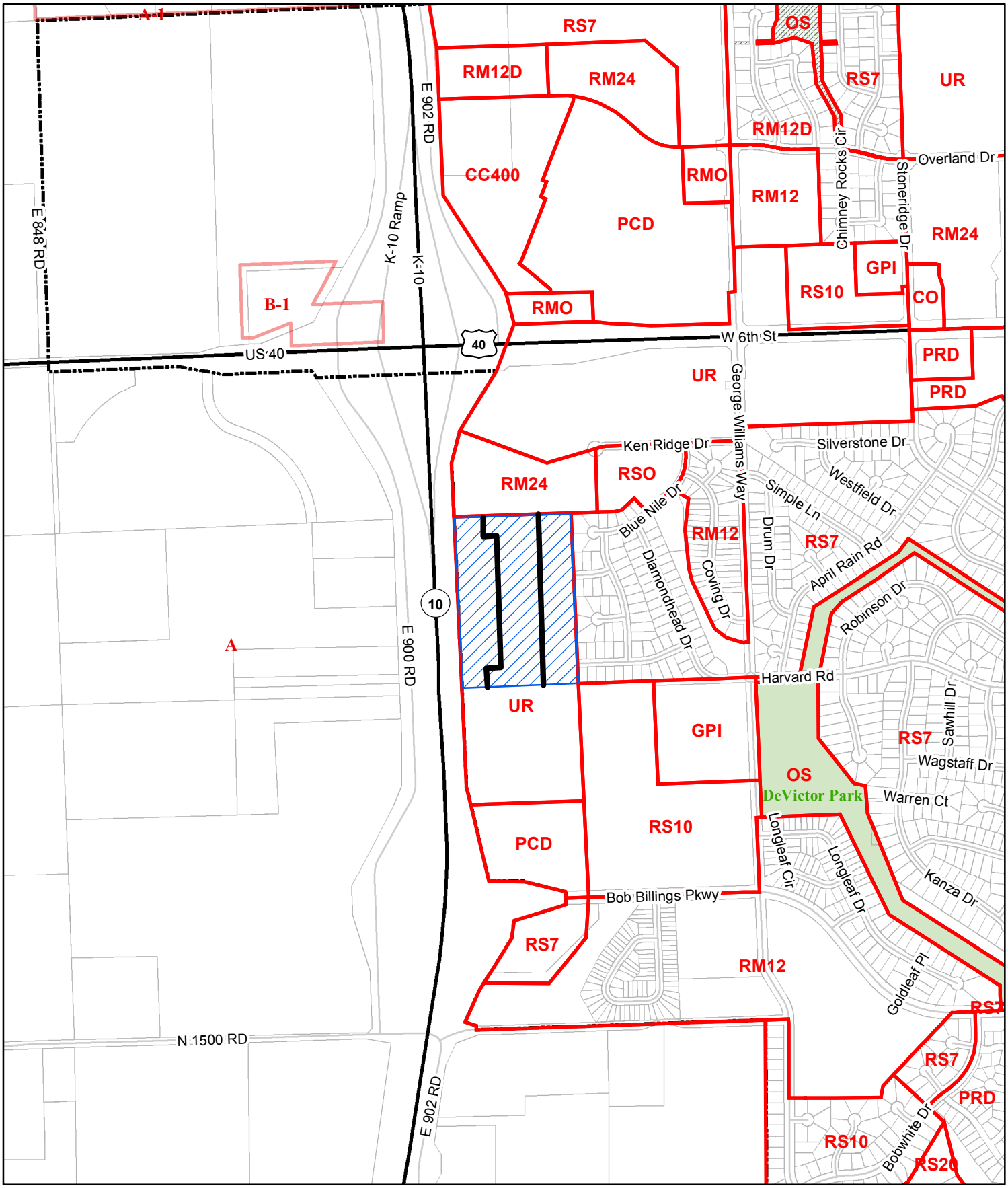


Figure 3A: Concept Plan 2012

Proposed Land Use Transition – January 2013



Figure 3B: Concept Plan2013



Z-12-00229: Rezone 8.5 acres from UR to RM12D
Z-12-00231: Rezone 9.2 acres from UR to RS7
Z-12-00232: Rezone 9.8 acres from UR to RM12
East of K-10 Highway & south of W. 6th St

Area Requested

Scale: 1 Inch = 1000 Feet

Lawrence-Douglas County Planning Office

January 2013

RECEIVED
JAN 28 2013
City County Planning Office
Lawrence, Kansas

LEAGUE OF WOMEN VOTERS®
OF LAWRENCE/DOUGLAS COUNTY

January 27, 2013

President
Melinda Henderson

President-Elect
David Burress

Vice President
Milton Scott

Secretary
Caleb Morse

Treasurer
Marjorie Cole

Directors
Margaret Arnold
Bonnie Dunham
James Dunn
Sally Hayden
Cille King
Ruth Lichtwardt
Marlene Merrill

Mr. Bruce Liese, Chairman
Members
Lawrence-Douglas County Metropolitan Planning Commission
City Hall
Lawrence, KS 66044

RE: ITEM NO. 3: PRELIMINARY PLAT AND REZONINGS FOR LANGSTON HEIGHTS ADDITION: E SIDE OF K-10 AND S OF W 6TH ST. (SLD)

Dear Chairman Liese and Planning Commissioners:

After studying the new Preliminary Plat and proposed rezonings for Langston Heights, we hope you will consider our original thoughts on this issue again. For your convenience, we have attached our original letter to you.

We do acknowledge that the issue of traffic from the multiple family development on Block One, Lot One has been alleviated to an extent. The restriction on Block One, Lot One development, until the connection to Bob Billings Parkway is opened, will help. This is the most intensive multiple family area. However, this issue still remains for traffic headed east and north from Block One, Lot One.

Also, the lack of predictability in the development of our neighborhoods is still a major problem in Lawrence. This is caused, among other reasons, by designations in our Comprehensive Plan of density only in the Area Plans coupled with the lack of definition of housing type in our multiple family districts. We describe this better in our attached letter.

We hope that you will consider our comments again because we believe they continue to apply here. Thank you.

Sincerely yours,

David Burress
President-Elect

Alan Black, Chairman
Land Use Committee

Attachment

PO BOX 1072 • LAWRENCE KS 66044-1072
league@sunflower.com • www.lawrenceleague.com
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ATTACHMENT

LEAGUE OF WOMEN VOTERS®
OF LAWRENCE/DOUGLAS COUNTY

RECEIVED
DEC 19 2012
City County Planning Office
Lawrence, Kansas

December 10, 2012

To: Lawrence/Douglas County Planning Commission:

Re: Langston Heights, Items 5A, 5B, 5D

President
Melinda Henderson

President-Elect
David Burress

Vice President
Milton Scott

Secretary
Caleb Morse

Treasurer
Marjorie Cole

Directors

Margaret Arnold

Bonnie Dunham

James Dunn

Sally Hayden

Cille King

Ruth Lichtwardt

Marlene Merrill

The League of Women Voters of Lawrence/Douglas County has strong positions on neighborhood planning. We believe that "the primary urban planning unit should be the neighborhood, large enough to support the location of a nursery-elementary school, park...and should reduce to a minimum the use of the private car within each neighborhood." Therefore, we are concerned about the proposal for the multiple family lot configurations of the Langston Heights Addition and their proposed rezoning to RM districts.

We strongly support designing neighborhoods with housing types suited to families with children that are close to elementary schools with pedestrian ways designed for safe walking, and believe that it is very poor planning to locate multiple family housing that is not appropriately designed for this near our schools. Multiple family housing types can be designed for families with children, but must have the needed amenities such as privacy, open space and other facilities to make such units attractive for family life, which this proposed development does not have. Additionally, we support staff's recommendation to deny the applicant's request for a variance to allow sidewalks on only one side of streets.

Because of the effect this multiple family housing would have on the future development of the adjacent vacant land to the south of this tract, it can be predicted that this land also would become multiple family and not attractive for families with children. Because of the proximity that these two tracts have to Langston Hughes Elementary School, we believe that this would be very poor urban planning and a serious waste of potential that these two properties would have to reduce automobile use and utilize these valuable areas for encouraging families to live within walking distance to the school.

We believe that the reason that this type of poor urban planning is not uncommon in Lawrence is because of some serious deficiencies in our Land Development Code and how it leads to the interpretation of *Horizon 2020*:

- The multiple family districts do not specify housing type.
- The only distinction in our Comprehensive Plan (CP) in the designation of residential areas is based on density. Because of the long-standing interpretation of our CP, it is possible to allow all types of multiple family units from tall apartments to duplexes to achieve the gross densities that are typical for detached single family housing. Therefore, the density designation in our CP is not an appropriate prediction of use.
- The CP does not include the same goal that *Plan '95* did, which emphasized that development should be designed for the ultimate user and not to satisfy only the needs of the developer.

These factors eliminate the essential predictability that homeowners need to be able to have confidence in the stability and future of their neighborhoods when they make the substantial investment for living in a community. It tends to reduce the trust needed for a growing and thriving city to attract new residents. We ask that you take these factors into consideration when making your decision on this rezoning request. The future of our city depends on good urban planning. We would look forward to a discussion about making the necessary changes to our Land Development Code and *Horizon 2020* to create the predictability in our neighborhoods that we need.

Thank you for your consideration of these issues.

Melinda Henderson
President

Alan Black, Chair
Land Use Committee

PO BOX 1072 • LAWRENCE KS 66044-1072
league@sunflower.com • www.lawrenceleague.com
www.facebook.com/lwvldc • www.twitter.com/lwvldc

From: Andrew Pitts [mailto:APitts@TreanorArchitects.com]
Sent: Friday, January 25, 2013 8:29 AM
To: Brian Sturm
Cc: Christopher Storm; phils@LANDPLAN-PA.COM; bobdennsan@gmail.com; douglas.raney@gmail.com; timaherndon@att.net; Sandra Day
Subject: RE: Langston Heights Addition - revised Concept Plan

Brian-

Thank you for the revised concept. As I mentioned, we have been circulating the revision throughout the neighborhood. We had hoped this type of dialogue could have happened prior to our last meeting, but appreciate the developer continuing to review and refine the concept.

Honestly, the change still causes great discomfort amongst most of the neighborhood. One of the biggest issues still is the density. While there was a change from duplexes to the RS-5, this is an undesirable zoning adjacent to the RS-7. This will not change density (as is indicated in the staff report) and will lower the property values of the area. The type of home built in RS-5, regardless that it is a single-family detached home, will be long and narrow and out of context and scale with the balance of the neighborhood.

Another issue continues to be the four-plex development. These are extremely undesirable.

While I have only spoken to a few and do not know how well this would be received, I would offer the following ideas for your consideration:

1. In lieu of the RS-5, continue the RS-7 zoning down both Troubadour Drive and Stanton Drive to Renaissance Drive. This would be similar to the plan, but would remove the four-plexes at the end of those roads.

2. The other idea would be to continue the duplexes on both Troubadour Ct and Stanton Ct. to Renaissance Drive. This would remove the four-plexes and have each of these cul-de-sacs being only duplexes.

3. The street network and row-housing would remain as designed.

I believe these types of changes could find favor among some in the neighborhood. These changes, coupled with your agreement to not build the multi-family until the completion of Renaissance Drive could be very positive. Again, these are my ideas in an effort to continue the dialogue and try to move this project forward and not a denial. I cannot guarantee if any other neighbors would agree, but think this could bring a positive response.

Please consider these ideas and let me know if you have any questions.

Thanks,

Andy Pitts

From: Andrew Pitts [mailto:APitts@TreanorArchitects.com]
Sent: Wednesday, January 23, 2013 9:44 AM
To: Brian Sturm
Cc: Christopher Storm; phils@LANDPLAN-PA.COM; bobdennsan@gmail.com; douglas.raney@gmail.com; timaherndon@att.net; Sandra Day
Subject: RE: Langston Heights Addition - revised Concept Plan

Thank you. We have been circulating and trying to gather our comments.

Andrew Pitts

From: Brian Sturm [mailto:brians@LANDPLAN-PA.COM]
Sent: Monday, January 21, 2013 1:15 PM
To: Andrew Pitts
Cc: Christopher Storm; phils@LANDPLAN-PA.COM; bobdennsan@gmail.com; douglas.raney@gmail.com; timaherndon@att.net; sday@lawrenceks.org
Subject: Langston Heights Addition - revised Concept Plan

Andy,
As a follow-up to our last meeting on Thursday, 1/10/13, please find attached an electronic copy of the revised Concept Plan for Langston Heights Addition. Last week, Landplan submitted to the City a revised Preliminary Plat and zoning district boundaries based upon this concept. Most all of the features shown in the plan discussed at our meeting on the 10th remain as components in this concept:

- An overall reduction in units (160 down from 165)
- Phasing that prohibits the construction of the 62-unit row home community until Renaissance Drive is constructed and complete south to Bob Billings Parkway.
- A street layout that promotes traffic calming and minimizes interaction between traffic generated by the single-family and multi-family components of the project.

The developer chose to make one additional change following our meeting: replacement of 26 duplex units with 23 single-family units adjacent to Stanton Drive and Troubadour Drive. The comment issued by you and your neighbors that the concept easily allowed for the extension of the single-family component down these two streets spoke loudly to us. Ultimately the developer sees great merit in using a single-family detached product to define the look of the eastern half of the neighborhood while transitioning to the SLT with a spectrum of multi-family products. I hope that the residents of the Diamondhead neighborhood also see this change as an improvement.

In regards to the traffic generated by this new concept, I have prepared below a table that breaks down the trips generated by the Langston Heights development per street. This table examines each of the proposed plats for this project (the one approved in 2006, the one submitted last October, as well as this latest revision) and then based on our trip distribution model assigns the number of trips that would travel down each of the three access streets (Crystal Lane, Palisades Drive and Renaissance Drive) during the critical peak period (afternoon peak-hour on a typical weekday).

Street	**2006 Plat**	**2012 Plat**	**2013 Plat, Phase 1**	**2013 Plat, Phase 2**
Crystal Ln.	45 (45%)	60 (45%)	41 (45%)	62(45%)
Palisades Dr.	56 (55%)	74 (55%)	51 (55%)	30 (22%)
Renaissance Dr.	N/A	N/A	N/A	45 (33%)
Total Trips	**101 (100%)**	**134 (100%)**	**92 (100%)**	**137 (100%)**

I will say a few things about the information in this table:

- The phasing built into this latest Concept Plan ensures that the volume of Langston Heights traffic cutting through the Diamondhead neighborhood will remain below the levels exhibited with the plat approved in 2006 (92 down from 101).

- The total volume of trips generated by this latest Concept Plan is higher than that associated with the plat submitted last October (137 up from 134). This slight uptick is due to the proposed increase in single-family units (52 up from 29) and decrease in multi-family units (108 down from 136).
- Let me know if you would like to review a copy of the full addendum to the Traffic Impact Study that Landplan submitted to the City.

The Planning Commission will resume their consideration of the Preliminary Plat and rezoning requests at their meeting next Monday, the 28th. Don't hesitate to let me know if you or your neighbors have any questions or comments concerning the above information. Your efforts, thus far to continue the dialogue associated with this development, have helped produce a stronger design.
Thanks,

Brian Sturm, RLA, ASLA, LEED AP
Project Landscape Architect
Licensed in KS

Landplan Engineering, P.A.
1310 Wakarusa Drive
Lawrence, Kansas 66049
v. 785.843.7530
f. 785.843.2410

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www.landplan-pa.com



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Lawrence Public Schools
110 McDonald Drive
Lawrence, Kansas 66044-1063
Telephone: (785) 832-5000

LAWRENCE
PUBLIC SCHOOLS

January 16, 2013

Lawrence-Douglas County Planning Commission
ATT: Bruce Liese, Chair
City Hall, 6 East 6th Street
Lawrence, KS 66044

RE: Langston Heights Rezoning Applications
Z-12-0029, Z-12-00231 and Z-12-00232

Dear Planning Commissioners:

Unified School District No. 497 traditionally does not take positions on neighborhood developments. The school district is here to serve all children attending public schools and has no position regarding the merits of the proposed development or any other development. With that said, Principal Jackie Mickel has expressed concerns about a potential traffic increase near Langston Hughes Elementary School at the intersection of Harvard Road and George Williams Way.

Please be advised that the applicant's revised proposal is a reasonable attempt to remedy those traffic concerns. The connection of Renaissance Drive to Bob Billings Parkway is viewed as an ideal solution to presently existing traffic issues in and around Langston Hughes Elementary School. The district is discussing opportunities to create another entrance/exit using Renaissance Drive. We are appreciative of the input from all concerned stakeholders, as it appears to have resulted in meaningful progress on those subjects.

Sincerely,

Dr. Rick Doll
Superintendent of Schools

Lawrence Douglas County Planning Commissionors January 19, 2013
Bruce Liese, Chair
Scott McCullough, Director Planning and Development Services
Sandra Day, Current Planner

The Diamondhead Neighborhood, the neighborhood, is writing to request that the Lawrence Douglas County Planning Commission deny RSR Development, LLC, the developer, a request to re-zone Langston Heights Development during the upcoming January 28 meeting. The neighborhood feels the plat changes offered thus far by the developer are not dramatic enough to warrant acceptance by the neighborhood. We received the plan attached, LangstonHeights2.pdf on January 10. This is the result following a meeting on December 20. At the meeting on the 20th we discussed opportunities the neighborhood felt would make for a viable solution and at this time we do not feel we are seeing enough change in the attached plan.

We appreciate the opportunity awarded us by the planning commission to be a part of this process, but we feel the developer has not met specific needs: A need for reduction in density, a focus on traffic issues, and improvement to the overall character of the neighborhood.

We share Commissioner Lamer and Blaser's concern during the December 10 planning commission meeting that RM12 and RM12D do not constitute single family zoning within Langston Heights. We agree that the type of zoning within Langston Heights will effect the future development of land to the south, which will have a bearing on the overall character of the entire neighborhood. Horizon 2020 calls for expectations to be set for neighborhoods. Our neighborhood had the expectations established in the 2006 plat, which called for single-family homes with a small concentration of duplex units. Keeping in mind that the planning commission also predicts single-family housing to be developed in the land to the south, the expectation is there for Langston Heights to be developed as a single-family development. Commissioner Josserand also expressed concern for the amount of multifamily dwellings planned for Langston Heights. During a December 20 meeting at Landplan Engineering, Inc. we shared similar concerns with the developer, but we do not see our concerns reflected in the revised plat LangstonHeights2.pdf.

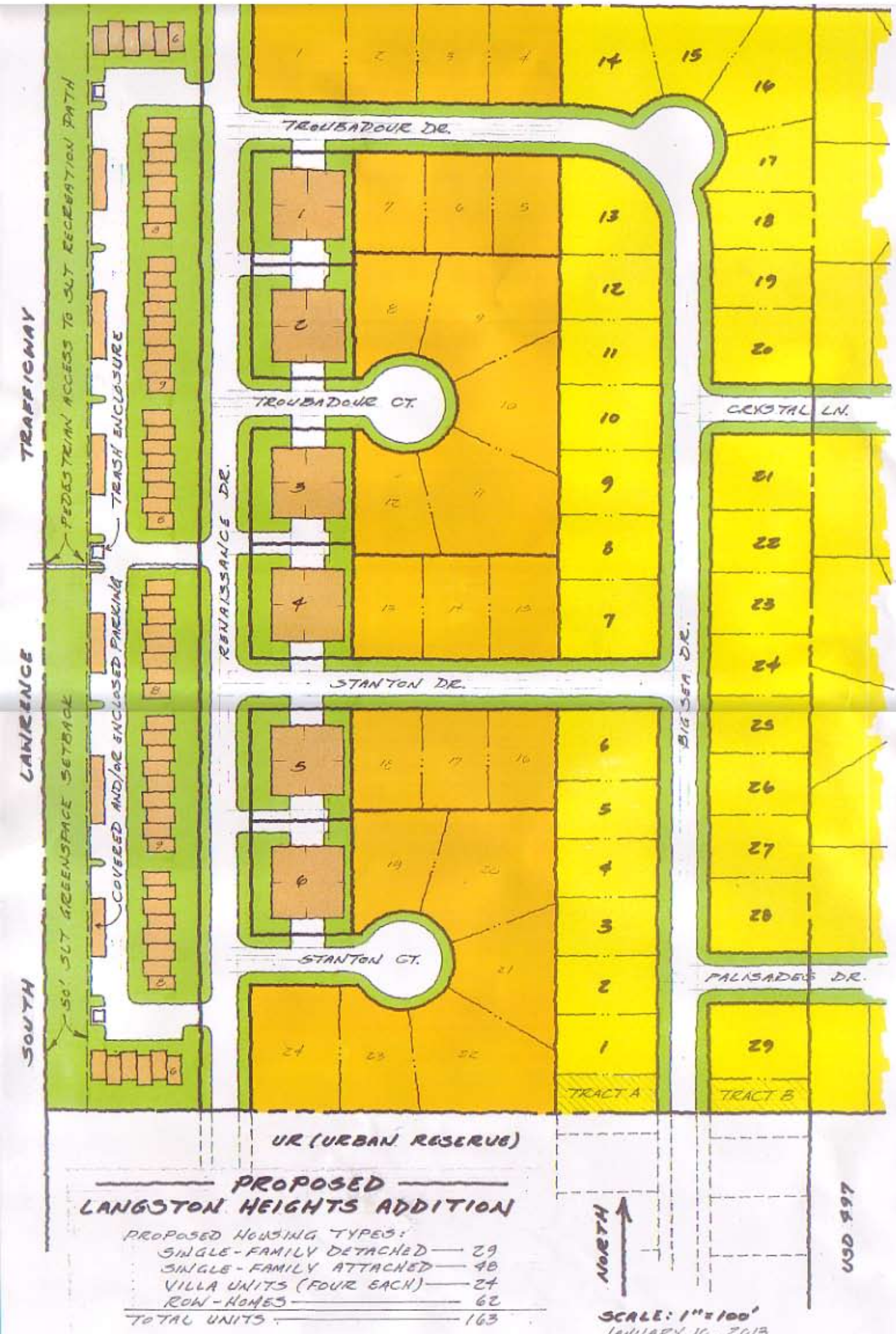
We also agree with Commissioners Josserand and Britten that high density traffic flowing into single family residence through Crystal Lane and Palisades Drive is a large problem. Without Renaissance Drive effectively connecting to 6th street and Bob Billings Drive, a traffic pattern through the existing neighborhood will establish. This traffic pattern has the potential to create unnecessary traffic that would not exist if Renaissance Drive were established at the beginning of the project.

As to the overall character, our neighborhood agrees with Commissioner Liese that this development should not be treated as an experiment. The concept of placing high-density housing flowing into single family residence remains in the revised plan for Langston Heights. A concept that is not seen anywhere else in Lawrence. Reconfiguration of roads was added to the revised plot, but the amount of high density still remains and although the overall average across the entire plat remains at 6 units per acre, the fact remains that the amount of high and medium density has not reduced.

Our neighborhood agrees with Commissioner Blaser that we are not giving respect to the land south of Langston Heights. The location of Reniasance Drive south and the decision on what is built in Langston Heights will effect the types of building planned for the land to the south, therefore setting the stage for the overall character of a high density neighborhood, which is not the expectation of the neighborhood, the West Lawrence Neighborhood Association, Horizon 2020 or the understanding of the Planning Commission members as stated during the December 10 meeting.

There is no reason why land east of K-10, south of 6th street and north of Bob Billings cannot receive the same level of respect as the design offered within the West of K-10 Plan. With new developments to Rock Chalk Park to the north of 6th street and George Williams Way and recent developments to acquire land to the south of Langston Heights by the developer, we feel it is time to create an East of K-10 comprehensive Plan. Therefore we respectively ask that you deny RSR Development, LLC the request to re-zone Langston Heights with the current plan LangsonHeights2.pdf.

Diamondhead Neighborhood



PROPOSED
LANGSTON HEIGHTS ADDITION

PROPOSED HOUSING TYPES:

SINGLE-FAMILY DETACHED	29
SINGLE-FAMILY ATTACHED	48
VILLA UNITS (FOUR EACH)	24
ROW-HOMES	62
TOTAL UNITS	163

SCALE: 1" = 100'
JANUARY 10, 2013

Sandra Day, AICP City/County Planner, City of Lawrence

RE: Landplan Engineering Informational Session December 3, 2012 Langston Heights Development

We are writing to ask you to consider deferring the rezoning of Langston Heights (Parcel west and south of Diamondhead) from UR to RM12 and RM12D in order to provide for a more agreeable development. The increase in traffic, decreased in property values and changes to the original 2006 plat are issues that need to be addressed.

The new plan proposal is to build a total of 165 housing units on 61 lots. With only 2 streets (Crystal Lane and Palisades Drive) servicing current and additional units, traffic will be heavier than originally planned for these two streets. This plan shows this with the numerous traffic calming devices located on the expanded Crystal Lane. Crystal Lane and Palisades were originally developed as a lead in to other single family housing, not medium density apartments. Typically, medium density housing is at the front of subdivisions, leading farther in to low density housing, this proposal is the exact opposite of that. Palisades already has issues on school days due to drop off and pick up from Langston Hughes Elementary School; it can't handle the additional traffic flow. Even when the future "proposed" access to 15th street and George Williams Way get added, traffic from this development will still be pushed through low density housing in nearly every direction. The Horizon 2020 plan specifically discourages this action with numerous aspects outlined in the bottom of this letter.

Should this plan be approved, due to the direct impact of the medium density housing, property values in the Diamondhead subdivision will decrease. When we bought our home back in 2007, we knew additional low density housing would soon follow to our west. This was based on the Planning Commission approval in January 2006 of single family homes in the Langston Heights area. We never would have bought our new home in this location had we known apartments and duplexes were to be built, and future potential home owners will feel the same way. We all based our decisions off this approved 2006 zoned plat for single family homes.

As you will see at the December 10th meeting, the Diamondhead subdivision is a unique neighborhood with a large population of kids. Traditions such as our July 4th parade, Easter egg hunts, neighborhood cookouts, and the general family feel among neighbors will be lost if this proposal passes.

Please see to it that this proposal does not go any further without modifications. We are not against the expansion of our subdivision to the west, we are against the medium density zoning; we would happily approve of low density zoning, which would expand on this great neighborhood.

Thank you for your time.

Sincerely,

Brian and Jennifer McCall

6201 Berando Court

Horizon 2020 Plan that relate to this proposal: Low-Density Residential Land Use

GOAL 3: Neighborhood Conservation (page 5-15, 5-16) Policy 3.3: Encourage Compatible infill Development Policy 3.4: Minimize Traffic Impact through Neighborhoods GOAL 4: Criteria for location of Low-Density Residential Development (page 5-17) Policy 4.2: Protect Areas Planned for Low-Density Development GOAL 5: Create a Functional and Aesthetic Living Environment (page 5-19, 5-20) Policy 5.5: Ensure Convenient and Logical Street/Road System Design

Medium and higher Density Residential Land use

GOAL 1: Criteria for Location of Medium and Higher Density Residential

Development

Policy 1.3: Identify Suitable Sites (page 5-23)□Policy 1.5: Ensure Adequate Infrastructure (page 5-24)□Policy 1.6: Consider Access (page 5-24)□Policy 1.7: Adhere to Designated Land Uses (page 5-24) GOAL 2:

Create a Functional and Aesthetic Living Environment Policy 2.6: Consider Residential Density and Intensity of Use (page 5-26) GOAL 4: Transportation Considerations (page 5-30, 5-31) ALL OF THEM

November 28, 2012

Sandra Day, AICP City/County Planner, City of Lawrence

RE: Landplan Engineering Informational Session December 3, 2012
Langston Heights Development

As a member of the Diamonhead subdivision (6th and George Williams Way), I and over 50 households in our neighborhood are concerned by the recent application to change the Langston Heights development. When our family purchased into our neighborhood our builder, Neal Ezel, told us the design of the subdivision to the west would be low-density housing similar to ours. I want to thank the Lawrence Planning Department for their hard work in developing our neighborhoods and their insightful design of planned unit developments. So I hope you will understand my concerns for changes in the current plan.

The 270% increase in family units to the new Langston Heights subdivision creates an increase in pressure on property values, traffic, children's safety and schools in our neighborhood. see below*

The Lawrence Planning Department has laid out a solid plan for adding a single-family Langston Heights Subdivision into the existing Diamondhead Subdivision creating a flow of single family homes into an existing single family neighborhood. The addition of high-density development causes high density traffic to flow into the existing low-density neighborhood. The Lawrence Planning Department exercises good design in neighborhoods that include high-density developments close to main arteries to the city and single family low-density located on the interior of a development. The revisions to Langston Heights do not show good design.

It is with great concern for our young children, our property values and the quality of our neighborhood that we ask you to defer from the revisions to Langston Heights Development.

Sheri and Mark Crabtree
820 Andrew John Drive

*Using the "Preliminary Plat Langston Heights" and the "Concept Plan Langston Heights" document, a summary of the change in units follows:

Number of Lots Block	Preliminary	Concept	
1	1	62	
2	21	36	
3	24	48	
4	4	8	
5	3	3	
6	8	8	
	61	165	270.49% increase

December 03, 2012

Ms. Day,

I'd like to take the opportunity to express my concerns about the proposed rezoning of the Langston Heights area in West Lawrence. My chief concern with the rezoning of the area is the multi-family units that are proposed at the site.

My family currently resides at 6201 Crystal Lane which is in the Diamondhead Subdivision. We have lived at this location for nearly two years and have thoroughly enjoyed the quality of life in our home. After much domestic debate we chose this location to build our new home based on a variety of different factors. First, the neighborhood is in a very close proximity to Langston Hughes School where our children would be afforded the opportunity to walk safely to school on a daily basis. Second, we researched the original platting of the area west of our home and it was all originally platted and zoned for what we thought was low-density residential dwellings. Finally and most importantly, the character and makeup of the neighborhood itself drew us to this area. As soon as we selected our site we were invited and included in neighborhood picnics, parades, parties and Easter-egg hunts. Our children routinely play with other neighborhood children in the area and are constantly riding bicycles and crossing streets in the neighborhood.

I feel the rezoning of this area to include multi-family living will dramatically increase the amount of through traffic flow through our neighborhood streets. The main traffic flow of these 165 units will run past many residences and sidewalks that children utilize on a daily basis. I don't believe rezoning this area would contribute to the greater good of the area or the community. I would strongly disagree with anyone who believed otherwise.

I'd like to comment on a couple of points:

First, when the area was rezoned from Agriculture District (A) to Duplex – Residential District (RM-D) in 2005 there was concern expressed from Planning Commissioner Haase that he would support the motion but was "losing his appetite for RM-D zoning because it had been abused in other parts of the community." Was Commissioner Haase a visionary as to what was on the horizon for this area with his comments? I would agree with Commissioner Haase that the placement of muti-dwelling living with the only means of access through a residential neighborhood is an abuse of what those neighborhoods are designed to provide. The traffic that will come with the rezoning will diminish the quality of life and safety of those in our neighborhood. In that very same planning meeting in 2005, Betty Lichtwardt with the League of Women Voters expressed her concern for pedestrian access to the school. I feel her concerns voiced in 2005 echo loudly today.

Second, I do not feel that rezoning an area to include 165 multi-family units with the only access being residential, neighborhood streets is a common practice in the city. With the current proposed plan of the area, the only access to these units would be on Palisades Drive or Crystal Lane. The precedent of

accessing multi-family units through established residential neighborhoods is not one I am aware of at any other area of the city. Generally, it is my understanding that higher density zoned areas would be zoned close to larger artery and collector streets. This planned area would be close to neither. This plan would also direct this traffic through a residential area that is frequented by our children whom walk to school daily.

Finally, I struggle with the necessity for the re-zoning of areas in Lawrence to multi-family if there are any concerns on what effects it may have on the surrounding residents and neighborhoods. A recent article in the Journal-World noted a developer whom recently pulled plans to construct an apartment complex off of 31st Street. The developer was quoted "We were very excited about that market at one time, but we have tempered that excitement." According to this developer, there is capacity in the muli-family living market in city. Why would it be in the best interest of city to re-zone the area where is could have an adverse affect on an already thriving neighborhood community? I unwaveringly feel this development would have an adverse affect on the neighborhood in which we reside.

I want to be clear that I understand the importance of thoughtful expansion and development of neighborhoods in our community. I however believe that multi-family living units should be concentrated in areas that are easily accessible to major thoroughfares. Rezoning this area would accomplish just the opposite. The amount of traffic this action will generate would be a danger to the residents and children of our neighborhood.

I do appreciate the opportunity to comment on this issue. I would ask that you please include these comments for the Planning Commission to review. Thank You for your time.

Sincerely,

Ryan, Tiffany, Lillian and Jackson Fike

6201 Crystal Lane

From: Rick Hird [mailto:rhird@petefishlaw.com]
Sent: Thursday, November 29, 2012 8:21 AM
To: Matt Gudenkauf
Cc: Scott McCullough
Subject: RE: Langston Heights Rezoning

Dear Matt,

This will confirm that I have received and read your letter regarding the zoning of Langston Heights. I truly appreciate your input in the process. I have copied Scott McCullough on this email so he can circulate your email to the Staff and all of the Planning Commissioners.

Rick

Richard W. Hird
Petefish, Immel, Heeb & Hird, LLP
842 Louisiana
P.O. Box 485
Lawrence, KS 66044
785-843-0450
785-843-0407 fax

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From: Matt Gudenkauf [mailto:mattgudenkauf@gmail.com]
Sent: Wednesday, November 28, 2012 8:52 PM
To: Rick Hird
Subject: Langston Heights Rezoning

Dear Richard:

We are writing to ask you to consider deferring the rezoning of Langston Heights (Parcel west and south of Diamondhead) from UR to RM12 and RM12D in order to provide for a more agreeable development. The increase in traffic, decreased in property values and changes to the original 2006 plat are issues that need to be addressed.

The new plan proposal is to build a total of 165 housing units on 61 lots. With only 2 streets (Crystal Lane and Palisades Drive) servicing current and additional units, traffic will be heavier than originally planned for these two streets. This plan shows this with the numerous traffic calming devices located on the expanded Crystal Lane. Crystal Lane and Palisades were originally developed as a lead in to other single family housing, not medium density apartments. Typically, medium density housing is at the front of subdivisions, leading farther in to low density housing, this proposal is the exact opposite of that. Palisades already has issues on school days due to drop off and pick up from Langston Hughes Elementary School; it can't handle the additional traffic flow. Even when the future "proposed" access to 15th street and George Williams Way get added, traffic from this development will still be pushed through low density housing in nearly every direction. The Horizon 2020 plan specifically discourages this action with numerous aspects outlined in the bottom of this letter.

Should this plan be approved, due to the direct impact of the medium density housing, property values in the Diamondhead subdivision will decrease. When we built our home back in 2008, we knew additional low density housing would soon follow to our west. This was based on the Planning Commission approval in January 2006 of single family homes in the Langston Heights area. We never would have built our new home

in this location had we known apartments and duplexes were to be built, and future potential home owners will feel the same way. We all based our decisions off this approved 2006 zoned plat for single family homes.

As you will see at the December 10th meeting, the Diamondhead subdivision is a unique neighborhood with a large population of kids. Traditions such as our July 4th parade, Easter egg hunts, neighborhood cookouts, and the general family feel among neighbors will be lost if this proposal passes.

Please see to it that this proposal does not go any further without modifications. We are not against the expansion of our subdivision to the west, we are against the medium density zoning; we would happily approve of low density zoning, which would expand on this great neighborhood.

Thank you for your time

Matthew and Erica Gudenkauf
6204 Crystal Lane
Lawrence, KS 66049
(785)830-9802

Horizon 2020 Plan that relate to this proposal:

Low-Density Residential Land Use

GOAL 3: Neighborhood Conservation (page 5-15, 5-16)
- Policy 3.3: Encourage Compatible infill Development
- Policy 3.4: Minimize Traffic Impact through Neighborhoods

GOAL 4: Criteria for location of Low-Density Residential Development (page 5-17)
- Policy 4.2: Protect Areas Planned for Low-Density Development

GOAL 5: Create a Functional and Aesthetic Living Environment (page 5-19, 5-20)
- Policy 5.5: Ensure Convenient and Logical Street/Road System Design

Medium and higher Density Residential Land use

GOAL 1: Criteria for Location of Medium and Higher Density Residential Development
- Policy 1.3: Identify Suitable Sites (page 5-23)
- Policy 1.5: Ensure Adequate Infrastructure (page 5-24)
- Policy 1.6: Consider Access (page 5-24)
- Policy 1.7: Adhere to Designated Land Uses (page 5-24)

GOAL 2: Create a Functional and Aesthetic Living Environment
- Policy 2.6: Consider Residential Density and Intensity of Use (page 5-26)

GOAL 4: Transportation Considerations (page 5-30, 5-31)
- ALL OF THEM

November 27, 2012

Sandra Day, AICP
City/County Planner
6 East 6th street
Lawrence, KS 66044

RE: Langston Heights Addition
Planning Commission Agenda Items on December 10, 2012

Sandra,

We are writing to express our concerns associated with the four items on the Planning Commission agenda for December 10th for the Langston Heights development. We are responding to the material that has been currently submitted to the City for the application (application, plat, concept plans, etc.) The applicant and developer are holding a meeting with the neighborhood, but have scheduled this meeting (December 3rd) with limited to no time to be able to respond prior to the issuance of the staff report. We are submitting this prior to that meeting in order to be reviewed prior to the completion of the staff report and for inclusion on the packet to the Planning Commission.

The comments below represent the views and opinions of many within our neighborhood concerning the proposed zoning request and preliminary plat for the Langston Heights Addition. While many of us would welcome the proposed land to remain an open area, we all recognized that it would be developed as an extension of our neighborhood. Many of us, and those specifically on Palisades Drive and Crystal Lane, reviewed the current plans for this parcel of land prior to purchasing our home. While often there is limited knowledge of undeveloped area adjacent to a development, this was not the case with our neighborhood. There was a plat developed and approved by the Planning Commission and City Commission for this parcel of land. While the plat was never signed or recorded, it still provided a glimpse to the intentions of the land owner of their vision for this parcel of land.

We have attempted to address each specific agenda item individually but many of these issues crossover between items. Where this occurs we have indicated reference notes as appropriate.

PP-12-00228 Preliminary Plat for Langston Heights Addition: There are many concerns with the proposed plat and the proposed layout and land uses. Many of these concerns could be addressed should the land to the north and south of the proposed area be developed prior to or at the same time as this development. Obviously this is unrealistic to assume and the plat must be considered as development would not occur for some time to the north or south. Items of note include:

1. This is the second plat filed for this parcel of land. The first was approved in early 2006. This plat indicated 67 single-family and 18 duplex residential lots. While it is our understanding that is was never fully executed, it still provides reference to an alternate concept by the same land owner for this land.
2. Horizon 2020 indicates this area to be low-density residential. The application indicates that the Lawrence future land use map does not specifically designate a land use for this property. This is incorrect. The Nodal Plan for the Intersection of West 6th and KS 10 address this area as low-density. We understand that the project, as it relates to density, is using the entire land area to calculate the number of units per acre. We would caution the continued use of this method as it has recently caused conflicts in other areas of our community.

3. The plat indicates the extension of two local residential streets (Palisades Drive and Crystal Lane.) These two streets will be the only access point into the new development. Section 20-204 (e) of the Land Development Code indicates that "RM Districts are intended for implementation along Residential Collector, Collector and some Arterial Streets." Neither of these streets meets this requirement.
4. Renaissance Drive in the 2006 plat, the 2012 plat draft and on the concept plan (submitted by the applicant) all have indicated that this street would be a collector street. The current plat has changed this street to a local street. Should the RM zoning designation remain then the district should be accessed in accordance to the Development Code and Renaissance Drive shall remain as a collector street.
5. Renaissance Drive appears to be the proposed "connector" street from George Williams (via Ken Ridge) to the north and Bob Billings Parkway to the south. The use of this street in this manner is logical and would serve as a residential collector street for these neighborhoods and future development. As noted above though, it is unknown when this street would be completed and until such time, would not serve as a collector street. Regardless, this street should remain as a collector or residential collector street,
6. Should the RM zoning designation remain then a condition to the plat should be added that, until such time that Renaissance Drive is completed to either the north or the south, the RM zoning district should **not** be allowed to be developed. This would allow the collector street to be developed as required by the development code.
7. The request for variance on the sidewalks should be denied. While regulation may have changed from the time the adjacent land was developed and sidewalks were not installed on both sides of the local streets, this should not prevent the owner from providing walks per the Development Code. Sidewalks add to the "live-able" character of a neighborhood. In addition, as a neighborhood with many young children, sidewalks on both sides of a street eliminate the need to cross the street as often. Most of the children in this neighborhood enjoy the opportunity to walk to elementary school, and with the increased vehicle traffic of the development, the sidewalks on both streets would add to the safety of the neighborhood.
8. A traffic calming device, similar to the roundabout at Crystal Lane and Big Sea Drive, should be installed at Palisades and Big Sea Drive. While there is a speed hump in the mid block of Palisades this device does not appear to reduce the speed of vehicles in the neighborhood on this street or the adjacent streets.

Item Z-12-00220: Rezone to RM12D

1. RM Districts are intended for implementation along Residential Collector, Collector and some Arterial Streets. As noted above, neither Palisades Drive nor Crystal Lane qualifies as these street types.
2. The medium density zoning will be accessed through an existing low-density residential area and a proposed low-density residential area. There are no recent developments in Lawrence where this occurs. All other RM12 zoning is accessed from an adjacent collector street and not through a lower density residential neighborhood on a local street.
3. This zoning will pre-determine a portion of the land use to the south. The RM12D zoning adjacent to the southern edge will pre-determine RM12D zoning adjacent. The application specifically states, in Item 2, that this zoning change will develop "precedent for adjacent vacant properties." It can only be assumed, given the relationship of the developer of this parcel of land to the land owner to the south, that it is the intention to continue medium density residential to the south. This is counter to the future land uses indicated in Horizon 2020 for low-density residential.
4. Item 3 in the application indicates that the rezoning "will pose no detrimental effect to the nearby properties." This statement is unfounded. The increased traffic with medium density zoning and the unknown level of quality of the development could directly impact the adjacent property uses and land values. Unless the owner proposes restrictions to the type of development that could occur, materials

5. If this rezoning is to be considered in concert with the other two rezoning applications then a Planned Unit Development (PUD) should be required to ensure the type of development proposed with the plat is the actual development.
6. Item 6 of application indicates that "denial of this application will perpetuate the vacancy of this land." This statement is unfounded. This is the second plat for this portion of land by the same developer. There are obvious multiple uses for this parcel of land. Denial will not perpetuate vacancy. It is obvious that this parcel will be developed, but the question is whether the medium density zoning is appropriate.

Item Z-12-00231 : There is no opposition to Item Z-12-00231 to rezone land from UR to RS7. This land change is the expected zoning for this parcel of land considering the existing adjacent land uses. This zoning change is also expected as it represents the intention of a plat developed by the same land owner, Langston Heights L.C. in 2006. This plat was a document many of us referenced prior to purchasing our home.

Item Z-12-00232: Rezone to RM12

1. Many of the issues for this development are identical to the issues associated with the RM12D rezoning. Please refer to items 1, 2,4,5, and 6.
2. This zoning will pre-determine a portion of the land use to the south. The location of Renaissance Drive and its connection to the South, along with the RM12, will predetermine the land south of this development and west of Renaissance Drive to continue the RM12 or higher zoning designation. This, coupled with the RM12D predetermined zoning, will raise the density from low density residential to medium-density residential. This is counter to the indication of the Horizon 2020 land uses for this area. The application specifically states, in Item 2 that this zoning change will develop "precedent for adjacent vacant properties." It can only be assumed, given the relationship of the developer of this parcel of land to the land owner to the south, that it is the intention to continue medium density residential to the south. This is counter to the future land uses indicated in Horizon 2020.
3. Item 3 in the application indicates that the rezoning "will pose no detrimental effect to the nearby properties." This statement is unfounded. The increased traffic with medium density zoning and the unknown level of quality of the development could directly impact the adjacent property uses and land values.

We apologize for the length and depth of this letter, but the quantity of items to be considered and the complexity of each issue requires a proper response. We look forward to being able to hear from the applicant and owner at their presentation next week and will respond accordingly should the situation dictate.

We hope that you consider these issues prior to the completion of the staff report and, as previously noted, include this correspondence in the packet to the Planning Commission.

Respectfully submitted,

Andy and Debbie Pitts
6212 Palisades Drive

From:	Michael Whittlesey
To:	Sandra Day
Subject:	Langston Heights
Date:	Thursday, November 29, 2012 10:41:55 PM

Dear Sandra:

I am writing in opposition to the possible re-zoning of the Langston Heights development from a low density plan to a high density plan. The ramifications of this re-zoning would drastically effect the entire community and safety of the Diamondhead Development and the Langston Hughes Elementary school. The increase in traffic on Crystal lane and Palisades Dr that would come with the high density development would be approximately an additional 400 cars on streets that directly feed an elementary school. The majority of the residence in the Diamondhead Development built in the area under the knowledge that the original zoning of the Langston Heights was a low density plan. We all built in the area with the idea that it would remain a safe place to raise our children and with easy and safe access to Langston Hughes Elementary. Palisades Dr access to Diamondhead Dr is the main route that parents take daily to drop of their children to LH Elementary. Diamondhead Dr has become a one lane road as parents, in not only the Diamondhead Development but from other neighborhoods, use the access that Diamondhead Dr has to Langston Hughes Elementary to drop of their children. The design and road infrastructure of the Diamondhead Development was not built to handle the additional increase in traffic proposed with the re-zoning of the Langston Heights Development to a high density design. The infrastructure of the road might be able to handle the increase traffic but the density of housing projected in the traffic planning of the roads was for single family homes in the adjacent land use. Diamondhead development has sidewalks on only one side of the road as the design of the neighborhood and future development would not have the traffic load that would require sidewalks on both sides of the road. We all knew the Langston Heights would be developed but as a low density project with additional single family homes. Please consider the safety, quality of life, and infrastructure ramifications to all three communities Langston Heights, Diamondhead and Langston Hughes Elementary that this re-zoning would cause.

My wife and most in our immediate community actually commute out of Lawrence daily. However, we choose to build in this development because of the current residence, the sense of community, and the safety of the current planning of this area. We looked into the future planning of this development and where told it was zoned as single family to continue the continuity of the current development. As parents of 2 young children this was the ideal neighborhood considering safety, community togetherness, other children to play with and the closeness of schools. Rezoning this plot would drastically impact the safety of all these children playing in the area.

Thank you for your time and service.

Michael Whittlesey
6209 Crystal Lane
Lawrence KS

Sent from my iPad

Sandra L. Day, AICP, *City/County Planner*
Planning Division
P.O. Box 708, Lawrence, KS 66044
Office (785) 832-3161 | Fax (785) 832-3160
RE: Land plan Engineering Informational Session December 3, 2012
Langston Heights Development
December 5, 2012

Dear Sandra Day:

As a member of the Diamondhead subdivision, my husband and I are very concerned by the recent application to change the Langston Heights development. When we purchase our home, we were told that the design of the subdivision to the west would be low-density housing similar to ours. We want to thank the Lawrence Planning Department for their hard work in developing our neighborhoods and their insightful design of planned unit developments. We hope you will understand our concerns for changes in the current plan.

The 270% increase in family units to the new Langston Heights subdivision creates an increase in pressure on property values, traffic, children's safety and schools in our neighborhood. We feel that the proposed zoning does not guarantee any specific types of building. We feel left in the dark with the current proposal. We want to know if this design has worked well in other neighborhoods in Lawrence. If it has not, why our neighborhood should be a test case for what appears to be bad design.

We are not against the expansion of our subdivision to the west, we are against the medium density zoning; we would happily approve of low density zoning which would expand on this great neighborhood.

It is with great concern for our young children, our property values and the quality of our neighborhood that we ask you to defer from the revisions to Langston Heights Development.

Please include our letter in the Langston Heights Planning Packet!

Thank you very much for your time and consideration!

Sincerely,

Xiufen Bi and Gary Jiang
824 Diamondhead Dr.

From: Andrew Pitts [APitts@TreanorArchitects.com]
Sent: Wednesday, December 05, 2012 12:52 PM
To: Scott McCullough
Cc: markandsheri; lhanna@HNTB.com; ryanlfike@gmail.com; Boedeker; carisa@freshsound.com; tiffanyfike@gmail.com; donherbel@att.net; mattgudenkauf@gmail.com; dltate180@gmail.com; Bradley R. Finkeldei; Crabtree, Mark A.; dustin@freshsound.com; ahanna356@gmail.com; Home; Erica Gudenkauf; bigalcowles@gmail.com; lindalh2009@att.net; nate@lawrencewesleyan.com; shubhshar@gmail.com; mcsparky45@yahoo.com; thepitts@sunflower.com
Subject: December 10th Planning Commission: Langston Heights Agenda Items

Scott-

On behalf of our family and numerous others within the Diamondhead Neighborhood we are requesting consideration of moving Agenda Items No 5A, 5B, 5C and 5D to earlier in the Planning Commission meeting.

We ask this in order to accommodate the members of our neighborhood that wish to speak on these items. A significant portion of our neighborhood are families with children and a significant portion of these children are elementary or younger. While we have coordinated babysitting for neighborhood families at neighbors homes, we have parents that will need to leave to be able to ensure our children are in bed at a reasonable hour, especially on a school night.

This was best illustrated at the public meeting held this last Monday evening at Langston Hughes Elementary school. The meeting started at 7pm and we had approximately 50 neighbors in attendance. By 8pm many needed to leave to be able to attend to their children's needs.

We recognize the importance of the agenda items prior to this item and the amount of public or commission discussion that may occur. But we also believe that it would be a disservice for those that would like to address this item should the discussion linger on the later in the evening.

I want to thank you for your consideration on this item and look forward to the meeting on Monday.

Sincerely,

Andrew Pitts

December 6, 2012

Sandra Day, AICP
City/County Planner
6 East 6th street
Lawrence, KS 66044

RE: Langston Heights Addition
Additional Correspondence for
Planning Commission Agenda Items on December 10, 2012

Sandra,

Please accept the following correspondence to supplement our prior letter. This letter shall address items addressed at the neighborhood meeting held by the applicant and developer and the recently issued staff report.

On December 3rd, the applicant and developer held a neighborhood meeting at Langston Hughes Elementary School to address this proposal. Approximately 50 people were in attendance, and a majority of these were residents of the Diamondhead neighborhood. It was a very spirited discussion of the issues. There were many comments by the developer of opening a dialogue with the neighborhood of their concerns and issues with this proposal. We all welcomed this proposition. From the start of this process we have all supported development; the concern has, and continues to be, the type of zoning that is proposed. Unfortunately no dialogue has occurred.

Repeatedly the developer spoke of involving the neighborhood in decisions. They indicated the neighborhood would have a say in covenants associated with the multi-family. Unless this discussion occurs prior to the re-zoning then there would be not guarantee of compliance with this statement. Often the applicant and developer contradicted themselves in statements throughout the evening.

Items of note include:

1. The applicant continually stated that this development was in compliance with Horizon 2020. This caused confusion since their application stated that the future land use map and Horizon 2020 did "not specifically designate a land use for the subject property." The staff report correctly identified that the West 6th / K10 Nodal Plan addresses this area. But the staff report seems to interpret the document broadly, only referencing certain sections and failing to reference others.

2. The Nodal plan specifically addresses the Diamondhead and Langston Heights area. The nodal plan indicates that "this intersection is envisioned as a multiple-use activity center of low-, medium-, and high-density residential development; commercial, office, research, and industrial activities; public, semi-public, and institutional uses; and parks, recreational, and green/open space opportunities." It further states for the Southeast Corner, that the corner provides an opportunity for a variety of residential, commercial, and office activities. This nodal plan "also designates the majority of its residential uses appropriate for low-

density, **single-family** neighborhoods with a **small** portion considered appropriate for medium-density residential development. This medium-density development serves as primary buffer between single-family neighborhoods and commercial activities." It further states that "This nodal plan anticipates more low-density, single-family residential development in the areas surrounding this corner and therefore much of this corner was designated appropriate for similar development to maintain compatibility of surrounding land uses." The staff report quotes specific sections but fails to address the statement "appropriate for low-density, single-family neighborhoods." It only constantly quotes "a mixture of housing types… should be encouraged." We do not dispute the need for a mixture of housing types, but the question is whether this proposal is the correct mixture or the correct location? The developer and applicant admitted at the neighborhood meeting that this type and mix of development "has not been tried or developed in Lawrence." Why is this established successful neighborhood the place to try this experiment?

3. The staff report also discounts the traffic issues associated with the increased density that have been addressed by the neighborhood and accepts the traffic report by its "data and numbers". City development documents discuss the required need for neighborhood connectivity. It states that "streets within the various neighborhoods of this area shall be connected to each other. …Connected streets provide multiple route options for vehicles which can help eliminate the choke points that are created when cars are forced onto a limited amount of streets that carry traffic in and out of neighborhoods." We would concur with this statement. Without the complete development of the north/south road (Renaissance Drive) then all of the development traffic would be forced onto two local streets. The applicant has produced a traffic study that states the traffic counts are within the City requirements. We do not argue this fact. But neither the traffic study nor the staff report takes into account the impact of a neighborhood elementary school and its dramatic impact on the traffic pattern.

   Every morning and afternoon Diamondhead Drive becomes a double loaded drop off and pick up location. Children must maneuver between parked and slowly moving vehicles. The applicant, at the public meeting, stated that this issue was a minor "blip" in the traffic study. This "blip" has been one of the primary focuses of the Langston Hughes Site Council for numerous years. The site council has pushed for additional crossing guards, no parking restrictions, a school zone, and, most recently, added a fence to help limit pedestrian traffic from Diamondhead. Issues still persist.

   With the additional traffic associated with the increased density, the poor planned lack of sidewalks on both sides of the street (and specifically on the side of the street adjacent to the school,) this "blip" could be devastating if a child is injured because of this poor planning. Traffic studies, numbers, computer simulations will not depict the accurate scenario that we see every day in our neighborhood. The additional traffic associated with the increased density will compound this issue. As local traffic avoids the Diamondhead / Harvard round-a-bout at various times of day, all traffic will be focused to Ken Ridge Drive. This will create a significant choke point at this intersection.

4. Much in the staff report speaks of the desire of a mix of housing types within each neighborhood. We would support this guiding principal. The current zoning to the east of the Diamondhead development is an excellent development of RM12 Duplex homes. To the north of the neighborhood is existing zoning of RM24. This will provide a transition from the RS7 single family development to the future planned office / commercial development to the north. It has been discussed by the applicant and in the staff report of the need to "buffer" K10 with higher density multi-family housing. It has been discussed by the applicant the need to buffer the RM24 to the north. Other solutions are viable solutions to this proposal and examples can be found in the West of K10 Plan.

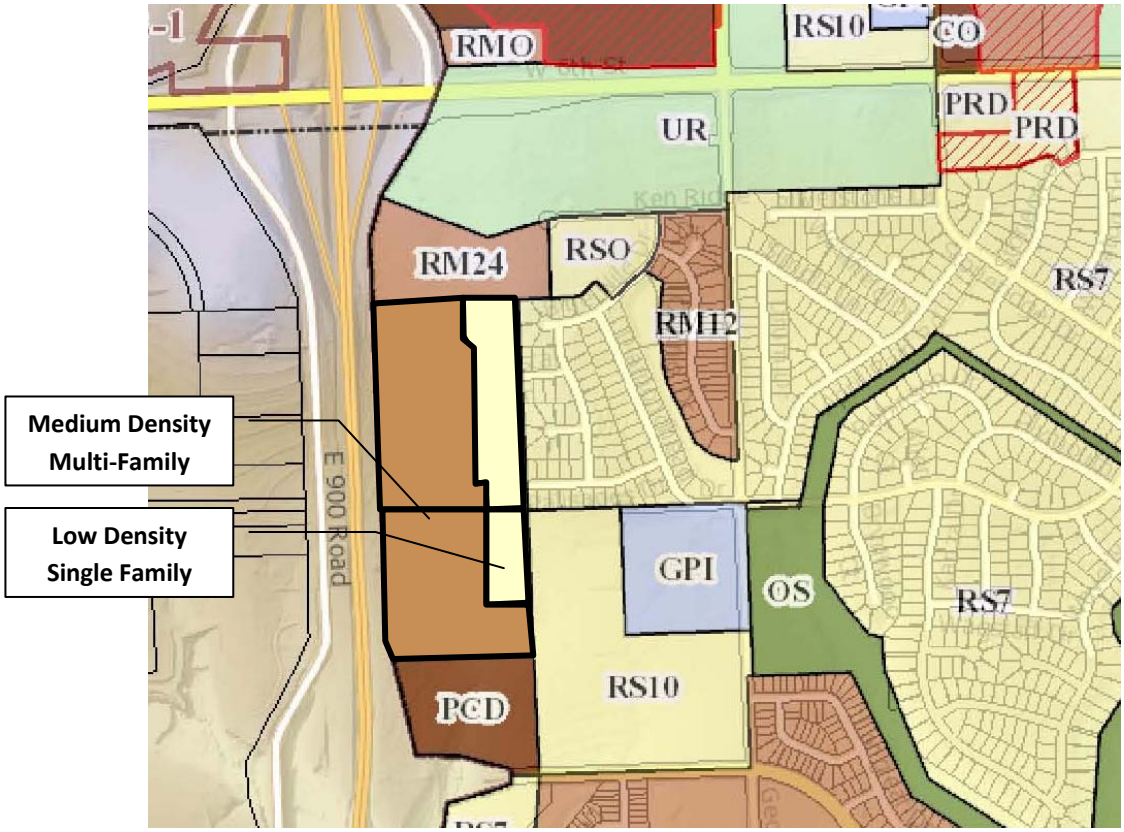
The staff report suggests that a variety of "step down" developments are required to appropriately transition the single-family development to the north and the west. As one of our most recent planning documents, the West of K10 Plan provides current planning ideas and guidelines for all new development in this area. It presents the concepts of "Traditional Neighborhood Design" (TND) versus the conventional land use development concepts. The document speaks about the challenges that arise when placing new developments adjacent to existing development. "Compatible land uses should be located adjacent to each other…" This document also presents concepts on buffering the K10 corridor counter to the proposed development. The concept illustrates an "outer" road concept with a green space to buffer commercial and residential development to K10. Per the SLT/K10 Transportation Corridor Overlay, this green space would be landscaped to screen the residential development. This method, a part of the 2006 plat, should be explored prior to acceptance of this request.



5. The applicant states in the application that the approval of this zoning will "set a developmental precedent for adjacent vacant parcels." The adjacent parcels indicated refer to the land to the south of the proposed development. Since the applicant specifically references this parcel and indicates that this will set a precedent, then the West of K10 Plan should be used as a guiding document as it addresses this parcel of land. This plan, adopted in 2009, is one of the latest planning documents and combines many of the current planning guidelines. Again, this document indicates the land south of the proposed development to be low-density development.

   As the applicant has indicated, the proposed development will be setting a precedent for future land uses. Should this be the case, then a majority of the land uses to the south will be predetermined to be multi-family, medium density land uses (see map below). This is supported by the proposed location of the Renaissance Drive as the applicant would more than likely propose multi-family between the road and K10. The proposed location and its connection point to Bob Billings will encourage medium density development. The map below begins to indicate the pre-determined extent of the southern land and, the quantity of medium density zoning, and is counter to the current adopted land use documents for this area.

The applicant and developer indicated in the neighborhood public meeting that they are currently in negotiations to control the use of the southern land. This statement reinforces the land uses will be pre-determined with the approval of the northern land uses.



6. Finally, the developer continually spoke at the meeting that this was "the only financially viable project for this land." This argument has been tried and failed before in Lawrence. The excuse of their inability to "make a project financially viable" should not be an excuse to discount the approved planning guidelines and documents. We all recognize the economic climate that our City and area have been in the last few years, and we would welcome a change. But this should not be an excuse to discard our planning principals and develop whatever the developer wants on this land.

We are not opposed to development. We encourage and want development on this land. The correct type of development will enhance our neighborhood and community. The correct type of road network, with connections to the north and south, would enhance and correct traffic issues. We would welcome an actual dialogue with the applicant and developer to discuss a compromise development.

We request, on all items associated with the Langston Heights Development, a deferral so that a dialogue may occur between the City, Developer, Applicant, and Neighborhood.

Respectfully submitted,

Andy and Debbie Pitts
6212 Palisades Drive

Diamondhead Residents Opposed to Langston Heights

Presented to the

City of Lawrence
KANSAS

December 10, 2012

History

The residents of the Diamondhead neighborhood in west Lawrence have united in our opposition to the rezoning required for proposed Langston Heights development. Some 35 families representing more than a hundred residents have signed on to lobby the Planning Commission.

The following pages detail our concerns. We start with our general belief that the area in which we chose to build and purchase our homes was in a single family neighborhood. The area's first plat, approved in 2006, indicated 67 single-family and 18 duplex residential lots. The new application proposes a 94% increase in dwelling units from the initial 2006 plan due to 24 four-plex units and 62 row houses.



The construction as proposed would require egress through two residential streets - Palisades Dr. and Crystal Ln as Renaissance Dr. would not be completed until some unknown future date. The developers themselves recognized that this would be the first instance in Lawrence where non-residential traffic would be forced through a residential area. Brian Sturm, spokesman for Landplan Engineering, likened it to an experiment at the December 3, 2012 informational meeting. The residents of this neighborhood would prefer not to be test subjects in a developer's experiment, nor should the Planning Commission allow that to be the case.

Horizon 2020

Brian Sturm in addressing the community, repeatedly referenced Horizon 2020 as justification for the proposed rezoning. A review of the document shows the proposed rezoning to be in direct conflict with the comprehensive plan. Horizon 2020 indicates this area to be low-density residential, and the document twice states a need to “Protect Areas Planned for Low-Density Development”.

Landplan Engineering, P.A.

Specific policy statements within Horizon 2020 counteract the statements and design of Landplan Engineering and the other applicants:

Policy 3.4: Minimize Traffic Impact through Neighborhoods

- The site design of a residential development should accommodate multiple points of access (direct and indirect) with attention to directing vehicular traffic to and from a development to collector and/or arterial street/roads.

Policy 3.6: Promote Neighborhood Identity

- Preserve and enhance the visual and environmental character of existing neighborhoods.

Policy 4.1 Levels of Service

- "The construction of new medium- or high-density residential development or the expansion of existing medium- or higher density residential development shall not be approved until the surrounding street/road system can provide an acceptable level of service"

Policy 4.3

- "Discourage the diversion of traffic to or from medium- and higher-density residential developments onto local residential street/roads through low-density residential neighborhoods."

Horizon 2020 also calls for the sites recommended for new medium-density residential development occupy transitional locations between single-family neighborhoods and office/commercial areas. But there are not areas for commercial development for which the medium-density housing could provide a buffer.

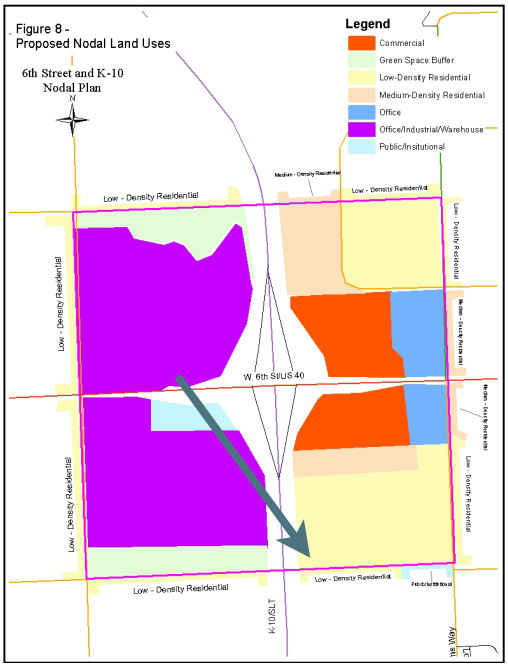
Furthermore, the Planning Commission has previously expressed concerns with this interpretation of the plan:

PC Minutes 11/16/05

“Comm. Hass indicated he would support the motion, but stated that he was losing his appetite for RM-D zoning because it has been abused in other parts of the community.”

6th & K-10 Nodal Plan

Additional planning documents address the area in more specificity. A Nodal Plan for the Intersection of West 6th Street & Kansas Highway 10 (K-10) designates the entire Diamondhead neighborhood as low density residential as detailed in the figure below. The plan defines low-density "to allow for single family dwelling, duplex, and attached dwellings but emphasis is placed on the residential uses." The zoning classifications indicate RS7 and RM12D but includes RM12 under the medium density classification.



The applicant states in the application that the approval of this zoning will "set a developmental precedent for adjacent vacant parcels." The adjacent parcels indicated refer to the land to the south of the proposed development.

As the applicant has indicated, the proposed development will be setting a precedent for future land uses. Should this be the case, then a majority of the land uses to the south will be predetermined to be multi-family, medium density land uses. This is supported by the location proposed of the street (Renaissance Drive) as the applicant would propose multi-family between the road and K10. The proposed location and its connection point to Bob Billings will encourage medium density development, which would conflict with the Nodal Plan.

West of K-10 Plan

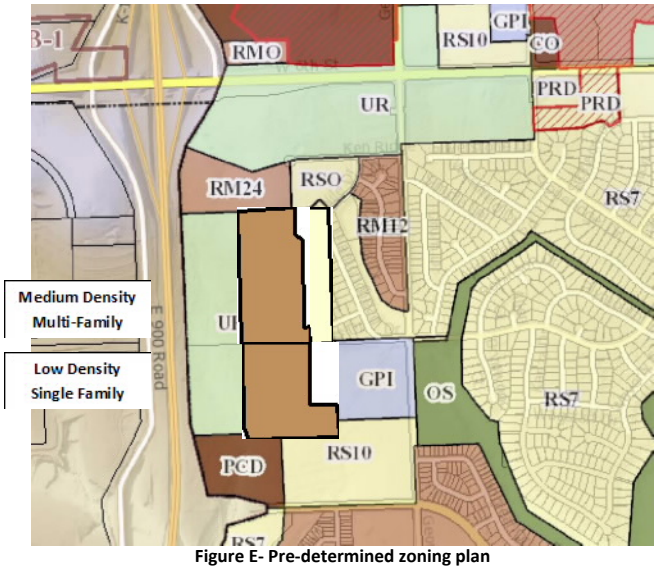


Figure E- Pre-determined zoning plan

The map at left indicates the pre-determined extent of the southern land and, the quantity of medium density zoning, is counter to the current adopted land use documents.

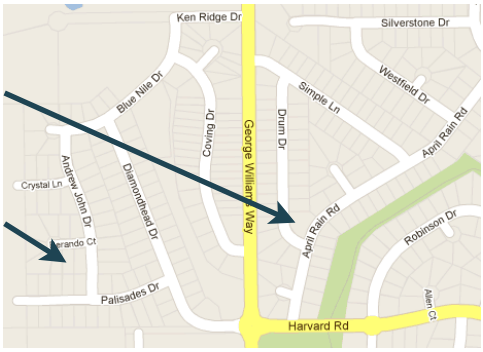
The applicant and developer indicated in the neighborhood public meeting that they are currently in negotiations to control the use of the southern land. This statement reinforces the land uses will be pre-determined with the approval of the northern land uses.

Precedent

Similar requests for rezoning adjacent to the Dlamondhead neighborhood have been denied for all the rationale presented in the preceding pages:

Denied

In Question



PC Minutes 1/25/06

Staff Finding

- The character of the area is a low-density, single family residential neighborhood. The area west of George Williams Way is planned as a mixed development including multiple types of residential development.

Staff Finding

- The subdivision layout and land use requests in the immediate area have conveyed a continuation of established low-density, single-family detached development pattern for this neighborhood. Development around the subject property has begun with an expectation of single-family detached development for the subject property. Property owners have made decisions based on recent previous actions for this area.

Staff Finding

- The property has been planned and platted for single-family development. If the request is denied the applicant still retains the ability to develop the property with single family homes. Approval would double the density and traffic generated[2] from the area.

- The Plan anticipates that low-density residential development will “continue to be the predominate land use in the City.” The most common method to assure compatibility is to extend or continue a particular zoning district. The approved and published RS-2 (Single-Family Residence) District expanded the low-density residential district in this area and was found to be consistent with the generalized land use expectation for residential development in 2004 per Z-4-15-04 and reaffirmed this decision in July 2005 per Z-06-35-05]. A subdivision plat for single-family residential development was approved and recorded as the Green Tree Subdivision in October 2004 as a requirement of the zoning.

- If approved, the result will be to sandwich a small pocket of duplex development along the east side of George Williams Way.

Staff Finding

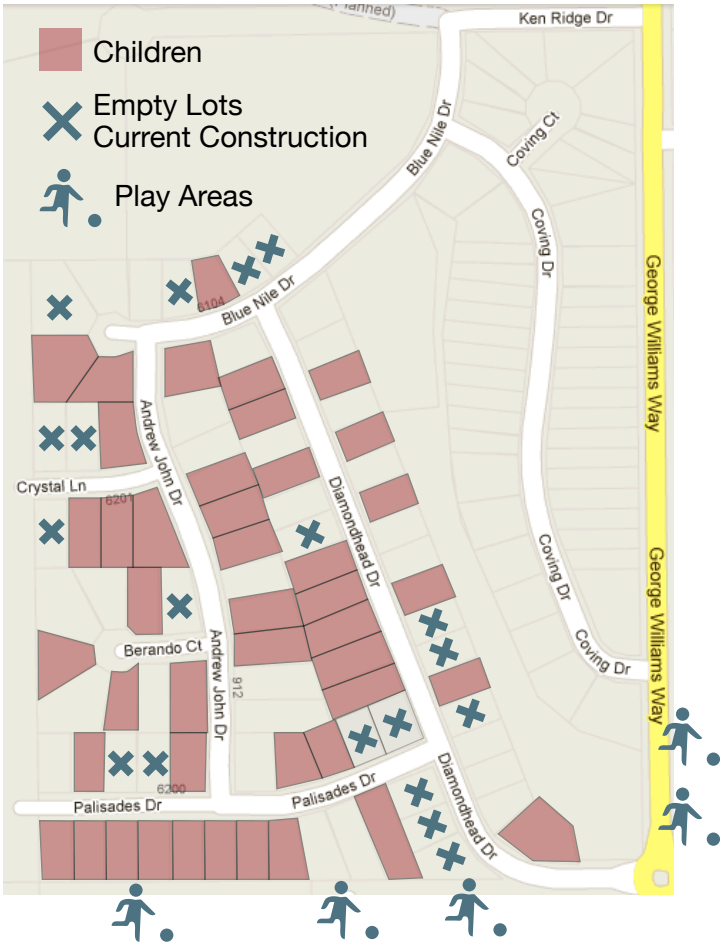
- The proposed request is not in conformance with Horizon 2020.

Traffic Safety

The citizens of the Diamondhead neighborhood are most concerned about the safety and well-being of our children. We believe that increased traffic, especially that of the younger and single type of residents that the developers expect to attract will unnecessarily put children at risk.

As Palisades Dr. and Crystal Ln. will be the only access to the row houses and multi-plexes, it invites the potential for a tragedy. The Diamondhead area is filled with with children of all ages and will be for many years to come.

The applicant references a traffic study that states the traffic counts are within the City requirements. The neighborhood was promised a copy of that study at the 12/3 informational meeting, but to date, it has not been provided. We are concerned the study does not take into account the impact of a neighborhood elementary school and multiple parks and their dramatic impact on the traffic pattern.



The map at left demonstrates the density of children in the neighborhood.

There exist a number of areas in and around the neighborhood where children would play. These have been marked just off the map and include:

- Two Separate Playgrounds
- Sports Fields
- Log Climbing Park
- Walking Trail

Also notice that not a single street in the community is a straight line. Considering the elevation change running along Andrew John Dr. one can envision the problems with sight lines for any driver, let alone one that is not used to driving in a family heavy residential neighborhood with children at play.

Traffic Congestion

In addition to the safety concerns, there remains the question of access. The streets in and around the neighborhood become congested on a daily basis along George Williams and at the Harvard roundabout in the morning and along Palisades Dr. each afternoon and any time there is an evening event at the Langston Hughes Elementary School. The applicant's cite a traffic study with peak times between 4pm and 6pm having adequate traffic flow. The peak times for this area are actually 8am to 9am and 3pm to 4pm due to school drop off and pickup.







The West of K-10 Plan, adopted July 2009, addresses neighborhood connectivity: "Streets within the various neighborhoods of this area shall be connected to each other. … connected streets provide multiple route options for vehicles which can help eliminate the choke points that are created when cars are forced onto a limited amount of streets that carry traffic in and out of neighborhoods."

Similar language is found within Horizon 2020: "Street systems that do not permit connections isolate neighbors and force traffic to concentrate on collectors. This type of street circulation should be avoided."

But the submitted rezoning application would increase residency in the area by 96% over the current zoning while not addressing any of the underlying problems with the current traffic situation. It would force more trips through Palisades Dr. and Crystal Ln.

Infrastructure

The current zoning has meant that the Diamondhead neighborhood was developed as single family with the future plan for a limited number of duplexes only. As such the lighting, sidewalks, crosswalks, signage, and other infrastructure have been implemented based on that plan.

The proposed rezoning for Langston Heights would require retrofitting the existing neighborhood with a variety of items. There currently exists sidewalks on a single side of the streets throughout the neighborhood and no crosswalks except for the roundabout at the intersection of Harvard and George Williams. As illustrated previous, the Diamondhead area is filled with children out at play and such a significant increase in residency and traffic would seem to necessitate changes to the existing layout.

None of the intersections in the community feature traffic signage. The applicants count at least 138 additional trips per hour with the traffic study, but fail to demonstrate its effect within the existing layout. We have already discussed the potential for pedestrian accidents, but the limited sight-lines and lack of any stop or yield signs is an invitation to traffic accidents.

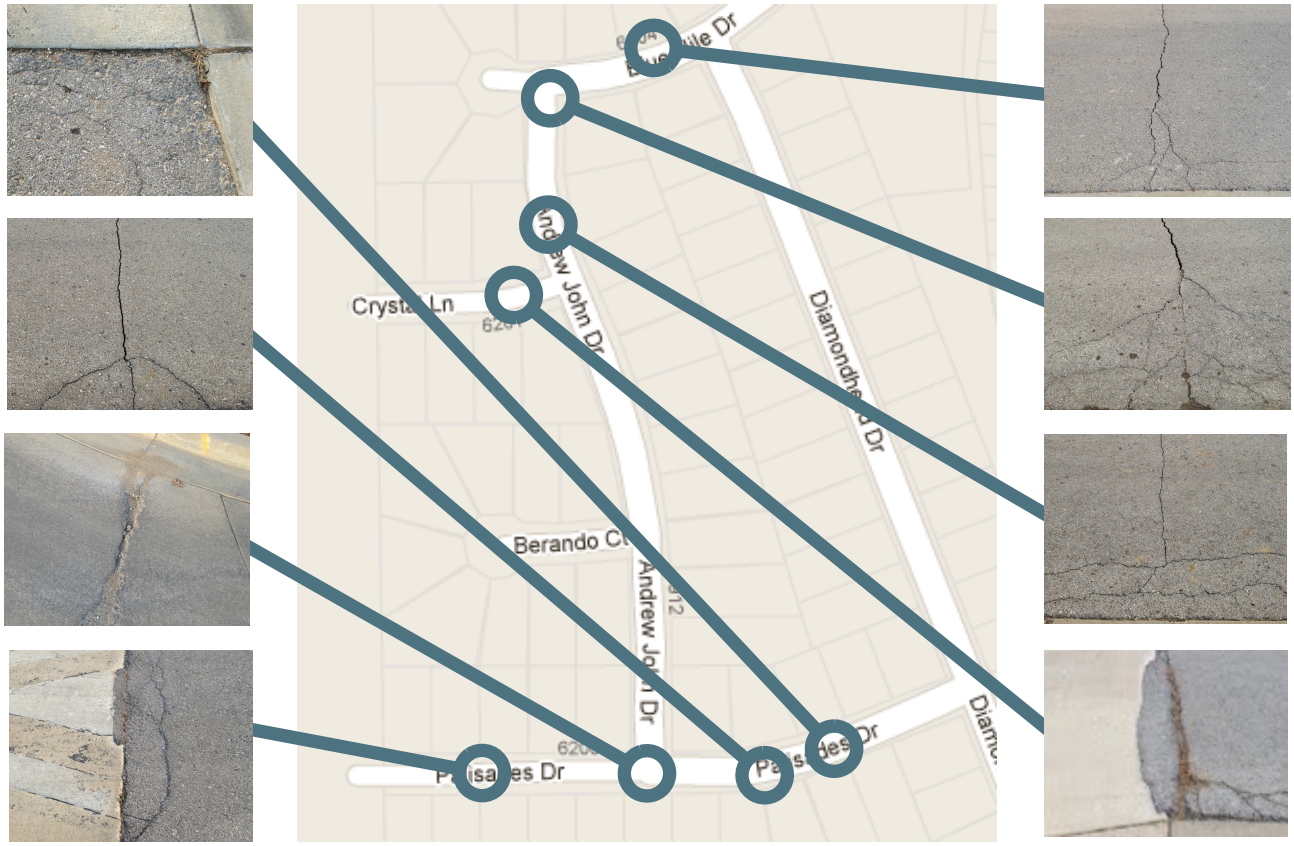
The streetlights throughout the area have similarly been installed for use in single family housing. The inclusion of additional multi-family housing could be cause for increased lighting. The residents of the area however are not keen on the idea of the additional lighting shining through their windows all night.

The roads too have been laid out for use in a low density area. The width in Diamondhead is 23', and with parking allowed on both sides, the streets can easily become unintended one-way's. Surely this is not appropriate for the style envisioned by the applicants.

Construction

In October, 2008 the City Auditor issued a Pavement Condition Summary. In this document both Palisades Dr and Crystal Lane received ratings of poor for the curbs and gutters while the pavement was rated 91.5 out of 100.

Since the issuing of the report four years ago, the conditions of our neighborhood streets have deteriorated. Below are images with their locations indicated on a map. The images shown reflect only a portion of the degradation of both the asphalt and concrete on the two proposed egresses.





It seems reasonable to expect that construction traffic will exasperate this problem. Heavy equipment, trucks carrying forms and supplies, concrete trucks, pouring cranes and endless trips by skilled laborers will serve to further decay the only egress through Palisades Dr. and Crystal Lane.

Marketplace

The applicants expressed at the 12/3 informational meeting that economic forces were the main rationale for changing the current zoning. While this may be true on a national, or even a regional level, a closer examination at West Lawrence reveals a different picture.

A recent headline and story get to the heart of the matter:

LAWRENCE JOURNAL-WORLD

Landlords trying to fill growing number of rental vacancies

There are also more apartment units. Since 2008, 997 apartment units have been built in Lawrence, with 55 built so far this year. Other projects in the works include a seven-story, 55-bedroom building on the corner of Ninth and New Hampshire streets and a 300-apartment complex on Sixth Street and Queens Road. Aug 13, 2011

The last complex mentioned is Hunter's Ridge, which is set to open soon. Plans filed this week by Lindsey Management call for a 630-unit apartment complex adjacent to Hunters Ridge. This area is a mere half mile from Diamondhead

Two additional complexes within a mile- Prairie Commons and Park West Gardens - plus current construction and vacancies on Coving Drive, a block over, would lead one to conclude that the area is saturated with medium and high density housing.

In a report published this September, The National Association of Realtors said that the median time a home was listed for sale on the market was 69 days in July. This represented a significant drop from both July 2011 and June 2012.

The homes in Diamondhead have been selling even faster - measured in weeks, not months. A local McGrew Real Estate agent said this week that "Houses have been moving really well in the Diamondhead area and that market in particular is strong for single family home sales.There was one there that sold in a day."

When you combine weak demand for higher density housing around the Diamondhead area with better than average sales of single family homes, it paints a clear picture. **This market needs more low density zoning, not less.**

The applicants should not be allowed to fundamentally and permanently alter the well-being of this neighborhood based on rationale that is suspect.

Community

The residents of our neighborhood have grown into a tight knit community. As most all neighbors do, we stop to talk with each other when we meet on the street. But more than that, we actively seek out each other's company, and welcome our neighbors into our homes. We plan activities to come together as a group and grow the sense of community that has developed here.



Annual Neighborhood Easter Egg Hunt



Halloween



Annual 4th of July Parade

Throughout the year, we gather together to participate in a variety of seasonal activities. Some are spontaneous as group sledding in the winter, or kids bike rides on sunny days. But many are planned in advance:

- Summer Cookout
- Easter Egg Hunt
- 4th of July Bike Parade
- Trick-or-Treating

We have come to think of the folks here as more than neighbors, they are our friends. We certainly welcome new faces to our neighborhood, however, we fear that the rezoning and subsequent construction of multi-plexes and row houses will alter the nature of the neighborhood and fragment our sense of community. Again we reference policy 3.6 of the Horizon 2020 plan which strives to "preserve and enhance the visual and environmental character of existing neighborhood.

The applicants' target market for their housing are not families, by and large it is younger singles. In addition to all of the issues the development would create with traffic, safety, and living conditions, it would alter the very fabric of the neighborhood we have all bought into.

Allied Entities

It is not just the residents of the Diamondhead neighborhood who oppose this application, there are also a number of groups who feel this would be the wrong move for our children, our families, our neighborhood, and our town. The following have expressed their opposition to the applicant's plan:

Langston Hughes Elementary School
Jackie Mickel, Principal

Langston Hughes Parent-Teacher Organization

West Lawrence Neighborhood Association, Incorporated
Alan Cowles, President

12/4/12

RECEIVED
DEC 06 2012
City County Planning Office
Lawrence, Kansas

Sandra Day, AICP/County Planner, City of Lawrence

RE: Landplan Engineering Informational Session December 3, 2012
Langston Heights Development

After attending the informational meeting last evening at Langston Hughes school, we are writing to ask you to consider deferring the rezoning of Langston Heights (Parcel west and south of Diamondhead) from UR to RM12 and RM12D. The increase in traffic, decrease in property values and changes to the 2006 plat are issues that need to be addressed. The new plan proposal is to build a mixture of single family homes, duplexes, and row houses. With only two streets (Crystal Lane and Palisades Drive) servicing current and additional units, traffic will be heavier than originally planned for these two streets. Crystal Lane and Palisades Drive were originally developed as a lead into other single family housing, not multifamily housing. Palisades already has issues on school days due to drop off and pick up from Langston Hughes Elementary School. Currently three new homes are being built on Diamondhead close to the school. That will mean new driveways from which residents will enter Diamondhead and reduce the amount of room for parents to park when dropping off and picking up children. Then add congestion at the round-a-bout on George Williams. I don't care what your traffic study says, the additional traffic will create safety problems. With undeveloped land to the south and north of the new plan, no one was able to tell us if, and when, any connecting access to the new development would be provided. Even if it did, traffic will still be pushed through low density housing. The Horizon 2020 plan specifically discourages this action.

Should this plan be approved, due to the direct impact of the multi family housing, property values in the Diamondhead subdivision will decrease. When we purchased our home in 2007, we knew additional low density housing would soon follow ot the west. This was based on the planning commission approval in January 2006 of single family homes in the Langston Heights area. We never would have purchased in this area has we known apartments and duplexes were to be built, and future potential home owners will feel the same.

Please see that this proposal does not go any further without modifications. We are not against the expansion of our subdivision to the west, but we are against the medium density zoning.

Thank you,

Edward C. Burrichter
6113 Palisades Dr

Colleen A. Burrichter
6113 Palisades Dr. Lawrence

From: Amy Miller
Sent: Thursday, December 06, 2012 6:54 PM
To: Sandra Day
Subject: Langston Heights Communications

Sandy,

Rod Laing came in today and wanted me to pass along his thoughts on the Langston Heights Subdivision PP and Zoning cases for inclusion as part of the communications on the project. He suggested that a condition could be placed on the multi-family residential zoning west of Renaissance Drive that building permits may not be issued on those dwellings until such time that Renaissance Drive connects to Bob Billings Parkway or the major street to the north. He thought that this would ease potential traffic concerns. Please include the above statement in the communications that go to the Planning Commission as part of their packet.

Thank you,

Amy Miller, AICP, CFM *Long-Range Planner*

From: Brian Sturm [mailto:brians@LANDPLAN-PA.COM]
Sent: Friday, December 07, 2012 2:27 PM
To: Sandra Day
Cc: bobdennsan@gmail.com; douglas.raney@gmail.com; RCJPHJ@me.com; Christopher Storm
Subject: PP-12-00228 - variance withdrawal; temp const esmt

Sandy,
On behalf of the applicant, I would like to incorporate the following two (2) items into the Planning Commissioners' packets for Monday's meeting regarding item #5A, the Preliminary Plat for Langston Heights Addition:

1. The applicant wishes to withdraw their request for a variance from Sec. 20-811(c). While the developer still has concerns about installing sidewalks that would essentially terminate in mid-block locations on Palisades Drive and Crystal Lane, they would rather design a subdivision that conforms to the current Subdivision Regulations and complete street policy. It's my understanding that the sidewalks to be shown on the south sides of Palisades Drive and Crystal Lane can be added to the Preliminary Plat as a condition of approval. It is also my understanding that the applicant can work with the City Engineer on an acceptable way to terminate these sidewalks on the east edge of the subdivision during the public improvement plan review process.
2. The applicant wishes to add, as a communication, the attached letter of intent which upon execution by both parties would allow for the creation of a temporary construction access easement over and across land owned by Alvamar, Inc. The developer understands the concerns neighbors in the Diamondhead subdivision have regarding potential construction traffic traveling through their neighborhood. This agreement, once signed by both parties, would allow that construction traffic to pass entirely across the ground presently owned by Alvamar on the south side of the subject property. With such an access easement in place, dump trucks, excavators and the like could pass from Bob Billings Parkway to the subject property without travelling on City streets, namely those in the Diamondhead subdivision. It is the developer's hope to have this letter executed by the time of Monday evening's PC meeting.

Please let me know if you have any questions regarding the above items.
Thank you,

Brian Sturm, RLA, ASLA, LEED AP
Project Landscape Architect
Licensed in KS

Landplan Engineering, P.A.
1310 Wakarusa Drive
Lawrence, Kansas 66049
v. 785.843.7530
f. 785.843.2410

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Letter of Intent

This letter reflects the mutual intentions of Langston Heights Development, LLC, and Alvamar, Inc. to enter into an agreement to create a temporary construction access road from Bob Billings Parkway to the property known as Langston Heights through property currently owned by Alvamar. Both parties intend for the road to be built before construction begins on Langston Heights. Alvamar agrees to provide an easement for this road and Langston Heights Development agrees to pay for the costs associated with building this road before construction begins. Langston Heights Development also agrees to pay one dollar ($1.00) to Alvamar as part of the agreement, regardless of whether construction begins.

_____ _____

Robert Santee Date

Officer, Langston Heights Development

_____ _____

Robert C. Johnson Date

Chairman of the Board, Alvamar, Inc.

LEAGUE OF WOMEN VOTERS®
OF LAWRENCE/DOUGLAS COUNTY

RECEIVED
DEC 19 2012
City County Planning Office
Lawrence, Kansas

December 10, 2012

To: Lawrence/Douglas County Planning Commission:

Re: Langston Heights, Items 5A, 5B, 5D

President
Melinda Henderson

President-Elect
David Burress

Vice President
Milton Scott

Secretary
Caleb Morse

Treasurer
Marjorie Cole

Directors

Margaret Arnold

Bonnie Dunham

James Dunn

Sally Hayden

Cille King

Ruth Lichtwardt

Marlene Merrill

The League of Women Voters of Lawrence/Douglas County has strong positions on neighborhood planning. We believe that "the primary urban planning unit should be the neighborhood, large enough to support the location of a nursery-elementary school, park...and should reduce to a minimum the use of the private car within each neighborhood." Therefore, we are concerned about the proposal for the multiple family lot configurations of the Langston Heights Addition and their proposed rezoning to RM districts.

We strongly support designing neighborhoods with housing types suited to families with children that are close to elementary schools with pedestrian ways designed for safe walking, and believe that it is very poor planning to locate multiple family housing that is not appropriately designed for this near our schools. Multiple family housing types can be designed for families with children, but must have the needed amenities such as privacy, open space and other facilities to make such units attractive for family life, which this proposed development does not have. Additionally, we support staff's recommendation to deny the applicant's request for a variance to allow sidewalks on only one side of streets.

Because of the effect this multiple family housing would have on the future development of the adjacent vacant land to the south of this tract, it can be predicted that this land also would become multiple family and not attractive for families with children. Because of the proximity that these two tracts have to Langston Hughes Elementary School, we believe that this would be very poor urban planning and a serious waste of potential that these two properties would have to reduce automobile use and utilize these valuable areas for encouraging families to live within walking distance to the school.

We believe that the reason that this type of poor urban planning is not uncommon in Lawrence is because of some serious deficiencies in our Land Development Code and how it leads to the interpretation of *Horizon 2020*:

- The multiple family districts do not specify housing type.
- The only distinction in our Comprehensive Plan (CP) in the designation of residential areas is based on density. Because of the long-standing interpretation of our CP, it is possible to allow all types of multiple family units from tall apartments to duplexes to achieve the gross densities that are typical for detached single family housing. Therefore, the density designation in our CP is not an appropriate prediction of use.
- The CP does not include the same goal that *Plan '95* did, which emphasized that development should be designed for the ultimate user and not to satisfy only the needs of the developer.

These factors eliminate the essential predictability that homeowners need to be able to have confidence in the stability and future of their neighborhoods when they make the substantial investment for living in a community. It tends to reduce the trust needed for a growing and thriving city to attract new residents. We ask that you take these factors into consideration when making your decision on this rezoning request. The future of our city depends on good urban planning. We would look forward to a discussion about making the necessary changes to our Land Development Code and *Horizon 2020* to create the predictability in our neighborhoods that we need.

Thank you for your consideration of these issues.

Melinda Henderson
President

Alan Black, Chair
Land Use Committee

PO BOX 1072 • LAWRENCE KS 66044-1072
league@sunflower.com • www.lawrenceleague.com
www.facebook.com/lwvldc • www.twitter.com/lwvldc

December 7, 2012

Sandra Day, AICP City/ County Planner, City of Lawrence:

RE: Rezoning Langston Heights

We are writing in opposition of the rezoning of Langston Heights. Our main areas of concern are traffic and child safety.

Our family moved to the Diamondhead subdivision 3 years ago. We chose the area based on several factors: the proximity to the elementary school, the community, and that the adjacent Langston Heights would be a similar neighborhood based on the 2006 plat.

Many families built in Diamondhead because the neighborhood to the West would be comparable. Langston Heights' preliminary plat of 2006 contained 67 single family homes and 18 duplexes. The new plat proposed by Land Plan would increase units by 94% in comparison to the 2006 plat. A 94% increase would greatly increase the amount of traffic on our residential streets.

Palisades and Crystal Lane are currently the only two inlets for Langston Heights. The roads leading to Langston Heights are narrow winding routes through residential areas with poor site lines.

At the December 3, informational meeting held by "Land Plan Engineering," Brian Sturm discussed the traffic study that was completed in September of 2012. The study claimed that the residential roads could support the rezoning of Langston Heights. Brian Sturm stated that the traffic study was done during the peak hours of traffic, 4:00 p.m. to 6:00 p.m. A traffic study done between 4:00 p.m. & 6:00 p.m. does not take into account the traffic at the school's dismissal hour. One of the main in-let/out-lets of Langston Heights is adjacent to a large elementary school. A traffic study done during the school's dismissal hour would provide more accurate information. 63% of the current Diamondhead households have children attending school. 63% of our neighborhood will be walking or driving during school arrival and dismissal times.

The sidewalks in the Diamondhead neighborhood would not support the 94% increase of population. Sidewalks in Diamondhead are only on one side of the street. Upon leaving Langston Hughes Elementary my children must cross Diamondhead Dr. (one of the only in-let/out-lets) This is the only intersection that contains a crosswalk. After walking up Diamondhead they must cross it again. They continue their walk home up Palisades, where they must cross Andrew John Dr. to reach the sidewalk. They walk north on Andrew John crossing Berando Ct. until they come upon Crystal Lane. (one of the other only in-let/outlets) To reach home they cross Andrew John Dr. again. Within a 3 block walk home, our children cross the street 5 times, encountering these soon to be heavily traveled roads. The future children of the Langston Heights neighborhood would also be traveling this dangerous route to their new home. Not only are we concerned about the safety of our own children, but the safety of the new families that will move into the Langston Heights development.

We love living in Lawrence and we love it because it gives us the small town feel we grew up with. We grew up in a town of 1500 where it was safe to walk down the street and everyone treated you like family. Our family has been searching for this sense of community for a while now and finally found it in Diamondhead. Our little neighborhood of all ages come together for an annual Memorial Day BBQ, 4th of July Parade, Pumpkin Carving, and Easter Egg Hunt. Children ride bikes, enjoy a game of basketball, and play tag outside. Neighbors help transport children, share recipes, help with heavy lifting, cook you meals when you're down, or let out the dog when you're away. Increasing the units by 96% from the 2006 plat to the proposed rezoning would only erode at the community we've created.

Lawrence is nationally known as a highly desirable community to live in. We need to continue to reflect on what drives people to Lawrence. Is it the multiple options of housing provided in a development, or is it the feeling of community we ALL provide?

Thank you for taking the time to read our concerns. We appreciate the opportunity to express our thoughts in the matter.

Sincerely,
Carisa, Dustin, Avery, & Sydney Stejskal

From: lauri di routh [mailto:lauridi@hotmail.com]
Sent: Monday, December 10, 2012 8:52 AM
To: Sheila Stogsdill
Subject: Comments for planning commission meeting 12/11/12

Ms. Stogsdill,

Please accept these comments for tonight's Planning Commission meeting. I respectfully request that these be shared with the Planning Commissioners and staff, and be included in the public record for tonight's meeting.
Please note that my comments herein are not intended to represent any organization or group. I offer these comments solely as an individual citizen and taxpayer.

RE: Long range planning work program, as submitted to the planning commission by Scott McCullough in November 2012.
I wish to express my concern about the City and County opting to postpone implementation of the environmental chapter of H2020 to a work schedule beyond 2013. This plan was crafted over the course of several years, and both citizens and the Sustainability Advisory Board play a role. I am troubled that this plan is being mothballed, at a time when we need it most. Given the current drought and its impact on both the built and natural environment, tending to our community's natural resources is more important now than ever. I ask that the PC make implemenation of the environmental chapter of H2020 a priority for 2013.

RE: Variances requested for the site plan and plat of the proposed Rock Chalk Village Park
I am troubled to see that the developer is requesting variances to the street connection requirements of the code, and also the sidewalk requirement of the code. Both of these items are integral to the City's Complete Streets plan, which was recently approved. While I appreciate the developer's stated intention of preserving trees on the property, without an inventory of said trees or any requirement for monitoring of tree preservation or removal during project construction, using trees as an excuse to minimize developer costs seems a bit disingenuous. In regard to street connectivity, it seems to me that allowing George William Way to remain a dead end street at the north end creates a bottleneck for the City's future rec center, and may create massive traffic problems on the property when large events are held at the KU facilities. At the very least, this variance should be reviewed and vetted, first, by traffic planners, to assess its impact. I believe that the requirements for sidewalks on both sides of the street should be upheld, and the developer's request for variances denied.

RE: Diamondhead Neighborhood Comments
I support the Diamondhead Neighborhood's right to preserve the nature and safety of their neighborhood. I ask that the PC reject the Landplan plat proposal as it would greatly expand the development of duplex and multifamily residential dwellings in this area, to the detriment of the existing neighborhood.

RE: planning commission packet structure

In reviewing the packet for this week's meeting, it is noted that the packet size of 57 MB makes it very difficult to load and open on a standard home computer. I had several people tell me that they had not even tried to do so, for fear that it would crash their computer system. While I understand that the files therein are large, I would like to see the PC use the City Commission's method of transmitting meeting information, using imbedded, topic-specific links on the agenda. This way, individual topic information can be opened and reviewed without the need to download the entire packet of 50+ MB of information. By breaking the packet up into managable chunks, it will make it easier for the public to access needed information and share with others who may wish to comment. Certainly, the PC wants to engage and solicit feedback from the public. I believe that the best way to do this would be to use imbedded links on the agenda, thereby reducing an evident barrier to accessing information.

I appreciate your consideration of my comments.

Sincerely,

Laura Routh
2235 East Drive
Lawrence, KS
979-3918

Memorandum
City of Lawrence
Planning Department

TO: **Lawrence Douglas County Planning Commission**

FROM: **Sandra Day, AICP, Planning Staff**

CC: **Applicant**

Date: **January 14, 2013**

RE: **Item No. 3: Langston Heights Residential Development**

Item No. 3A: PP-12-00228; Preliminary Plat
Item No. 3B: Z-12-00229; UR to RM12D
Item No. 3C: Z-12-00231; UR to RS7
Item No. 3D: Z-12-002323; UR to RM12
Item No. 3E: Z-13-00013: UR to RS5 as a lesser change of a portion of the RM12D application.

Attachments:
1. Revised Preliminary Plat
2. West of K10 Area Plan
3. Concept build-out plan

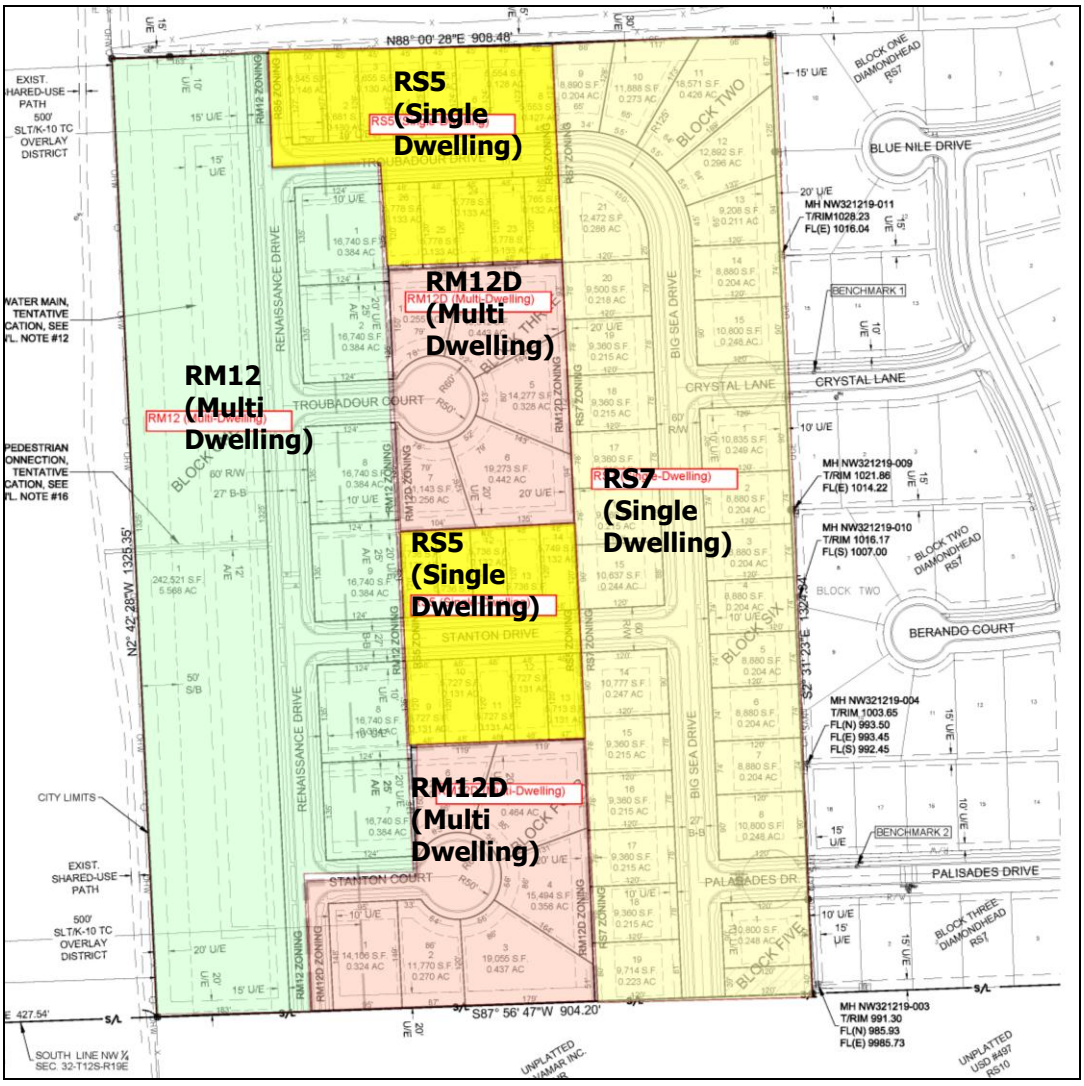
The purpose of this memo is to update the Commission on changes to the proposed development in response to comments from the December Planning Commission Meeting. The public hearing conducted in December resulted in a deferral of the proposed development applications with direction to address the following specific concerns.

- Increase presence of single-dwelling detached units and demonstrate the development is "predominantly single-dwelling residential" to comply with language found in the *6th Street and K-10 Highway Nodal Plan.*
- Explore providing additional access to Renaissance Drive to the south or north to alleviate the traffic impact of the proposed project. Associated to this is the issue of single loading Renaissance Drive as a design option.
- The effect of this development on future development to the south.

Presence of Single-Family
Significant changes have been made to the project that increase the overall percentage of detached residential units and reduce the total number of units proposed for this development. The revised project includes a request for 3.88 acres of RS5 zoning. The proposed development has, using a "lesser change", reduced the amount of RM12D to incorporate RS5 zoning. Section 20-1303 of the Development Code allows the modification of an application when the request is reduced in a manner specified by the Development Code.

The applicant has requested the Planning Commission consider a revision to the RM12D request to change a portion of the published RM12D request to RS5. This revision meets the requirements of the Lesser Change Table as highlighted below. Staff has assigned a specific case file number to the RS5 portion of the development request for tracking purposes.

The development request specifically amends the RM12D application to reduce the overall area from 8.33 acres of RM12D to 4.582 acres. The remaining 3.88 of the original request is proposed, as a lesser change, to RS5. The RS5 district is a single-dwelling residential district. This district is similar to the RS7 district in terms of uses. The RS5 district allows smaller lots with the minimum lot area established at 5,000 SF. The subdivision has been reconfigured to include the RS5 zoning and revised the interior street network to provide more separation between the development to the east and the multi-dwelling proposed to the west. The following graphic highlights the areas to be rezoned to the four different districts.



The following table provides a lot and density summary for the proposed Langston Heights development to show the changes between the previous plan and the current proposal. The December application included only 9.2 acres of detached housing as RS7 zoning. The revised application includes an additional 3.8 acres of detached housing as RS5 zoning.

	December 2012	January 2013
Gross RS7 District Acres	9.206	9.122
ROW Acres Tract	2.33	2.245 .109
Net RS7 Area Acres	6.873	6.768
Total Lots/Units	29/29	29/29
Density	4.219	4.285
Gross RM12D District Acres	8.33	4.582
ROW Acres	1.664	.723
Net RM12D area Acres	6.669	3.856
Total Lots/Units	25/50	11/22
Density	7.497	5.701
Gross RS5 District Acres		3.880
ROW Acres		.885
Net RS5 Area Acres		3.025
Total Lots/Units		23/23
Density		7.603
Gross RM12 District Acres	10.025	9.980
ROW Acres	2.11	2.107
Net RM12 Area Acres	7.908	7.873
Total Lots/Units	7/86	7/86
Density	10.875	10.923
Total Area	27.564	27.564
Total Units	165	160
Total Density	5.986	5.805

Table 1: Area Summary by Zoning District

The total number of units has been reduced by 5 and the overall density has been slightly reduced. Both the RS7 and the RS5 zoning districts represent single-dwelling detached residential development. The total number of detached housing proposed has increased from 29 in the December 2012 plan to 52 units in the current plan. The total number of duplex units has decreased from 50 units to 22 units. The RS7 district and the RM12 Districts have remained static between the two plans with no change in the total number of units and minor changes to the gross area of the two districts.

Land Use Development Pattern

Area	Acres	Percent
Total Area:	**186.45**	**100**
Developed Area:	43.38	23%
Proposed Development:	27.57	15%
Vacant Area:	115.5	62%

Table 2A: Summary of Developed and Undeveloped Land

Use	Acres	Percent
Single Family:	74.37	40%
Duplex:	14.89	20%
Multi-Dwelling:	22.76	12%
Commercial:	43.30	23%
UR	18.75	10%
Public	12.38	7%
Total	186.45	100%

The following information shows the existing and developing land use pattern for the area west of George Williams Way between W. 6th Street and Bob Billings Parkway [Diamondhead Neighborhood]. A substantial portion of the area is zoned for detached residential development. Based on the existing and proposed zoning and known land uses the Diamondhead Neighborhood area includes 74.4 acres of detached residential development and zoning. Table 2 summarizes the existing and proposed housing types for this area based on existing and proposed zoning.

A significant portion of the area is defined by the existing development pattern and zoning. The above image shows the existing and proposed development pattern and includes the future street connection between Bob Billings Parkway and Ken Ridge Drive. The 18 acres of UR is likely to be reconfigured into several zoning districts in the future including commercial and multi-dwelling. The proposed subdivision street connections from the Langston Heights Development would support the continuation of a detached housing pattern to the south. The following map shows graphically the existing and proposed housing types for this area based on the existing and proposed zoning.

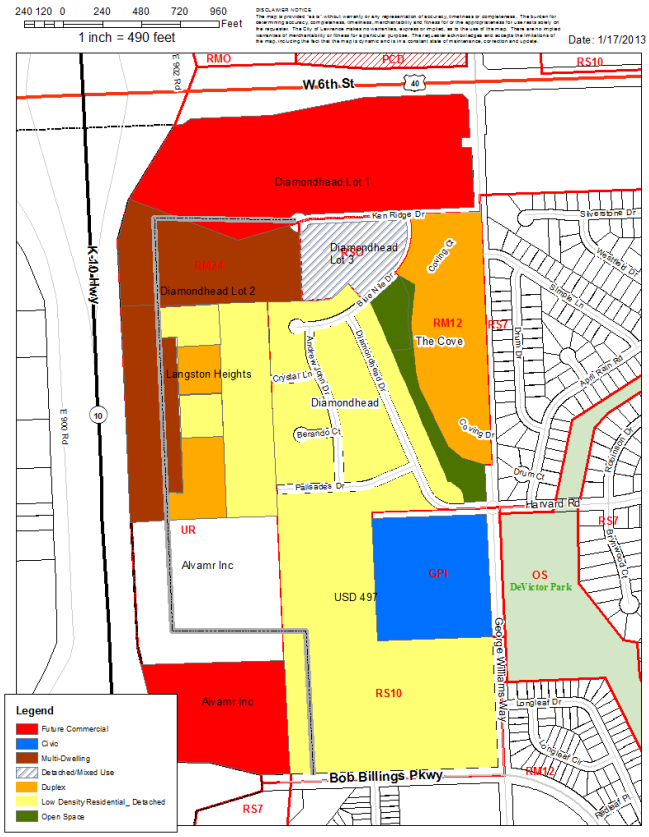


Figure 1 Map of Land Use

Renaissance Drive:

The location of Renaissance Drive provides the greatest buffer between K10 Highway to the west and the lower density residential development to the east. The design of the street provides the ability to develop on both sides of the street. Single loaded streets are generally inefficient in terms of construction and maintenance costs. This design provides the ability to provide development backing up to the highway that will provide

both a visual and noise buffer between the highway and the residential development to the east. Development both north and south will be required to extend Renaissance Drive north to Ken Ridge Drive and to the south to Bob Billings Parkway. Both streets have identified connection points. The connection to Bob Billings Parkway is being actively designed because of the K10 highway interchange to be constructed in the next year.

Access to Bob Billings Parkway:

KDOT, City Engineers, property owners and USD 497 have been working to establish designated access points as they relate to the pending interchange improvements of the SLT interchange with Bob Billings Parkway. This information is critical to the development of the property between Diamondhead Subdivision to the north and Bob Billings Parkway to the south. The access point is designated approximately 990' east of the intersection to avoid conflicts within the interchange and ramps. Access is intended to provide connectivity to the undeveloped parcels north of Bob Billings Parkway and connect to Renaissance Drive to the north. The finalized alignment will be platted based upon executed agreements of all parties and through the Subdivision Regulation process. The following exhibit shows the connection between Bob Billings Parkway and the proposed development to the north. This concept includes the subdivision design as of November 2012. The location of Renaissance Drive between the December and January versions has not changed. Renaissance Drive is proposed as a "double loaded" local connector street within the neighborhood.

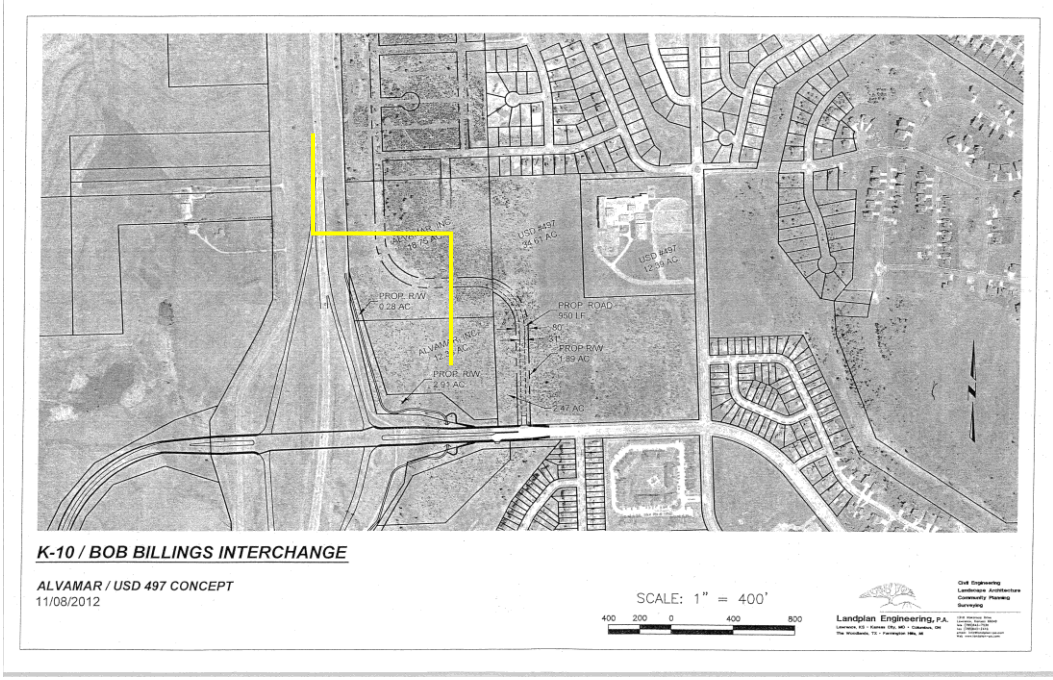


Figure 2: Renaissance Drive Extended South

The base document used in the concept includes the previous subdivision plat arrangement. The internal street connections to the Langston Heights subdivision have been revised since this concept plan was prepared. However, the location of Renaissance Drive and the access point to Bob Billings Parkway have not changed throughout this project.

Effect on future development to South
The proposed Subdivision extends the local street network to the south via Renaissance Drive and Big Sea Drive. The basic alignment of Renaissance Drive south of the subject property is being developed with KDOT and City staff and the adjacent property owners. The property along Bob Billings Parkway has been zoned for specific uses (PCD and RS10). The commercial use located on the northeast corner of Bob Billings Parkway and the SLT is likely to be requested for an expansion to the north and possibly east filling the gap created by the street alignment. The long-range land use plan (West of K10 Plan) indicates this area as suitable for future neighborhood commercial uses. Regional detention will also be required on this corner as the area develops. This will further reduce the developable land for commercial uses at the immediate intersection.

USD 497 owns acreage on the northwest corner of Bob Billings Parkway and George Williams Way. This area is zoned RS10 and may be developed with expanded school facilities or could also be developed residentially given the existing zoning. There remains 18 acres of UR zoning between the neighborhood commercial and the proposed Langston Heights development. The proposed subdivision extends Big Sea Drive to the south property line that accommodates an extension of the detached residential pattern to the south. This street could be extended to intersect Renaissance Drive or could terminate in a T or cul-de-sac intersection. A small area would remain between the highway and Renaissance Drive that could be developed with a transitional use between the proposed multi-dwelling and the neighborhood commercial use depending on the requirements for regional detention for the area. The townhouse pattern could be extended in this area with significant landscaping along areas that abut the commercial development.

The attached exhibit highlights one concept for future development to the south.

West of K-10 Plan
The area south of the Langston Heights Development is located within the boundary of the West of K10 Plan area. The plan recommends low-density residential land use between the highway and George Williams Way with the exception of the area designated for neighborhood commercial uses at the intersection of K10 and Bob Billings Parkway.

The residential land uses recommended in the plan state:

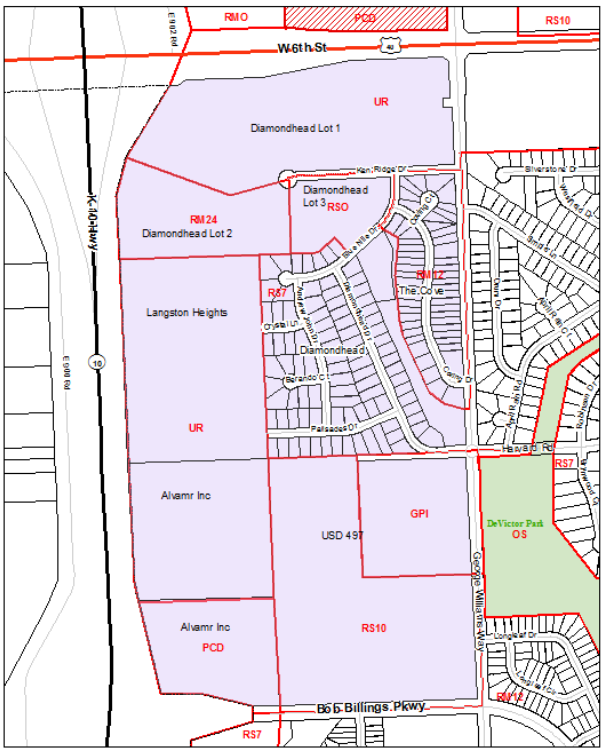
> ***Residential- Low Density***
> *The intent of the low-density residential use is to allow for single-dwelling, duplex and attached dwellings but emphasis is placed on residential type uses. Development in this area should be compatible with single-family character, which could include such uses as churches, small–scale daycares and institutional uses.*

The plan notes the primary uses as "*Detached dwellings, attached dwellings, duplex, group home, public and civic uses."* Applicable zoning districts include RS10, RS7, RS5 RM12D and PD. The Plan further states the maximum density recommended for areas recommended for low-density residential development is 6 dwelling units per acre.

Future Land Use Development Pattern

Based on the recommended land uses found in *Horizon 2020*, *West of K10 Highway Plan*, and the recent discussions with the Commission and the applicant staff prepared an example of a possible development pattern for the remaining undeveloped tracts of land. This concept plan is attached.

Land Use Summary Diamondhead Neighborhood Area						
Area/Description	**Acres**	**Zoning**	**Land Use**	**Density**	**Total Units**	**Subject Area**
Lot 1 Diamondhead	31	UR	vacant		0	
Lot 2 Diamondhead	12.78	RM24	vacant	24	306	
Lot 3 Diamondhead	6.07	RSO	vacant	15	91	
The Cove	10.3	RM12[1]	duplex	5.8	60	
Diamondhead Residential	20.7	RS7	sfr	4.2	89	
Langston Heights	***9.12***	***RS7***	***Sfr – Proposed***	***4.2***	***29***	
Langston Heights	***3.88***	***RS5***	***Sfr – Proposed***	***7.6***	***23***	
Langston Heights	***4.59***	***RM12D***	***Duplex-Proposed***	***5.7***	***22***	
Langston Heights	***9.98***	***RM12[2]***	***Multi - Proposed***	***10.92***	***86***	
Alvamar Inc	18.75	UR	vacant			
Alvamar Inc	12.3	PCD[3]	vacant	35	430	
USD 497	12.38	GPI	public	0	0	
USD497	34.6	RS10	vacant	4.3	148	
Total Area	**186.45**				**578**	



- Total Land Area 186.45 AC
- Developed Area 43.38 AC
- Vacant Land

Table 3: Land Use Summary by parcel/Subdivision

[1] RM12 zoning allows multi-dwelling units. The Cove Subdivision is being developed to a less dense pattern with only two units (duplex housing) per lot.

[2] RM12 zoning allows a total of 119 units. Proposed application is restricted to a lower density than district would allow by right.

[3] PCD allows 35 dwelling units per acre. Typical PCD zoning has not included a residential component or only a small percentage when present.



SCALE: 1" = 100'

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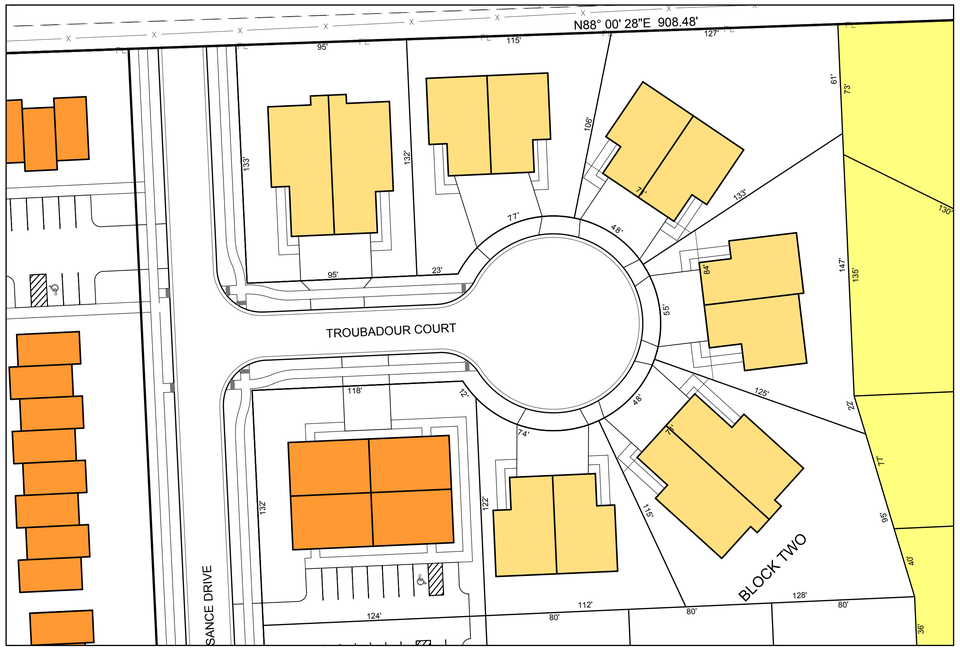
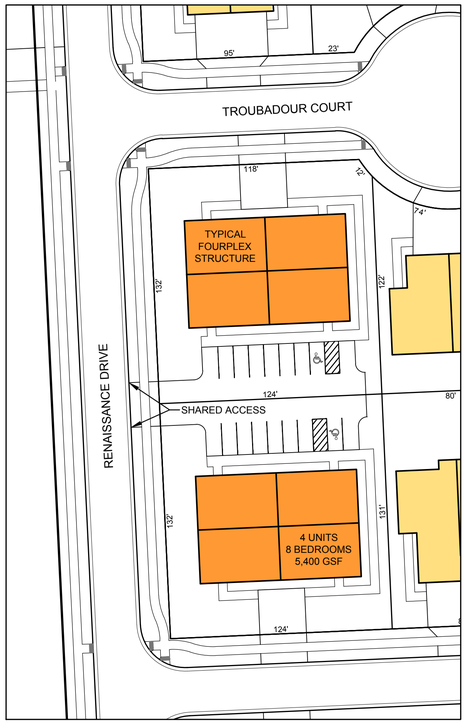


TYPICAL DUPLEX LAYOUT

BUILDING SUMMARY:

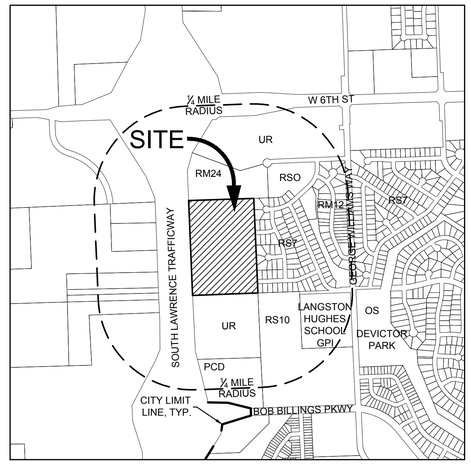
PRODUCT TYPE	QUANTITY	UNITS	BEDROOMS
SINGLE-FAMILY HOME	29	29	N/A
DUPLEX	25	50	N/A
FOURPLEX	6	24	48
ROW HOME	62	62	124

***GROSS SUBDIVISION UNIT DENSITY = 165 UNITS / 27.564 AC = 5.986 UNITS/AC**



TYPICAL FOURPLEX LAYOUT

LOCATION MAP:



GENERAL NOTES:

1. OWNER: LANGSTON HEIGHTS, LC, 611 SAINT ANDREWS DRIVE, LAWRENCE, KANSAS 66047
2. LAND PLANNER/ CIVIL ENGINEER/ SURVEYOR: LANDPLAN ENGINEERING, P.A., 1310 WAKARUSA DRIVE, LAWRENCE, KANSAS 66049
3. EXISTING ZONING: UR
4. PROPOSED ZONING: RS7, RM12, RM12D
5. EXISTING LAND USE: VACANT
6. PROPOSED LAND USE: DETACHED DWELLING, DUPLEX, ATTACHED DWELLING
7. THE SUBJECT PROPERTY DOES LIE WITHIN A SPECIAL FLOOD HAZARD AREA AS DEFINED BY FLOOD INSURANCE RATE MAP (FIRM); PANEL NO. 154, MAP NUMBER 20045C0154D, DOUGLAS COUNTY, KS., BEARING AN EFFECTIVE DATE OF AUGUST 5, 2010.
8. THIS SITE IS DESIGNATED LOW-DENSITY RESIDENTIAL IN HORIZON 2020, DATED 7/1/11, AND THE WEST OF K-10 PLAN, DATED 1/7/08.
9. LOTS DEVELOPED WITHIN THE SLT/K10-TC SHALL BE DESIGNED TO COMPLY WITH THE MINIMUM DESIGN STANDARDS OF SECTION 20-307(c)(1).

ZONING SUMMARY:

RS7
GROSS AREA: 401,026 SF / 9.206 AC
RIGHTS-OF-WAY: 101,644 SF / 2.333 AC
NET AREA: 299,382 SF / 6.873 AC
TOTAL LOTS: 29
AVERAGE LOT AREA: 10,324 SF / 0.237 AC
MINIMUM LOT AREA: 8,886 SF / 0.204 AC
MAXIMUM LOT AREA: 17,635 SF / 0.405 AC
TOTAL UNITS: 29
UNIT DENSITY: 4.219 UNITS/AC

RM12D
GROSS AREA: 362,991 SF / 8.333 AC
RIGHTS-OF-WAY: 72,503 SF / 1.664 AC
NET AREA: 290,488 SF / 6.669 AC
TOTAL LOTS: 25
AVERAGE LOT AREA: 11,620 SF / 0.267 AC
MINIMUM LOT AREA: 9,552 SF / 0.219 AC
MAXIMUM LOT AREA: 15,997 SF / 0.367 AC
TOTAL UNITS: 50
UNIT DENSITY: 7.497 UNITS/AC

RM12
GROSS AREA: 436,678 SF / 10.025 AC
RIGHTS-OF-WAY: 92,205 SF / 2.117 AC
NET AREA: 344,473 SF / 7.908 AC
TOTAL LOTS: 7
AVERAGE LOT AREA: 49,210 SF / 1.130 AC
MINIMUM LOT AREA: 16,329 SF / 0.375 AC
MAXIMUM LOT AREA: 242,521 SF / 5.568 AC
TOTAL UNITS: 86
UNIT DENSITY: 10.875 UNITS/AC

***GROSS SUBDIVISION UNIT DENSITY = 165 UNITS / 27.564 AC = 5.986 UNITS/AC**

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Landscape Architecture
Community Planning
Surveying

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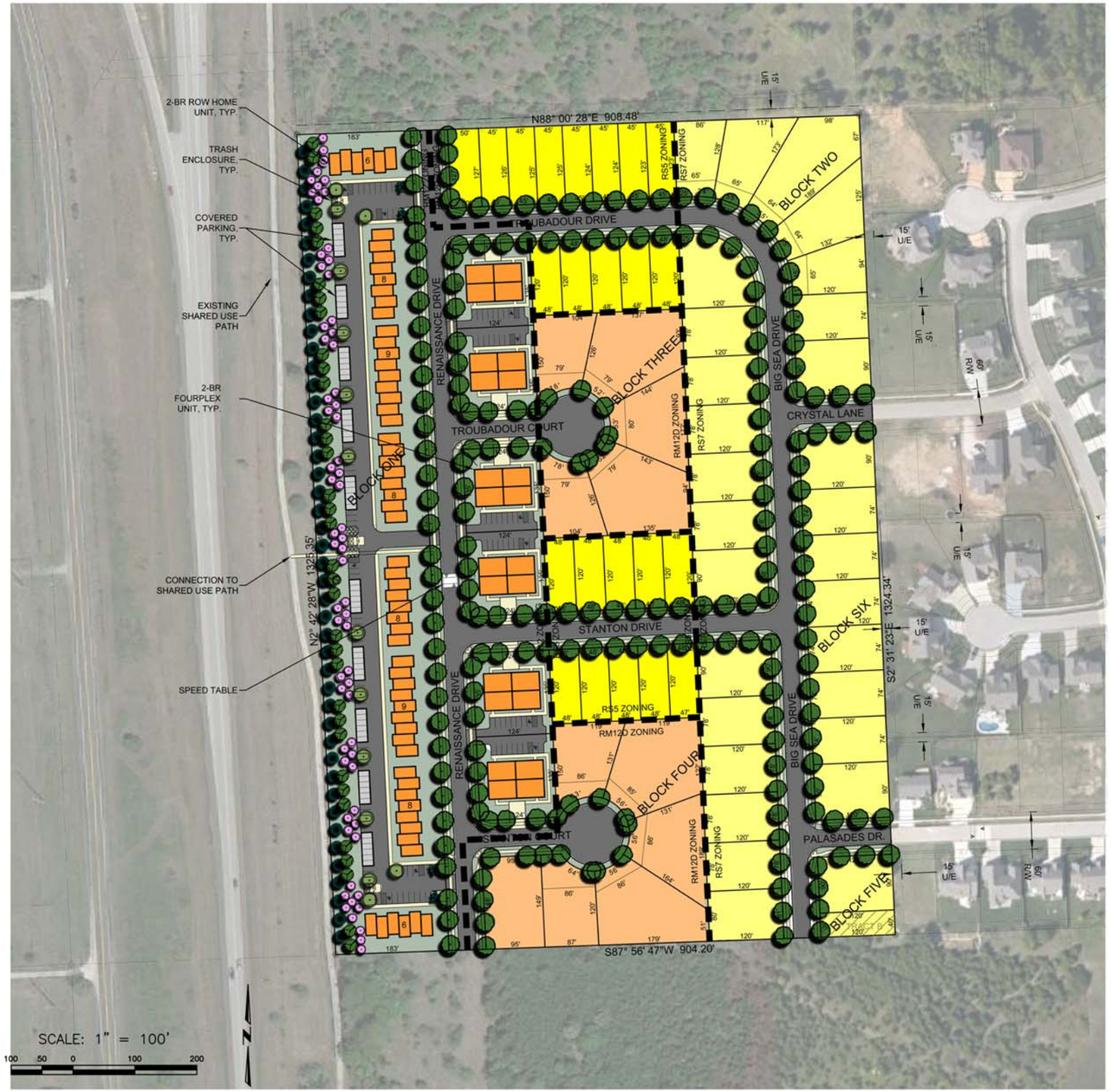
CONCEPT PLAN
LANGSTON HEIGHTS ADDITION, CITY OF LAWRENCE DOUGLAS COUNTY, KANSAS

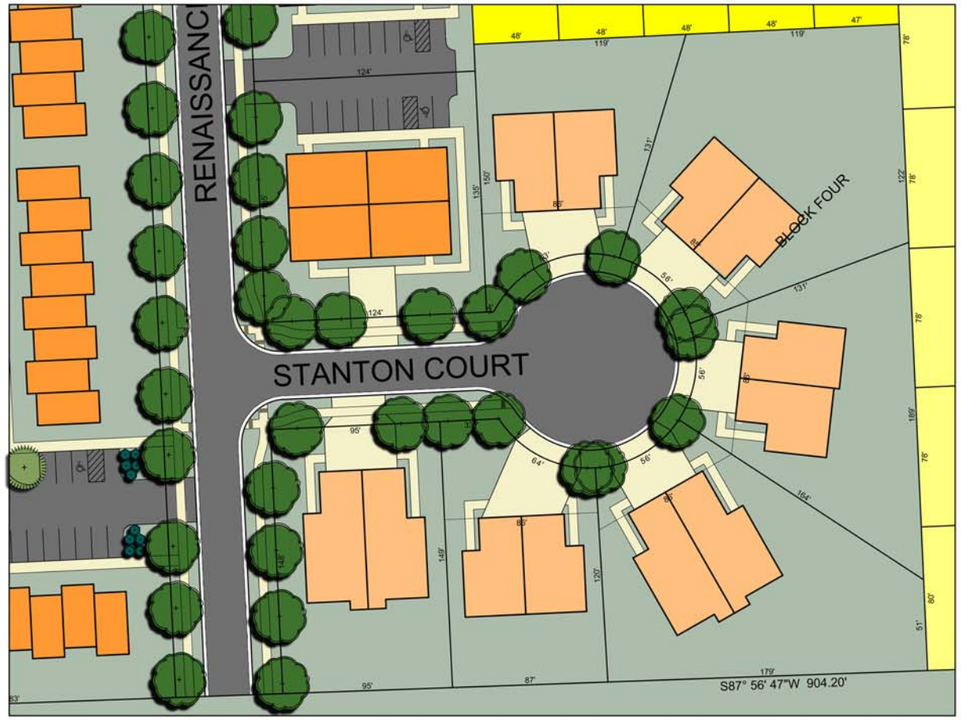
REV	DATE	DESCRIPTION

DATE: 11/29/12
PROJECT NO.: 20121218
DESIGNED BY: TAH/LPE
DRAWN BY: BS
CHECKED BY: CMS

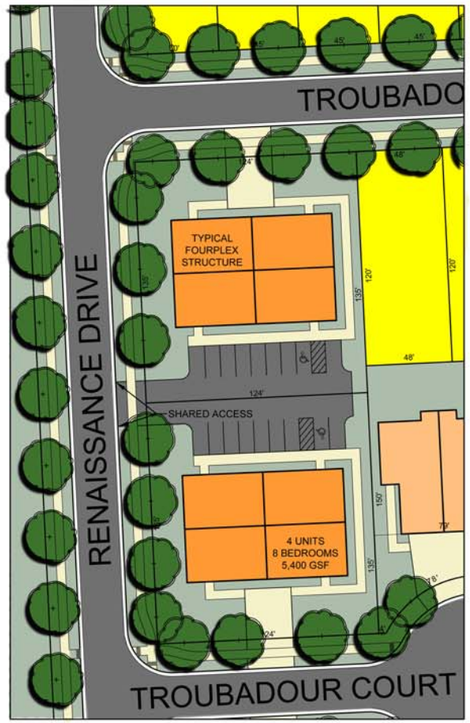
ISSUE | SHEET NO. 1 OF 1 SHEETS

FILE NAME: Q:\20121218\CAD\Concept-Exhibits\CONCEPT.dwg LAST SAVED BY: Brian Sturm SAVED DATE: 11/29/2012 2:55 PM PLOTTED: 11/29/2012 2:55 PM





TYPICAL DUPLEX LAYOUT



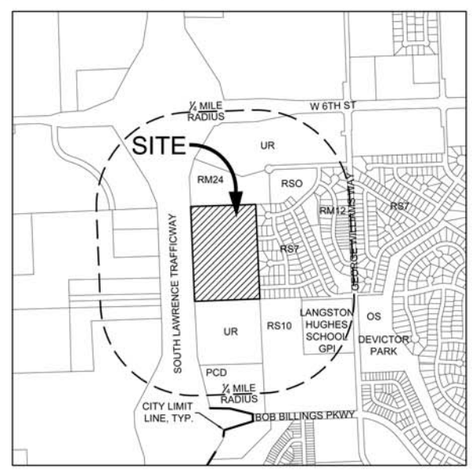
TYPICAL FOURPLEX LAYOUT

BUILDING SUMMARY:

PRODUCT TYPE	QUANTITY	UNITS	BEDROOMS
SINGLE-FAMILY HOME	52	52	N/A
DUPLEX	11	22	N/A
FOURPLEX	6	24	48
ROW HOME	62	62	124

**GROSS SUBDIVISION UNIT DENSITY = 160 UNITS / 27.564 AC = 5.805 UNITS/AC*

LOCATION MAP:



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3. EXISTING ZONING: UR
4. PROPOSED ZONING: RS7, RS5, RM12D, RM12
5. EXISTING LAND USE: VACANT
6. PROPOSED LAND USE: DETACHED DWELLING, DUPLEX, ATTACHED DWELLING
7. THE SUBJECT PROPERTY DOES NOT LIE WITHIN A SPECIAL FLOOD HAZARD AREA AS DEFINED BY FLOOD INSURANCE RATE MAP (FIRM); PANEL NO. 154, MAP NUMBER 20045C0154D, DOUGLAS COUNTY, KS., BEARING AN EFFECTIVE DATE OF AUGUST 5, 2010.
8. THIS SITE IS DESIGNATED LOW-DENSITY RESIDENTIAL IN A NODAL PLAN FOR THE INTERSECTION OF WEST 6TH STREET & KANSAS HIGHWAY 10 (K-10), DATED 11/11/03.
9. LOTS DEVELOPED WITHIN THE SLT/K10-TC SHALL BE DESIGNED TO COMPLY WITH THE MINIMUM DESIGN STANDARDS OF SECTION 20-307(c)(1).

ZONING SUMMARY:

RS7
GROSS AREA: 397,349 SF / 9.122 AC
RIGHTS-OF-WAY: 97,784 SF / 2.245 AC
TRACTS: 4,742 SF / 0.109 AC
NET AREA: 294,823 SF / 6.768 AC
TOTAL LOTS: 29
AVERAGE LOT AREA: 10,166 SF / 0.233 AC
MINIMUM LOT AREA: 8,880 SF / 0.204 AC
MAXIMUM LOT AREA: 18,571 SF / 0.426 AC
TOTAL UNITS: 29
UNIT DENSITY: 4.285 UNITS/AC

RS5
GROSS AREA: 169,017 SF / 3.880 AC
RIGHTS-OF-WAY: 37,224 SF / 0.855 AC
NET AREA: 131,793 SF / 3.025 AC
TOTAL LOTS: 23
AVERAGE LOT AREA: 7,187 SF / 0.144 AC
MINIMUM LOT AREA: 5,553 SF / 0.127 AC
MAXIMUM LOT AREA: 6,345 SF / 0.146 AC
TOTAL UNITS: 23
UNIT DENSITY: 7.603 UNITS/AC

RM12D
GROSS AREA: 199,594 SF / 4.582 AC
RIGHTS-OF-WAY: 31,505 SF / 0.723 AC
NET AREA: 168,089 SF / 3.859 AC
TOTAL LOTS: 11
AVERAGE LOT AREA: 15,281 SF / 0.351 AC
MINIMUM LOT AREA: 10,982 SF / 0.252 AC
MAXIMUM LOT AREA: 20,191 SF / 0.464 AC
TOTAL UNITS: 22
UNIT DENSITY: 5.701 UNITS/AC

RM12
GROSS AREA: 434,735 SF / 9.980 AC
RIGHTS-OF-WAY: 91,774 SF / 2.107 AC
NET AREA: 342,961 SF / 7.873 AC
TOTAL LOTS: 7
AVERAGE LOT AREA: 48,994 SF / 1.125 AC
MINIMUM LOT AREA: 16,740 SF / 0.384 AC
MAXIMUM LOT AREA: 242,521 SF / 5.568 AC
TOTAL UNITS: 86
UNIT DENSITY: 10.923 UNITS/AC

**GROSS SUBDIVISION UNIT DENSITY = 160 UNITS / 27.564 AC = 5.805 UNITS/AC*

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CONCEPT PLAN
LANGSTON HEIGHTS ADDITION,
CITY OF LAWRENCE
DOUGLAS COUNTY, KANSAS

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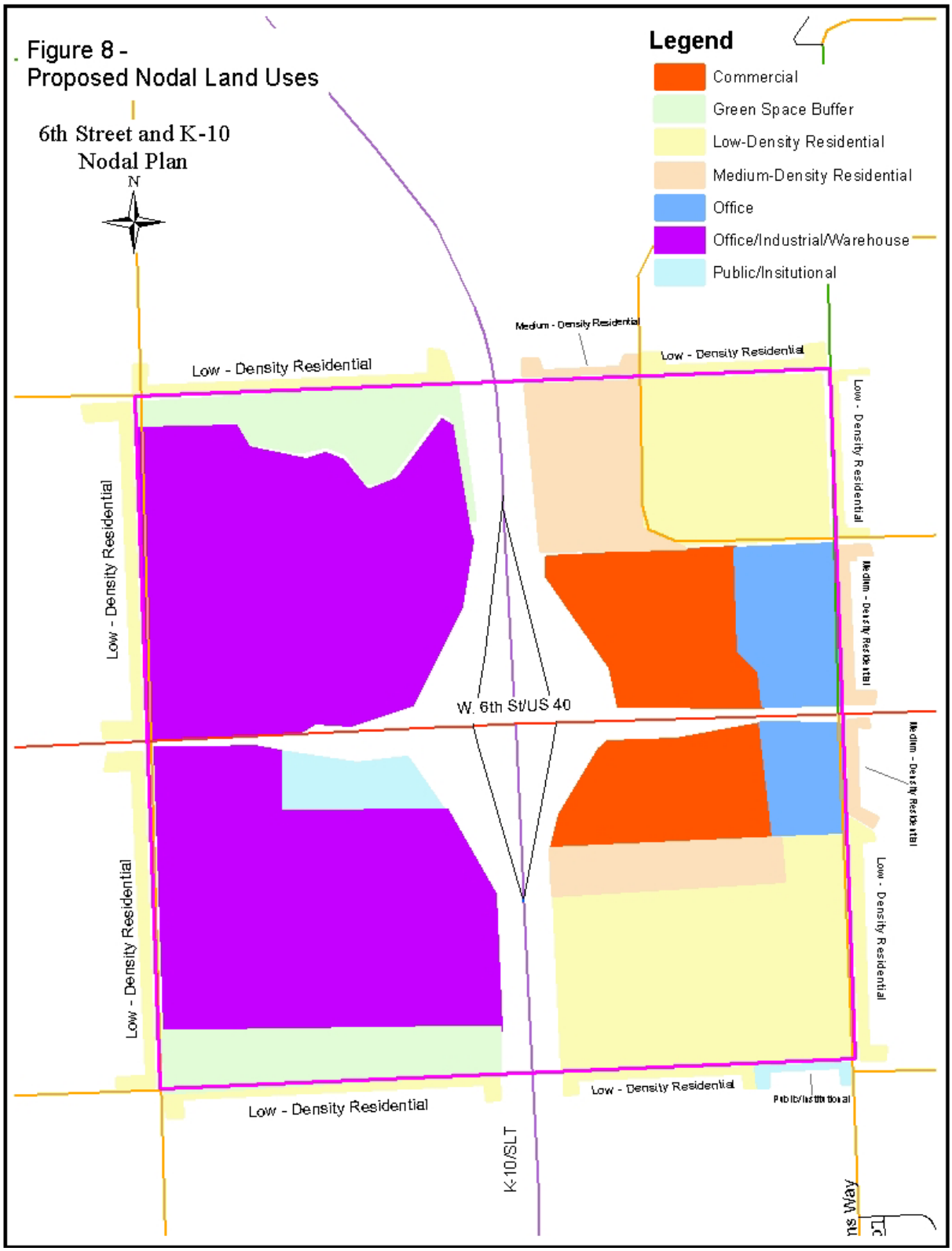
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Proposed Nodal Land Uses
6th Street and K-10
Nodal Plan
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Legend
Commercial
Green Space Buffer
Low-Density Residential
Medium-Density Residential
Office
Office/Industrial/Warehouse
Public/Insitutional
Low - Density Residential
Medium - Density Residential
Low - Density Residential
Low - Density Residential
Low - Density Reeidential
W. 6th St/US 40
Low - Density Residential
Low - Density Residential
Low - Density Residential
K-10/SLT

PLANNING COMMISSION REPORT
Regular Agenda - Public Hearing Item

PC Staff Report
1/28/2013

ITEM NO 3C: Z-12-00231 UR (Urban Reserve) District to RS7 (Single-Dwelling Residential) District; 9.206 acres (SLD)

Z-12-00231: Consider a request to rezone approximately ~~9.206~~ **9.122** acres from UR (Urban Reserve) to RS7 (Single-Dwelling Residential), located north and south of Crystal Lane and Palisades Drive extended, as shown in the preliminary plat of Langston Heights Addition. Submitted by Landplan Engineering, for Langston Heights, LC, property owner of record. **Deferred from the December 2012 Planning Commission Meeting.**

STAFF RECOMMENDATION: Staff recommends approval of the request to rezone approximately ~~9.206~~ **9.122** acres from UR (Urban Reserve) District to RS7 (Single Dwelling Residential) District based on the findings presented in the staff report and forwarding it to the City Commission with a recommendation for approval.

Reason for Request: *The developer, RSR, Inc., intends to subdivide and rezone the subject property to support detached dwelling single-family development (see attached concept plan).*

Note: Revised Language is shown in **blue bold** text.

KEY POINTS
- Request is part of an overall development package that includes RM12D, **RS5,** and RM12 Zoning and a preliminary plat.
- This request is adjacent to a developing Detached-Dwelling subdivision.
- **The area proposed for RS7 is only slightly modified from the previous request. This is a result in corrections to bearings and distances used to describe the area.**

ASSOCIATED CASES/OTHER ACTION REQUIRED
- Z-12-00229: ~~8.564 acres~~ **4.582 acres** from UR (Urban Reserve) to RM12D (Multi-Dwelling Residential)
- Z-12-00231: ~~9.206 acres~~ **9.122 acres** from UR (Urban Reserve) to RS7 (Single-Dwelling Residential)
- Z-12-00232: ~~10.025 acres~~ **9.980 acres** from UR (Urban Reserve) to RM12 (Multi-Dwelling Residential)
- **Z-13-00015: 3.88 acres from UR (Urban Reserve) to RS5 (Single-Dwelling Residential) as a lesser change from a portion of the proposed RM12D application.**
- PP-12-00228: Preliminary Plat Langston Heights

PLANS AND STUDIES REQUIRED
- *Traffic Study* – Not required for rezoning
- *Downstream Sanitary Sewer Analysis* – Not required for rezoning
- *Drainage Study* – Not required for rezoning
- *Retail Market Study* – Not applicable to residential request

ATTACHMENTS
- Area map
- Concept plan December 2012
- **Concept Plan January 2013**
- 6th & K-10 land use map

PUBLIC COMMENT RECEIVED PRIOR TO PRINTING
- Communications are attached.

Project Summary:
Proposed request is for **9.122** acres of low-density residential zoning to accommodate development of Detached Dwellings on individual lots. This request is part of a larger development request that includes RM12D**, RS5,** and RM12 zoning with a preliminary plat. The relative density of **5.8** dwelling units per acre is spread across the entire 27-acre development site to meet the low-density land use recommendations for this area. This report discusses the RS7 portion of the development request.

1. CONFORMANCE WITH THE COMPREHENSIVE PLAN
Applicant's Response: *the Lawrence future Land Use Map (3-2) in Horizon 2020 does not specifically designate a land use for this subject property, however, adjacent existing residential development is consistent with low-density residential land uses of 6 or fewer dwelling units per acre. When considered with the two (2) other rezoning applications accompanying this one, all three conform to the Residential Development Strategy (pg. 5-1) of providing a mixture of housing types, styles and economic levels for new residential development.*

This property is located within the boundary of the *6th Street and K-10 Nodal Plan,* refer to attachment. This request is part of a package of requests that include medium-density residential zoning in the form of duplex and multi-dwelling zoning districts and a preliminary plat that establishes the integrated layout of the overall development pattern planned for this area. The Nodal Plan, amended into the Comprehensive Plan, shows this area to be developed with low-density residential uses except for an area located along the south side of W. 6th Street and a portion of highway south of W. 6th Street.

The nodal plan provides a narrative description of the recommended land use development for each quadrant of the intersection of W. 6th Street and K-10 Highway. The plan states:

> ***The Southeast Corner***
>
> *Like its northern counterpart, this corner provides opportunity for a variety of residential, commercial, and office activities. This nodal plan designates the majority of this corner appropriate for residential development and the remaining area appropriate for commercial and office uses. This nodal plan also designates the majority of its residential uses appropriate for low-density, single-family neighborhoods with a small portion considered appropriate for medium-density residential development. This medium-density development serves as primary buffer between single-family neighborhoods and commercial activities. The commercial and office activities of the southeast corner along West 6th Street mirror those of the northeast corner - the majority of such activities are designated appropriate for commercial with the remainder for office uses.*

This nodal plan anticipates more low-density, single-family residential development in the areas surrounding this corner and therefore much of this corner was designated appropriate for similar development to maintain compatibility of surrounding land uses. Open space areas are also highly encouraged to serve as buffers between residential, commercial, and office land use activities, as well as provide opportunities for linkages to the surrounding neighborhoods to the southeast of this nodal study area.

In addition to density recommendations, *Horizon 2020* provides key strategies that are applicable to this development request and the related applications. They are:

- *Infill residential development should be considered prior to annexation of new residential areas.*
- *A mixture of housing types, styles and economic levels should be encouraged for new residential and infill developments.*
- *Compatible densities and housing types should be encouraged in residential neighborhoods by providing appropriate transition zones between low-density residential land uses and more intensive residential development, and between higher density residential uses and non-residential land uses.*
- *The character and appearance of existing residential neighborhoods should be protected and enhanced. Infill development, rehabilitation or reconstruction should reflect architectural qualities and styles of existing neighborhoods.*

This request represents infill development and the first step in a plan to provide a transition of uses between the existing development and the Highway. The proposed RS7 district is a low-density residential district consistent with the recommended land use found in the comprehensive plan and the nodal plan.

Staff Finding – The proposed RS7 district conforms to the land use recommendations included in *Horizon 2020* and in the *6th & K-10 Nodal Plan*. **There are no changes to this finding of fact.**

2. ZONING AND USE OF NEARBY PROPERTY, INCLUDING OVERLAY ZONING

Current Zoning and Land Use:	UR (Urban Reserve) District; undeveloped property.
Surrounding Zoning and Land Use:	RM24 (Multi-Dwelling Residential) District to the north. Undeveloped land. RS7 (Single-Dwelling Residential) District to the east. Developing residential subdivision. UR (Urban Reserve) District to the south. Undeveloped land. Existing UR (Urban Reserve) District and Proposed RM12D (Multi-Dwelling Residential) District to the west; undeveloped land. K-10 Highway is the west boundary of the development site.

In addition to the immediate zoning and land use, the Langston Hughes Elementary School site is located to the southeast. The school site property includes GPI (General Public and institutional) District zoning for the immediate school improvements. The balance of the school property is zoned RS10 (Single-Dwelling Residential) District.

Staff Finding – This area is surrounded by a mix of zoning. The predominate land use is residential. **There are no changes to this finding of fact.**

3. CHARACTER OF THE NEIGHBORHOOD

Applicant's Response: *The subject property is a vacant piece of abandon farmland. It is bordered to the west by the SLT right-of-way, which also includes the SLT recreation path. To the north lies vacant ground platted as part of the Diamondhead subdivision and zoned RM24. To the east lie properties platted under the Diamondhead subdivision, zoned RS7 and developed as detached single-family homes, all constructed within the past 5-7 years. To the south rests vacant unplatted property zoned UR and of similar natural character to the subject property. Langston Hughes School is a short distance to the southeast.*

The west portion of the development site abuts the K-10 Highway (higher density proposed). The east portion of the development site abuts developing single-dwelling subdivision known as Diamondhead Subdivision. This requested RS7 district provides an extension and transition between the existing low-density development pattern and the planned higher intensity development to the west along the Highway frontage.

This property is located within the West Lawrence Neighborhood. This section of the neighborhood includes several undeveloped parcels to the north and south along the K-10 Highway. This neighborhood is characterized by the dominance of residential use, primarily low-density detached housing. Higher intensity uses are located along major streets in the neighborhood. Existing and planned non-residential uses are located at major intersections throughout the neighborhood.

Staff Finding – The overall neighborhood is characterized by and dominated by residential uses. Higher density uses are located along the arterial streets of W. 6th Street and Bob Billings Parkway. **There are no changes to this finding of fact.**

4. PLANS FOR THE AREA OR NEIGHBORHOOD, AS REFLECTED IN ADOPTED AREA AND/OR SECTOR PLANS INCLUDING THE PROPERTY OR ADJOINING PROPERTY

As noted above this area is located within the boundary of the *6th Street and K-10 Highway Nodal Plan*. The area is generally recommended for low-density residential development with a small portion considered appropriate for medium density residential development. This request is consistent with that land use recommendation.

Staff Finding – The proposed RS7 zoning is consistent with the low-density residential land use recommended in the nodal plan applicable to this area. **There are no changes to this finding of fact.**

5. SUITABILITY OF SUBJECT PROPERTY FOR THE USES TO WHICH IT HAS BEEN RESTRICTED UNDER THE EXISTING ZONING REGULATIONS

Applicant's Response: *The UR district has served this vacant ground adequately but will not permit new development of any kind. Development that provides an appropriate transition from the existing RS7 neighborhood to the east, the future RM32 development to the north and the existing SLT to the west requires a new zoning classification.*

Staff concurs that the UR zoning is no longer desirable given plans to develop the property. The current zoning serves as a holding zone until property is ready for development. The proposed request conforms to the overall land use recommendations and is upheld by the proposed preliminary plat arrangement of lots and streets for this area.

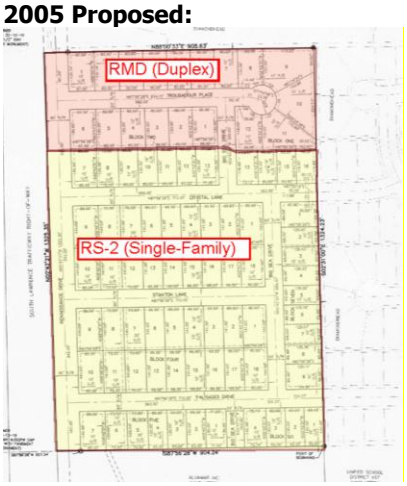
Staff Finding – The existing UR (Urban Reserve) District is no longer a suitable zoning district for this property since development applications have been made. **There are no changes to this finding of fact.**

6. LENGTH OF TIME SUBJECT PROPERTY HAS REMAINED VACANT AS ZONED

Applicant's Response: *the property has remained vacant since being annexed into the City in the early 2000's.*

This property is undeveloped (vacant). The existing zoning, UR, was established in 2006 with the adoption of the Development Code. Prior to that time the property was zoned A (Agricultural). The surrounding area to the north and east (Diamondhead) was annexed and rezoned for various uses in October 1998.

This property was part of a 27.23-acre request for RS-2 zoning submitted in October 2002 (Z-10-39-02) but later withdrawn and replaced by two later applications in 2005. (Z-9-63-05 and Z-9-64-05). The 2005 requests were for 6.8 acres of RMD (Duplex Residential District) and 20.77 Acres of RS-2 (Single-Family Residential District). These requests were approved by the Planning Commission on November 16, 2005. They were accompanied by a preliminary plat that included connected grid streets. The approval was subject to the recording of a final plat for the property. The Final Plat for the property was approved in 2006 and the approval was extended in 2008. The property owner did not complete the requirements and record the final plat. Therefore, the zoning was never published and made effective.

<table>
<tr><th colspan="3">Development Density Comparison</th></tr>
<tr>
<td>2005 Proposed:
 
</td>
<td>December 2012 Request:
  </td>
<td>2005 Proposed:
6.80 Acres – Duplex Zoning
20.22 Acres – Detached Residential Zoning
Total Units -104

December 2012 Request:
9.20 Acres – Detached Residential Zoning
7.49 Acres – Duplex Zoning
10.02 Acres – Multi-Dwelling Zoning.
Total Units - 165</td>
</tr>
<tr>
<td></td>
<td> 
Note: Lot 1, Block 1, outlined in red will not be developed until connection of Renaissance Drive to the south to Bob Billings Parkway, refer to Preliminary Plat.</td>
<td>2005 Proposed:
6.80 Acres – Duplex Zoning
20.22 Acres – Detached Residential Zoning
Total Units 104

December 2012 Request:
9.20 Acres – Detached Residential Zoning
7.49 Acres – Duplex Zoning
10.02 Acres – Multi-Dwelling Zoning.
Total Units - 165

January 2013 Request:
13.002 Acres – Detached Residential Zoning [9.122 + 3.88)
4.582 Acres – Duplex Zoning
9.980 Acres – Multi-Dwelling Zoning
Total Units - 160</td>
</tr>
</table>

Staff Finding – The area is undeveloped. The property was zoned A Agricultural from 1966 to 2006. **There are no changes to this finding of fact.**

7. EXTENT TO WHICH APPROVING THE REZONING WILL DETRIMENTALLY AFFECT NEARBY PROPERTIES

Applicant's Response: *Approving this rezoning will pose no detrimental effect to nearby properties. Approval will facilitate appropriate residential development adjacent to the SLT and set a development precedent for adjacent vacant parcels.*

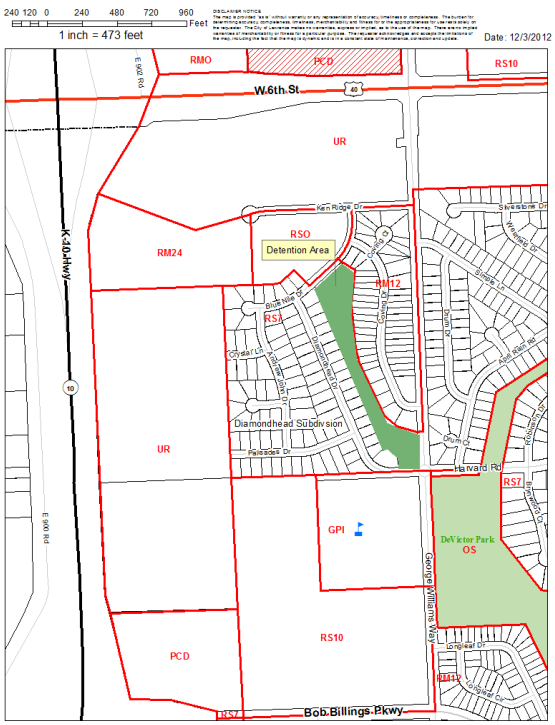
The proposed RS7 zoning is a low-density residential district with a maximum density of 6 dwelling units per acre and a minimum lot size of 7,000 SF per lot. The proposed preliminary plat design includes 29 lots for single-dwelling detached residential development. The net unit density of the proposed RS7 portion of the development is reflected on the concurrent proposed preliminary plat as only 4.2 units per acre. This net density calculation excludes rights-of-way. As a comparison,

the developing subdivision to the east, known as the Diamondhead Subdivision, includes 89 residential lots (detached RS7 zoning) on 32.28 acres. Excluding rights-of-way (streets) and the 4.7 acres of detention along the east sides of the subdivision, the developable area is 20.8 acres making the Diamondhead Subdivision a low-density development with 4.28 units per acre.

The proposed request extends the existing development pattern to the west. Both Crystal Lane and Palisades Drive were platted to be extended to the area to the west. Additional traffic will be added to the local streets as this area develops. The increase in traffic is consistent with local street designs. There are no detrimental effects to adjacent properties.

Adjacent low-density development – Diamondhead Subdivsion

- Gross RS7: 32 acres
- Detention: 4.7 acres
- Right-of-Way: 6.5 acres
- Net Area: 20.8 acres
- Total Lots: 89
- Net Density: 4.28 Units per acre



Staff Finding – The proposed request is consistent with the planned development for the area. **There are no changes to this finding of fact.**

8. THE GAIN, IF ANY, TO THE PUBLIC HEALTH, SAFETY AND WELFARE DUE TO THE DENIAL OF THE APPLICATION, AS COMPARED TO THE HARDSHIP IMPOSED UPON THE LANDOWNER, IF ANY, AS A RESULT OF DENIAL OF THE APPLICATION

Applicant's Response: *The gains to public welfare proposed by this application are the gains associated with creating appropriate transitional residential development adjacent to established neighborhoods and highway corridors. Denial of this application will perpetuate the vacancy of this land.*

Evaluation of this criterion includes weighing the benefits to the public versus the benefit of the owners of the subject property. Benefits are measured based on anticipated impacts of the rezoning request on the public health, safety, and welfare.

The purpose of the UR District is to accommodate properties that have been annexed into the City of Lawrence until development or redevelopment is planned. This property is proposed to be

developed for a variety of residential land uses including low-density detached residential structures on individual lots. This area can be served by the extension of existing utility infrastructure. This project represents infill development. Approval of the request will facilitate additional housing choices in this area and provide a land use transition between existing development and the proposed development.

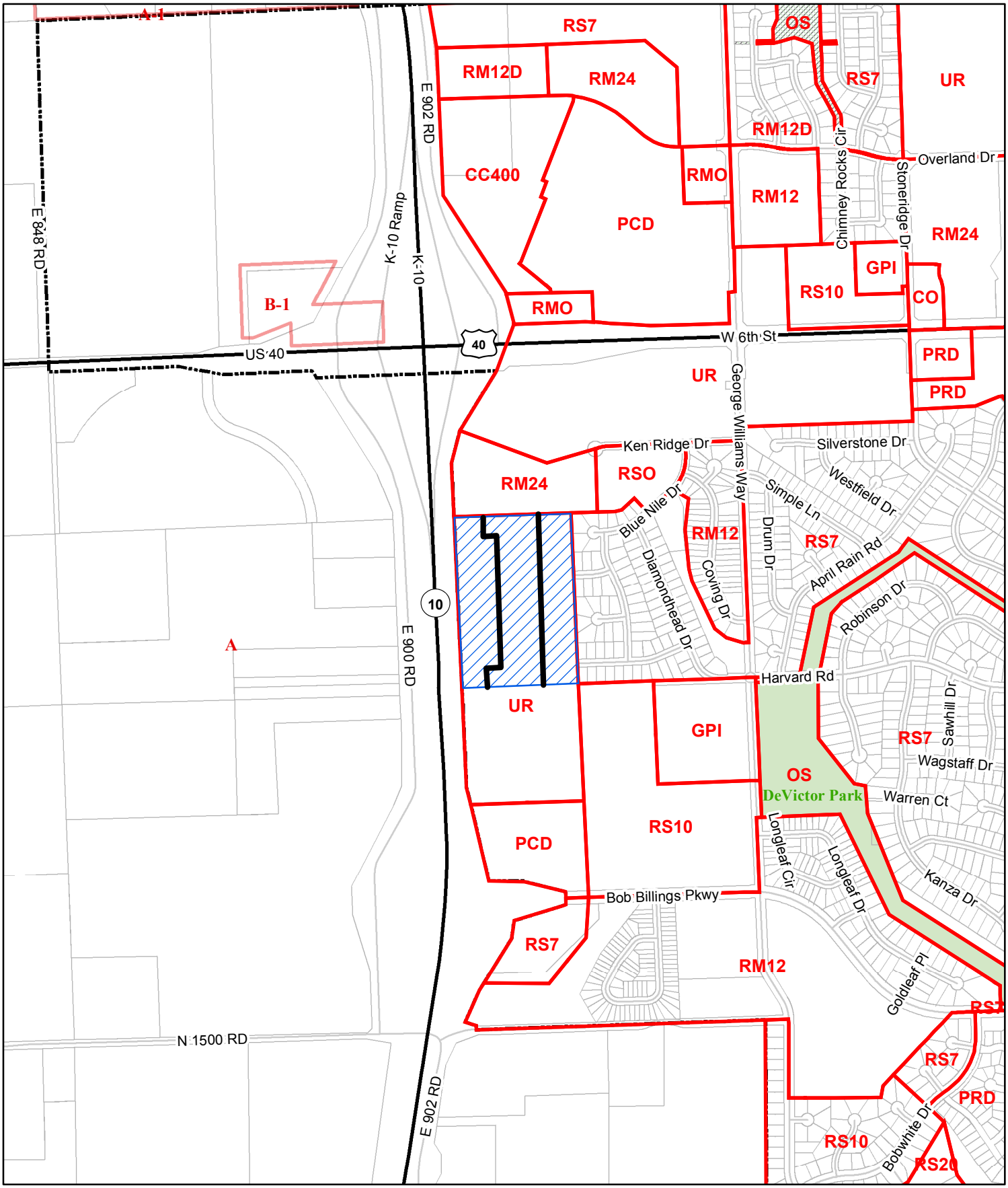
Staff Finding – Approval of this request facilitates infill development and economies of scale with regard to utility service delivery. Approval of the request provides additional housing choices to this portion of the neighborhood. **There are no changes to this finding of fact.**

9. PROFESSIONAL STAFF RECOMMENDATION

This request is considered concurrently with the RM12D**, RS5,** and RM12 zoning requests and includes the related preliminary plat that combined make up the Langston Heights Development. Separate reports are provided for each individual request. The RS7 request extends the existing development pattern to the west consistent with previous plans for the area and consistent with the low-density residential development of the area. This maximum density allowed for the RS7 district is 6 dwelling units per acre. The proposed density for this portion of the Langston Heights Development is only 4.2 units per acre. This allows the remaining areas to cluster development and spread the density across the entire acreage to provide a transition of land uses and housing types east of K-10 highway. Staff recommends approval of the proposed RS7 zoning.

CONCLUSION

The proposed request is consistent with anticipated low-density residential development. This request extends the existing residential pattern to the west.



Z-12-00229: Rezone 8.5 acres from UR to RM12D
Z-12-00231: Rezone 9.2 acres from UR to RS7
Z-12-00232: Rezone 9.8 acres from UR to RM12
East of K-10 Highway & south of W. 6th St

Area Requested

Scale: 1 Inch = 1000 Feet

Lawrence-Douglas County Planning Office

January 2013

RECEIVED
JAN 28 2013
City County Planning Office
Lawrence, Kansas

LEAGUE OF WOMEN VOTERS®
OF LAWRENCE/DOUGLAS COUNTY

January 27, 2013

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Melinda Henderson

President-Elect
David Burress

Vice President
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James Dunn
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Cille King
Ruth Lichtwardt
Marlene Merrill

Mr. Bruce Liese, Chairman
Members
Lawrence-Douglas County Metropolitan Planning Commission
City Hall
Lawrence, KS 66044

RE: ITEM NO. 3: PRELIMINARY PLAT AND REZONINGS FOR LANGSTON HEIGHTS ADDITION: E SIDE OF K-10 AND S OF W 6TH ST. (SLD)

Dear Chairman Liese and Planning Commissioners:

After studying the new Preliminary Plat and proposed rezonings for Langston Heights, we hope you will consider our original thoughts on this issue again. For your convenience, we have attached our original letter to you.

We do acknowledge that the issue of traffic from the multiple family development on Block One, Lot One has been alleviated to an extent. The restriction on Block One, Lot One development, until the connection to Bob Billings Parkway is opened, will help. This is the most intensive multiple family area. However, this issue still remains for traffic headed east and north from Block One, Lot One.

Also, the lack of predictability in the development of our neighborhoods is still a major problem in Lawrence. This is caused, among other reasons, by designations in our Comprehensive Plan of density only in the Area Plans coupled with the lack of definition of housing type in our multiple family districts. We describe this better in our attached letter.

We hope that you will consider our comments again because we believe they continue to apply here. Thank you.

Sincerely yours,

David Burress
President-Elect

Alan Black, Chairman
Land Use Committee

Attachment

PO BOX 1072 • LAWRENCE KS 66044-1072
league@sunflower.com • www.lawrenceleague.com
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ATTACHMENT

LEAGUE OF WOMEN VOTERS®
OF LAWRENCE/DOUGLAS COUNTY

RECEIVED
DEC 19 2012
City County Planning Office
Lawrence, Kansas

December 10, 2012

To: Lawrence/Douglas County Planning Commission:

Re: Langston Heights, Items 5A, 5B, 5D

President
Melinda Henderson

President-Elect
David Burress

Vice President
Milton Scott

Secretary
Caleb Morse

Treasurer
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Directors

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James Dunn

Sally Hayden

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Ruth Lichtwardt

Marlene Merrill

The League of Women Voters of Lawrence/Douglas County has strong positions on neighborhood planning. We believe that "the primary urban planning unit should be the neighborhood, large enough to support the location of a nursery-elementary school, park...and should reduce to a minimum the use of the private car within each neighborhood." Therefore, we are concerned about the proposal for the multiple family lot configurations of the Langston Heights Addition and their proposed rezoning to RM districts.

We strongly support designing neighborhoods with housing types suited to families with children that are close to elementary schools with pedestrian ways designed for safe walking, and believe that it is very poor planning to locate multiple family housing that is not appropriately designed for this near our schools. Multiple family housing types can be designed for families with children, but must have the needed amenities such as privacy, open space and other facilities to make such units attractive for family life, which this proposed development does not have. Additionally, we support staff's recommendation to deny the applicant's request for a variance to allow sidewalks on only one side of streets.

Because of the effect this multiple family housing would have on the future development of the adjacent vacant land to the south of this tract, it can be predicted that this land also would become multiple family and not attractive for families with children. Because of the proximity that these two tracts have to Langston Hughes Elementary School, we believe that this would be very poor urban planning and a serious waste of potential that these two properties would have to reduce automobile use and utilize these valuable areas for encouraging families to live within walking distance to the school.

We believe that the reason that this type of poor urban planning is not uncommon in Lawrence is because of some serious deficiencies in our Land Development Code and how it leads to the interpretation of *Horizon 2020*:

- The multiple family districts do not specify housing type.
- The only distinction in our Comprehensive Plan (CP) in the designation of residential areas is based on density. Because of the long-standing interpretation of our CP, it is possible to allow all types of multiple family units from tall apartments to duplexes to achieve the gross densities that are typical for detached single family housing. Therefore, the density designation in our CP is not an appropriate prediction of use.
- The CP does not include the same goal that *Plan '95* did, which emphasized that development should be designed for the ultimate user and not to satisfy only the needs of the developer.

These factors eliminate the essential predictability that homeowners need to be able to have confidence in the stability and future of their neighborhoods when they make the substantial investment for living in a community. It tends to reduce the trust needed for a growing and thriving city to attract new residents. We ask that you take these factors into consideration when making your decision on this rezoning request. The future of our city depends on good urban planning. We would look forward to a discussion about making the necessary changes to our Land Development Code and *Horizon 2020* to create the predictability in our neighborhoods that we need.

Thank you for your consideration of these issues.

Melinda Henderson
President

Alan Black, Chair
Land Use Committee

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From: Andrew Pitts [mailto:APitts@TreanorArchitects.com]
Sent: Friday, January 25, 2013 8:29 AM
To: Brian Sturm
Cc: Christopher Storm; phils@LANDPLAN-PA.COM; bobdennsan@gmail.com; douglas.raney@gmail.com; timaherndon@att.net; Sandra Day
Subject: RE: Langston Heights Addition - revised Concept Plan

Brian-

Thank you for the revised concept. As I mentioned, we have been circulating the revision throughout the neighborhood. We had hoped this type of dialogue could have happened prior to our last meeting, but appreciate the developer continuing to review and refine the concept.

Honestly, the change still causes great discomfort amongst most of the neighborhood. One of the biggest issues still is the density. While there was a change from duplexes to the RS-5, this is an undesirable zoning adjacent to the RS-7. This will not change density (as is indicated in the staff report) and will lower the property values of the area. The type of home built in RS-5, regardless that it is a single-family detached home, will be long and narrow and out of context and scale with the balance of the neighborhood.

Another issue continues to be the four-plex development. These are extremely undesirable.

While I have only spoken to a few and do not know how well this would be received, I would offer the following ideas for your consideration:

1. In lieu of the RS-5, continue the RS-7 zoning down both Troubadour Drive and Stanton Drive to Renaissance Drive. This would be similar to the plan, but would remove the four-plexes at the end of those roads.

2. The other idea would be to continue the duplexes on both Troubadour Ct and Stanton Ct. to Renaissance Drive. This would remove the four-plexes and have each of these cul-de-sacs being only duplexes.

3. The street network and row-housing would remain as designed.

I believe these types of changes could find favor among some in the neighborhood. These changes, coupled with your agreement to not build the multi-family until the completion of Renaissance Drive could be very positive. Again, these are my ideas in an effort to continue the dialogue and try to move this project forward and not a denial. I cannot guarantee if any other neighbors would agree, but think this could bring a positive response.

Please consider these ideas and let me know if you have any questions.

Thanks,

Andy Pitts

From: Andrew Pitts [mailto:APitts@TreanorArchitects.com]
Sent: Wednesday, January 23, 2013 9:44 AM
To: Brian Sturm
Cc: Christopher Storm; phils@LANDPLAN-PA.COM; bobdennsan@gmail.com; douglas.raney@gmail.com; timaherndon@att.net; Sandra Day
Subject: RE: Langston Heights Addition - revised Concept Plan

Thank you. We have been circulating and trying to gather our comments.

Andrew Pitts

From: Brian Sturm [mailto:brians@LANDPLAN-PA.COM]
Sent: Monday, January 21, 2013 1:15 PM
To: Andrew Pitts
Cc: Christopher Storm; phils@LANDPLAN-PA.COM; bobdennsan@gmail.com; douglas.raney@gmail.com; timaherndon@att.net; sday@lawrenceks.org
Subject: Langston Heights Addition - revised Concept Plan

Andy,
As a follow-up to our last meeting on Thursday, 1/10/13, please find attached an electronic copy of the revised Concept Plan for Langston Heights Addition. Last week, Landplan submitted to the City a revised Preliminary Plat and zoning district boundaries based upon this concept. Most all of the features shown in the plan discussed at our meeting on the 10th remain as components in this concept:

- An overall reduction in units (160 down from 165)
- Phasing that prohibits the construction of the 62-unit row home community until Renaissance Drive is constructed and complete south to Bob Billings Parkway.
- A street layout that promotes traffic calming and minimizes interaction between traffic generated by the single-family and multi-family components of the project.

The developer chose to make one additional change following our meeting: replacement of 26 duplex units with 23 single-family units adjacent to Stanton Drive and Troubadour Drive. The comment issued by you and your neighbors that the concept easily allowed for the extension of the single-family component down these two streets spoke loudly to us. Ultimately the developer sees great merit in using a single-family detached product to define the look of the eastern half of the neighborhood while transitioning to the SLT with a spectrum of multi-family products. I hope that the residents of the Diamondhead neighborhood also see this change as an improvement.

In regards to the traffic generated by this new concept, I have prepared below a table that breaks down the trips generated by the Langston Heights development per street. This table examines each of the proposed plats for this project (the one approved in 2006, the one submitted last October, as well as this latest revision) and then based on our trip distribution model assigns the number of trips that would travel down each of the three access streets (Crystal Lane, Palisades Drive and Renaissance Drive) during the critical peak period (afternoon peak-hour on a typical weekday).

Street	**2006 Plat**	**2012 Plat**	**2013 Plat, Phase 1**	**2013 Plat, Phase 2**
Crystal Ln.	45 (45%)	60 (45%)	41 (45%)	62(45%)
Palisades Dr.	56 (55%)	74 (55%)	51 (55%)	30 (22%)
Renaissance Dr.	N/A	N/A	N/A	45 (33%)
Total Trips	**101 (100%)**	**134 (100%)**	**92 (100%)**	**137 (100%)**

I will say a few things about the information in this table:

- The phasing built into this latest Concept Plan ensures that the volume of Langston Heights traffic cutting through the Diamondhead neighborhood will remain below the levels exhibited with the plat approved in 2006 (92 down from 101).

- The total volume of trips generated by this latest Concept Plan is higher than that associated with the plat submitted last October (137 up from 134). This slight uptick is due to the proposed increase in single-family units (52 up from 29) and decrease in multi-family units (108 down from 136).
- Let me know if you would like to review a copy of the full addendum to the Traffic Impact Study that Landplan submitted to the City.

The Planning Commission will resume their consideration of the Preliminary Plat and rezoning requests at their meeting next Monday, the 28th. Don't hesitate to let me know if you or your neighbors have any questions or comments concerning the above information. Your efforts, thus far to continue the dialogue associated with this development, have helped produce a stronger design.
Thanks,

Brian Sturm, RLA, ASLA, LEED AP
Project Landscape Architect
Licensed in KS

Landplan Engineering, P.A.
1310 Wakarusa Drive
Lawrence, Kansas 66049
v. 785.843.7530
f. 785.843.2410

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Lawrence Public Schools
110 McDonald Drive
Lawrence, Kansas 66044-1063
Telephone: (785) 832-5000

LAWRENCE
PUBLIC SCHOOLS

January 16, 2013

Lawrence-Douglas County Planning Commission
ATT: Bruce Liese, Chair
City Hall, 6 East 6th Street
Lawrence, KS 66044

RE: Langston Heights Rezoning Applications
Z-12-0029, Z-12-00231 and Z-12-00232

Dear Planning Commissioners:

Unified School District No. 497 traditionally does not take positions on neighborhood developments. The school district is here to serve all children attending public schools and has no position regarding the merits of the proposed development or any other development. With that said, Principal Jackie Mickel has expressed concerns about a potential traffic increase near Langston Hughes Elementary School at the intersection of Harvard Road and George Williams Way.

Please be advised that the applicant's revised proposal is a reasonable attempt to remedy those traffic concerns. The connection of Renaissance Drive to Bob Billings Parkway is viewed as an ideal solution to presently existing traffic issues in and around Langston Hughes Elementary School. The district is discussing opportunities to create another entrance/exit using Renaissance Drive. We are appreciative of the input from all concerned stakeholders, as it appears to have resulted in meaningful progress on those subjects.

Sincerely,

Dr. Rick Doll
Superintendent of Schools

Lawrence Douglas County Planning Commissionors January 19, 2013
Bruce Liese, Chair
Scott McCullough, Director Planning and Development Services
Sandra Day, Current Planner

The Diamondhead Neighborhood, the neighborhood, is writing to request that the Lawrence Douglas County Planning Commission deny RSR Development, LLC, the developer, a request to re-zone Langston Heights Development during the upcoming January 28 meeting. The neighborhood feels the plat changes offered thus far by the developer are not dramatic enough to warrant acceptance by the neighborhood. We received the plan attached, LangstonHeights2.pdf on January 10. This is the result following a meeting on December 20. At the meeting on the 20th we discussed opportunities the neighborhood felt would make for a viable solution and at this time we do not feel we are seeing enough change in the attached plan.

We appreciate the opportunity awarded us by the planning commission to be a part of this process, but we feel the developer has not met specific needs: A need for reduction in density, a focus on traffic issues, and improvement to the overall character of the neighborhood.

We share Commissioner Lamer and Blaser's concern during the December 10 planning commission meeting that RM12 and RM12D do not constitute single family zoning within Langston Heights. We agree that the type of zoning within Langston Heights will effect the future development of land to the south, which will have a bearing on the overall character of the entire neighborhood. Horizon 2020 calls for expectations to be set for neighborhoods. Our neighborhood had the expectations established in the 2006 plat, which called for single-family homes with a small concentration of duplex units. Keeping in mind that the planning commission also predicts single-family housing to be developed in the land to the south, the expectation is there for Langston Heights to be developed as a single-family development. Commissioner Josserand also expressed concern for the amount of multifamily dwellings planned for Langston Heights. During a December 20 meeting at Landplan Engineering, Inc. we shared similar concerns with the developer, but we do not see our concerns reflected in the revised plat LangstonHeights2.pdf.

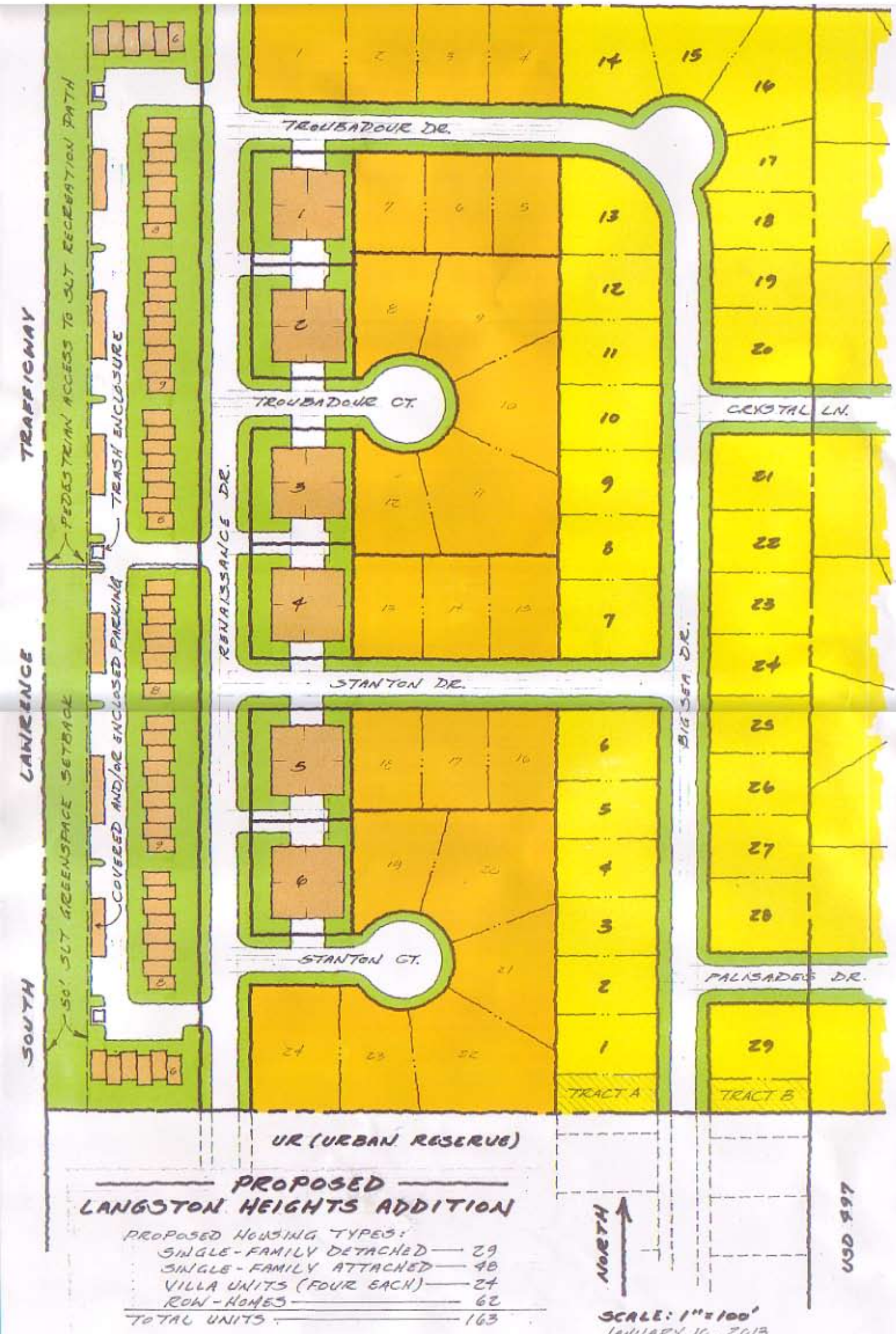
We also agree with Commissioners Josserand and Britten that high density traffic flowing into single family residence through Crystal Lane and Palisades Drive is a large problem. Without Renaissance Drive effectively connecting to 6th street and Bob Billings Drive, a traffic pattern through the existing neighborhood will establish. This traffic pattern has the potential to create unnecessary traffic that would not exist if Renaissance Drive were established at the beginning of the project.

As to the overall character, our neighborhood agrees with Commissioner Liese that this development should not be treated as an experiment. The concept of placing high-density housing flowing into single family residence remains in the revised plan for Langston Heights. A concept that is not seen anywhere else in Lawrence. Reconfiguration of roads was added to the revised plot, but the amount of high density still remains and although the overall average across the entire plat remains at 6 units per acre, the fact remains that the amount of high and medium density has not reduced.

Our neighborhood agrees with Commissioner Blaser that we are not giving respect to the land south of Langston Heights. The location of Reniasance Drive south and the decision on what is built in Langston Heights will effect the types of building planned for the land to the south, therefore setting the stage for the overall character of a high density neighborhood, which is not the expectation of the neighborhood, the West Lawrence Neighborhood Association, Horizon 2020 or the understanding of the Planning Commission members as stated during the December 10 meeting.

There is no reason why land east of K-10, south of 6th street and north of Bob Billings cannot receive the same level of respect as the design offered within the West of K-10 Plan. With new developments to Rock Chalk Park to the north of 6th street and George Williams Way and recent developments to acquire land to the south of Langston Heights by the developer, we feel it is time to create an East of K-10 comprehensive Plan. Therefore we respectively ask that you deny RSR Development, LLC the request to re-zone Langston Heights with the current plan LangsonHeights2.pdf.

Diamondhead Neighborhood



PROPOSED
LANGSTON HEIGHTS ADDITION

PROPOSED HOUSING TYPES:

SINGLE-FAMILY DETACHED	29
SINGLE-FAMILY ATTACHED	48
VILLA UNITS (FOUR EACH)	24
ROW-HOMES	62
TOTAL UNITS	163

SCALE: 1" = 100'
JANUARY 10, 2013

Sandra Day, AICP City/County Planner, City of Lawrence

RE: Landplan Engineering Informational Session December 3, 2012 Langston Heights Development

We are writing to ask you to consider deferring the rezoning of Langston Heights (Parcel west and south of Diamondhead) from UR to RM12 and RM12D in order to provide for a more agreeable development. The increase in traffic, decreased in property values and changes to the original 2006 plat are issues that need to be addressed.

The new plan proposal is to build a total of 165 housing units on 61 lots. With only 2 streets (Crystal Lane and Palisades Drive) servicing current and additional units, traffic will be heavier than originally planned for these two streets. This plan shows this with the numerous traffic calming devices located on the expanded Crystal Lane. Crystal Lane and Palisades were originally developed as a lead in to other single family housing, not medium density apartments. Typically, medium density housing is at the front of subdivisions, leading farther in to low density housing, this proposal is the exact opposite of that. Palisades already has issues on school days due to drop off and pick up from Langston Hughes Elementary School; it can't handle the additional traffic flow. Even when the future "proposed" access to 15th street and George Williams Way get added, traffic from this development will still be pushed through low density housing in nearly every direction. The Horizon 2020 plan specifically discourages this action with numerous aspects outlined in the bottom of this letter.

Should this plan be approved, due to the direct impact of the medium density housing, property values in the Diamondhead subdivision will decrease. When we bought our home back in 2007, we knew additional low density housing would soon follow to our west. This was based on the Planning Commission approval in January 2006 of single family homes in the Langston Heights area. We never would have bought our new home in this location had we known apartments and duplexes were to be built, and future potential home owners will feel the same way. We all based our decisions off this approved 2006 zoned plat for single family homes.

As you will see at the December 10th meeting, the Diamondhead subdivision is a unique neighborhood with a large population of kids. Traditions such as our July 4th parade, Easter egg hunts, neighborhood cookouts, and the general family feel among neighbors will be lost if this proposal passes.

Please see to it that this proposal does not go any further without modifications. We are not against the expansion of our subdivision to the west, we are against the medium density zoning; we would happily approve of low density zoning, which would expand on this great neighborhood.

Thank you for your time.

Sincerely,

Brian and Jennifer McCall

6201 Berando Court

Horizon 2020 Plan that relate to this proposal: Low-Density Residential Land Use

GOAL 3: Neighborhood Conservation (page 5-15, 5-16) Policy 3.3: Encourage Compatible infill Development Policy 3.4: Minimize Traffic Impact through Neighborhoods GOAL 4: Criteria for location of Low-Density Residential Development (page 5-17) Policy 4.2: Protect Areas Planned for Low-Density Development GOAL 5: Create a Functional and Aesthetic Living Environment (page 5-19, 5-20) Policy 5.5: Ensure Convenient and Logical Street/Road System Design

Medium and higher Density Residential Land use

GOAL 1: Criteria for Location of Medium and Higher Density Residential

Development

Policy 1.3: Identify Suitable Sites (page 5-23)□Policy 1.5: Ensure Adequate Infrastructure (page 5-24)□Policy 1.6: Consider Access (page 5-24)□Policy 1.7: Adhere to Designated Land Uses (page 5-24) GOAL 2:

Create a Functional and Aesthetic Living Environment Policy 2.6: Consider Residential Density and Intensity of Use (page 5-26) GOAL 4: Transportation Considerations (page 5-30, 5-31) ALL OF THEM

November 28, 2012

Sandra Day, AICP City/County Planner, City of Lawrence

RE: Landplan Engineering Informational Session December 3, 2012
Langston Heights Development

As a member of the Diamonhead subdivision (6th and George Williams Way), I and over 50 households in our neighborhood are concerned by the recent application to change the Langston Heights development. When our family purchased into our neighborhood our builder, Neal Ezel, told us the design of the subdivision to the west would be low-density housing similar to ours. I want to thank the Lawrence Planning Department for their hard work in developing our neighborhoods and their insightful design of planned unit developments. So I hope you will understand my concerns for changes in the current plan.

The 270% increase in family units to the new Langston Heights subdivision creates an increase in pressure on property values, traffic, children's safety and schools in our neighborhood. see below*

The Lawrence Planning Department has laid out a solid plan for adding a single-family Langston Heights Subdivision into the existing Diamondhead Subdivision creating a flow of single family homes into an existing single family neighborhood. The addition of high-density development causes high density traffic to flow into the existing low-density neighborhood. The Lawrence Planning Department exercises good design in neighborhoods that include high-density developments close to main arteries to the city and single family low-density located on the interior of a development. The revisions to Langston Heights do not show good design.

It is with great concern for our young children, our property values and the quality of our neighborhood that we ask you to defer from the revisions to Langston Heights Development.

Sheri and Mark Crabtree
820 Andrew John Drive

*Using the "Preliminary Plat Langston Heights" and the "Concept Plan Langston Heights" document, a summary of the change in units follows:

Number of Lots Block	Preliminary	Concept	
1	1	62	
2	21	36	
3	24	48	
4	4	8	
5	3	3	
6	8	8	
	61	165	270.49% increase

December 03, 2012

Ms. Day,

I'd like to take the opportunity to express my concerns about the proposed rezoning of the Langston Heights area in West Lawrence. My chief concern with the rezoning of the area is the multi-family units that are proposed at the site.

My family currently resides at 6201 Crystal Lane which is in the Diamondhead Subdivision. We have lived at this location for nearly two years and have thoroughly enjoyed the quality of life in our home. After much domestic debate we chose this location to build our new home based on a variety of different factors. First, the neighborhood is in a very close proximity to Langston Hughes School where our children would be afforded the opportunity to walk safely to school on a daily basis. Second, we researched the original platting of the area west of our home and it was all originally platted and zoned for what we thought was low-density residential dwellings. Finally and most importantly, the character and makeup of the neighborhood itself drew us to this area. As soon as we selected our site we were invited and included in neighborhood picnics, parades, parties and Easter-egg hunts. Our children routinely play with other neighborhood children in the area and are constantly riding bicycles and crossing streets in the neighborhood.

I feel the rezoning of this area to include multi-family living will dramatically increase the amount of through traffic flow through our neighborhood streets. The main traffic flow of these 165 units will run past many residences and sidewalks that children utilize on a daily basis. I don't believe rezoning this area would contribute to the greater good of the area or the community. I would strongly disagree with anyone who believed otherwise.

I'd like to comment on a couple of points:

First, when the area was rezoned from Agriculture District (A) to Duplex – Residential District (RM-D) in 2005 there was concern expressed from Planning Commissioner Haase that he would support the motion but was "losing his appetite for RM-D zoning because it had been abused in other parts of the community." Was Commissioner Haase a visionary as to what was on the horizon for this area with his comments? I would agree with Commissioner Haase that the placement of muti-dwelling living with the only means of access through a residential neighborhood is an abuse of what those neighborhoods are designed to provide. The traffic that will come with the rezoning will diminish the quality of life and safety of those in our neighborhood. In that very same planning meeting in 2005, Betty Lichtwardt with the League of Women Voters expressed her concern for pedestrian access to the school. I feel her concerns voiced in 2005 echo loudly today.

Second, I do not feel that rezoning an area to include 165 multi-family units with the only access being residential, neighborhood streets is a common practice in the city. With the current proposed plan of the area, the only access to these units would be on Palisades Drive or Crystal Lane. The precedent of

accessing multi-family units through established residential neighborhoods is not one I am aware of at any other area of the city. Generally, it is my understanding that higher density zoned areas would be zoned close to larger artery and collector streets. This planned area would be close to neither. This plan would also direct this traffic through a residential area that is frequented by our children whom walk to school daily.

Finally, I struggle with the necessity for the re-zoning of areas in Lawrence to multi-family if there are any concerns on what effects it may have on the surrounding residents and neighborhoods. A recent article in the Journal-World noted a developer whom recently pulled plans to construct an apartment complex off of 31st Street. The developer was quoted "We were very excited about that market at one time, but we have tempered that excitement." According to this developer, there is capacity in the muli-family living market in city. Why would it be in the best interest of city to re-zone the area where is could have an adverse affect on an already thriving neighborhood community? I unwaveringly feel this development would have an adverse affect on the neighborhood in which we reside.

I want to be clear that I understand the importance of thoughtful expansion and development of neighborhoods in our community. I however believe that multi-family living units should be concentrated in areas that are easily accessible to major thoroughfares. Rezoning this area would accomplish just the opposite. The amount of traffic this action will generate would be a danger to the residents and children of our neighborhood.

I do appreciate the opportunity to comment on this issue. I would ask that you please include these comments for the Planning Commission to review. Thank You for your time.

Sincerely,

Ryan, Tiffany, Lillian and Jackson Fike

6201 Crystal Lane

From: Rick Hird [mailto:rhird@petefishlaw.com]
Sent: Thursday, November 29, 2012 8:21 AM
To: Matt Gudenkauf
Cc: Scott McCullough
Subject: RE: Langston Heights Rezoning

Dear Matt,

This will confirm that I have received and read your letter regarding the zoning of Langston Heights. I truly appreciate your input in the process. I have copied Scott McCullough on this email so he can circulate your email to the Staff and all of the Planning Commissioners.

Rick

Richard W. Hird
Petefish, Immel, Heeb & Hird, LLP
842 Louisiana
P.O. Box 485
Lawrence, KS 66044
785-843-0450
785-843-0407 fax

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From: Matt Gudenkauf [mailto:mattgudenkauf@gmail.com]
Sent: Wednesday, November 28, 2012 8:52 PM
To: Rick Hird
Subject: Langston Heights Rezoning

Dear Richard:

We are writing to ask you to consider deferring the rezoning of Langston Heights (Parcel west and south of Diamondhead) from UR to RM12 and RM12D in order to provide for a more agreeable development. The increase in traffic, decreased in property values and changes to the original 2006 plat are issues that need to be addressed.

The new plan proposal is to build a total of 165 housing units on 61 lots. With only 2 streets (Crystal Lane and Palisades Drive) servicing current and additional units, traffic will be heavier than originally planned for these two streets. This plan shows this with the numerous traffic calming devices located on the expanded Crystal Lane. Crystal Lane and Palisades were originally developed as a lead in to other single family housing, not medium density apartments. Typically, medium density housing is at the front of subdivisions, leading farther in to low density housing, this proposal is the exact opposite of that. Palisades already has issues on school days due to drop off and pick up from Langston Hughes Elementary School; it can't handle the additional traffic flow. Even when the future "proposed" access to 15th street and George Williams Way get added, traffic from this development will still be pushed through low density housing in nearly every direction. The Horizon 2020 plan specifically discourages this action with numerous aspects outlined in the bottom of this letter.

Should this plan be approved, due to the direct impact of the medium density housing, property values in the Diamondhead subdivision will decrease. When we built our home back in 2008, we knew additional low density housing would soon follow to our west. This was based on the Planning Commission approval in January 2006 of single family homes in the Langston Heights area. We never would have built our new home

in this location had we known apartments and duplexes were to be built, and future potential home owners will feel the same way. We all based our decisions off this approved 2006 zoned plat for single family homes.

As you will see at the December 10th meeting, the Diamondhead subdivision is a unique neighborhood with a large population of kids. Traditions such as our July 4th parade, Easter egg hunts, neighborhood cookouts, and the general family feel among neighbors will be lost if this proposal passes.

Please see to it that this proposal does not go any further without modifications. We are not against the expansion of our subdivision to the west, we are against the medium density zoning; we would happily approve of low density zoning, which would expand on this great neighborhood.

Thank you for your time

Matthew and Erica Gudenkauf
6204 Crystal Lane
Lawrence, KS 66049
(785)830-9802

Horizon 2020 Plan that relate to this proposal:

Low-Density Residential Land Use

GOAL 3: Neighborhood Conservation (page 5-15, 5-16)
- Policy 3.3: Encourage Compatible infill Development
- Policy 3.4: Minimize Traffic Impact through Neighborhoods

GOAL 4: Criteria for location of Low-Density Residential Development (page 5-17)
- Policy 4.2: Protect Areas Planned for Low-Density Development

GOAL 5: Create a Functional and Aesthetic Living Environment (page 5-19, 5-20)
- Policy 5.5: Ensure Convenient and Logical Street/Road System Design

Medium and higher Density Residential Land use

GOAL 1: Criteria for Location of Medium and Higher Density Residential Development
- Policy 1.3: Identify Suitable Sites (page 5-23)
- Policy 1.5: Ensure Adequate Infrastructure (page 5-24)
- Policy 1.6: Consider Access (page 5-24)
- Policy 1.7: Adhere to Designated Land Uses (page 5-24)

GOAL 2: Create a Functional and Aesthetic Living Environment
- Policy 2.6: Consider Residential Density and Intensity of Use (page 5-26)

GOAL 4: Transportation Considerations (page 5-30, 5-31)
- ALL OF THEM

November 27, 2012

Sandra Day, AICP
City/County Planner
6 East 6th street
Lawrence, KS 66044

RE: Langston Heights Addition
Planning Commission Agenda Items on December 10, 2012

Sandra,

We are writing to express our concerns associated with the four items on the Planning Commission agenda for December 10th for the Langston Heights development. We are responding to the material that has been currently submitted to the City for the application (application, plat, concept plans, etc.) The applicant and developer are holding a meeting with the neighborhood, but have scheduled this meeting (December 3rd) with limited to no time to be able to respond prior to the issuance of the staff report. We are submitting this prior to that meeting in order to be reviewed prior to the completion of the staff report and for inclusion on the packet to the Planning Commission.

The comments below represent the views and opinions of many within our neighborhood concerning the proposed zoning request and preliminary plat for the Langston Heights Addition. While many of us would welcome the proposed land to remain an open area, we all recognized that it would be developed as an extension of our neighborhood. Many of us, and those specifically on Palisades Drive and Crystal Lane, reviewed the current plans for this parcel of land prior to purchasing our home. While often there is limited knowledge of undeveloped area adjacent to a development, this was not the case with our neighborhood. There was a plat developed and approved by the Planning Commission and City Commission for this parcel of land. While the plat was never signed or recorded, it still provided a glimpse to the intentions of the land owner of their vision for this parcel of land.

We have attempted to address each specific agenda item individually but many of these issues crossover between items. Where this occurs we have indicated reference notes as appropriate.

PP-12-00228 Preliminary Plat for Langston Heights Addition: There are many concerns with the proposed plat and the proposed layout and land uses. Many of these concerns could be addressed should the land to the north and south of the proposed area be developed prior to or at the same time as this development. Obviously this is unrealistic to assume and the plat must be considered as development would not occur for some time to the north or south. Items of note include:

1. This is the second plat filed for this parcel of land. The first was approved in early 2006. This plat indicated 67 single-family and 18 duplex residential lots. While it is our understanding that is was never fully executed, it still provides reference to an alternate concept by the same land owner for this land.
2. Horizon 2020 indicates this area to be low-density residential. The application indicates that the Lawrence future land use map does not specifically designate a land use for this property. This is incorrect. The Nodal Plan for the Intersection of West 6th and KS 10 address this area as low-density. We understand that the project, as it relates to density, is using the entire land area to calculate the number of units per acre. We would caution the continued use of this method as it has recently caused conflicts in other areas of our community.

3. The plat indicates the extension of two local residential streets (Palisades Drive and Crystal Lane.) These two streets will be the only access point into the new development. Section 20-204 (e) of the Land Development Code indicates that "RM Districts are intended for implementation along Residential Collector, Collector and some Arterial Streets." Neither of these streets meets this requirement.
4. Renaissance Drive in the 2006 plat, the 2012 plat draft and on the concept plan (submitted by the applicant) all have indicated that this street would be a collector street. The current plat has changed this street to a local street. Should the RM zoning designation remain then the district should be accessed in accordance to the Development Code and Renaissance Drive shall remain as a collector street.
5. Renaissance Drive appears to be the proposed "connector" street from George Williams (via Ken Ridge) to the north and Bob Billings Parkway to the south. The use of this street in this manner is logical and would serve as a residential collector street for these neighborhoods and future development. As noted above though, it is unknown when this street would be completed and until such time, would not serve as a collector street. Regardless, this street should remain as a collector or residential collector street,
6. Should the RM zoning designation remain then a condition to the plat should be added that, until such time that Renaissance Drive is completed to either the north or the south, the RM zoning district should **not** be allowed to be developed. This would allow the collector street to be developed as required by the development code.
7. The request for variance on the sidewalks should be denied. While regulation may have changed from the time the adjacent land was developed and sidewalks were not installed on both sides of the local streets, this should not prevent the owner from providing walks per the Development Code. Sidewalks add to the "live-able" character of a neighborhood. In addition, as a neighborhood with many young children, sidewalks on both sides of a street eliminate the need to cross the street as often. Most of the children in this neighborhood enjoy the opportunity to walk to elementary school, and with the increased vehicle traffic of the development, the sidewalks on both streets would add to the safety of the neighborhood.
8. A traffic calming device, similar to the roundabout at Crystal Lane and Big Sea Drive, should be installed at Palisades and Big Sea Drive. While there is a speed hump in the mid block of Palisades this device does not appear to reduce the speed of vehicles in the neighborhood on this street or the adjacent streets.

Item Z-12-00220: Rezone to RM12D

1. RM Districts are intended for implementation along Residential Collector, Collector and some Arterial Streets. As noted above, neither Palisades Drive nor Crystal Lane qualifies as these street types.
2. The medium density zoning will be accessed through an existing low-density residential area and a proposed low-density residential area. There are no recent developments in Lawrence where this occurs. All other RM12 zoning is accessed from an adjacent collector street and not through a lower density residential neighborhood on a local street.
3. This zoning will pre-determine a portion of the land use to the south. The RM12D zoning adjacent to the southern edge will pre-determine RM12D zoning adjacent. The application specifically states, in Item 2, that this zoning change will develop "precedent for adjacent vacant properties." It can only be assumed, given the relationship of the developer of this parcel of land to the land owner to the south, that it is the intention to continue medium density residential to the south. This is counter to the future land uses indicated in Horizon 2020 for low-density residential.
4. Item 3 in the application indicates that the rezoning "will pose no detrimental effect to the nearby properties." This statement is unfounded. The increased traffic with medium density zoning and the unknown level of quality of the development could directly impact the adjacent property uses and land values. Unless the owner proposes restrictions to the type of development that could occur, materials

5. If this rezoning is to be considered in concert with the other two rezoning applications then a Planned Unit Development (PUD) should be required to ensure the type of development proposed with the plat is the actual development.
6. Item 6 of application indicates that "denial of this application will perpetuate the vacancy of this land." This statement is unfounded. This is the second plat for this portion of land by the same developer. There are obvious multiple uses for this parcel of land. Denial will not perpetuate vacancy. It is obvious that this parcel will be developed, but the question is whether the medium density zoning is appropriate.

Item Z-12-00231 : There is no opposition to Item Z-12-00231 to rezone land from UR to RS7. This land change is the expected zoning for this parcel of land considering the existing adjacent land uses. This zoning change is also expected as it represents the intention of a plat developed by the same land owner, Langston Heights L.C. in 2006. This plat was a document many of us referenced prior to purchasing our home.

Item Z-12-00232: Rezone to RM12

1. Many of the issues for this development are identical to the issues associated with the RM12D rezoning. Please refer to items 1, 2,4,5, and 6.
2. This zoning will pre-determine a portion of the land use to the south. The location of Renaissance Drive and its connection to the South, along with the RM12, will predetermine the land south of this development and west of Renaissance Drive to continue the RM12 or higher zoning designation. This, coupled with the RM12D predetermined zoning, will raise the density from low density residential to medium-density residential. This is counter to the indication of the Horizon 2020 land uses for this area. The application specifically states, in Item 2 that this zoning change will develop "precedent for adjacent vacant properties." It can only be assumed, given the relationship of the developer of this parcel of land to the land owner to the south, that it is the intention to continue medium density residential to the south. This is counter to the future land uses indicated in Horizon 2020.
3. Item 3 in the application indicates that the rezoning "will pose no detrimental effect to the nearby properties." This statement is unfounded. The increased traffic with medium density zoning and the unknown level of quality of the development could directly impact the adjacent property uses and land values.

We apologize for the length and depth of this letter, but the quantity of items to be considered and the complexity of each issue requires a proper response. We look forward to being able to hear from the applicant and owner at their presentation next week and will respond accordingly should the situation dictate.

We hope that you consider these issues prior to the completion of the staff report and, as previously noted, include this correspondence in the packet to the Planning Commission.

Respectfully submitted,

Andy and Debbie Pitts
6212 Palisades Drive

From:	Michael Whittlesey
To:	Sandra Day
Subject:	Langston Heights
Date:	Thursday, November 29, 2012 10:41:55 PM

Dear Sandra:

I am writing in opposition to the possible re-zoning of the Langston Heights development from a low density plan to a high density plan. The ramifications of this re-zoning would drastically effect the entire community and safety of the Diamondhead Development and the Langston Hughes Elementary school. The increase in traffic on Crystal lane and Palisades Dr that would come with the high density development would be approximately an additional 400 cars on streets that directly feed an elementary school. The majority of the residence in the Diamondhead Development built in the area under the knowledge that the original zoning of the Langston Heights was a low density plan. We all built in the area with the idea that it would remain a safe place to raise our children and with easy and safe access to Langston Hughes Elementary. Palisades Dr access to Diamondhead Dr is the main route that parents take daily to drop of their children to LH Elementary. Diamondhead Dr has become a one lane road as parents, in not only the Diamondhead Development but from other neighborhoods, use the access that Diamondhead Dr has to Langston Hughes Elementary to drop of their children. The design and road infrastructure of the Diamondhead Development was not built to handle the additional increase in traffic proposed with the re-zoning of the Langston Heights Development to a high density design. The infrastructure of the road might be able to handle the increase traffic but the density of housing projected in the traffic planning of the roads was for single family homes in the adjacent land use. Diamondhead development has sidewalks on only one side of the road as the design of the neighborhood and future development would not have the traffic load that would require sidewalks on both sides of the road. We all knew the Langston Heights would be developed but as a low density project with additional single family homes. Please consider the safety, quality of life, and infrastructure ramifications to all three communities Langston Heights, Diamondhead and Langston Hughes Elementary that this re-zoning would cause.

My wife and most in our immediate community actually commute out of Lawrence daily. However, we choose to build in this development because of the current residence, the sense of community, and the safety of the current planning of this area. We looked into the future planning of this development and where told it was zoned as single family to continue the continuity of the current development. As parents of 2 young children this was the ideal neighborhood considering safety, community togetherness, other children to play with and the closeness of schools. Rezoning this plot would drastically impact the safety of all these children playing in the area.

Thank you for your time and service.

Michael Whittlesey
6209 Crystal Lane
Lawrence KS

Sent from my iPad

Sandra L. Day, AICP, *City/County Planner*
Planning Division
P.O. Box 708, Lawrence, KS 66044
Office (785) 832-3161 | Fax (785) 832-3160
RE: Land plan Engineering Informational Session December 3, 2012
Langston Heights Development
December 5, 2012

Dear Sandra Day:

As a member of the Diamondhead subdivision, my husband and I are very concerned by the recent application to change the Langston Heights development. When we purchase our home, we were told that the design of the subdivision to the west would be low-density housing similar to ours. We want to thank the Lawrence Planning Department for their hard work in developing our neighborhoods and their insightful design of planned unit developments. We hope you will understand our concerns for changes in the current plan.

The 270% increase in family units to the new Langston Heights subdivision creates an increase in pressure on property values, traffic, children's safety and schools in our neighborhood. We feel that the proposed zoning does not guarantee any specific types of building. We feel left in the dark with the current proposal. We want to know if this design has worked well in other neighborhoods in Lawrence. If it has not, why our neighborhood should be a test case for what appears to be bad design.

We are not against the expansion of our subdivision to the west, we are against the medium density zoning; we would happily approve of low density zoning which would expand on this great neighborhood.

It is with great concern for our young children, our property values and the quality of our neighborhood that we ask you to defer from the revisions to Langston Heights Development.

Please include our letter in the Langston Heights Planning Packet!

Thank you very much for your time and consideration!

Sincerely,

Xiufen Bi and Gary Jiang
824 Diamondhead Dr.

From: Andrew Pitts [APitts@TreanorArchitects.com]
Sent: Wednesday, December 05, 2012 12:52 PM
To: Scott McCullough
Cc: markandsheri; lhanna@HNTB.com; ryanlfike@gmail.com; Boedeker; carisa@freshsound.com; tiffanyfike@gmail.com; donherbel@att.net; mattgudenkauf@gmail.com; dltate180@gmail.com; Bradley R. Finkeldei; Crabtree, Mark A.; dustin@freshsound.com; ahanna356@gmail.com; Home; Erica Gudenkauf; bigalcowles@gmail.com; lindalh2009@att.net; nate@lawrencewesleyan.com; shubhshar@gmail.com; mcsparky45@yahoo.com; thepitts@sunflower.com
Subject: December 10th Planning Commission: Langston Heights Agenda Items

Scott-

On behalf of our family and numerous others within the Diamondhead Neighborhood we are requesting consideration of moving Agenda Items No 5A, 5B, 5C and 5D to earlier in the Planning Commission meeting.

We ask this in order to accommodate the members of our neighborhood that wish to speak on these items. A significant portion of our neighborhood are families with children and a significant portion of these children are elementary or younger. While we have coordinated babysitting for neighborhood families at neighbors homes, we have parents that will need to leave to be able to ensure our children are in bed at a reasonable hour, especially on a school night.

This was best illustrated at the public meeting held this last Monday evening at Langston Hughes Elementary school. The meeting started at 7pm and we had approximately 50 neighbors in attendance. By 8pm many needed to leave to be able to attend to their children's needs.

We recognize the importance of the agenda items prior to this item and the amount of public or commission discussion that may occur. But we also believe that it would be a disservice for those that would like to address this item should the discussion linger on the later in the evening.

I want to thank you for your consideration on this item and look forward to the meeting on Monday.

Sincerely,

Andrew Pitts

December 6, 2012

Sandra Day, AICP
City/County Planner
6 East 6th street
Lawrence, KS 66044

RE: Langston Heights Addition
Additional Correspondence for
Planning Commission Agenda Items on December 10, 2012

Sandra,

Please accept the following correspondence to supplement our prior letter. This letter shall address items addressed at the neighborhood meeting held by the applicant and developer and the recently issued staff report.

On December 3rd, the applicant and developer held a neighborhood meeting at Langston Hughes Elementary School to address this proposal. Approximately 50 people were in attendance, and a majority of these were residents of the Diamondhead neighborhood. It was a very spirited discussion of the issues. There were many comments by the developer of opening a dialogue with the neighborhood of their concerns and issues with this proposal. We all welcomed this proposition. From the start of this process we have all supported development; the concern has, and continues to be, the type of zoning that is proposed. Unfortunately no dialogue has occurred.

Repeatedly the developer spoke of involving the neighborhood in decisions. They indicated the neighborhood would have a say in covenants associated with the multi-family. Unless this discussion occurs prior to the re-zoning then there would be not guarantee of compliance with this statement. Often the applicant and developer contradicted themselves in statements throughout the evening.

Items of note include:

1. The applicant continually stated that this development was in compliance with Horizon 2020. This caused confusion since their application stated that the future land use map and Horizon 2020 did "not specifically designate a land use for the subject property." The staff report correctly identified that the West 6th / K10 Nodal Plan addresses this area. But the staff report seems to interpret the document broadly, only referencing certain sections and failing to reference others.

2. The Nodal plan specifically addresses the Diamondhead and Langston Heights area. The nodal plan indicates that "this intersection is envisioned as a multiple-use activity center of low-, medium-, and high-density residential development; commercial, office, research, and industrial activities; public, semi-public, and institutional uses; and parks, recreational, and green/open space opportunities." It further states for the Southeast Corner, that the corner provides an opportunity for a variety of residential, commercial, and office activities. This nodal plan "also designates the majority of its residential uses appropriate for low-

density, **single-family** neighborhoods with a **small** portion considered appropriate for medium-density residential development. This medium-density development serves as primary buffer between single-family neighborhoods and commercial activities." It further states that "This nodal plan anticipates more low-density, single-family residential development in the areas surrounding this corner and therefore much of this corner was designated appropriate for similar development to maintain compatibility of surrounding land uses." The staff report quotes specific sections but fails to address the statement "appropriate for low-density, single-family neighborhoods." It only constantly quotes "a mixture of housing types… should be encouraged." We do not dispute the need for a mixture of housing types, but the question is whether this proposal is the correct mixture or the correct location? The developer and applicant admitted at the neighborhood meeting that this type and mix of development "has not been tried or developed in Lawrence." Why is this established successful neighborhood the place to try this experiment?

3. The staff report also discounts the traffic issues associated with the increased density that have been addressed by the neighborhood and accepts the traffic report by its "data and numbers". City development documents discuss the required need for neighborhood connectivity. It states that "streets within the various neighborhoods of this area shall be connected to each other. …Connected streets provide multiple route options for vehicles which can help eliminate the choke points that are created when cars are forced onto a limited amount of streets that carry traffic in and out of neighborhoods." We would concur with this statement. Without the complete development of the north/south road (Renaissance Drive) then all of the development traffic would be forced onto two local streets. The applicant has produced a traffic study that states the traffic counts are within the City requirements. We do not argue this fact. But neither the traffic study nor the staff report takes into account the impact of a neighborhood elementary school and its dramatic impact on the traffic pattern.

   Every morning and afternoon Diamondhead Drive becomes a double loaded drop off and pick up location. Children must maneuver between parked and slowly moving vehicles. The applicant, at the public meeting, stated that this issue was a minor "blip" in the traffic study. This "blip" has been one of the primary focuses of the Langston Hughes Site Council for numerous years. The site council has pushed for additional crossing guards, no parking restrictions, a school zone, and, most recently, added a fence to help limit pedestrian traffic from Diamondhead. Issues still persist.

   With the additional traffic associated with the increased density, the poor planned lack of sidewalks on both sides of the street (and specifically on the side of the street adjacent to the school,) this "blip" could be devastating if a child is injured because of this poor planning. Traffic studies, numbers, computer simulations will not depict the accurate scenario that we see every day in our neighborhood. The additional traffic associated with the increased density will compound this issue. As local traffic avoids the Diamondhead / Harvard round-a-bout at various times of day, all traffic will be focused to Ken Ridge Drive. This will create a significant choke point at this intersection.

4. Much in the staff report speaks of the desire of a mix of housing types within each neighborhood. We would support this guiding principal. The current zoning to the east of the Diamondhead development is an excellent development of RM12 Duplex homes. To the north of the neighborhood is existing zoning of RM24. This will provide a transition from the RS7 single family development to the future planned office / commercial development to the north. It has been discussed by the applicant and in the staff report of the need to "buffer" K10 with higher density multi-family housing. It has been discussed by the applicant the need to buffer the RM24 to the north. Other solutions are viable solutions to this proposal and examples can be found in the West of K10 Plan.

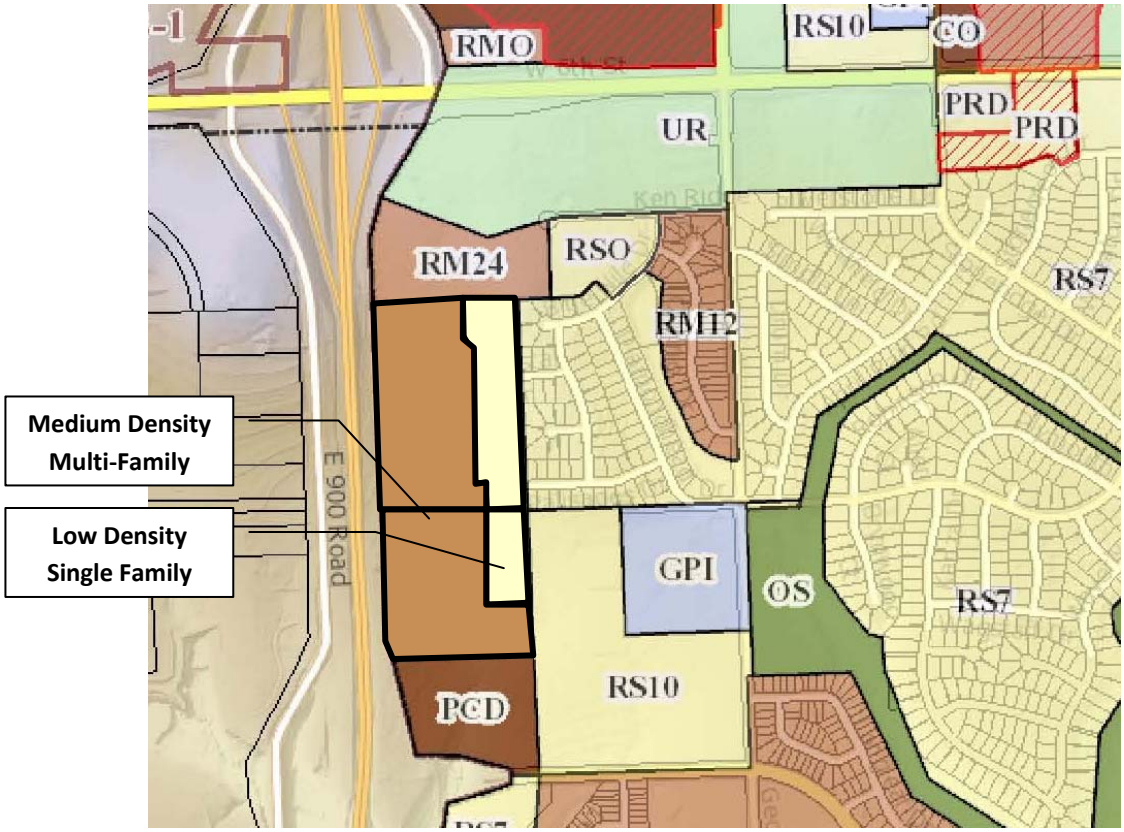
The staff report suggests that a variety of "step down" developments are required to appropriately transition the single-family development to the north and the west. As one of our most recent planning documents, the West of K10 Plan provides current planning ideas and guidelines for all new development in this area. It presents the concepts of "Traditional Neighborhood Design" (TND) versus the conventional land use development concepts. The document speaks about the challenges that arise when placing new developments adjacent to existing development. "Compatible land uses should be located adjacent to each other…" This document also presents concepts on buffering the K10 corridor counter to the proposed development. The concept illustrates an "outer" road concept with a green space to buffer commercial and residential development to K10. Per the SLT/K10 Transportation Corridor Overlay, this green space would be landscaped to screen the residential development. This method, a part of the 2006 plat, should be explored prior to acceptance of this request.



5. The applicant states in the application that the approval of this zoning will "set a developmental precedent for adjacent vacant parcels." The adjacent parcels indicated refer to the land to the south of the proposed development. Since the applicant specifically references this parcel and indicates that this will set a precedent, then the West of K10 Plan should be used as a guiding document as it addresses this parcel of land. This plan, adopted in 2009, is one of the latest planning documents and combines many of the current planning guidelines. Again, this document indicates the land south of the proposed development to be low-density development.

   As the applicant has indicated, the proposed development will be setting a precedent for future land uses. Should this be the case, then a majority of the land uses to the south will be predetermined to be multi-family, medium density land uses (see map below). This is supported by the proposed location of the Renaissance Drive as the applicant would more than likely propose multi-family between the road and K10. The proposed location and its connection point to Bob Billings will encourage medium density development. The map below begins to indicate the pre-determined extent of the southern land and, the quantity of medium density zoning, and is counter to the current adopted land use documents for this area.

The applicant and developer indicated in the neighborhood public meeting that they are currently in negotiations to control the use of the southern land. This statement reinforces the land uses will be pre-determined with the approval of the northern land uses.



6. Finally, the developer continually spoke at the meeting that this was "the only financially viable project for this land." This argument has been tried and failed before in Lawrence. The excuse of their inability to "make a project financially viable" should not be an excuse to discount the approved planning guidelines and documents. We all recognize the economic climate that our City and area have been in the last few years, and we would welcome a change. But this should not be an excuse to discard our planning principals and develop whatever the developer wants on this land.

We are not opposed to development. We encourage and want development on this land. The correct type of development will enhance our neighborhood and community. The correct type of road network, with connections to the north and south, would enhance and correct traffic issues. We would welcome an actual dialogue with the applicant and developer to discuss a compromise development.

We request, on all items associated with the Langston Heights Development, a deferral so that a dialogue may occur between the City, Developer, Applicant, and Neighborhood.

Respectfully submitted,

Andy and Debbie Pitts
6212 Palisades Drive

Diamondhead Residents Opposed to Langston Heights

Presented to the

City of Lawrence
KANSAS

December 10, 2012

History

The residents of the Diamondhead neighborhood in west Lawrence have united in our opposition to the rezoning required for proposed Langston Heights development. Some 35 families representing more than a hundred residents have signed on to lobby the Planning Commission.

The following pages detail our concerns. We start with our general belief that the area in which we chose to build and purchase our homes was in a single family neighborhood. The area's first plat, approved in 2006, indicated 67 single-family and 18 duplex residential lots. The new application proposes a 94% increase in dwelling units from the initial 2006 plan due to 24 four-plex units and 62 row houses.



The construction as proposed would require egress through two residential streets - Palisades Dr. and Crystal Ln as Renaissance Dr. would not be completed until some unknown future date. The developers themselves recognized that this would be the first instance in Lawrence where non-residential traffic would be forced through a residential area. Brian Sturm, spokesman for Landplan Engineering, likened it to an experiment at the December 3, 2012 informational meeting. The residents of this neighborhood would prefer not to be test subjects in a developer's experiment, nor should the Planning Commission allow that to be the case.

Horizon 2020

Brian Sturm in addressing the community, repeatedly referenced Horizon 2020 as justification for the proposed rezoning. A review of the document shows the proposed rezoning to be in direct conflict with the comprehensive plan. Horizon 2020 indicates this area to be low-density residential, and the document twice states a need to “Protect Areas Planned for Low-Density Development”.

Landplan Engineering, P.A.

Specific policy statements within Horizon 2020 counteract the statements and design of Landplan Engineering and the other applicants:

Policy 3.4: Minimize Traffic Impact through Neighborhoods

- The site design of a residential development should accommodate multiple points of access (direct and indirect) with attention to directing vehicular traffic to and from a development to collector and/or arterial street/roads.

Policy 3.6: Promote Neighborhood Identity

- Preserve and enhance the visual and environmental character of existing neighborhoods.

Policy 4.1 Levels of Service

- "The construction of new medium- or high-density residential development or the expansion of existing medium- or higher density residential development shall not be approved until the surrounding street/road system can provide an acceptable level of service"

Policy 4.3

- "Discourage the diversion of traffic to or from medium- and higher-density residential developments onto local residential street/roads through low-density residential neighborhoods."

Horizon 2020 also calls for the sites recommended for new medium-density residential development occupy transitional locations between single-family neighborhoods and office/commercial areas. But there are not areas for commercial development for which the medium-density housing could provide a buffer.

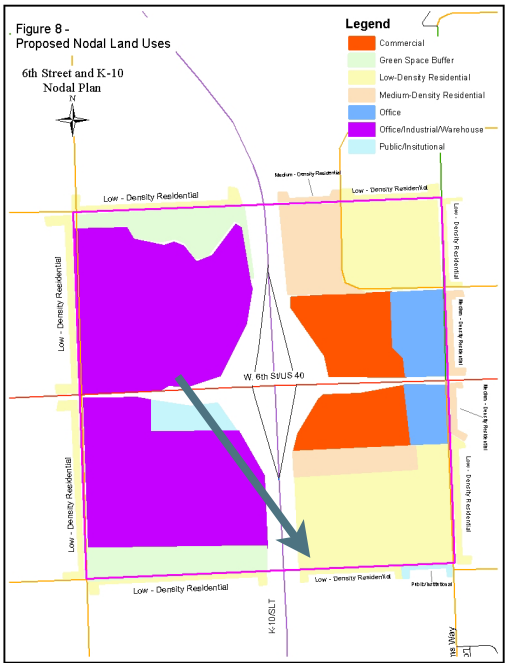
Furthermore, the Planning Commission has previously expressed concerns with this interpretation of the plan:

PC Minutes 11/16/05

“Comm. Hass indicated he would support the motion, but stated that he was losing his appetite for RM-D zoning because it has been abused in other parts of the community.”

6th & K-10 Nodal Plan

Additional planning documents address the area in more specificity. A Nodal Plan for the Intersection of West 6th Street & Kansas Highway 10 (K-10) designates the entire Diamondhead neighborhood as low density residential as detailed in the figure below. The plan defines low-density "to allow for single family dwelling, duplex, and attached dwellings but emphasis is placed on the residential uses." The zoning classifications indicate RS7 and RM12D but includes RM12 under the medium density classification.



The applicant states in the application that the approval of this zoning will "set a developmental precedent for adjacent vacant parcels." The adjacent parcels indicated refer to the land to the south of the proposed development.

As the applicant has indicated, the proposed development will be setting a precedent for future land uses. Should this be the case, then a majority of the land uses to the south will be predetermined to be multi-family, medium density land uses. This is supported by the location proposed of the street (Renaissance Drive) as the applicant would propose multi-family between the road and K10. The proposed location and its connection point to Bob Billings will encourage medium density development, which would conflict with the Nodal Plan.

West of K-10 Plan

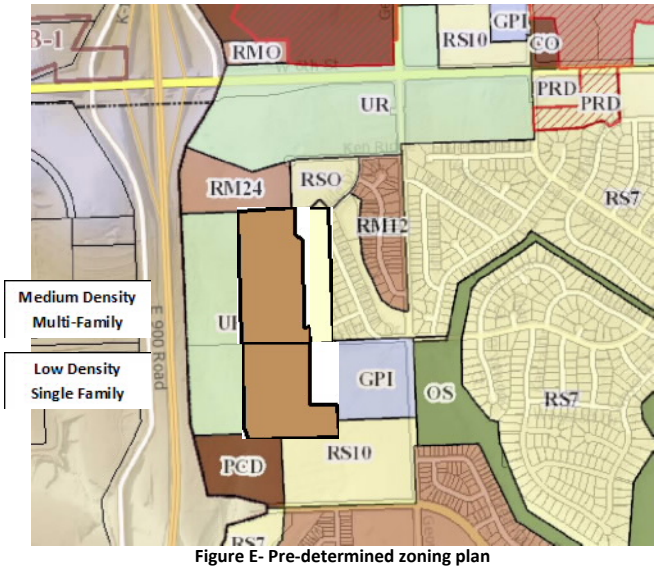


Figure E- Pre-determined zoning plan

The map at left indicates the pre-determined extent of the southern land and, the quantity of medium density zoning, is counter to the current adopted land use documents.

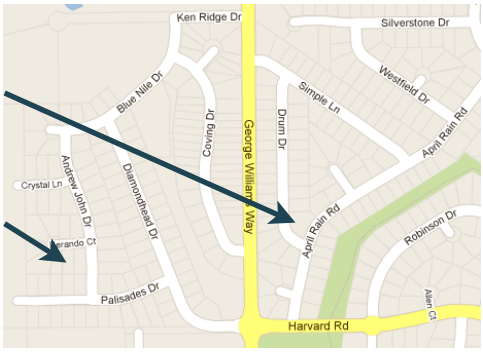
The applicant and developer indicated in the neighborhood public meeting that they are currently in negotiations to control the use of the southern land. This statement reinforces the land uses will be pre-determined with the approval of the northern land uses.

Precedent

Similar requests for rezoning adjacent to the Dlamondhead neighborhood have been denied for all the rationale presented in the preceding pages:

Denied

In Question



PC Minutes 1/25/06

Staff Finding

- The character of the area is a low-density, single family residential neighborhood. The area west of George Williams Way is planned as a mixed development including multiple types of residential development.

Staff Finding

- The subdivision layout and land use requests in the immediate area have conveyed a continuation of established low-density, single-family detached development pattern for this neighborhood. Development around the subject property has begun with an expectation of single-family detached development for the subject property. Property owners have made decisions based on recent previous actions for this area.

Staff Finding

- The property has been planned and platted for single-family development. If the request is denied the applicant still retains the ability to develop the property with single family homes. Approval would double the density and traffic generated[2] from the area.

- The Plan anticipates that low-density residential development will “continue to be the predominate land use in the City.” The most common method to assure compatibility is to extend or continue a particular zoning district. The approved and published RS-2 (Single-Family Residence) District expanded the low-density residential district in this area and was found to be consistent with the generalized land use expectation for residential development in 2004 per Z-4-15-04 and reaffirmed this decision in July 2005 per Z-06-35-05]. A subdivision plat for single-family residential development was approved and recorded as the Green Tree Subdivision in October 2004 as a requirement of the zoning.

- If approved, the result will be to sandwich a small pocket of duplex development along the east side of George Williams Way.

Staff Finding

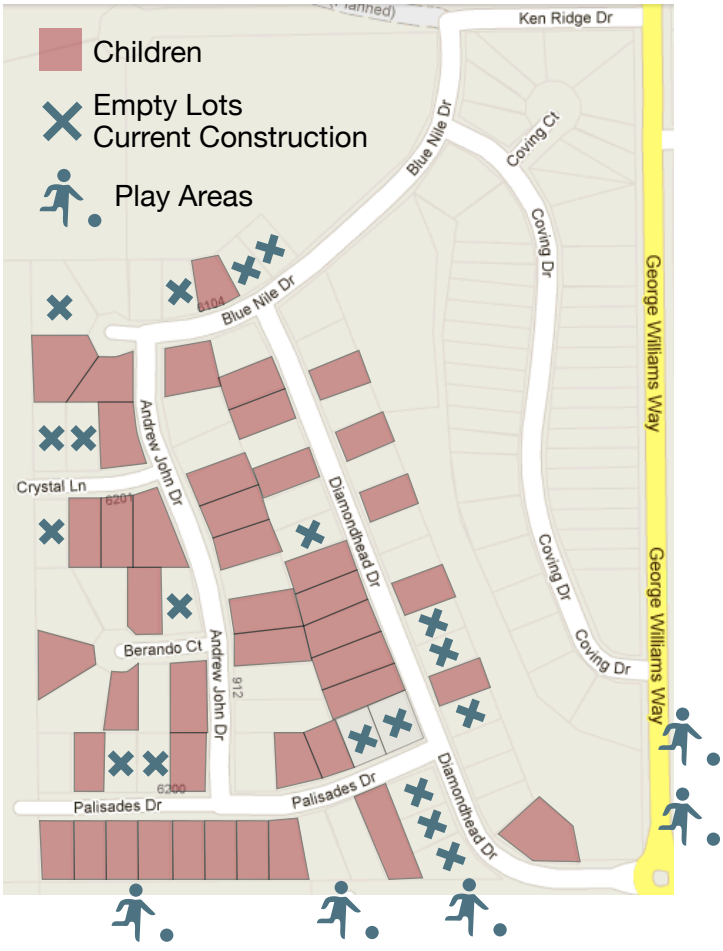
- The proposed request is not in conformance with Horizon 2020.

Traffic Safety

The citizens of the Diamondhead neighborhood are most concerned about the safety and well-being of our children. We believe that increased traffic, especially that of the younger and single type of residents that the developers expect to attract will unnecessarily put children at risk.

As Palisades Dr. and Crystal Ln. will be the only access to the row houses and multi-plexes, it invites the potential for a tragedy. The Diamondhead area is filled with with children of all ages and will be for many years to come.

The applicant references a traffic study that states the traffic counts are within the City requirements. The neighborhood was promised a copy of that study at the 12/3 informational meeting, but to date, it has not been provided. We are concerned the study does not take into account the impact of a neighborhood elementary school and multiple parks and their dramatic impact on the traffic pattern.



The map at left demonstrates the density of children in the neighborhood.

There exist a number of areas in and around the neighborhood where children would play. These have been marked just off the map and include:

- Two Separate Playgrounds
- Sports Fields
- Log Climbing Park
- Walking Trail

Also notice that not a single street in the community is a straight line. Considering the elevation change running along Andrew John Dr. one can envision the problems with sight lines for any driver, let alone one that is not used to driving in a family heavy residential neighborhood with children at play.

Traffic Congestion

In addition to the safety concerns, there remains the question of access. The streets in and around the neighborhood become congested on a daily basis along George Williams and at the Harvard roundabout in the morning and along Palisades Dr. each afternoon and any time there is an evening event at the Langston Hughes Elementary School. The applicant's cite a traffic study with peak times between 4pm and 6pm having adequate traffic flow. The peak times for this area are actually 8am to 9am and 3pm to 4pm due to school drop off and pickup.







The West of K-10 Plan, adopted July 2009, addresses neighborhood connectivity: "Streets within the various neighborhoods of this area shall be connected to each other. … connected streets provide multiple route options for vehicles which can help eliminate the choke points that are created when cars are forced onto a limited amount of streets that carry traffic in and out of neighborhoods."

Similar language is found within Horizon 2020: "Street systems that do not permit connections isolate neighbors and force traffic to concentrate on collectors. This type of street circulation should be avoided."

But the submitted rezoning application would increase residency in the area by 96% over the current zoning while not addressing any of the underlying problems with the current traffic situation. It would force more trips through Palisades Dr. and Crystal Ln.

Infrastructure

The current zoning has meant that the Diamondhead neighborhood was developed as single family with the future plan for a limited number of duplexes only. As such the lighting, sidewalks, crosswalks, signage, and other infrastructure have been implemented based on that plan.

The proposed rezoning for Langston Heights would require retrofitting the existing neighborhood with a variety of items. There currently exists sidewalks on a single side of the streets throughout the neighborhood and no crosswalks except for the roundabout at the intersection of Harvard and George Williams. As illustrated previous, the Diamondhead area is filled with children out at play and such a significant increase in residency and traffic would seem to necessitate changes to the existing layout.

None of the intersections in the community feature traffic signage. The applicants count at least 138 additional trips per hour with the traffic study, but fail to demonstrate its effect within the existing layout. We have already discussed the potential for pedestrian accidents, but the limited sight-lines and lack of any stop or yield signs is an invitation to traffic accidents.

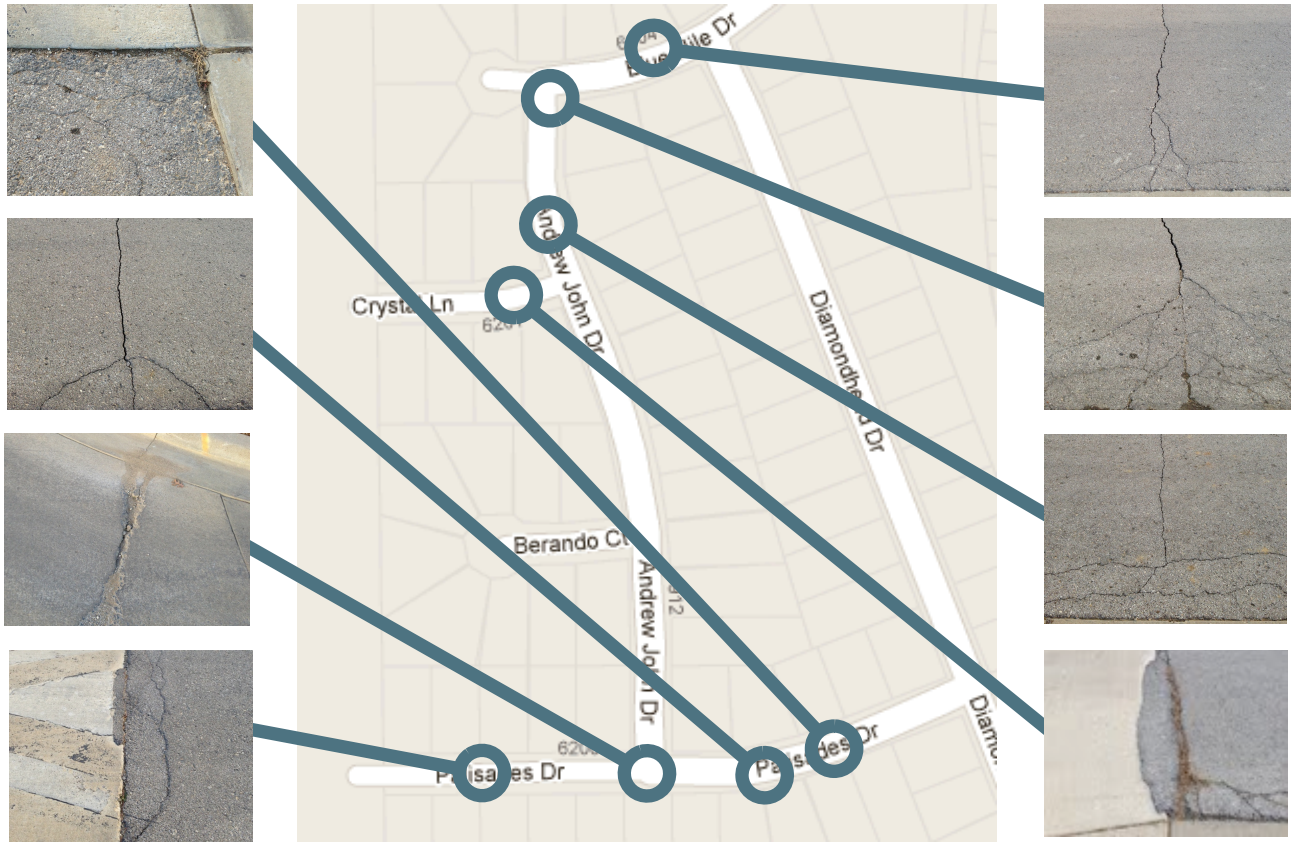
The streetlights throughout the area have similarly been installed for use in single family housing. The inclusion of additional multi-family housing could be cause for increased lighting. The residents of the area however are not keen on the idea of the additional lighting shining through their windows all night.

The roads too have been laid out for use in a low density area. The width in Diamondhead is 23', and with parking allowed on both sides, the streets can easily become unintended one-way's. Surely this is not appropriate for the style envisioned by the applicants.

Construction

In October, 2008 the City Auditor issued a Pavement Condition Summary. In this document both Palisades Dr and Crystal Lane received ratings of poor for the curbs and gutters while the pavement was rated 91.5 out of 100.

Since the issuing of the report four years ago, the conditions of our neighborhood streets have deteriorated. Below are images with their locations indicated on a map. The images shown reflect only a portion of the degradation of both the asphalt and concrete on the two proposed egresses.





It seems reasonable to expect that construction traffic will exasperate this problem. Heavy equipment, trucks carrying forms and supplies, concrete trucks, pouring cranes and endless trips by skilled laborers will serve to further decay the only egress through Palisades Dr. and Crystal Lane.

Marketplace

The applicants expressed at the 12/3 informational meeting that economic forces were the main rationale for changing the current zoning. While this may be true on a national, or even a regional level, a closer examination at West Lawrence reveals a different picture.

A recent headline and story get to the heart of the matter:

LAWRENCE JOURNAL-WORLD

Landlords trying to fill growing number of rental vacancies

There are also more apartment units. Since 2008, 997 apartment units have been built in Lawrence, with 55 built so far this year. Other projects in the works include a seven-story, 55-bedroom building on the corner of Ninth and New Hampshire streets and a 300-apartment complex on Sixth Street and Queens Road. Aug 13, 2011

The last complex mentioned is Hunter's Ridge, which is set to open soon. Plans filed this week by Lindsey Management call for a 630-unit apartment complex adjacent to Hunters Ridge. This area is a mere half mile from Diamondhead

Two additional complexes within a mile- Prairie Commons and Park West Gardens - plus current construction and vacancies on Coving Drive, a block over, would lead one to conclude that the area is saturated with medium and high density housing.

In a report published this September, The National Association of Realtors said that the median time a home was listed for sale on the market was 69 days in July. This represented a significant drop from both July 2011 and June 2012.

The homes in Diamondhead have been selling even faster - measured in weeks, not months. A local McGrew Real Estate agent said this week that "Houses have been moving really well in the Diamondhead area and that market in particular is strong for single family home sales.There was one there that sold in a day."

When you combine weak demand for higher density housing around the Diamondhead area with better than average sales of single family homes, it paints a clear picture. **This market needs more low density zoning, not less.**

The applicants should not be allowed to fundamentally and permanently alter the well-being of this neighborhood based on rationale that is suspect.

Community

The residents of our neighborhood have grown into a tight knit community. As most all neighbors do, we stop to talk with each other when we meet on the street. But more than that, we actively seek out each other's company, and welcome our neighbors into our homes. We plan activities to come together as a group and grow the sense of community that has developed here.



Annual Neighborhood Easter Egg Hunt



Halloween



Annual 4th of July Parade

Throughout the year, we gather together to participate in a variety of seasonal activities. Some are spontaneous as group sledding in the winter, or kids bike rides on sunny days. But many are planned in advance:

- Summer Cookout
- Easter Egg Hunt
- 4th of July Bike Parade
- Trick-or-Treating

We have come to think of the folks here as more than neighbors, they are our friends. We certainly welcome new faces to our neighborhood, however, we fear that the rezoning and subsequent construction of multi-plexes and row houses will alter the nature of the neighborhood and fragment our sense of community. Again we reference policy 3.6 of the Horizon 2020 plan which strives to "preserve and enhance the visual and environmental character of existing neighborhood.

The applicants' target market for their housing are not families, by and large it is younger singles. In addition to all of the issues the development would create with traffic, safety, and living conditions, it would alter the very fabric of the neighborhood we have all bought into.

Allied Entities

It is not just the residents of the Diamondhead neighborhood who oppose this application, there are also a number of groups who feel this would be the wrong move for our children, our families, our neighborhood, and our town. The following have expressed their opposition to the applicant's plan:

Langston Hughes Elementary School
Jackie Mickel, Principal

Langston Hughes Parent-Teacher Organization

West Lawrence Neighborhood Association, Incorporated
Alan Cowles, President

12/4/12

RECEIVED
DEC 06 2012
City County Planning Office
Lawrence, Kansas

Sandra Day, AICP/County Planner, City of Lawrence

RE: Landplan Engineering Informational Session December 3, 2012
Langston Heights Development

After attending the informational meeting last evening at Langston Hughes school, we are writing to ask you to consider deferring the rezoning of Langston Heights (Parcel west and south of Diamondhead) from UR to RM12 and RM12D. The increase in traffic, decrease in property values and changes to the 2006 plat are issues that need to be addressed. The new plan proposal is to build a mixture of single family homes, duplexes, and row houses. With only two streets (Crystal Lane and Palisades Drive) servicing current and additional units, traffic will be heavier than originally planned for these two streets. Crystal Lane and Palisades Drive were originally developed as a lead into other single family housing, not multifamily housing. Palisades already has issues on school days due to drop off and pick up from Langston Hughes Elementary School. Currently three new homes are being built on Diamondhead close to the school. That will mean new driveways from which residents will enter Diamondhead and reduce the amount of room for parents to park when dropping off and picking up children. Then add congestion at the round-a-bout on George Williams. I don't care what your traffic study says, the additional traffic will create safety problems. With undeveloped land to the south and north of the new plan, no one was able to tell us if, and when, any connecting access to the new development would be provided. Even if it did, traffic will still be pushed through low density housing. The Horizon 2020 plan specifically discourages this action.

Should this plan be approved, due to the direct impact of the multi family housing, property values in the Diamondhead subdivision will decrease. When we purchased our home in 2007, we knew additional low density housing would soon follow ot the west. This was based on the planning commission approval in January 2006 of single family homes in the Langston Heights area. We never would have purchased in this area has we known apartments and duplexes were to be built, and future potential home owners will feel the same.

Please see that this proposal does not go any further without modifications. We are not against the expansion of our subdivision to the west, but we are against the medium density zoning.

Thank you,

Edward C. Burrichter
6113 Palisades Dr

Colleen A. Burrichter
6113 Palisades Dr. Lawrence

From: Amy Miller
Sent: Thursday, December 06, 2012 6:54 PM
To: Sandra Day
Subject: Langston Heights Communications

Sandy,

Rod Laing came in today and wanted me to pass along his thoughts on the Langston Heights Subdivision PP and Zoning cases for inclusion as part of the communications on the project. He suggested that a condition could be placed on the multi-family residential zoning west of Renaissance Drive that building permits may not be issued on those dwellings until such time that Renaissance Drive connects to Bob Billings Parkway or the major street to the north. He thought that this would ease potential traffic concerns. Please include the above statement in the communications that go to the Planning Commission as part of their packet.

Thank you,

Amy Miller, AICP, CFM *Long-Range Planner*

From: Brian Sturm [mailto:brians@LANDPLAN-PA.COM]
Sent: Friday, December 07, 2012 2:27 PM
To: Sandra Day
Cc: bobdennsan@gmail.com; douglas.raney@gmail.com; RCJPHJ@me.com; Christopher Storm
Subject: PP-12-00228 - variance withdrawal; temp const esmt

Sandy,
On behalf of the applicant, I would like to incorporate the following two (2) items into the Planning Commissioners' packets for Monday's meeting regarding item #5A, the Preliminary Plat for Langston Heights Addition:

1. The applicant wishes to withdraw their request for a variance from Sec. 20-811(c). While the developer still has concerns about installing sidewalks that would essentially terminate in mid-block locations on Palisades Drive and Crystal Lane, they would rather design a subdivision that conforms to the current Subdivision Regulations and complete street policy. It's my understanding that the sidewalks to be shown on the south sides of Palisades Drive and Crystal Lane can be added to the Preliminary Plat as a condition of approval. It is also my understanding that the applicant can work with the City Engineer on an acceptable way to terminate these sidewalks on the east edge of the subdivision during the public improvement plan review process.
2. The applicant wishes to add, as a communication, the attached letter of intent which upon execution by both parties would allow for the creation of a temporary construction access easement over and across land owned by Alvamar, Inc. The developer understands the concerns neighbors in the Diamondhead subdivision have regarding potential construction traffic traveling through their neighborhood. This agreement, once signed by both parties, would allow that construction traffic to pass entirely across the ground presently owned by Alvamar on the south side of the subject property. With such an access easement in place, dump trucks, excavators and the like could pass from Bob Billings Parkway to the subject property without travelling on City streets, namely those in the Diamondhead subdivision. It is the developer's hope to have this letter executed by the time of Monday evening's PC meeting.

Please let me know if you have any questions regarding the above items.
Thank you,

Brian Sturm, RLA, ASLA, LEED AP
Project Landscape Architect
Licensed in KS

Landplan Engineering, P.A.
1310 Wakarusa Drive
Lawrence, Kansas 66049
v. 785.843.7530
f. 785.843.2410

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www.landplan-pa.com

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Letter of Intent

This letter reflects the mutual intentions of Langston Heights Development, LLC, and Alvamar, Inc. to enter into an agreement to create a temporary construction access road from Bob Billings Parkway to the property known as Langston Heights through property currently owned by Alvamar. Both parties intend for the road to be built before construction begins on Langston Heights. Alvamar agrees to provide an easement for this road and Langston Heights Development agrees to pay for the costs associated with building this road before construction begins. Langston Heights Development also agrees to pay one dollar ($1.00) to Alvamar as part of the agreement, regardless of whether construction begins.

_____ _____

Robert Santee Date

Officer, Langston Heights Development

_____ _____

Robert C. Johnson Date

Chairman of the Board, Alvamar, Inc.

LEAGUE OF WOMEN VOTERS®
OF LAWRENCE/DOUGLAS COUNTY

RECEIVED
DEC 19 2012
City County Planning Office
Lawrence, Kansas

December 10, 2012

To: Lawrence/Douglas County Planning Commission:

Re: Langston Heights, Items 5A, 5B, 5D

President
Melinda Henderson

President-Elect
David Burress

Vice President
Milton Scott

Secretary
Caleb Morse

Treasurer
Marjorie Cole

Directors

Margaret Arnold

Bonnie Dunham

James Dunn

Sally Hayden

Cille King

Ruth Lichtwardt

Marlene Merrill

The League of Women Voters of Lawrence/Douglas County has strong positions on neighborhood planning. We believe that "the primary urban planning unit should be the neighborhood, large enough to support the location of a nursery-elementary school, park...and should reduce to a minimum the use of the private car within each neighborhood." Therefore, we are concerned about the proposal for the multiple family lot configurations of the Langston Heights Addition and their proposed rezoning to RM districts.

We strongly support designing neighborhoods with housing types suited to families with children that are close to elementary schools with pedestrian ways designed for safe walking, and believe that it is very poor planning to locate multiple family housing that is not appropriately designed for this near our schools. Multiple family housing types can be designed for families with children, but must have the needed amenities such as privacy, open space and other facilities to make such units attractive for family life, which this proposed development does not have. Additionally, we support staff's recommendation to deny the applicant's request for a variance to allow sidewalks on only one side of streets.

Because of the effect this multiple family housing would have on the future development of the adjacent vacant land to the south of this tract, it can be predicted that this land also would become multiple family and not attractive for families with children. Because of the proximity that these two tracts have to Langston Hughes Elementary School, we believe that this would be very poor urban planning and a serious waste of potential that these two properties would have to reduce automobile use and utilize these valuable areas for encouraging families to live within walking distance to the school.

We believe that the reason that this type of poor urban planning is not uncommon in Lawrence is because of some serious deficiencies in our Land Development Code and how it leads to the interpretation of *Horizon 2020*:

- The multiple family districts do not specify housing type.
- The only distinction in our Comprehensive Plan (CP) in the designation of residential areas is based on density. Because of the long-standing interpretation of our CP, it is possible to allow all types of multiple family units from tall apartments to duplexes to achieve the gross densities that are typical for detached single family housing. Therefore, the density designation in our CP is not an appropriate prediction of use.
- The CP does not include the same goal that *Plan '95* did, which emphasized that development should be designed for the ultimate user and not to satisfy only the needs of the developer.

These factors eliminate the essential predictability that homeowners need to be able to have confidence in the stability and future of their neighborhoods when they make the substantial investment for living in a community. It tends to reduce the trust needed for a growing and thriving city to attract new residents. We ask that you take these factors into consideration when making your decision on this rezoning request. The future of our city depends on good urban planning. We would look forward to a discussion about making the necessary changes to our Land Development Code and *Horizon 2020* to create the predictability in our neighborhoods that we need.

Thank you for your consideration of these issues.

Melinda Henderson
President

Alan Black, Chair
Land Use Committee

PO BOX 1072 • LAWRENCE KS 66044-1072
league@sunflower.com • www.lawrenceleague.com
www.facebook.com/lwvldc • www.twitter.com/lwvldc

December 7, 2012

Sandra Day, AICP City/ County Planner, City of Lawrence:

RE: Rezoning Langston Heights

We are writing in opposition of the rezoning of Langston Heights. Our main areas of concern are traffic and child safety.

Our family moved to the Diamondhead subdivision 3 years ago. We chose the area based on several factors: the proximity to the elementary school, the community, and that the adjacent Langston Heights would be a similar neighborhood based on the 2006 plat.

Many families built in Diamondhead because the neighborhood to the West would be comparable. Langston Heights' preliminary plat of 2006 contained 67 single family homes and 18 duplexes. The new plat proposed by Land Plan would increase units by 94% in comparison to the 2006 plat. A 94% increase would greatly increase the amount of traffic on our residential streets.

Palisades and Crystal Lane are currently the only two inlets for Langston Heights. The roads leading to Langston Heights are narrow winding routes through residential areas with poor site lines.

At the December 3, informational meeting held by "Land Plan Engineering," Brian Sturm discussed the traffic study that was completed in September of 2012. The study claimed that the residential roads could support the rezoning of Langston Heights. Brian Sturm stated that the traffic study was done during the peak hours of traffic, 4:00 p.m. to 6:00 p.m. A traffic study done between 4:00 p.m. & 6:00 p.m. does not take into account the traffic at the school's dismissal hour. One of the main in-let/out-lets of Langston Heights is adjacent to a large elementary school. A traffic study done during the school's dismissal hour would provide more accurate information. 63% of the current Diamondhead households have children attending school. 63% of our neighborhood will be walking or driving during school arrival and dismissal times.

The sidewalks in the Diamondhead neighborhood would not support the 94% increase of population. Sidewalks in Diamondhead are only on one side of the street. Upon leaving Langston Hughes Elementary my children must cross Diamondhead Dr. (one of the only in-let/out-lets) This is the only intersection that contains a crosswalk. After walking up Diamondhead they must cross it again. They continue their walk home up Palisades, where they must cross Andrew John Dr. to reach the sidewalk. They walk north on Andrew John crossing Berando Ct. until they come upon Crystal Lane. (one of the other only in-let/outlets) To reach home they cross Andrew John Dr. again. Within a 3 block walk home, our children cross the street 5 times, encountering these soon to be heavily traveled roads. The future children of the Langston Heights neighborhood would also be traveling this dangerous route to their new home. Not only are we concerned about the safety of our own children, but the safety of the new families that will move into the Langston Heights development.

We love living in Lawrence and we love it because it gives us the small town feel we grew up with. We grew up in a town of 1500 where it was safe to walk down the street and everyone treated you like family. Our family has been searching for this sense of community for a while now and finally found it in Diamondhead. Our little neighborhood of all ages come together for an annual Memorial Day BBQ, 4th of July Parade, Pumpkin Carving, and Easter Egg Hunt. Children ride bikes, enjoy a game of basketball, and play tag outside. Neighbors help transport children, share recipes, help with heavy lifting, cook you meals when you're down, or let out the dog when you're away. Increasing the units by 96% from the 2006 plat to the proposed rezoning would only erode at the community we've created.

Lawrence is nationally known as a highly desirable community to live in. We need to continue to reflect on what drives people to Lawrence. Is it the multiple options of housing provided in a development, or is it the feeling of community we ALL provide?

Thank you for taking the time to read our concerns. We appreciate the opportunity to express our thoughts in the matter.

Sincerely,
Carisa, Dustin, Avery, & Sydney Stejskal

From: lauri di routh [mailto:lauridi@hotmail.com]
Sent: Monday, December 10, 2012 8:52 AM
To: Sheila Stogsdill
Subject: Comments for planning commission meeting 12/11/12

Ms. Stogsdill,

Please accept these comments for tonight's Planning Commission meeting. I respectfully request that these be shared with the Planning Commissioners and staff, and be included in the public record for tonight's meeting.
Please note that my comments herein are not intended to represent any organization or group. I offer these comments solely as an individual citizen and taxpayer.

RE: Long range planning work program, as submitted to the planning commission by Scott McCullough in November 2012.
I wish to express my concern about the City and County opting to postpone implementation of the environmental chapter of H2020 to a work schedule beyond 2013. This plan was crafted over the course of several years, and both citizens and the Sustainability Advisory Board play a role. I am troubled that this plan is being mothballed, at a time when we need it most. Given the current drought and its impact on both the built and natural environment, tending to our community's natural resources is more important now than ever. I ask that the PC make implemenation of the environmental chapter of H2020 a priority for 2013.

RE: Variances requested for the site plan and plat of the proposed Rock Chalk Village Park
I am troubled to see that the developer is requesting variances to the street connection requirements of the code, and also the sidewalk requirement of the code. Both of these items are integral to the City's Complete Streets plan, which was recently approved. While I appreciate the developer's stated intention of preserving trees on the property, without an inventory of said trees or any requirement for monitoring of tree preservation or removal during project construction, using trees as an excuse to minimize developer costs seems a bit disingenuous. In regard to street connectivity, it seems to me that allowing George William Way to remain a dead end street at the north end creates a bottleneck for the City's future rec center, and may create massive traffic problems on the property when large events are held at the KU facilities. At the very least, this variance should be reviewed and vetted, first, by traffic planners, to assess its impact. I believe that the requirements for sidewalks on both sides of the street should be upheld, and the developer's request for variances denied.

RE: Diamondhead Neighborhood Comments
I support the Diamondhead Neighborhood's right to preserve the nature and safety of their neighborhood. I ask that the PC reject the Landplan plat proposal as it would greatly expand the development of duplex and multifamily residential dwellings in this area, to the detriment of the existing neighborhood.

RE: planning commission packet structure

In reviewing the packet for this week's meeting, it is noted that the packet size of 57 MB makes it very difficult to load and open on a standard home computer. I had several people tell me that they had not even tried to do so, for fear that it would crash their computer system. While I understand that the files therein are large, I would like to see the PC use the City Commission's method of transmitting meeting information, using imbedded, topic-specific links on the agenda. This way, individual topic information can be opened and reviewed without the need to download the entire packet of 50+ MB of information. By breaking the packet up into managable chunks, it will make it easier for the public to access needed information and share with others who may wish to comment. Certainly, the PC wants to engage and solicit feedback from the public. I believe that the best way to do this would be to use imbedded links on the agenda, thereby reducing an evident barrier to accessing information.

I appreciate your consideration of my comments.

Sincerely,

Laura Routh
2235 East Drive
Lawrence, KS
979-3918

Memorandum
City of Lawrence
Planning Department

TO: **Lawrence Douglas County Planning Commission**

FROM: **Sandra Day, AICP, Planning Staff**

CC: **Applicant**

Date: **January 14, 2013**

RE: **Item No. 3: Langston Heights Residential Development**

Item No. 3A: PP-12-00228; Preliminary Plat
Item No. 3B: Z-12-00229; UR to RM12D
Item No. 3C: Z-12-00231; UR to RS7
Item No. 3D: Z-12-002323; UR to RM12
Item No. 3E: Z-13-00013: UR to RS5 as a lesser change of a portion of the RM12D application.

Attachments:
1. Revised Preliminary Plat
2. West of K10 Area Plan
3. Concept build-out plan

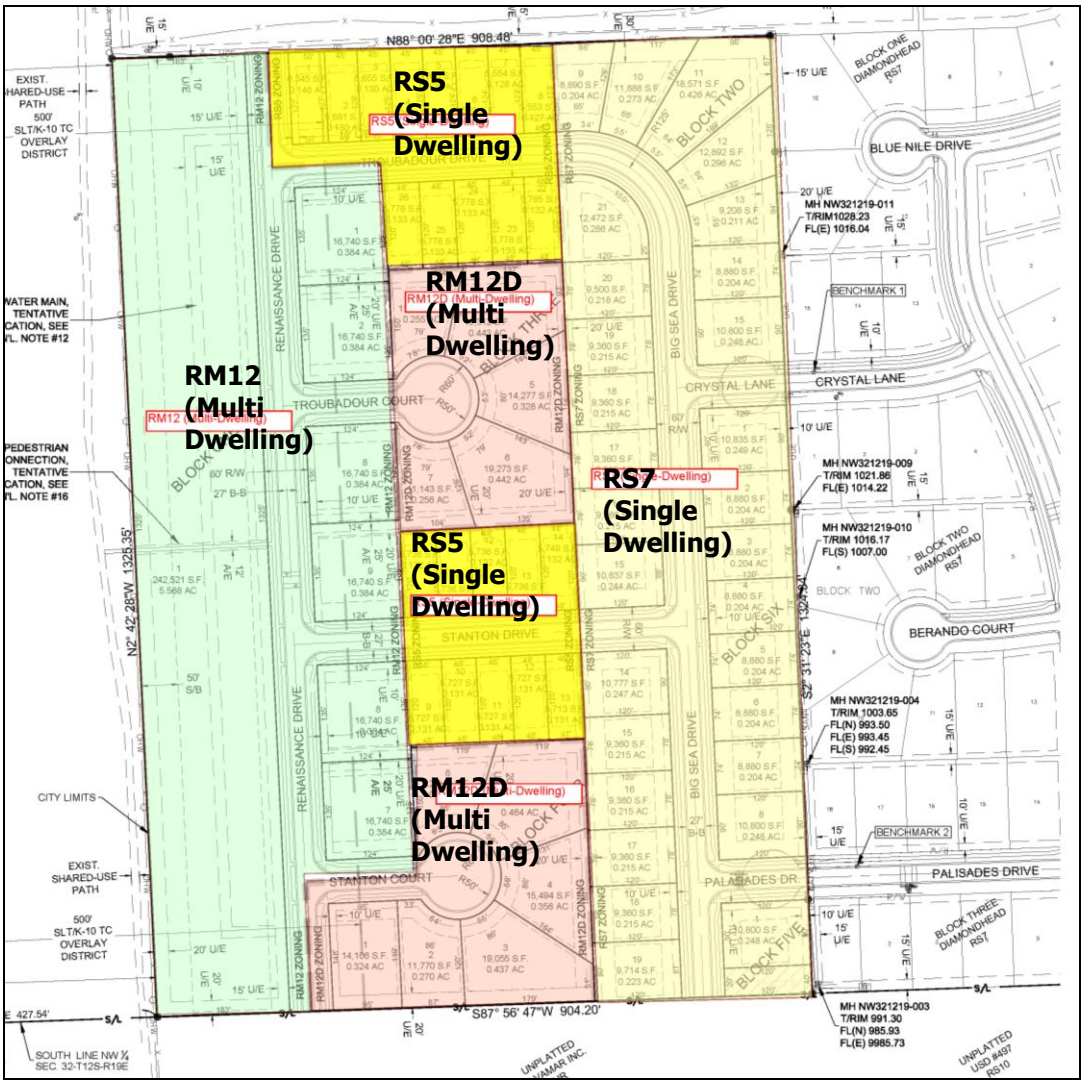
The purpose of this memo is to update the Commission on changes to the proposed development in response to comments from the December Planning Commission Meeting. The public hearing conducted in December resulted in a deferral of the proposed development applications with direction to address the following specific concerns.

- Increase presence of single-dwelling detached units and demonstrate the development is "predominantly single-dwelling residential" to comply with language found in the *6th Street and K-10 Highway Nodal Plan.*
- Explore providing additional access to Renaissance Drive to the south or north to alleviate the traffic impact of the proposed project. Associated to this is the issue of single loading Renaissance Drive as a design option.
- The effect of this development on future development to the south.

Presence of Single-Family
Significant changes have been made to the project that increase the overall percentage of detached residential units and reduce the total number of units proposed for this development. The revised project includes a request for 3.88 acres of RS5 zoning. The proposed development has, using a "lesser change", reduced the amount of RM12D to incorporate RS5 zoning. Section 20-1303 of the Development Code allows the modification of an application when the request is reduced in a manner specified by the Development Code.

The applicant has requested the Planning Commission consider a revision to the RM12D request to change a portion of the published RM12D request to RS5. This revision meets the requirements of the Lesser Change Table as highlighted below. Staff has assigned a specific case file number to the RS5 portion of the development request for tracking purposes.

The development request specifically amends the RM12D application to reduce the overall area from 8.33 acres of RM12D to 4.582 acres. The remaining 3.88 of the original request is proposed, as a lesser change, to RS5. The RS5 district is a single-dwelling residential district. This district is similar to the RS7 district in terms of uses. The RS5 district allows smaller lots with the minimum lot area established at 5,000 SF. The subdivision has been reconfigured to include the RS5 zoning and revised the interior street network to provide more separation between the development to the east and the multi-dwelling proposed to the west. The following graphic highlights the areas to be rezoned to the four different districts.



The following table provides a lot and density summary for the proposed Langston Heights development to show the changes between the previous plan and the current proposal. The December application included only 9.2 acres of detached housing as RS7 zoning. The revised application includes an additional 3.8 acres of detached housing as RS5 zoning.

	December 2012	January 2013
Gross RS7 District Acres	9.206	9.122
ROW Acres Tract	2.33	2.245 .109
Net RS7 Area Acres	6.873	6.768
Total Lots/Units	29/29	29/29
Density	4.219	4.285
Gross RM12D District Acres	8.33	4.582
ROW Acres	1.664	.723
Net RM12D area Acres	6.669	3.856
Total Lots/Units	25/50	11/22
Density	7.497	5.701
Gross RS5 District Acres		3.880
ROW Acres		.885
Net RS5 Area Acres		3.025
Total Lots/Units		23/23
Density		7.603
Gross RM12 District Acres	10.025	9.980
ROW Acres	2.11	2.107
Net RM12 Area Acres	7.908	7.873
Total Lots/Units	7/86	7/86
Density	10.875	10.923
Total Area	27.564	27.564
Total Units	165	160
Total Density	5.986	5.805

Table 1: Area Summary by Zoning District

The total number of units has been reduced by 5 and the overall density has been slightly reduced. Both the RS7 and the RS5 zoning districts represent single-dwelling detached residential development. The total number of detached housing proposed has increased from 29 in the December 2012 plan to 52 units in the current plan. The total number of duplex units has decreased from 50 units to 22 units. The RS7 district and the RM12 Districts have remained static between the two plans with no change in the total number of units and minor changes to the gross area of the two districts.

Land Use Development Pattern

Area	Acres	Percent
Total Area:	**186.45**	**100**
Developed Area:	43.38	23%
Proposed Development:	27.57	15%
Vacant Area:	115.5	62%

Table 2A: Summary of Developed and Undeveloped Land

Use	Acres	Percent
Single Family:	74.37	40%
Duplex:	14.89	20%
Multi-Dwelling:	22.76	12%
Commercial:	43.30	23%
UR	18.75	10%
Public	12.38	7%
Total	186.45	100%

The following information shows the existing and developing land use pattern for the area west of George Williams Way between W. 6th Street and Bob Billings Parkway [Diamondhead Neighborhood]. A substantial portion of the area is zoned for detached residential development. Based on the existing and proposed zoning and known land uses the Diamondhead Neighborhood area includes 74.4 acres of detached residential development and zoning. Table 2 summarizes the existing and proposed housing types for this area based on existing and proposed zoning.

A significant portion of the area is defined by the existing development pattern and zoning. The above image shows the existing and proposed development pattern and includes the future street connection between Bob Billings Parkway and Ken Ridge Drive. The 18 acres of UR is likely to be reconfigured into several zoning districts in the future including commercial and multi-dwelling. The proposed subdivision street connections from the Langston Heights Development would support the continuation of a detached housing pattern to the south. The following map shows graphically the existing and proposed housing types for this area based on the existing and proposed zoning.

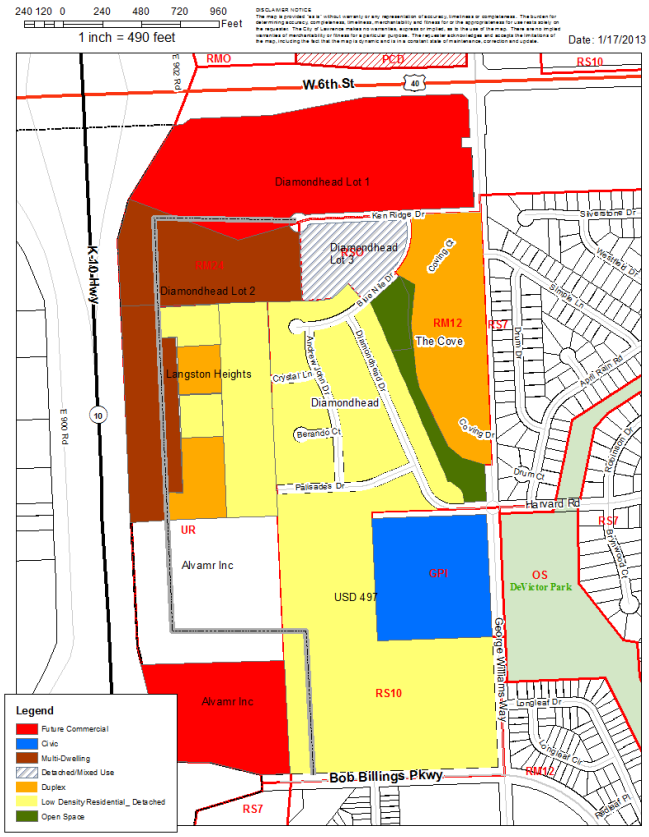


Figure 1 Map of Land Use

Renaissance Drive:

The location of Renaissance Drive provides the greatest buffer between K10 Highway to the west and the lower density residential development to the east. The design of the street provides the ability to develop on both sides of the street. Single loaded streets are generally inefficient in terms of construction and maintenance costs. This design provides the ability to provide development backing up to the highway that will provide

both a visual and noise buffer between the highway and the residential development to the east. Development both north and south will be required to extend Renaissance Drive north to Ken Ridge Drive and to the south to Bob Billings Parkway. Both streets have identified connection points. The connection to Bob Billings Parkway is being actively designed because of the K10 highway interchange to be constructed in the next year.

Access to Bob Billings Parkway:

KDOT, City Engineers, property owners and USD 497 have been working to establish designated access points as they relate to the pending interchange improvements of the SLT interchange with Bob Billings Parkway. This information is critical to the development of the property between Diamondhead Subdivision to the north and Bob Billings Parkway to the south. The access point is designated approximately 990' east of the intersection to avoid conflicts within the interchange and ramps. Access is intended to provide connectivity to the undeveloped parcels north of Bob Billings Parkway and connect to Renaissance Drive to the north. The finalized alignment will be platted based upon executed agreements of all parties and through the Subdivision Regulation process. The following exhibit shows the connection between Bob Billings Parkway and the proposed development to the north. This concept includes the subdivision design as of November 2012. The location of Renaissance Drive between the December and January versions has not changed. Renaissance Drive is proposed as a "double loaded" local connector street within the neighborhood.

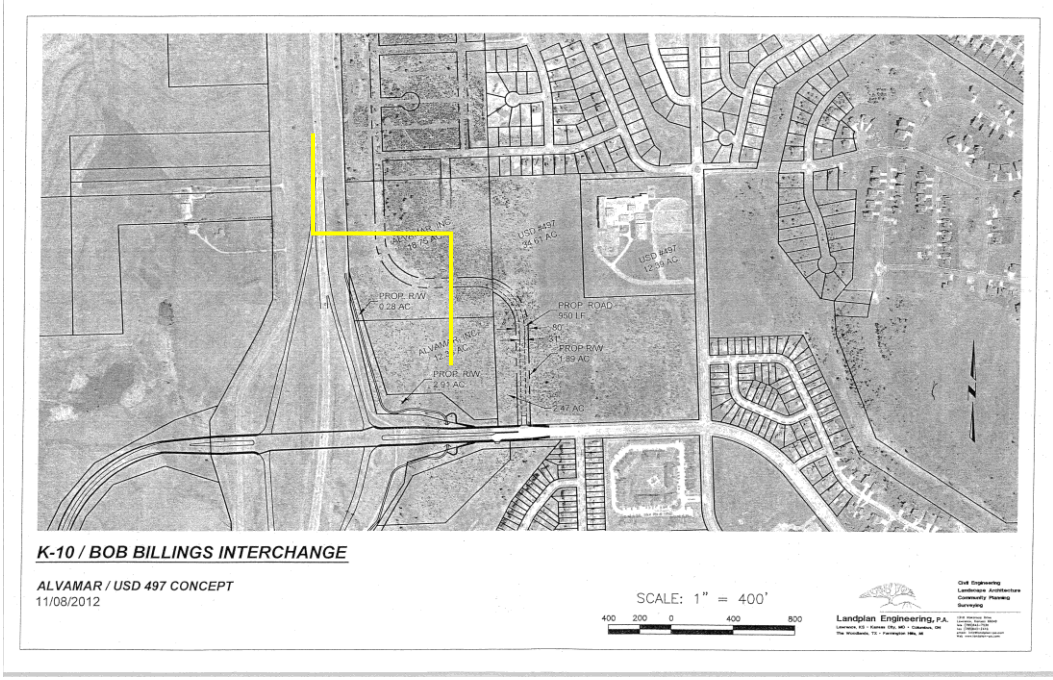


Figure 2: Renaissance Drive Extended South

The base document used in the concept includes the previous subdivision plat arrangement. The internal street connections to the Langston Heights subdivision have been revised since this concept plan was prepared. However, the location of Renaissance Drive and the access point to Bob Billings Parkway have not changed throughout this project.

Effect on future development to South
The proposed Subdivision extends the local street network to the south via Renaissance Drive and Big Sea Drive. The basic alignment of Renaissance Drive south of the subject property is being developed with KDOT and City staff and the adjacent property owners. The property along Bob Billings Parkway has been zoned for specific uses (PCD and RS10). The commercial use located on the northeast corner of Bob Billings Parkway and the SLT is likely to be requested for an expansion to the north and possibly east filling the gap created by the street alignment. The long-range land use plan (West of K10 Plan) indicates this area as suitable for future neighborhood commercial uses. Regional detention will also be required on this corner as the area develops. This will further reduce the developable land for commercial uses at the immediate intersection.

USD 497 owns acreage on the northwest corner of Bob Billings Parkway and George Williams Way. This area is zoned RS10 and may be developed with expanded school facilities or could also be developed residentially given the existing zoning. There remains 18 acres of UR zoning between the neighborhood commercial and the proposed Langston Heights development. The proposed subdivision extends Big Sea Drive to the south property line that accommodates an extension of the detached residential pattern to the south. This street could be extended to intersect Renaissance Drive or could terminate in a T or cul-de-sac intersection. A small area would remain between the highway and Renaissance Drive that could be developed with a transitional use between the proposed multi-dwelling and the neighborhood commercial use depending on the requirements for regional detention for the area. The townhouse pattern could be extended in this area with significant landscaping along areas that abut the commercial development.

The attached exhibit highlights one concept for future development to the south.

West of K-10 Plan
The area south of the Langston Heights Development is located within the boundary of the West of K10 Plan area. The plan recommends low-density residential land use between the highway and George Williams Way with the exception of the area designated for neighborhood commercial uses at the intersection of K10 and Bob Billings Parkway.

The residential land uses recommended in the plan state:

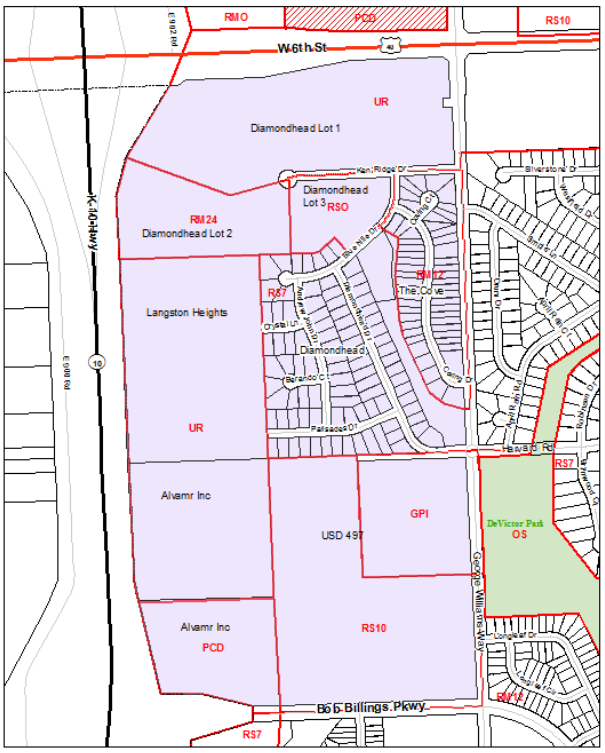
> ***Residential- Low Density***
> *The intent of the low-density residential use is to allow for single-dwelling, duplex and attached dwellings but emphasis is placed on residential type uses. Development in this area should be compatible with single-family character, which could include such uses as churches, small–scale daycares and institutional uses.*

The plan notes the primary uses as "*Detached dwellings, attached dwellings, duplex, group home, public and civic uses."* Applicable zoning districts include RS10, RS7, RS5 RM12D and PD. The Plan further states the maximum density recommended for areas recommended for low-density residential development is 6 dwelling units per acre.

Future Land Use Development Pattern

Based on the recommended land uses found in *Horizon 2020*, *West of K10 Highway Plan*, and the recent discussions with the Commission and the applicant staff prepared an example of a possible development pattern for the remaining undeveloped tracts of land. This concept plan is attached.

Land Use Summary Diamondhead Neighborhood Area						
Area/Description	**Acres**	**Zoning**	**Land Use**	**Density**	**Total Units**	**Subject Area**
Lot 1 Diamondhead	31	UR	vacant		0	
Lot 2 Diamondhead	12.78	RM24	vacant	24	306	
Lot 3 Diamondhead	6.07	RSO	vacant	15	91	
The Cove	10.3	RM12[1]	duplex	5.8	60	
Diamondhead Residential	20.7	RS7	sfr	4.2	89	
Langston Heights	***9.12***	***RS7***	***Sfr – Proposed***	***4.2***	***29***	
Langston Heights	***3.88***	***RS5***	***Sfr – Proposed***	***7.6***	***23***	
Langston Heights	***4.59***	***RM12D***	***Duplex-Proposed***	***5.7***	***22***	
Langston Heights	***9.98***	***RM12[2]***	***Multi - Proposed***	***10.92***	***86***	
Alvamar Inc	18.75	UR	vacant			
Alvamar Inc	12.3	PCD[3]	vacant	35	430	
USD 497	12.38	GPI	public	0	0	
USD497	34.6	RS10	vacant	4.3	148	
Total Area	**186.45**				**578**	



- Total Land Area 186.45 AC
- Developed Area 43.38 AC
- Vacant Land

Table 3: Land Use Summary by parcel/Subdivision

[1] RM12 zoning allows multi-dwelling units. The Cove Subdivision is being developed to a less dense pattern with only two units (duplex housing) per lot.

[2] RM12 zoning allows a total of 119 units. Proposed application is restricted to a lower density than district would allow by right.

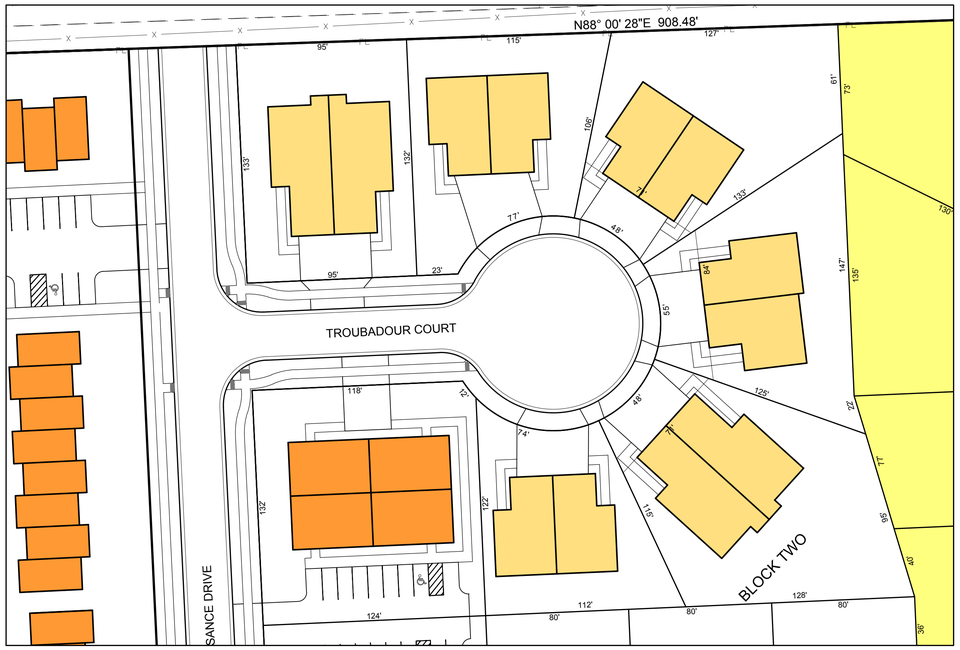
[3] PCD allows 35 dwelling units per acre. Typical PCD zoning has not included a residential component or only a small percentage when present.



SCALE: 1" = 100'

100 50 0 100 200

N

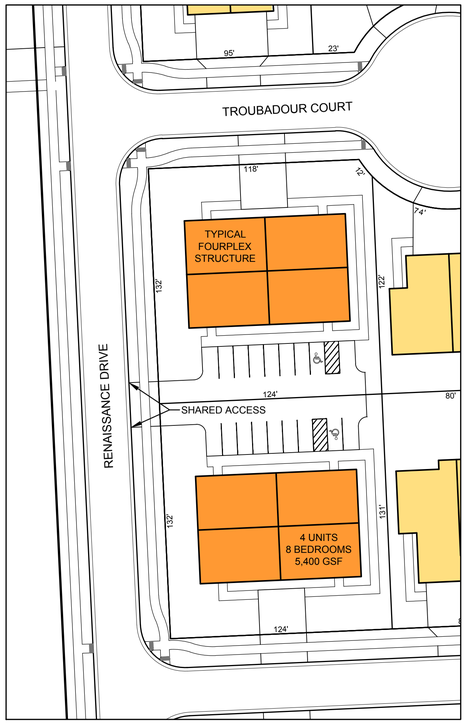


TYPICAL DUPLEX LAYOUT

BUILDING SUMMARY:

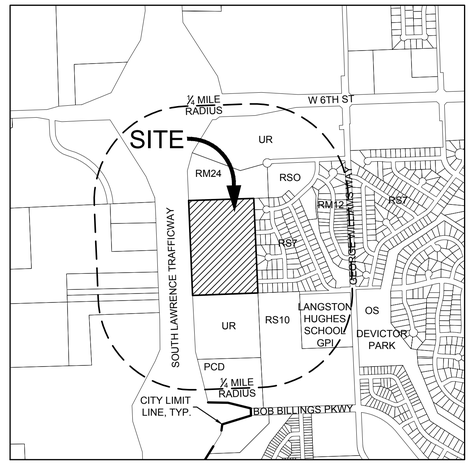
PRODUCT TYPE	QUANTITY	UNITS	BEDROOMS
SINGLE-FAMILY HOME	29	29	N/A
DUPLEX	25	50	N/A
FOURPLEX	6	24	48
ROW HOME	62	62	124

***GROSS SUBDIVISION UNIT DENSITY = 165 UNITS / 27.564 AC = 5.986 UNITS/AC**



TYPICAL FOURPLEX LAYOUT

LOCATION MAP:



GENERAL NOTES:

1. OWNER: LANGSTON HEIGHTS, LC, 611 SAINT ANDREWS DRIVE, LAWRENCE, KANSAS 66047
2. LAND PLANNER/ CIVIL ENGINEER/ SURVEYOR: LANDPLAN ENGINEERING, P.A., 1310 WAKARUSA DRIVE, LAWRENCE, KANSAS 66049
3. EXISTING ZONING: UR
4. PROPOSED ZONING: RS7, RM12, RM12D
5. EXISTING LAND USE: VACANT
6. PROPOSED LAND USE: DETACHED DWELLING, DUPLEX, ATTACHED DWELLING
7. THE SUBJECT PROPERTY DOES LIE WITHIN A SPECIAL FLOOD HAZARD AREA AS DEFINED BY FLOOD INSURANCE RATE MAP (FIRM); PANEL NO. 154, MAP NUMBER 20045C0154D, DOUGLAS COUNTY, KS., BEARING AN EFFECTIVE DATE OF AUGUST 5, 2010.
8. THIS SITE IS DESIGNATED LOW-DENSITY RESIDENTIAL IN HORIZON 2020, DATED 7/1/11, AND THE WEST OF K-10 PLAN, DATED 1/7/08.
9. LOTS DEVELOPED WITHIN THE SLT/K10-TC SHALL BE DESIGNED TO COMPLY WITH THE MINIMUM DESIGN STANDARDS OF SECTION 20-307(c)(1).

ZONING SUMMARY:

RS7
GROSS AREA: 401,026 SF / 9.206 AC
RIGHTS-OF-WAY: 101,644 SF / 2.333 AC
NET AREA: 299,382 SF / 6.873 AC
TOTAL LOTS: 29
AVERAGE LOT AREA: 10,324 SF / 0.237 AC
MINIMUM LOT AREA: 8,886 SF / 0.204 AC
MAXIMUM LOT AREA: 17,635 SF / 0.405 AC
TOTAL UNITS: 29
UNIT DENSITY: 4.219 UNITS/AC

RM12D
GROSS AREA: 362,991 SF / 8.333 AC
RIGHTS-OF-WAY: 72,503 SF / 1.664 AC
NET AREA: 290,488 SF / 6.669 AC
TOTAL LOTS: 25
AVERAGE LOT AREA: 11,620 SF / 0.267 AC
MINIMUM LOT AREA: 9,552 SF / 0.219 AC
MAXIMUM LOT AREA: 15,997 SF / 0.367 AC
TOTAL UNITS: 50
UNIT DENSITY: 7.497 UNITS/AC

RM12
GROSS AREA: 436,678 SF / 10.025 AC
RIGHTS-OF-WAY: 92,205 SF / 2.117 AC
NET AREA: 344,473 SF / 7.908 AC
TOTAL LOTS: 7
AVERAGE LOT AREA: 49,210 SF / 1.130 AC
MINIMUM LOT AREA: 16,329 SF / 0.375 AC
MAXIMUM LOT AREA: 242,521 SF / 5.568 AC
TOTAL UNITS: 86
UNIT DENSITY: 10.875 UNITS/AC

***GROSS SUBDIVISION UNIT DENSITY = 165 UNITS / 27.564 AC = 5.986 UNITS/AC**

Civil Engineering
Landscape Architecture
Community Planning
Surveying

Landplan Engineering, P.A.
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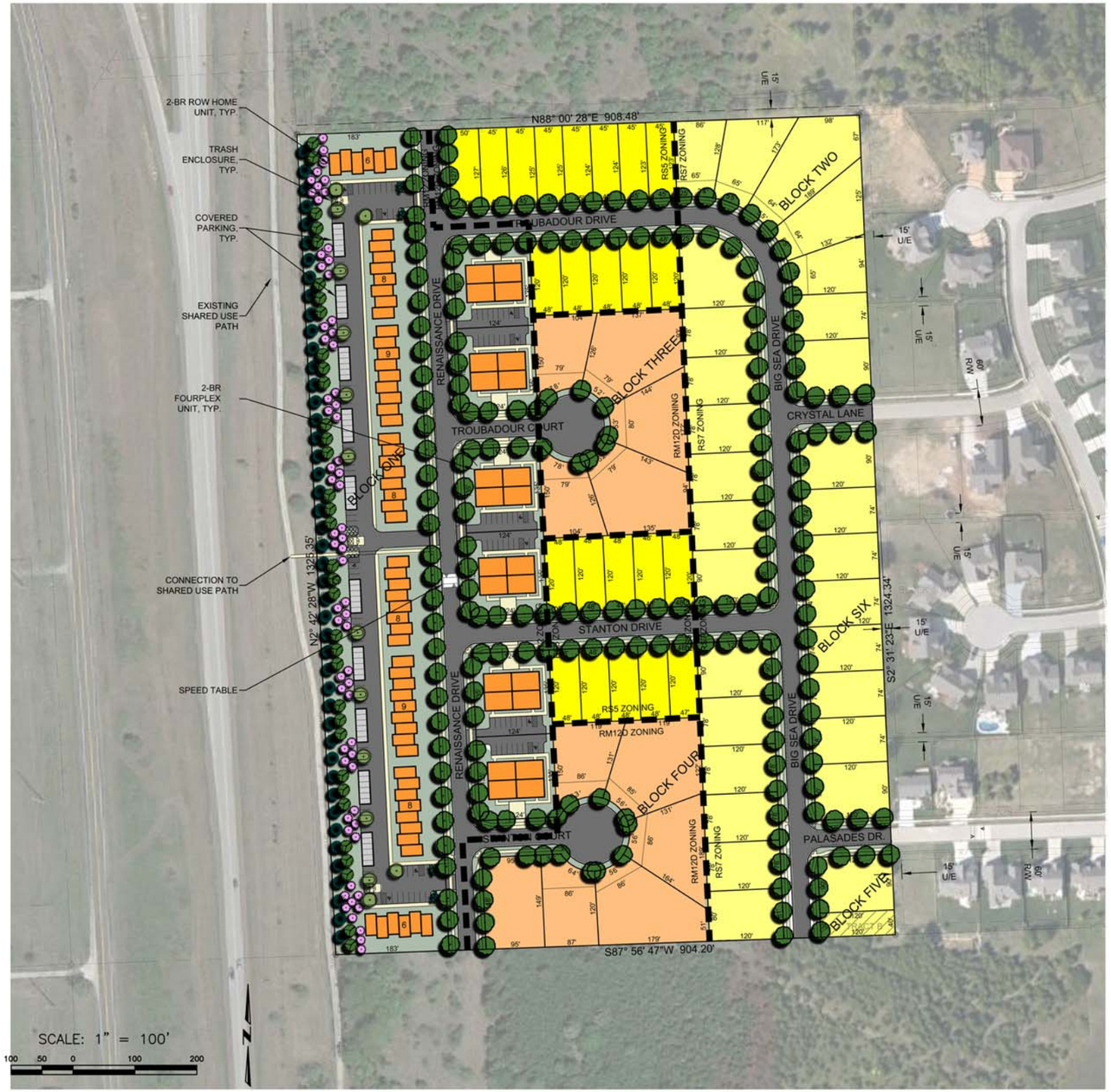
CONCEPT PLAN
LANGSTON HEIGHTS ADDITION, CITY OF LAWRENCE DOUGLAS COUNTY, KANSAS

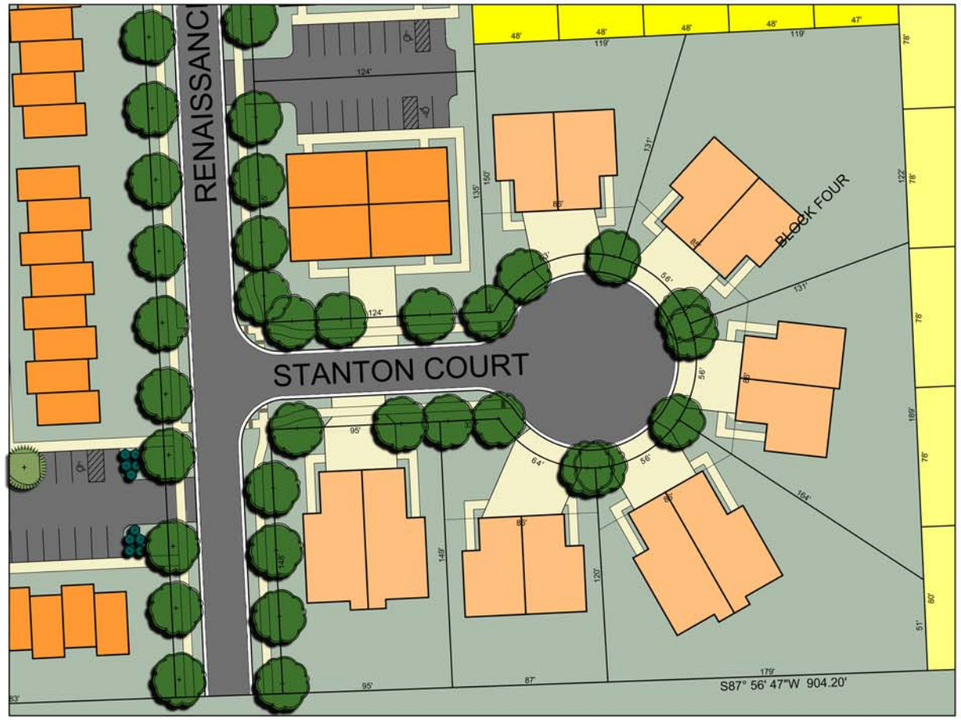
REV	DATE	DESCRIPTION

DATE: 11/29/12
PROJECT NO.: 20121218
DESIGNED BY: TAH/LPE
DRAWN BY: BS
CHECKED BY: CMS

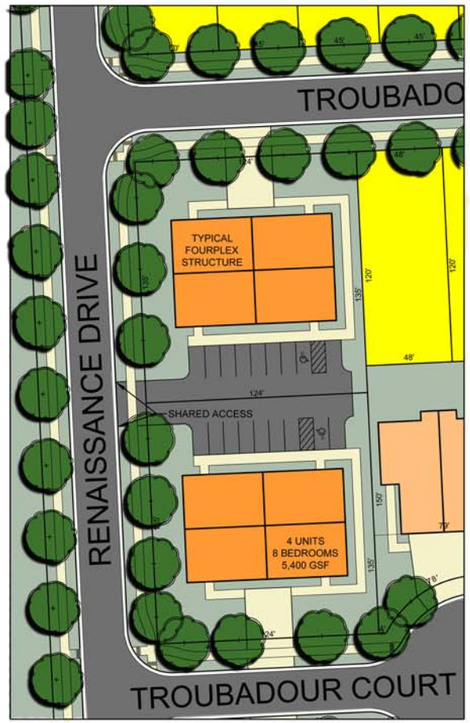
ISSUE | SHEET NO. 1 OF 1 SHEETS

FILE NAME: Q:\20121218\CAD\Concept-Exhibits\CONCEPT.dwg LAST SAVED BY: Brian Sturm SAVED DATE: 11/29/2012 2:55 PM PLOTTED: 11/29/2012 2:55 PM





TYPICAL DUPLEX LAYOUT



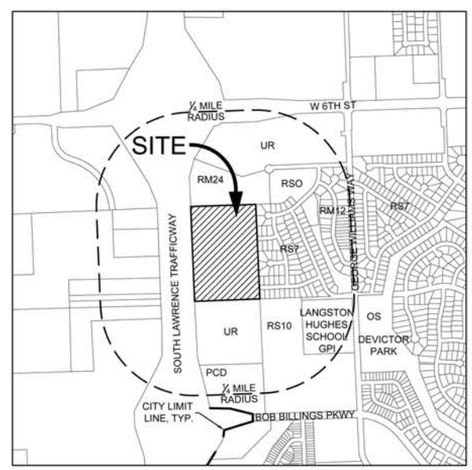
TYPICAL FOURPLEX LAYOUT

BUILDING SUMMARY:

PRODUCT TYPE	QUANTITY	UNITS	BEDROOMS
SINGLE-FAMILY HOME	52	52	N/A
DUPLEX	11	22	N/A
FOURPLEX	6	24	48
ROW HOME	62	62	124

**GROSS SUBDIVISION UNIT DENSITY = 160 UNITS / 27.564 AC = 5.805 UNITS/AC*

LOCATION MAP:



GENERAL NOTES:

1. OWNER: LANGSTON HEIGHTS, LC, 611 SAINT ANDREWS DRIVE, LAWRENCE, KANSAS 66047
2. LAND PLANNER/ CIVIL ENGINEER/ SURVEYOR: LANDPLAN ENGINEERING, P.A., 1310 WAKARUSA DRIVE, LAWRENCE, KANSAS 66049
3. EXISTING ZONING: UR
4. PROPOSED ZONING: RS7, RS5, RM12D, RM12
5. EXISTING LAND USE: VACANT
6. PROPOSED LAND USE: DETACHED DWELLING, DUPLEX, ATTACHED DWELLING
7. THE SUBJECT PROPERTY DOES NOT LIE WITHIN A SPECIAL FLOOD HAZARD AREA AS DEFINED BY FLOOD INSURANCE RATE MAP (FIRM); PANEL NO. 154, MAP NUMBER 20045C0154D, DOUGLAS COUNTY, KS., BEARING AN EFFECTIVE DATE OF AUGUST 5, 2010.
8. THIS SITE IS DESIGNATED LOW-DENSITY RESIDENTIAL IN A NODAL PLAN FOR THE INTERSECTION OF WEST 6TH STREET & KANSAS HIGHWAY 10 (K-10), DATED 11/11/03.
9. LOTS DEVELOPED WITHIN THE SLT/K10-TC SHALL BE DESIGNED TO COMPLY WITH THE MINIMUM DESIGN STANDARDS OF SECTION 20-307(c)(1).

ZONING SUMMARY:

RS7
GROSS AREA: 397,349 SF / 9.122 AC
RIGHTS-OF-WAY: 97,784 SF / 2.245 AC
TRACTS: 4,742 SF / 0.109 AC
NET AREA: 294,823 SF / 6.768 AC
TOTAL LOTS: 29
AVERAGE LOT AREA: 10,166 SF / 0.233 AC
MINIMUM LOT AREA: 8,880 SF / 0.204 AC
MAXIMUM LOT AREA: 18,571 SF / 0.426 AC
TOTAL UNITS: 29
UNIT DENSITY: 4.285 UNITS/AC

RS5
GROSS AREA: 169,017 SF / 3.880 AC
RIGHTS-OF-WAY: 37,224 SF / 0.855 AC
NET AREA: 131,793 SF / 3.025 AC
TOTAL LOTS: 23
AVERAGE LOT AREA: 7,187 SF / 0.144 AC
MINIMUM LOT AREA: 5,553 SF / 0.127 AC
MAXIMUM LOT AREA: 6,345 SF / 0.146 AC
TOTAL UNITS: 23
UNIT DENSITY: 7.603 UNITS/AC

RM12D
GROSS AREA: 199,594 SF / 4.582 AC
RIGHTS-OF-WAY: 31,505 SF / 0.723 AC
NET AREA: 168,089 SF / 3.859 AC
TOTAL LOTS: 11
AVERAGE LOT AREA: 15,281 SF / 0.351 AC
MINIMUM LOT AREA: 10,982 SF / 0.252 AC
MAXIMUM LOT AREA: 20,191 SF / 0.464 AC
TOTAL UNITS: 22
UNIT DENSITY: 5.701 UNITS/AC

RM12
GROSS AREA: 434,735 SF / 9.980 AC
RIGHTS-OF-WAY: 91,774 SF / 2.107 AC
NET AREA: 342,961 SF / 7.873 AC
TOTAL LOTS: 7
AVERAGE LOT AREA: 48,994 SF / 1.125 AC
MINIMUM LOT AREA: 16,740 SF / 0.384 AC
MAXIMUM LOT AREA: 242,521 SF / 5.568 AC
TOTAL UNITS: 86
UNIT DENSITY: 10.923 UNITS/AC

**GROSS SUBDIVISION UNIT DENSITY = 160 UNITS / 27.564 AC = 5.805 UNITS/AC*

Civil Engineering
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Community Planning
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PLANNING COMMISSION REPORT
Regular Agenda - Public Hearing Item

PC Staff Report
1/28/2013

ITEM NO 5D: Z-12-00232 UR (Urban Reserve) District to RM12 (Multi-Dwelling Residential) District; ~~9.794~~ ~~10.025~~ 9.980 acres (SLD)

Z-12-00232: Consider a request to rezone approximately ~~10.025~~ **9.980** acres from UR (Urban Reserve) to RM12 (Multi-Dwelling Residential), located along the east side of K-10 Highway south of W. 6th Street and along the west side of a proposed street known as Renaissance Drive, as shown in the preliminary plat of Langston Heights Addition. Submitted by Landplan Engineering, for Langston Heights, LC, property owner of record. **Deferred from the December 2012 Planning Commission Meeting.**

STAFF RECOMMENDATION: Staff recommends approval of the request to rezone approximately ~~10.025~~ **9.980** acres from UR (Urban Reserve) District to RM12 (Multi Dwelling Residential) District based on the findings presented in the staff report and forwarding it to the City Commission with a recommendation for approval subject to a maximum development of of 62 units along K-10 Highway and 6 lots of 4-plex units adjacent to the proposed RM12D district (86 total units).

Reason for Request: *The developer, RSR, Inc., intends to subdivide and rezone the subject property to support detached dwelling single-family development (see attached concept plan).*

Note: Revised Language is shown in **blue bold** text.

KEY POINTS
- Request is part of an overall development package that includes RS7, RM12D, **and RS5** Zoning and a preliminary plat.
- This district serves as a transitional use between the highway to the west and the lower density uses to the east.

ASSOCIATED CASES/OTHER ACTION REQUIRED
- Z-12-00229: ~~8.564~~ acres **4.582 acres** from UR (Urban Reserve) to RM12D (Multi-Dwelling Residential)
- Z-12-00231: ~~9.206 acres~~ **9.122 acres** from UR (Urban Reserve) to RS7 (Single-Dwelling Residential)
- Z-12-00232: ~~10.025 acres~~ **9.980 acres** from UR (Urban Reserve) to RM12 (Multi-Dwelling Residential)
- **Z-13-00015: 3.88 acres from UR (Urban Reserve) to RS5 (Single-Dwelling Residential) as a lesser change from a portion of the proposed RM12D application.**
- PP-12-00228: Preliminary Plat Langston Heights

PLANS AND STUDIES REQUIRED
- *Traffic Study* – Not required for rezoning
- *Downstream Sanitary Sewer Analysis* – Not required for rezoning
- *Drainage Study* – Not required for rezoning
- *Retail Market Study* – Not applicable to residential request

ATTACHMENTS
- Area map
- Concept plan December 2012
- **Concept Plan January 2013**

PUBLIC COMMENT RECEIVED PRIOR TO PRINTING
- Communications are attached

Project Summary:
This proposed request for RM12 zoning is for ~~10.025~~ **9.980** acres to accommodate multi-dwelling development and a total of 86 dwelling units. This district is defined in Section 20-201 of the Development Code as corresponding to a "Medium-Density" comprehensive plan designation. This request is intended to be considered concurrently with the RM12D, **RS5,** and RS7 zoning requests and the preliminary plat, PP-12-00228 Langston Heights, that creates a lot arrangement that results in a lower-density pattern per acre and provides a land use transition between the highway to the west and lower density development to the east. This property is encumbered by the Transportation Corridor Overlay District for the South Lawrence Trafficway/K-10 Highway.

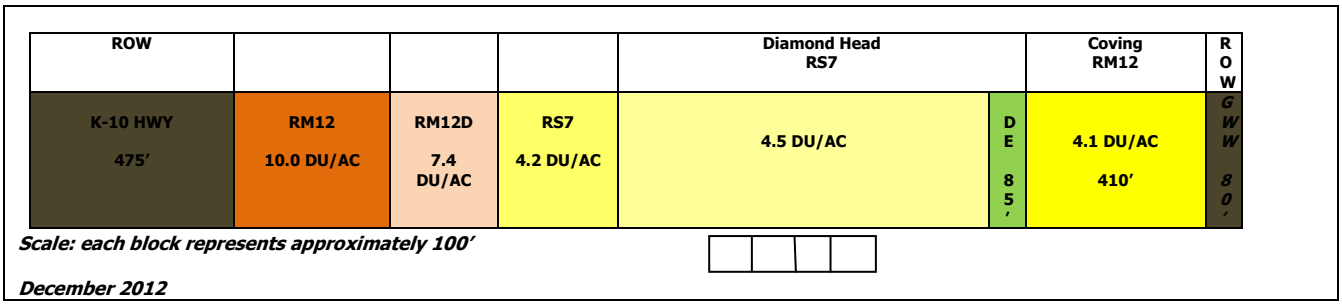
1. CONFORMANCE WITH THE COMPREHENSIVE PLAN
Applicant's Response: *the Lawrence future Land Use Map (3-2) in Horizon 2020 does not specifically designate a land use for this subject property, however, adjacent existing residential development is consistent with low-density residential land uses of 6 or fewer dwelling units per acre. When considered with the two (2) other rezoning applications accompanying this one, all three conform to the Residential Development Strategy (pg. 5-1) of providing a mixture of housing types, styles and economic levels for new residential development.*

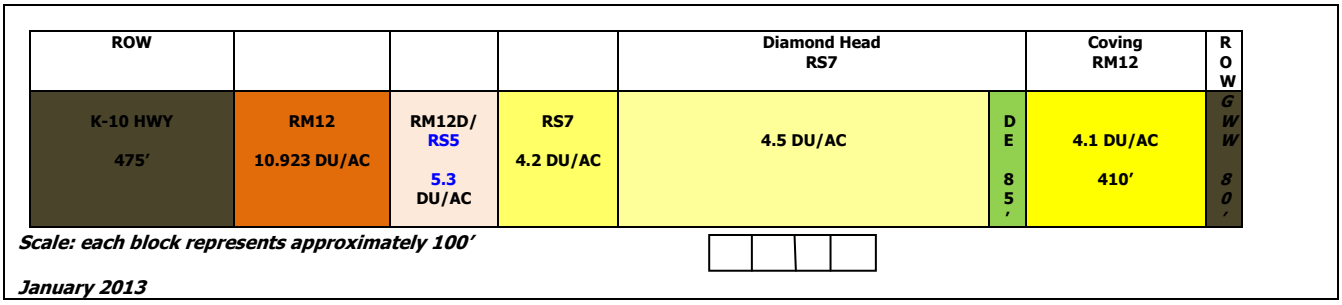
As noted in the related zoning reports this area is included in the boundary of the *6th Street and K-10 Nodal Plan*. This plan was amended into *Horizon 2020*.

Key strategies included in *Horizon 2020* provide the framework for area, nodal and neighborhood plans. Key policies related to this development are:

- *Infill residential development should be considered prior to annexation of new residential areas.*
- *A mixture of housing types, styles and economic levels should be encouraged for new residential and infill developments.*
- *Compatible densities and housing types should be encouraged in residential neighborhoods by providing appropriate transition zones between low-density residential land uses and more intensive residential development, and between higher density residential uses and non-residential land uses.*
- *The character and appearance of existing residential neighborhoods should be protected and enhanced. Infill development, rehabilitation or reconstruction should reflect architectural qualities and styles of existing neighborhoods.*

As discussed in the concurrent zoning reports, related to this request, this project represents infill development. This request, considered concurrently with the RS7, **RS5,** and the RM12D applications provide a graduated development pattern that provides a mix of housing types and styles in a new residential development. The individual density for this area between George Williams Way and the highway is represented by the following graphic.





While the **RM12** subject area includes ~~10.025~~ **9.980** acres is a medium-density zoning district, the gross density of this development project, when spread across the entire 27 acres is ~~5.9~~ 5.805 units per acre. **The revised development proposal adds 3.880 acres of detached dwelling zoning through the RS5 district.**

Horizon 2020 states that medium density residential development (7-15 dwelling units per acre*) is recommended as cluster development at selected locations along major roadways, hear high-intensity activities areas and when adjacent to important natural amenities*. In this application, the development is located along a major roadway, K-10 Highway. Density is clustered to accommodate a transition of uses from the west along the highway to the east using the concurrent RM12D and RS7 applications with the proposed preliminary plat. There are no natural amenities that were identified to be preserved for this property.

This use is intended to promote a mix of housing types within a planned development area. *Horizon 2020* states that *medium density areas should include a mix of single-family, detached and attached homes, cluster homes, townhouses, and similar housing types*. The development of this property seeks to implement this policy using combined zoning applications that establish base districts across the entire acreage and delineate the boundary of the transitions through the district boundaries.

The Plan also states that medium density uses should be *designed to help avoid major and abrupt changes in density or use*.

Various goals and polices address the land use transition between low and high-density areas. Specific recommendations include the use of vegetation and screening to buffer land uses. The preliminary plat serves to establish back-to-back relationships between land uses. This policy is implemented through the subdivision design standards and applicable landscape and buffering requirements contained in the Development Code.

Staff Finding – This request is considered concurrently with the companion RS7, **RS5,** and RM12D zoning request and the preliminary plat. The intent of the request is to provide a

cluster development that situates the higher density residential use next to the highway and provide a transition of land use between the highway and the low-density development to the east. The preliminary plat establishes the framework for the designation of the boundary of the district. The specific RM12 request orients the medium density development adjacent to the highway with access to a local street that will be extended to the north and south as the area develops. This request **when combined with the related zoning and preliminary plat requests** spreads the density of the overall development across the entire 27 acres to achieve the recommended low-density residential land use identified in the nodal plan.

2. ZONING AND USE OF NEARBY PROPERTY, INCLUDING OVERLAY ZONING

Current Zoning and Land Use:	UR (Urban Reserve) District and TC (SLT/K-10 Major Transportation Corridor Overlay) District; undeveloped property.
Surrounding Zoning and Land Use:	RM24 (Multi-Dwelling Residential) District to the north. Undeveloped land. Proposed RM12D (Multiple-Dwelling Residential) **and RS5 (Single-Dwelling Residential)** District to the east. Developing residential subdivision to the east of the proposed development area. UR (Urban Reserve) District to the south. Undeveloped land. K-10 Highway is the west boundary of the development site. The Highway right-of-way and properties to the west are located within the unincorporated portion of Douglas County and are zoned A (Agricultural).

Staff Finding – The proposed RM12 district represents the west portion of the development area. Land to the immediate north, south, east ~~and west~~ are undeveloped. **Land to the immediate west includes over 400' of right-of-way for the K10 Highway.** Land to the immediate east is proposed for duplex development as part of this development request.

3. CHARACTER OF THE NEIGHBORHOOD

Applicant's Response: *The subject property is a vacant piece of abandon farmland. It is bordered to the west by the SLT right-of-way, which also includes the SLT recreation path. To the north lies vacant ground platted as part of the Diamondhead subdivision and zoned RM24. To the east lie properties platted under the Diamondhead subdivision, zoned RS7 and developed as detached single-family homes, all constructed within the past 5-7 years. To the south rests vacant unplatted property zoned UR and of similar natural character to the subject property. Langston Hughes School is a short distance to the southeast.*

The west portion of the development site abuts K-10 Highway (higher density proposed). The east portion of the development site abuts developing single-dwelling subdivision known as Diamondhead Subdivision. This requested RM12 district clusters the higher density development adjacent to the highway.

This property is located within the West Lawrence Neighborhood. This section of the neighborhood includes several undeveloped parcels to the north and south along K-10 Highway. This neighborhood is characterized by the dominance of residential use, primarily low-density detached housing. Higher intensity uses and are located along major streets in the neighborhood. Existing and planned non-residential uses are located at major intersections throughout the neighborhood.

Staff Finding – The overall neighborhood is characterized by residential uses. Higher density uses are located along the arterial streets of W. 6th Street and Bob Billings Parkway. **There are no changes to this finding of fact.**

4. PLANS FOR THE AREA OR NEIGHBORHOOD, AS REFLECTED IN ADOPTED AREA AND/OR SECTOR PLANS INCLUDING THE PROPERTY OR ADJOINING PROPERTY

As noted above this area is located within the boundary of the *6th Street and K-10 Highway Nodal Plan*. The area is generally recommended for low-density residential development with a small portion considered appropriate for medium density residential development. This request is consistent with that land use recommendation when considered concurrently with the preliminary plat and concurrent RM12D **, RS5,** and RS7 zoning requests that spreads density across the entire 27 acres. Taken alone, the RM12 zoning is not compliant with the *6th Street and K-10 highway Nodal Plan.* However, this request is part of a combined development request for 27 acres of residential development that abuts K-10 Highway on the west side.

Staff Finding – Taken alone, the RM12 zoning is not compliant with the W. 6th Street and K-10 Highway Nodal Plan. However, the proposed RM12 zoning is consistent with the low-density residential land use recommended in the nodal plan applicable to this area when reviewed concurrently with the preliminary plat. **There are no changes to this finding of fact.**

5. SUITABILITY OF SUBJECT PROPERTY FOR THE USES TO WHICH IT HAS BEEN RESTRICTED UNDER THE EXISTING ZONING REGULATIONS

Applicant's Response: *The UR district has served this vacant ground adequately but will not permit new development of any kind. Development that provides an appropriate transition from the existing RS7 neighborhood to the east, the future RM32 development to the north and the existing SLT to the west requires a new zoning classification.*

Staff concurs that the UR zoning is no longer desirable given plans to develop the property. The current zoning serves as a holding zone until property is ready for development. The proposed request is for RM12 to accommodate development along the highway. The proposed request includes a subdivision design that shows multi-dwelling lots along the highway as a transition between the highway and the proposed duplex area to the east. Considered concurrently with the preliminary plat, this specific development provides a buffer between the highway and the lower-density uses proposed to the east.

Approval of the request facilitates infill development and the provision of additional housing choices in this area. The use of the RM12 district in this application facilitates an appropriate land use transition between low-density residential development and the highway.

Staff Finding – The existing UR (Urban Reserve) District is no longer a suitable zoning district for this property since development applications have been made. The proposed RM12 district is intended as a land use transition between the highway and the existing and proposed

residential development to the east. This is a suitable use of the RM12 district. **There are no changes to this finding of fact.**

6. LENGTH OF TIME SUBJECT PROPERTY HAS REMAINED VACANT AS ZONED

Applicant's Response: *the property has remained vacant since being annexed into the City in the early 2000's.*

This property is undeveloped (vacant). The existing zoning, UR, was established in 2006 with the adoption of the Development Code. Prior to that time the property was zoned A (Agricultural). The surrounding area to the north and east (Diamondhead) was annexed and rezoned for various uses in October 1998.

This property was part of a 27.23-acre request for RS-2 zoning submitted in October 2002 (Z-10-39-02) but later withdrawn and replaced by two later applications in 2005. (Z-9-63-05 and Z-9-64-05). The 2005 requests were for 6.8 acres of RMD and 20.77 Acres of RS-2. These requests were approved by the Planning Commission on November 16, 2005. They were accompanied by a preliminary plat that included connected grid streets. The approval was subject to the recording of a final plat for the property. The Final Plat for the property was approved in 2006 and the approval was extended in 2008. The property owner did not complete the requirements and record the final plat. Therefore, the zoning was never published and made effective. The 2005 request for RMD included the north portion of the subject property that abutted the RM24 zoning. That Development pattern included only one block of duplex lots terminating in a cul-de-sec.

Staff Finding – The area is undeveloped. The property was zoned A (Agricultural) from 1966 to 2006. The UR district was established in 2006 and remains to the present. **There are no changes to this finding of fact.**

7. EXTENT TO WHICH APPROVING THE REZONING WILL DETRIMENTALLY AFFECT NEARBY PROPERTIES

Applicant's Response: *Approving this rezoning will pose no detrimental effect to nearby properties. Approval will facilitate appropriate residential development adjacent to the SLT and set a development precedent for adjacent vacant parcels.*

The area to the north and south is undeveloped. As such, no direct detrimental impacts are anticipated for these properties. **The area to the north is currently zoned for high-density residential development (RM24) but is undeveloped at this time. The area to the south is zoned UR and is also undeveloped.**

Approval of the rezoning request facilitates the extension of streets and utilities to this area. As the areas to the north and south develop, street connections will be made that connect the proposed development with the adjacent properties. **City Staff, KDOT and property owners, including the School District, have discussed options for the connection between Bob Billings Parkway and the subject property. Refer to the preliminary plat staff report for additional discussion about this connection.**

~~For the interim period, areas along the proposed Renaissance Drive will take access to the street network via Crystal Lane, Palisades Drive. Residents in the developed area to the east have expressed opposition to this pattern citing concerns of traffic and devaluation of property. Staff does not conduct an appraisal analysis of development on property values. With regard to traffic concerns, the proposed development will not generate excessive traffic though this area.~~

~~Furthermore, traffic will diminish as additional local street connections are made to the north and south. Development of this property extends a benefit to the undeveloped properties by the extension of infrastructure.~~

The revised preliminary plat terminates Crystal Lane and Palisades Drive at a T intersection with offset streets, Stanton Drive and Troubadour Drive, providing connection to Renaissance Drive. Big Sea Drive is extended to the north and south to provide internal connection without orienting traffic directly to the east. Until such time as Renaissance Drive is connected to the south traffic will use the eastern street connections.

Another concern expressed by residents of the developed area to the east regards intensification of uses. Previous land use approvals conveyed an expectation for continued low-density development in the form of detached dwelling units on individual lots. The previous land use approvals for the detached and duplex zoning expired as discussed earlier in this report. This proposed request alters that expectation by moving the proposed duplex use from the north portion of the site to the central portion of the site and introducing multi-dwelling uses along the highway.

Existing residences will experience an increase in traffic since the local streets currently dead-end at undeveloped property. An increase in traffic should be expected. The local street network has capacity to service this area even with the addition of the proposed development. There are no future collector streets planned for the area between George Williams Way and K-10 Highway between W. 6th Street and Bob Billings Parkway. Traffic generated from this area will utilize the local street network to access the larger collector and arterial street network per approved plans. Increased traffic on existing local streets should be expected. As the area develops, additional street connections will be made dispersing some local street traffic.

The developer plans to restrict construction of the multi-dwelling portion of the Langston Heights development until Renaissance Drive is connected to Bob Billings Parkway.

Staff Finding – The significant change anticipated by this request is the increase in traffic for this area and the introduction of multiple housing choices in the form of duplex and multi-dwelling units. These concerns have been expressed by area residents and potential detrimental impacts. **The total area included in the RM12D has been slightly reduced.** While traffic will increase on the existing streets, sufficient capacity exists to accommodate the proposed land uses included in this development request. The overall impact of the proposed request is negligible to the existing development and surrounding undeveloped areas. **The proposed zoning as defined with the preliminary plat includes a limitation on development of the multi-dwelling area until a street connection is made to the south with Bob Billings Parkway. This connection will have the impact of reducing the overall internal traffic by proving a more direct connection to the larger street network.**

8. THE GAIN, IF ANY, TO THE PUBLIC HEALTH, SAFETY AND WELFARE DUE TO THE DENIAL OF THE APPLICATION, AS COMPARED TO THE HARDSHIP IMPOSED UPON THE LANDOWNER, IF ANY, AS A RESULT OF DENIAL OF THE APPLICATION

Applicant's Response: *The gains to public welfare proposed by this application are the gains associated with creating appropriate transitional residential development adjacent to established*

neighborhoods and highway corridors. Denial of this application will perpetuate the vacancy of this land.

Evaluation of this criterion includes weighing the benefits to the public versus the benefit of the owners of the subject property. Benefits are measured based on anticipated impacts of the rezoning request on the public health, safety, and welfare.

This portion of the development request is the most controversial. It introduces an opportunity for multi-dwelling development of 62 units along K-10 Highway and 6 lots of 4-plex units adjacent to the proposed RM12D district (86 total units). This request facilitates the development of vacant property for residential purposes. The project extends the city's infrastructure within the existing boundaries of the city as infill development. As streets are constructed additional connectivity to this area west of George Williams Way will be added.

If this application is denied, the applicant could seek a request for a different zoning district. Development of the property has been anticipated for residential development since 2002. Development of this area is one of timing as it relates to the developer's schedule. There are no impediments to extending public infrastructure to this area. Development of the site facilitates vehicular and pedestrian connectivity.

A plat restriction provides a timing guarantee which will minimize the impact of the proposed development.

Staff Finding – Approval of the request facilitates infill residential development between George Williams Way and K-10 Highway and the efficient extension of public services and utilities. Denial of the request would result in a revised development plan for the area. **This zoning request with the preliminary plat includes a provision to limit the RM12 development until Renaissance Drive is extended to the south to connect with Bob Billings Parkway. This will mitigate development impacts on the developed area to the east.**

9. PROFESSIONAL STAFF RECOMMENDATION

The purpose of the RM12 district is found in Section 20-204 of the Development Code. This district is included with all other RM districts. The Development Code states:

> *The primary purpose of the RM districts is to accommodate multi-dwelling housing. The district is intended to create, maintain and promote higher density housing opportunities in areas with good transportation access.*

The RM12D and the RM12 have the same density and dimensional standards. However, the RM12 district accommodates multi-dwelling development in the form of triplex, 4-plex and apartment type units. Each lot may be developed with more than one structure.

Staff has received numerous calls regarding the proposed Langston Heights development project specifically as it relates to the use of the RM12D and RM12 zoning districts. A key consideration in this evaluation is the concurrent application of the preliminary plat that is used to define the boundary of each district of the request.

Previous applications provided either full development of the subject property as an exclusively single-dwelling detached lot subdivision or provided duplex zoning as a transition from north to south. The only transition provided for K-10 Highway was a public street with a single row of lots facing the highway. The current request provides a reasonable transition of land uses with back-to-back lot orientations and a decrease in intensity east of the highway. The RM12 portion of the request provides the specific buffer adjacent to K-10 Highway. The concept plan depicts 62 dwelling units along the highway. These units would have a smaller profile and are expected to be 1-2 stories limiting the bulk and massing of the structures. This building type increases the compatibility of the future development to the lower density developments to the east.

The RM12 district allows 35' tall structures, which would permit a greater number of stories than reflected on the concept plan. If the physical components of the RM12 portion of the project are important to achieve as great of compatibility as possible, the Planning Commission may wish to consider conditioning the zoning on a maximum density of 86 units and a maximum number of stories to two.

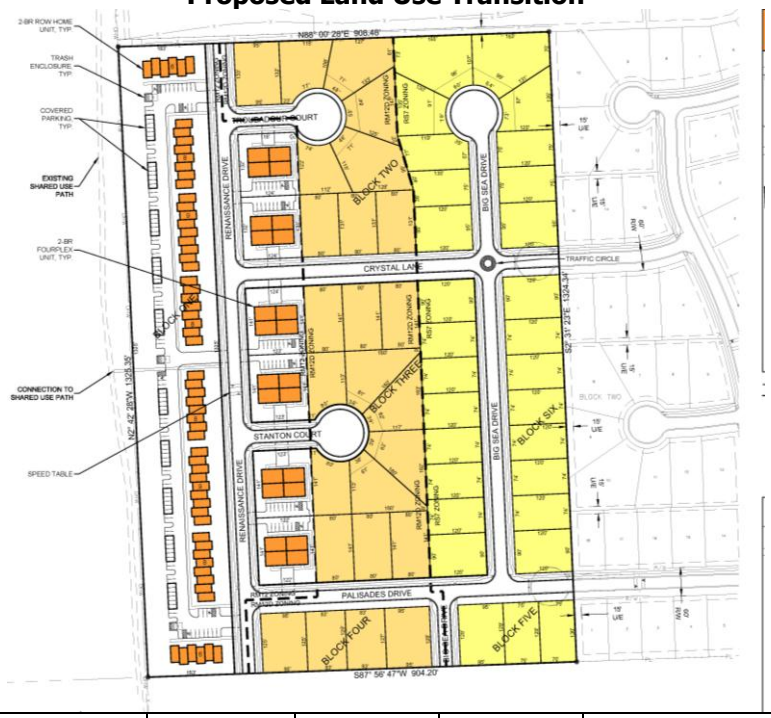
Lot 1, Block 1, of the preliminary plat represents the multi-dwelling portion of the request on the west side of Renaissance Drive. This portion of the development provides a buffer between the highway and the lower density development to the east. The Preliminary Plat states *"Building permits for structures in Lot 1, Block 1 will not be made available until such time that Renaissance Drive is constructed and completed south to Bob Billings Parkway."* This is a self-restricting condition the applicant has proposed to mitigate the impact of the project impacts on the developed are to the east.

CONCLUSION

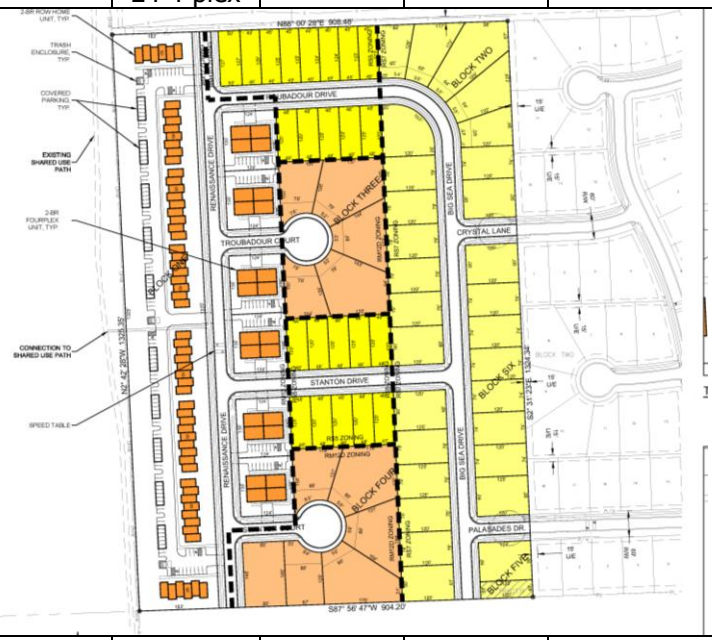
The proposed use of RM12 is a reasonable approach for land use adjacent to a highway. Considered concurrently with the preliminary plat **and plat restrictions** the proposed request limits the intensity of the overall development to a use compatible with the planned and existing uses to the east. This request is part of a larger development request that integrates the land use, density and subdivision design for property.

The project facilitates infill development and the efficient extension of utilities.

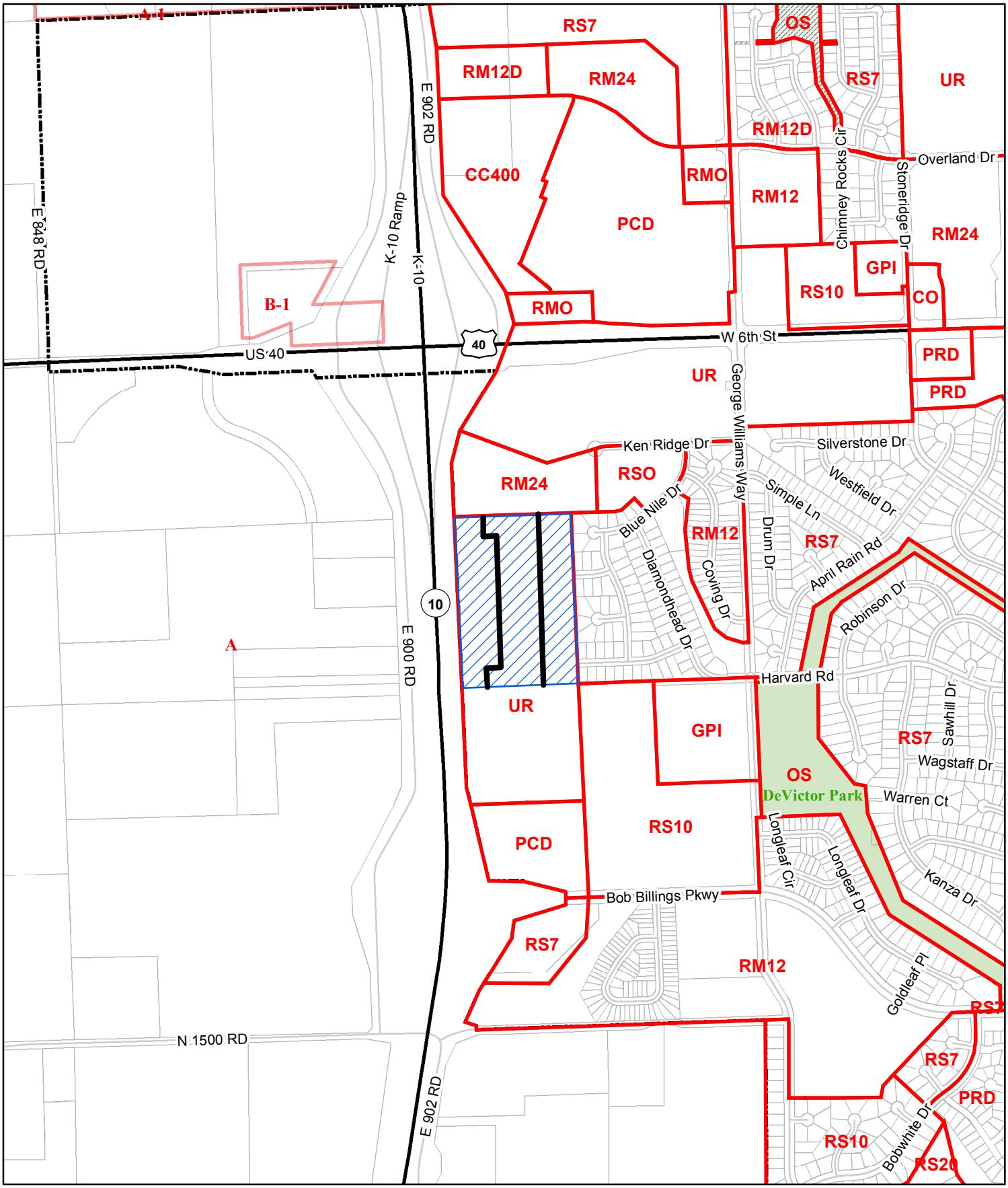
Proposed Land Use Transition



DU – Dwelling Units	**7 lot** **86 DU** 62 multi-dwelling 24 4-plex	**25 Lots** **50 DU**	**29 Lots** **29 DU**	



DU – Dwelling Units	**7 Lots** **86 DU** 62 multi-dwelling 24 4-plex	**33 Lots** **45 UD** 23 SFR 22 duplex	**29 Lots** **29 DU**	



Z-12-00229: Rezone 8.5 acres from UR to RM12D
Z-12-00231: Rezone 9.2 acres from UR to RS7
Z-12-00232: Rezone 9.8 acres from UR to RM12
East of K-10 Highway & south of W. 6th St

Area Requested

Scale: 1 Inch = 1000 Feet

Lawrence-Douglas County Planning Office

January 2013

RECEIVED
JAN 28 2013
City County Planning Office
Lawrence, Kansas

LEAGUE OF WOMEN VOTERS®
OF LAWRENCE/DOUGLAS COUNTY

January 27, 2013

President
Melinda Henderson

President-Elect
David Burress

Vice President
Milton Scott

Secretary
Caleb Morse

Treasurer
Marjorie Cole

Directors
Margaret Arnold
Bonnie Dunham
James Dunn
Sally Hayden
Cille King
Ruth Lichtwardt
Marlene Merrill

Mr. Bruce Liese, Chairman
Members
Lawrence-Douglas County Metropolitan Planning Commission
City Hall
Lawrence, KS 66044

RE: ITEM NO. 3: PRELIMINARY PLAT AND REZONINGS FOR LANGSTON HEIGHTS ADDITION: E SIDE OF K-10 AND S OF W 6TH ST. (SLD)

Dear Chairman Liese and Planning Commissioners:

After studying the new Preliminary Plat and proposed rezonings for Langston Heights, we hope you will consider our original thoughts on this issue again. For your convenience, we have attached our original letter to you.

We do acknowledge that the issue of traffic from the multiple family development on Block One, Lot One has been alleviated to an extent. The restriction on Block One, Lot One development, until the connection to Bob Billings Parkway is opened, will help. This is the most intensive multiple family area. However, this issue still remains for traffic headed east and north from Block One, Lot One.

Also, the lack of predictability in the development of our neighborhoods is still a major problem in Lawrence. This is caused, among other reasons, by designations in our Comprehensive Plan of density only in the Area Plans coupled with the lack of definition of housing type in our multiple family districts. We describe this better in our attached letter.

We hope that you will consider our comments again because we believe they continue to apply here. Thank you.

Sincerely yours,

David Burress
President-Elect

Alan Black, Chairman
Land Use Committee

Attachment

PO BOX 1072 • LAWRENCE KS 66044-1072
league@sunflower.com • www.lawrenceleague.com
www.facebook.com/lwvldc • www.twitter.com/lwvldc

ATTACHMENT

LEAGUE OF WOMEN VOTERS®
OF LAWRENCE/DOUGLAS COUNTY

RECEIVED
DEC 19 2012
City County Planning Office
Lawrence, Kansas

December 10, 2012

To: Lawrence/Douglas County Planning Commission:

Re: Langston Heights, Items 5A, 5B, 5D

President
Melinda Henderson

President-Elect
David Burress

Vice President
Milton Scott

Secretary
Caleb Morse

Treasurer
Marjorie Cole

Directors

Margaret Arnold

Bonnie Dunham

James Dunn

Sally Hayden

Cille King

Ruth Lichtwardt

Marlene Merrill

The League of Women Voters of Lawrence/Douglas County has strong positions on neighborhood planning. We believe that "the primary urban planning unit should be the neighborhood, large enough to support the location of a nursery-elementary school, park...and should reduce to a minimum the use of the private car within each neighborhood." Therefore, we are concerned about the proposal for the multiple family lot configurations of the Langston Heights Addition and their proposed rezoning to RM districts.

We strongly support designing neighborhoods with housing types suited to families with children that are close to elementary schools with pedestrian ways designed for safe walking, and believe that it is very poor planning to locate multiple family housing that is not appropriately designed for this near our schools. Multiple family housing types can be designed for families with children, but must have the needed amenities such as privacy, open space and other facilities to make such units attractive for family life, which this proposed development does not have. Additionally, we support staff's recommendation to deny the applicant's request for a variance to allow sidewalks on only one side of streets.

Because of the effect this multiple family housing would have on the future development of the adjacent vacant land to the south of this tract, it can be predicted that this land also would become multiple family and not attractive for families with children. Because of the proximity that these two tracts have to Langston Hughes Elementary School, we believe that this would be very poor urban planning and a serious waste of potential that these two properties would have to reduce automobile use and utilize these valuable areas for encouraging families to live within walking distance to the school.

We believe that the reason that this type of poor urban planning is not uncommon in Lawrence is because of some serious deficiencies in our Land Development Code and how it leads to the interpretation of *Horizon 2020*:

- The multiple family districts do not specify housing type.
- The only distinction in our Comprehensive Plan (CP) in the designation of residential areas is based on density. Because of the long-standing interpretation of our CP, it is possible to allow all types of multiple family units from tall apartments to duplexes to achieve the gross densities that are typical for detached single family housing. Therefore, the density designation in our CP is not an appropriate prediction of use.
- The CP does not include the same goal that *Plan '95* did, which emphasized that development should be designed for the ultimate user and not to satisfy only the needs of the developer.

These factors eliminate the essential predictability that homeowners need to be able to have confidence in the stability and future of their neighborhoods when they make the substantial investment for living in a community. It tends to reduce the trust needed for a growing and thriving city to attract new residents. We ask that you take these factors into consideration when making your decision on this rezoning request. The future of our city depends on good urban planning. We would look forward to a discussion about making the necessary changes to our Land Development Code and *Horizon 2020* to create the predictability in our neighborhoods that we need.

Thank you for your consideration of these issues.

Melinda Henderson
President

Alan Black, Chair
Land Use Committee

PO BOX 1072 • LAWRENCE KS 66044-1072
league@sunflower.com • www.lawrenceleague.com
www.facebook.com/lwvldc • www.twitter.com/lwvldc

From: Andrew Pitts [mailto:APitts@TreanorArchitects.com]
Sent: Friday, January 25, 2013 8:29 AM
To: Brian Sturm
Cc: Christopher Storm; phils@LANDPLAN-PA.COM; bobdennsan@gmail.com; douglas.raney@gmail.com; timaherndon@att.net; Sandra Day
Subject: RE: Langston Heights Addition - revised Concept Plan

Brian-

Thank you for the revised concept. As I mentioned, we have been circulating the revision throughout the neighborhood. We had hoped this type of dialogue could have happened prior to our last meeting, but appreciate the developer continuing to review and refine the concept.

Honestly, the change still causes great discomfort amongst most of the neighborhood. One of the biggest issues still is the density. While there was a change from duplexes to the RS-5, this is an undesirable zoning adjacent to the RS-7. This will not change density (as is indicated in the staff report) and will lower the property values of the area. The type of home built in RS-5, regardless that it is a single-family detached home, will be long and narrow and out of context and scale with the balance of the neighborhood.

Another issue continues to be the four-plex development. These are extremely undesirable.

While I have only spoken to a few and do not know how well this would be received, I would offer the following ideas for your consideration:

1. In lieu of the RS-5, continue the RS-7 zoning down both Troubadour Drive and Stanton Drive to Renaissance Drive. This would be similar to the plan, but would remove the four-plexes at the end of those roads.

2. The other idea would be to continue the duplexes on both Troubadour Ct and Stanton Ct. to Renaissance Drive. This would remove the four-plexes and have each of these cul-de-sacs being only duplexes.

3. The street network and row-housing would remain as designed.

I believe these types of changes could find favor among some in the neighborhood. These changes, coupled with your agreement to not build the multi-family until the completion of Renaissance Drive could be very positive. Again, these are my ideas in an effort to continue the dialogue and try to move this project forward and not a denial. I cannot guarantee if any other neighbors would agree, but think this could bring a positive response.

Please consider these ideas and let me know if you have any questions.

Thanks,

Andy Pitts

From: Andrew Pitts [mailto:APitts@TreanorArchitects.com]
Sent: Wednesday, January 23, 2013 9:44 AM
To: Brian Sturm
Cc: Christopher Storm; phils@LANDPLAN-PA.COM; bobdennsan@gmail.com; douglas.raney@gmail.com; timaherndon@att.net; Sandra Day
Subject: RE: Langston Heights Addition - revised Concept Plan

Thank you. We have been circulating and trying to gather our comments.

Andrew Pitts

From: Brian Sturm [mailto:brians@LANDPLAN-PA.COM]
Sent: Monday, January 21, 2013 1:15 PM
To: Andrew Pitts
Cc: Christopher Storm; phils@LANDPLAN-PA.COM; bobdennsan@gmail.com; douglas.raney@gmail.com; timaherndon@att.net; sday@lawrenceks.org
Subject: Langston Heights Addition - revised Concept Plan

Andy,
As a follow-up to our last meeting on Thursday, 1/10/13, please find attached an electronic copy of the revised Concept Plan for Langston Heights Addition. Last week, Landplan submitted to the City a revised Preliminary Plat and zoning district boundaries based upon this concept. Most all of the features shown in the plan discussed at our meeting on the 10th remain as components in this concept:

- An overall reduction in units (160 down from 165)
- Phasing that prohibits the construction of the 62-unit row home community until Renaissance Drive is constructed and complete south to Bob Billings Parkway.
- A street layout that promotes traffic calming and minimizes interaction between traffic generated by the single-family and multi-family components of the project.

The developer chose to make one additional change following our meeting: replacement of 26 duplex units with 23 single-family units adjacent to Stanton Drive and Troubadour Drive. The comment issued by you and your neighbors that the concept easily allowed for the extension of the single-family component down these two streets spoke loudly to us. Ultimately the developer sees great merit in using a single-family detached product to define the look of the eastern half of the neighborhood while transitioning to the SLT with a spectrum of multi-family products. I hope that the residents of the Diamondhead neighborhood also see this change as an improvement.

In regards to the traffic generated by this new concept, I have prepared below a table that breaks down the trips generated by the Langston Heights development per street. This table examines each of the proposed plats for this project (the one approved in 2006, the one submitted last October, as well as this latest revision) and then based on our trip distribution model assigns the number of trips that would travel down each of the three access streets (Crystal Lane, Palisades Drive and Renaissance Drive) during the critical peak period (afternoon peak-hour on a typical weekday).

Street	**2006 Plat**	**2012 Plat**	**2013 Plat, Phase 1**	**2013 Plat, Phase 2**
Crystal Ln.	45 (45%)	60 (45%)	41 (45%)	62(45%)
Palisades Dr.	56 (55%)	74 (55%)	51 (55%)	30 (22%)
Renaissance Dr.	N/A	N/A	N/A	45 (33%)
Total Trips	**101 (100%)**	**134 (100%)**	**92 (100%)**	**137 (100%)**

I will say a few things about the information in this table:

- The phasing built into this latest Concept Plan ensures that the volume of Langston Heights traffic cutting through the Diamondhead neighborhood will remain below the levels exhibited with the plat approved in 2006 (92 down from 101).

- The total volume of trips generated by this latest Concept Plan is higher than that associated with the plat submitted last October (137 up from 134). This slight uptick is due to the proposed increase in single-family units (52 up from 29) and decrease in multi-family units (108 down from 136).
- Let me know if you would like to review a copy of the full addendum to the Traffic Impact Study that Landplan submitted to the City.

The Planning Commission will resume their consideration of the Preliminary Plat and rezoning requests at their meeting next Monday, the 28th. Don't hesitate to let me know if you or your neighbors have any questions or comments concerning the above information. Your efforts, thus far to continue the dialogue associated with this development, have helped produce a stronger design.
Thanks,

Brian Sturm, RLA, ASLA, LEED AP
Project Landscape Architect
Licensed in KS

Landplan Engineering, P.A.
1310 Wakarusa Drive
Lawrence, Kansas 66049
v. 785.843.7530
f. 785.843.2410

Lawrence, KS • Kansas City, MO • The Woodlands, TX • Farmington Hills, MI • Columbus, OH
www.landplan-pa.com



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Lawrence Public Schools
110 McDonald Drive
Lawrence, Kansas 66044-1063
Telephone: (785) 832-5000

LAWRENCE
PUBLIC SCHOOLS

January 16, 2013

Lawrence-Douglas County Planning Commission
ATT: Bruce Liese, Chair
City Hall, 6 East 6th Street
Lawrence, KS 66044

RE: Langston Heights Rezoning Applications
Z-12-0029, Z-12-00231 and Z-12-00232

Dear Planning Commissioners:

Unified School District No. 497 traditionally does not take positions on neighborhood developments. The school district is here to serve all children attending public schools and has no position regarding the merits of the proposed development or any other development. With that said, Principal Jackie Mickel has expressed concerns about a potential traffic increase near Langston Hughes Elementary School at the intersection of Harvard Road and George Williams Way.

Please be advised that the applicant's revised proposal is a reasonable attempt to remedy those traffic concerns. The connection of Renaissance Drive to Bob Billings Parkway is viewed as an ideal solution to presently existing traffic issues in and around Langston Hughes Elementary School. The district is discussing opportunities to create another entrance/exit using Renaissance Drive. We are appreciative of the input from all concerned stakeholders, as it appears to have resulted in meaningful progress on those subjects.

Sincerely,

Dr. Rick Doll
Superintendent of Schools

Lawrence Douglas County Planning Commissionors January 19, 2013
Bruce Liese, Chair
Scott McCullough, Director Planning and Development Services
Sandra Day, Current Planner

The Diamondhead Neighborhood, the neighborhood, is writing to request that the Lawrence Douglas County Planning Commission deny RSR Development, LLC, the developer, a request to re-zone Langston Heights Development during the upcoming January 28 meeting. The neighborhood feels the plat changes offered thus far by the developer are not dramatic enough to warrant acceptance by the neighborhood. We received the plan attached, LangstonHeights2.pdf on January 10. This is the result following a meeting on December 20. At the meeting on the 20th we discussed opportunities the neighborhood felt would make for a viable solution and at this time we do not feel we are seeing enough change in the attached plan.

We appreciate the opportunity awarded us by the planning commission to be a part of this process, but we feel the developer has not met specific needs: A need for reduction in density, a focus on traffic issues, and improvement to the overall character of the neighborhood.

We share Commissioner Lamer and Blaser's concern during the December 10 planning commission meeting that RM12 and RM12D do not constitute single family zoning within Langston Heights. We agree that the type of zoning within Langston Heights will effect the future development of land to the south, which will have a bearing on the overall character of the entire neighborhood. Horizon 2020 calls for expectations to be set for neighborhoods. Our neighborhood had the expectations established in the 2006 plat, which called for single-family homes with a small concentration of duplex units. Keeping in mind that the planning commission also predicts single-family housing to be developed in the land to the south, the expectation is there for Langston Heights to be developed as a single-family development. Commissioner Josserand also expressed concern for the amount of multifamily dwellings planned for Langston Heights. During a December 20 meeting at Landplan Engineering, Inc. we shared similar concerns with the developer, but we do not see our concerns reflected in the revised plat LangstonHeights2.pdf.

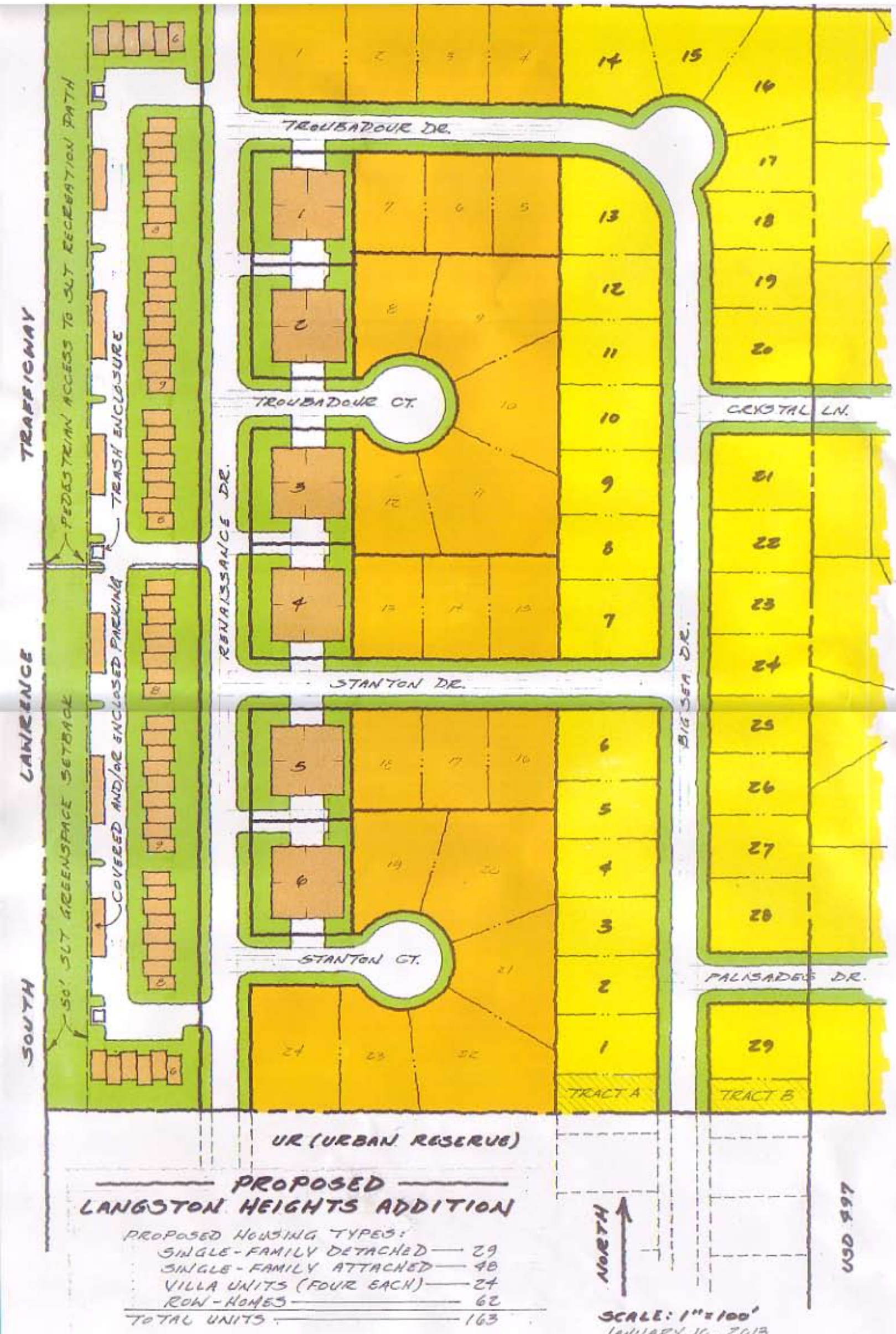
We also agree with Commissioners Josserand and Britten that high density traffic flowing into single family residence through Crystal Lane and Palisades Drive is a large problem. Without Renaissance Drive effectively connecting to 6th street and Bob Billings Drive, a traffic pattern through the existing neighborhood will establish. This traffic pattern has the potential to create unnecessary traffic that would not exist if Renaissance Drive were established at the beginning of the project.

As to the overall character, our neighborhood agrees with Commissioner Liese that this development should not be treated as an experiment. The concept of placing high-density housing flowing into single family residence remains in the revised plan for Langston Heights. A concept that is not seen anywhere else in Lawrence. Reconfiguration of roads was added to the revised plot, but the amount of high density still remains and although the overall average across the entire plat remains at 6 units per acre, the fact remains that the amount of high and medium density has not reduced.

Our neighborhood agrees with Commissioner Blaser that we are not giving respect to the land south of Langston Heights. The location of Reniasance Drive south and the decision on what is built in Langston Heights will effect the types of building planned for the land to the south, therefore setting the stage for the overall character of a high density neighborhood, which is not the expectation of the neighborhood, the West Lawrence Neighborhood Association, Horizon 2020 or the understanding of the Planning Commission members as stated during the December 10 meeting.

There is no reason why land east of K-10, south of 6th street and north of Bob Billings cannot receive the same level of respect as the design offered within the West of K-10 Plan. With new developments to Rock Chalk Park to the north of 6th street and George Williams Way and recent developments to acquire land to the south of Langston Heights by the developer, we feel it is time to create an East of K-10 comprehensive Plan. Therefore we respectively ask that you deny RSR Development, LLC the request to re-zone Langston Heights with the current plan LangsonHeights2.pdf.

Diamondhead Neighborhood



PROPOSED
LANGSTON HEIGHTS ADDITION

PROPOSED HOUSING TYPES:

SINGLE-FAMILY DETACHED	29
SINGLE-FAMILY ATTACHED	48
VILLA UNITS (FOUR EACH)	24
ROW-HOMES	62
TOTAL UNITS	163

SCALE: 1" = 100'
JANUARY 10, 2013

Sandra Day, AICP City/County Planner, City of Lawrence

RE: Landplan Engineering Informational Session December 3, 2012 Langston Heights Development

We are writing to ask you to consider deferring the rezoning of Langston Heights (Parcel west and south of Diamondhead) from UR to RM12 and RM12D in order to provide for a more agreeable development. The increase in traffic, decreased in property values and changes to the original 2006 plat are issues that need to be addressed.

The new plan proposal is to build a total of 165 housing units on 61 lots. With only 2 streets (Crystal Lane and Palisades Drive) servicing current and additional units, traffic will be heavier than originally planned for these two streets. This plan shows this with the numerous traffic calming devices located on the expanded Crystal Lane. Crystal Lane and Palisades were originally developed as a lead in to other single family housing, not medium density apartments. Typically, medium density housing is at the front of subdivisions, leading farther in to low density housing, this proposal is the exact opposite of that. Palisades already has issues on school days due to drop off and pick up from Langston Hughes Elementary School; it can't handle the additional traffic flow. Even when the future "proposed" access to 15th street and George Williams Way get added, traffic from this development will still be pushed through low density housing in nearly every direction. The Horizon 2020 plan specifically discourages this action with numerous aspects outlined in the bottom of this letter.

Should this plan be approved, due to the direct impact of the medium density housing, property values in the Diamondhead subdivision will decrease. When we bought our home back in 2007, we knew additional low density housing would soon follow to our west. This was based on the Planning Commission approval in January 2006 of single family homes in the Langston Heights area. We never would have bought our new home in this location had we known apartments and duplexes were to be built, and future potential home owners will feel the same way. We all based our decisions off this approved 2006 zoned plat for single family homes.

As you will see at the December 10th meeting, the Diamondhead subdivision is a unique neighborhood with a large population of kids. Traditions such as our July 4th parade, Easter egg hunts, neighborhood cookouts, and the general family feel among neighbors will be lost if this proposal passes.

Please see to it that this proposal does not go any further without modifications. We are not against the expansion of our subdivision to the west, we are against the medium density zoning; we would happily approve of low density zoning, which would expand on this great neighborhood.

Thank you for your time.

Sincerely,

Brian and Jennifer McCall

6201 Berando Court

Horizon 2020 Plan that relate to this proposal: Low-Density Residential Land Use

GOAL 3: Neighborhood Conservation (page 5-15, 5-16) Policy 3.3: Encourage Compatible infill Development Policy 3.4: Minimize Traffic Impact through Neighborhoods GOAL 4: Criteria for location of Low-Density Residential Development (page 5-17) Policy 4.2: Protect Areas Planned for Low-Density Development GOAL 5: Create a Functional and Aesthetic Living Environment (page 5-19, 5-20) Policy 5.5: Ensure Convenient and Logical Street/Road System Design

Medium and higher Density Residential Land use

GOAL 1: Criteria for Location of Medium and Higher Density Residential

Development

Policy 1.3: Identify Suitable Sites (page 5-23)□Policy 1.5: Ensure Adequate Infrastructure (page 5-24)□Policy 1.6: Consider Access (page 5-24)□Policy 1.7: Adhere to Designated Land Uses (page 5-24) GOAL 2:

Create a Functional and Aesthetic Living Environment Policy 2.6: Consider Residential Density and Intensity of Use (page 5-26) GOAL 4: Transportation Considerations (page 5-30, 5-31) ALL OF THEM

November 28, 2012

Sandra Day, AICP City/County Planner, City of Lawrence

RE: Landplan Engineering Informational Session December 3, 2012
Langston Heights Development

As a member of the Diamonhead subdivision (6th and George Williams Way), I and over 50 households in our neighborhood are concerned by the recent application to change the Langston Heights development. When our family purchased into our neighborhood our builder, Neal Ezel, told us the design of the subdivision to the west would be low-density housing similar to ours. I want to thank the Lawrence Planning Department for their hard work in developing our neighborhoods and their insightful design of planned unit developments. So I hope you will understand my concerns for changes in the current plan.

The 270% increase in family units to the new Langston Heights subdivision creates an increase in pressure on property values, traffic, children's safety and schools in our neighborhood. see below*

The Lawrence Planning Department has laid out a solid plan for adding a single-family Langston Heights Subdivision into the existing Diamondhead Subdivision creating a flow of single family homes into an existing single family neighborhood. The addition of high-density development causes high density traffic to flow into the existing low-density neighborhood. The Lawrence Planning Department exercises good design in neighborhoods that include high-density developments close to main arteries to the city and single family low-density located on the interior of a development. The revisions to Langston Heights do not show good design.

It is with great concern for our young children, our property values and the quality of our neighborhood that we ask you to defer from the revisions to Langston Heights Development.

Sheri and Mark Crabtree
820 Andrew John Drive

*Using the "Preliminary Plat Langston Heights" and the "Concept Plan Langston Heights" document, a summary of the change in units follows:

Number of Lots Block	Preliminary	Concept	
1	1	62	
2	21	36	
3	24	48	
4	4	8	
5	3	3	
6	8	8	
	61	165	270.49% increase

December 03, 2012

Ms. Day,

I'd like to take the opportunity to express my concerns about the proposed rezoning of the Langston Heights area in West Lawrence. My chief concern with the rezoning of the area is the multi-family units that are proposed at the site.

My family currently resides at 6201 Crystal Lane which is in the Diamondhead Subdivision. We have lived at this location for nearly two years and have thoroughly enjoyed the quality of life in our home. After much domestic debate we chose this location to build our new home based on a variety of different factors. First, the neighborhood is in a very close proximity to Langston Hughes School where our children would be afforded the opportunity to walk safely to school on a daily basis. Second, we researched the original platting of the area west of our home and it was all originally platted and zoned for what we thought was low-density residential dwellings. Finally and most importantly, the character and makeup of the neighborhood itself drew us to this area. As soon as we selected our site we were invited and included in neighborhood picnics, parades, parties and Easter-egg hunts. Our children routinely play with other neighborhood children in the area and are constantly riding bicycles and crossing streets in the neighborhood.

I feel the rezoning of this area to include multi-family living will dramatically increase the amount of through traffic flow through our neighborhood streets. The main traffic flow of these 165 units will run past many residences and sidewalks that children utilize on a daily basis. I don't believe rezoning this area would contribute to the greater good of the area or the community. I would strongly disagree with anyone who believed otherwise.

I'd like to comment on a couple of points:

First, when the area was rezoned from Agriculture District (A) to Duplex – Residential District (RM-D) in 2005 there was concern expressed from Planning Commissioner Haase that he would support the motion but was "losing his appetite for RM-D zoning because it had been abused in other parts of the community." Was Commissioner Haase a visionary as to what was on the horizon for this area with his comments? I would agree with Commissioner Haase that the placement of muti-dwelling living with the only means of access through a residential neighborhood is an abuse of what those neighborhoods are designed to provide. The traffic that will come with the rezoning will diminish the quality of life and safety of those in our neighborhood. In that very same planning meeting in 2005, Betty Lichtwardt with the League of Women Voters expressed her concern for pedestrian access to the school. I feel her concerns voiced in 2005 echo loudly today.

Second, I do not feel that rezoning an area to include 165 multi-family units with the only access being residential, neighborhood streets is a common practice in the city. With the current proposed plan of the area, the only access to these units would be on Palisades Drive or Crystal Lane. The precedent of

accessing multi-family units through established residential neighborhoods is not one I am aware of at any other area of the city. Generally, it is my understanding that higher density zoned areas would be zoned close to larger artery and collector streets. This planned area would be close to neither. This plan would also direct this traffic through a residential area that is frequented by our children whom walk to school daily.

Finally, I struggle with the necessity for the re-zoning of areas in Lawrence to multi-family if there are any concerns on what effects it may have on the surrounding residents and neighborhoods. A recent article in the Journal-World noted a developer whom recently pulled plans to construct an apartment complex off of 31st Street. The developer was quoted "We were very excited about that market at one time, but we have tempered that excitement." According to this developer, there is capacity in the muli-family living market in city. Why would it be in the best interest of city to re-zone the area where is could have an adverse affect on an already thriving neighborhood community? I unwaveringly feel this development would have an adverse affect on the neighborhood in which we reside.

I want to be clear that I understand the importance of thoughtful expansion and development of neighborhoods in our community. I however believe that multi-family living units should be concentrated in areas that are easily accessible to major thoroughfares. Rezoning this area would accomplish just the opposite. The amount of traffic this action will generate would be a danger to the residents and children of our neighborhood.

I do appreciate the opportunity to comment on this issue. I would ask that you please include these comments for the Planning Commission to review. Thank You for your time.

Sincerely,

Ryan, Tiffany, Lillian and Jackson Fike

6201 Crystal Lane

From: Rick Hird [mailto:rhird@petefishlaw.com]
Sent: Thursday, November 29, 2012 8:21 AM
To: Matt Gudenkauf
Cc: Scott McCullough
Subject: RE: Langston Heights Rezoning

Dear Matt,

This will confirm that I have received and read your letter regarding the zoning of Langston Heights. I truly appreciate your input in the process. I have copied Scott McCullough on this email so he can circulate your email to the Staff and all of the Planning Commissioners.

Rick

Richard W. Hird
Petefish, Immel, Heeb & Hird, LLP
842 Louisiana
P.O. Box 485
Lawrence, KS 66044
785-843-0450
785-843-0407 fax

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From: Matt Gudenkauf [mailto:mattgudenkauf@gmail.com]
Sent: Wednesday, November 28, 2012 8:52 PM
To: Rick Hird
Subject: Langston Heights Rezoning

Dear Richard:

We are writing to ask you to consider deferring the rezoning of Langston Heights (Parcel west and south of Diamondhead) from UR to RM12 and RM12D in order to provide for a more agreeable development. The increase in traffic, decreased in property values and changes to the original 2006 plat are issues that need to be addressed.

The new plan proposal is to build a total of 165 housing units on 61 lots. With only 2 streets (Crystal Lane and Palisades Drive) servicing current and additional units, traffic will be heavier than originally planned for these two streets. This plan shows this with the numerous traffic calming devices located on the expanded Crystal Lane. Crystal Lane and Palisades were originally developed as a lead in to other single family housing, not medium density apartments. Typically, medium density housing is at the front of subdivisions, leading farther in to low density housing, this proposal is the exact opposite of that. Palisades already has issues on school days due to drop off and pick up from Langston Hughes Elementary School; it can't handle the additional traffic flow. Even when the future "proposed" access to 15th street and George Williams Way get added, traffic from this development will still be pushed through low density housing in nearly every direction. The Horizon 2020 plan specifically discourages this action with numerous aspects outlined in the bottom of this letter.

Should this plan be approved, due to the direct impact of the medium density housing, property values in the Diamondhead subdivision will decrease. When we built our home back in 2008, we knew additional low density housing would soon follow to our west. This was based on the Planning Commission approval in January 2006 of single family homes in the Langston Heights area. We never would have built our new home

in this location had we known apartments and duplexes were to be built, and future potential home owners will feel the same way. We all based our decisions off this approved 2006 zoned plat for single family homes.

As you will see at the December 10th meeting, the Diamondhead subdivision is a unique neighborhood with a large population of kids. Traditions such as our July 4th parade, Easter egg hunts, neighborhood cookouts, and the general family feel among neighbors will be lost if this proposal passes.

Please see to it that this proposal does not go any further without modifications. We are not against the expansion of our subdivision to the west, we are against the medium density zoning; we would happily approve of low density zoning, which would expand on this great neighborhood.

Thank you for your time

Matthew and Erica Gudenkauf
6204 Crystal Lane
Lawrence, KS 66049
(785)830-9802

Horizon 2020 Plan that relate to this proposal:

Low-Density Residential Land Use

GOAL 3: Neighborhood Conservation (page 5-15, 5-16)
- Policy 3.3: Encourage Compatible infill Development
- Policy 3.4: Minimize Traffic Impact through Neighborhoods

GOAL 4: Criteria for location of Low-Density Residential Development (page 5-17)
- Policy 4.2: Protect Areas Planned for Low-Density Development

GOAL 5: Create a Functional and Aesthetic Living Environment (page 5-19, 5-20)
- Policy 5.5: Ensure Convenient and Logical Street/Road System Design

Medium and higher Density Residential Land use

GOAL 1: Criteria for Location of Medium and Higher Density Residential Development
- Policy 1.3: Identify Suitable Sites (page 5-23)
- Policy 1.5: Ensure Adequate Infrastructure (page 5-24)
- Policy 1.6: Consider Access (page 5-24)
- Policy 1.7: Adhere to Designated Land Uses (page 5-24)

GOAL 2: Create a Functional and Aesthetic Living Environment
- Policy 2.6: Consider Residential Density and Intensity of Use (page 5-26)

GOAL 4: Transportation Considerations (page 5-30, 5-31)
- ALL OF THEM

November 27, 2012

Sandra Day, AICP
City/County Planner
6 East 6th street
Lawrence, KS 66044

RE: Langston Heights Addition
Planning Commission Agenda Items on December 10, 2012

Sandra,

We are writing to express our concerns associated with the four items on the Planning Commission agenda for December 10th for the Langston Heights development. We are responding to the material that has been currently submitted to the City for the application (application, plat, concept plans, etc.) The applicant and developer are holding a meeting with the neighborhood, but have scheduled this meeting (December 3rd) with limited to no time to be able to respond prior to the issuance of the staff report. We are submitting this prior to that meeting in order to be reviewed prior to the completion of the staff report and for inclusion on the packet to the Planning Commission.

The comments below represent the views and opinions of many within our neighborhood concerning the proposed zoning request and preliminary plat for the Langston Heights Addition. While many of us would welcome the proposed land to remain an open area, we all recognized that it would be developed as an extension of our neighborhood. Many of us, and those specifically on Palisades Drive and Crystal Lane, reviewed the current plans for this parcel of land prior to purchasing our home. While often there is limited knowledge of undeveloped area adjacent to a development, this was not the case with our neighborhood. There was a plat developed and approved by the Planning Commission and City Commission for this parcel of land. While the plat was never signed or recorded, it still provided a glimpse to the intentions of the land owner of their vision for this parcel of land.

We have attempted to address each specific agenda item individually but many of these issues crossover between items. Where this occurs we have indicated reference notes as appropriate.

PP-12-00228 Preliminary Plat for Langston Heights Addition: There are many concerns with the proposed plat and the proposed layout and land uses. Many of these concerns could be addressed should the land to the north and south of the proposed area be developed prior to or at the same time as this development. Obviously this is unrealistic to assume and the plat must be considered as development would not occur for some time to the north or south. Items of note include:

1. This is the second plat filed for this parcel of land. The first was approved in early 2006. This plat indicated 67 single-family and 18 duplex residential lots. While it is our understanding that is was never fully executed, it still provides reference to an alternate concept by the same land owner for this land.
2. Horizon 2020 indicates this area to be low-density residential. The application indicates that the Lawrence future land use map does not specifically designate a land use for this property. This is incorrect. The Nodal Plan for the Intersection of West 6th and KS 10 address this area as low-density. We understand that the project, as it relates to density, is using the entire land area to calculate the number of units per acre. We would caution the continued use of this method as it has recently caused conflicts in other areas of our community.

3. The plat indicates the extension of two local residential streets (Palisades Drive and Crystal Lane.) These two streets will be the only access point into the new development. Section 20-204 (e) of the Land Development Code indicates that "RM Districts are intended for implementation along Residential Collector, Collector and some Arterial Streets." Neither of these streets meets this requirement.
4. Renaissance Drive in the 2006 plat, the 2012 plat draft and on the concept plan (submitted by the applicant) all have indicated that this street would be a collector street. The current plat has changed this street to a local street. Should the RM zoning designation remain then the district should be accessed in accordance to the Development Code and Renaissance Drive shall remain as a collector street.
5. Renaissance Drive appears to be the proposed "connector" street from George Williams (via Ken Ridge) to the north and Bob Billings Parkway to the south. The use of this street in this manner is logical and would serve as a residential collector street for these neighborhoods and future development. As noted above though, it is unknown when this street would be completed and until such time, would not serve as a collector street. Regardless, this street should remain as a collector or residential collector street,
6. Should the RM zoning designation remain then a condition to the plat should be added that, until such time that Renaissance Drive is completed to either the north or the south, the RM zoning district should **not** be allowed to be developed. This would allow the collector street to be developed as required by the development code.
7. The request for variance on the sidewalks should be denied. While regulation may have changed from the time the adjacent land was developed and sidewalks were not installed on both sides of the local streets, this should not prevent the owner from providing walks per the Development Code. Sidewalks add to the "live-able" character of a neighborhood. In addition, as a neighborhood with many young children, sidewalks on both sides of a street eliminate the need to cross the street as often. Most of the children in this neighborhood enjoy the opportunity to walk to elementary school, and with the increased vehicle traffic of the development, the sidewalks on both streets would add to the safety of the neighborhood.
8. A traffic calming device, similar to the roundabout at Crystal Lane and Big Sea Drive, should be installed at Palisades and Big Sea Drive. While there is a speed hump in the mid block of Palisades this device does not appear to reduce the speed of vehicles in the neighborhood on this street or the adjacent streets.

Item Z-12-00220: Rezone to RM12D

1. RM Districts are intended for implementation along Residential Collector, Collector and some Arterial Streets. As noted above, neither Palisades Drive nor Crystal Lane qualifies as these street types.
2. The medium density zoning will be accessed through an existing low-density residential area and a proposed low-density residential area. There are no recent developments in Lawrence where this occurs. All other RM12 zoning is accessed from an adjacent collector street and not through a lower density residential neighborhood on a local street.
3. This zoning will pre-determine a portion of the land use to the south. The RM12D zoning adjacent to the southern edge will pre-determine RM12D zoning adjacent. The application specifically states, in Item 2, that this zoning change will develop "precedent for adjacent vacant properties." It can only be assumed, given the relationship of the developer of this parcel of land to the land owner to the south, that it is the intention to continue medium density residential to the south. This is counter to the future land uses indicated in Horizon 2020 for low-density residential.
4. Item 3 in the application indicates that the rezoning "will pose no detrimental effect to the nearby properties." This statement is unfounded. The increased traffic with medium density zoning and the unknown level of quality of the development could directly impact the adjacent property uses and land values. Unless the owner proposes restrictions to the type of development that could occur, materials

5. If this rezoning is to be considered in concert with the other two rezoning applications then a Planned Unit Development (PUD) should be required to ensure the type of development proposed with the plat is the actual development.
6. Item 6 of application indicates that "denial of this application will perpetuate the vacancy of this land." This statement is unfounded. This is the second plat for this portion of land by the same developer. There are obvious multiple uses for this parcel of land. Denial will not perpetuate vacancy. It is obvious that this parcel will be developed, but the question is whether the medium density zoning is appropriate.

Item Z-12-00231 : There is no opposition to Item Z-12-00231 to rezone land from UR to RS7. This land change is the expected zoning for this parcel of land considering the existing adjacent land uses. This zoning change is also expected as it represents the intention of a plat developed by the same land owner, Langston Heights L.C. in 2006. This plat was a document many of us referenced prior to purchasing our home.

Item Z-12-00232: Rezone to RM12

1. Many of the issues for this development are identical to the issues associated with the RM12D rezoning. Please refer to items 1, 2,4,5, and 6.
2. This zoning will pre-determine a portion of the land use to the south. The location of Renaissance Drive and its connection to the South, along with the RM12, will predetermine the land south of this development and west of Renaissance Drive to continue the RM12 or higher zoning designation. This, coupled with the RM12D predetermined zoning, will raise the density from low density residential to medium-density residential. This is counter to the indication of the Horizon 2020 land uses for this area. The application specifically states, in Item 2 that this zoning change will develop "precedent for adjacent vacant properties." It can only be assumed, given the relationship of the developer of this parcel of land to the land owner to the south, that it is the intention to continue medium density residential to the south. This is counter to the future land uses indicated in Horizon 2020.
3. Item 3 in the application indicates that the rezoning "will pose no detrimental effect to the nearby properties." This statement is unfounded. The increased traffic with medium density zoning and the unknown level of quality of the development could directly impact the adjacent property uses and land values.

We apologize for the length and depth of this letter, but the quantity of items to be considered and the complexity of each issue requires a proper response. We look forward to being able to hear from the applicant and owner at their presentation next week and will respond accordingly should the situation dictate.

We hope that you consider these issues prior to the completion of the staff report and, as previously noted, include this correspondence in the packet to the Planning Commission.

Respectfully submitted,

Andy and Debbie Pitts
6212 Palisades Drive

From:	Michael Whittlesey
To:	Sandra Day
Subject:	Langston Heights
Date:	Thursday, November 29, 2012 10:41:55 PM

Dear Sandra:

I am writing in opposition to the possible re-zoning of the Langston Heights development from a low density plan to a high density plan. The ramifications of this re-zoning would drastically effect the entire community and safety of the Diamondhead Development and the Langston Hughes Elementary school. The increase in traffic on Crystal lane and Palisades Dr that would come with the high density development would be approximately an additional 400 cars on streets that directly feed an elementary school. The majority of the residence in the Diamondhead Development built in the area under the knowledge that the original zoning of the Langston Heights was a low density plan. We all built in the area with the idea that it would remain a safe place to raise our children and with easy and safe access to Langston Hughes Elementary. Palisades Dr access to Diamondhead Dr is the main route that parents take daily to drop of their children to LH Elementary. Diamondhead Dr has become a one lane road as parents, in not only the Diamondhead Development but from other neighborhoods, use the access that Diamondhead Dr has to Langston Hughes Elementary to drop of their children. The design and road infrastructure of the Diamondhead Development was not built to handle the additional increase in traffic proposed with the re-zoning of the Langston Heights Development to a high density design. The infrastructure of the road might be able to handle the increase traffic but the density of housing projected in the traffic planning of the roads was for single family homes in the adjacent land use. Diamondhead development has sidewalks on only one side of the road as the design of the neighborhood and future development would not have the traffic load that would require sidewalks on both sides of the road. We all knew the Langston Heights would be developed but as a low density project with additional single family homes. Please consider the safety, quality of life, and infrastructure ramifications to all three communities Langston Heights, Diamondhead and Langston Hughes Elementary that this re-zoning would cause.

My wife and most in our immediate community actually commute out of Lawrence daily. However, we choose to build in this development because of the current residence, the sense of community, and the safety of the current planning of this area. We looked into the future planning of this development and where told it was zoned as single family to continue the continuity of the current development. As parents of 2 young children this was the ideal neighborhood considering safety, community togetherness, other children to play with and the closeness of schools. Rezoning this plot would drastically impact the safety of all these children playing in the area.

Thank you for your time and service.

Michael Whittlesey
6209 Crystal Lane
Lawrence KS

Sent from my iPad

Sandra L. Day, AICP, *City/County Planner*
Planning Division
P.O. Box 708, Lawrence, KS 66044
Office (785) 832-3161 | Fax (785) 832-3160
RE: Land plan Engineering Informational Session December 3, 2012
Langston Heights Development
December 5, 2012

Dear Sandra Day:

As a member of the Diamondhead subdivision, my husband and I are very concerned by the recent application to change the Langston Heights development. When we purchase our home, we were told that the design of the subdivision to the west would be low-density housing similar to ours. We want to thank the Lawrence Planning Department for their hard work in developing our neighborhoods and their insightful design of planned unit developments. We hope you will understand our concerns for changes in the current plan.

The 270% increase in family units to the new Langston Heights subdivision creates an increase in pressure on property values, traffic, children's safety and schools in our neighborhood. We feel that the proposed zoning does not guarantee any specific types of building. We feel left in the dark with the current proposal. We want to know if this design has worked well in other neighborhoods in Lawrence. If it has not, why our neighborhood should be a test case for what appears to be bad design.

We are not against the expansion of our subdivision to the west, we are against the medium density zoning; we would happily approve of low density zoning which would expand on this great neighborhood.

It is with great concern for our young children, our property values and the quality of our neighborhood that we ask you to defer from the revisions to Langston Heights Development.

Please include our letter in the Langston Heights Planning Packet!

Thank you very much for your time and consideration!

Sincerely,

Xiufen Bi and Gary Jiang
824 Diamondhead Dr.

From: Andrew Pitts [APitts@TreanorArchitects.com]
Sent: Wednesday, December 05, 2012 12:52 PM
To: Scott McCullough
Cc: markandsheri; lhanna@HNTB.com; ryanlfike@gmail.com; Boedeker; carisa@freshsound.com; tiffanyfike@gmail.com; donherbel@att.net; mattgudenkauf@gmail.com; dltate180@gmail.com; Bradley R. Finkeldei; Crabtree, Mark A.; dustin@freshsound.com; ahanna356@gmail.com; Home; Erica Gudenkauf; bigalcowles@gmail.com; lindalh2009@att.net; nate@lawrencewesleyan.com; shubhshar@gmail.com; mcsparky45@yahoo.com; thepitts@sunflower.com
Subject: December 10th Planning Commission: Langston Heights Agenda Items

Scott-

On behalf of our family and numerous others within the Diamondhead Neighborhood we are requesting consideration of moving Agenda Items No 5A, 5B, 5C and 5D to earlier in the Planning Commission meeting.

We ask this in order to accommodate the members of our neighborhood that wish to speak on these items. A significant portion of our neighborhood are families with children and a significant portion of these children are elementary or younger. While we have coordinated babysitting for neighborhood families at neighbors homes, we have parents that will need to leave to be able to ensure our children are in bed at a reasonable hour, especially on a school night.

This was best illustrated at the public meeting held this last Monday evening at Langston Hughes Elementary school. The meeting started at 7pm and we had approximately 50 neighbors in attendance. By 8pm many needed to leave to be able to attend to their children's needs.

We recognize the importance of the agenda items prior to this item and the amount of public or commission discussion that may occur. But we also believe that it would be a disservice for those that would like to address this item should the discussion linger on the later in the evening.

I want to thank you for your consideration on this item and look forward to the meeting on Monday.

Sincerely,

Andrew Pitts

December 6, 2012

Sandra Day, AICP
City/County Planner
6 East 6th street
Lawrence, KS 66044

RE: Langston Heights Addition
Additional Correspondence for
Planning Commission Agenda Items on December 10, 2012

Sandra,

Please accept the following correspondence to supplement our prior letter. This letter shall address items addressed at the neighborhood meeting held by the applicant and developer and the recently issued staff report.

On December 3rd, the applicant and developer held a neighborhood meeting at Langston Hughes Elementary School to address this proposal. Approximately 50 people were in attendance, and a majority of these were residents of the Diamondhead neighborhood. It was a very spirited discussion of the issues. There were many comments by the developer of opening a dialogue with the neighborhood of their concerns and issues with this proposal. We all welcomed this proposition. From the start of this process we have all supported development; the concern has, and continues to be, the type of zoning that is proposed. Unfortunately no dialogue has occurred.

Repeatedly the developer spoke of involving the neighborhood in decisions. They indicated the neighborhood would have a say in covenants associated with the multi-family. Unless this discussion occurs prior to the re-zoning then there would be not guarantee of compliance with this statement. Often the applicant and developer contradicted themselves in statements throughout the evening.

Items of note include:

1. The applicant continually stated that this development was in compliance with Horizon 2020. This caused confusion since their application stated that the future land use map and Horizon 2020 did "not specifically designate a land use for the subject property." The staff report correctly identified that the West 6th / K10 Nodal Plan addresses this area. But the staff report seems to interpret the document broadly, only referencing certain sections and failing to reference others.

2. The Nodal plan specifically addresses the Diamondhead and Langston Heights area. The nodal plan indicates that "this intersection is envisioned as a multiple-use activity center of low-, medium-, and high-density residential development; commercial, office, research, and industrial activities; public, semi-public, and institutional uses; and parks, recreational, and green/open space opportunities." It further states for the Southeast Corner, that the corner provides an opportunity for a variety of residential, commercial, and office activities. This nodal plan "also designates the majority of its residential uses appropriate for low-

density, **single-family** neighborhoods with a **small** portion considered appropriate for medium-density residential development. This medium-density development serves as primary buffer between single-family neighborhoods and commercial activities." It further states that "This nodal plan anticipates more low-density, single-family residential development in the areas surrounding this corner and therefore much of this corner was designated appropriate for similar development to maintain compatibility of surrounding land uses." The staff report quotes specific sections but fails to address the statement "appropriate for low-density, single-family neighborhoods." It only constantly quotes "a mixture of housing types… should be encouraged." We do not dispute the need for a mixture of housing types, but the question is whether this proposal is the correct mixture or the correct location? The developer and applicant admitted at the neighborhood meeting that this type and mix of development "has not been tried or developed in Lawrence." Why is this established successful neighborhood the place to try this experiment?

3. The staff report also discounts the traffic issues associated with the increased density that have been addressed by the neighborhood and accepts the traffic report by its "data and numbers". City development documents discuss the required need for neighborhood connectivity. It states that "streets within the various neighborhoods of this area shall be connected to each other. …Connected streets provide multiple route options for vehicles which can help eliminate the choke points that are created when cars are forced onto a limited amount of streets that carry traffic in and out of neighborhoods." We would concur with this statement. Without the complete development of the north/south road (Renaissance Drive) then all of the development traffic would be forced onto two local streets. The applicant has produced a traffic study that states the traffic counts are within the City requirements. We do not argue this fact. But neither the traffic study nor the staff report takes into account the impact of a neighborhood elementary school and its dramatic impact on the traffic pattern.

   Every morning and afternoon Diamondhead Drive becomes a double loaded drop off and pick up location. Children must maneuver between parked and slowly moving vehicles. The applicant, at the public meeting, stated that this issue was a minor "blip" in the traffic study. This "blip" has been one of the primary focuses of the Langston Hughes Site Council for numerous years. The site council has pushed for additional crossing guards, no parking restrictions, a school zone, and, most recently, added a fence to help limit pedestrian traffic from Diamondhead. Issues still persist.

   With the additional traffic associated with the increased density, the poor planned lack of sidewalks on both sides of the street (and specifically on the side of the street adjacent to the school,) this "blip" could be devastating if a child is injured because of this poor planning. Traffic studies, numbers, computer simulations will not depict the accurate scenario that we see every day in our neighborhood. The additional traffic associated with the increased density will compound this issue. As local traffic avoids the Diamondhead / Harvard round-a-bout at various times of day, all traffic will be focused to Ken Ridge Drive. This will create a significant choke point at this intersection.

4. Much in the staff report speaks of the desire of a mix of housing types within each neighborhood. We would support this guiding principal. The current zoning to the east of the Diamondhead development is an excellent development of RM12 Duplex homes. To the north of the neighborhood is existing zoning of RM24. This will provide a transition from the RS7 single family development to the future planned office / commercial development to the north. It has been discussed by the applicant and in the staff report of the need to "buffer" K10 with higher density multi-family housing. It has been discussed by the applicant the need to buffer the RM24 to the north. Other solutions are viable solutions to this proposal and examples can be found in the West of K10 Plan.

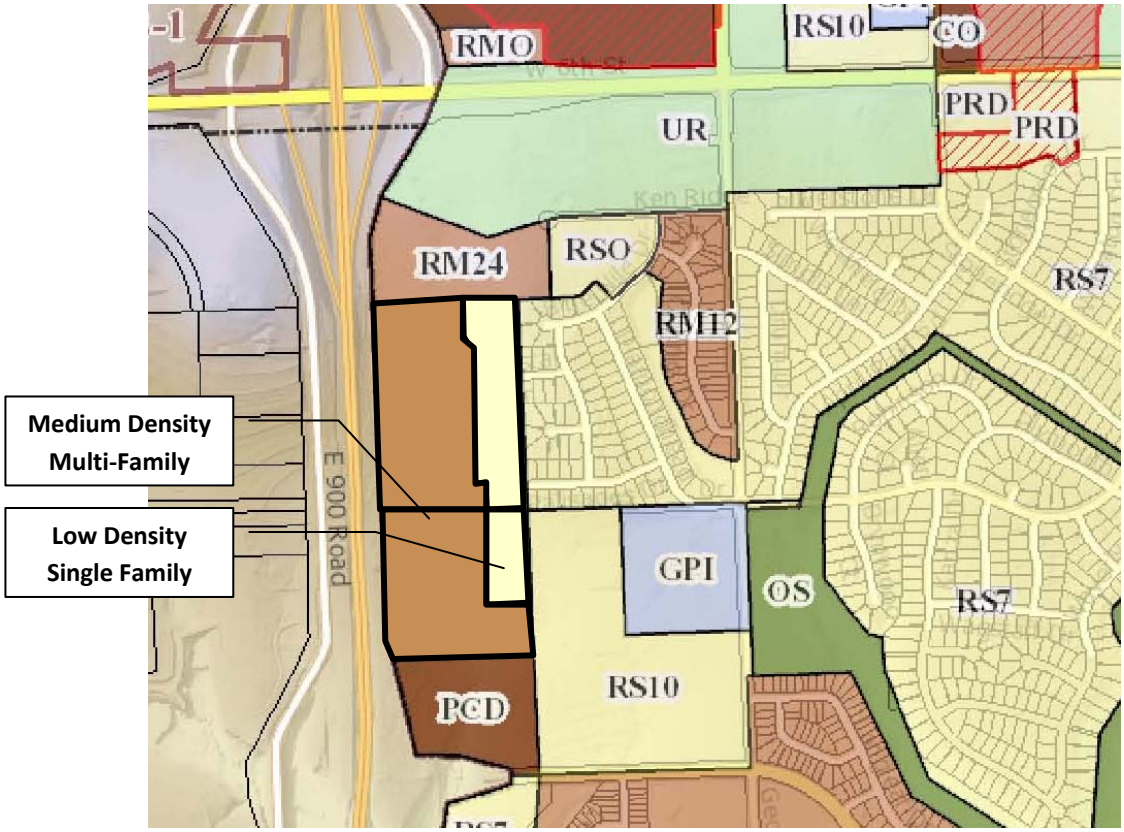
The staff report suggests that a variety of "step down" developments are required to appropriately transition the single-family development to the north and the west. As one of our most recent planning documents, the West of K10 Plan provides current planning ideas and guidelines for all new development in this area. It presents the concepts of "Traditional Neighborhood Design" (TND) versus the conventional land use development concepts. The document speaks about the challenges that arise when placing new developments adjacent to existing development. "Compatible land uses should be located adjacent to each other…" This document also presents concepts on buffering the K10 corridor counter to the proposed development. The concept illustrates an "outer" road concept with a green space to buffer commercial and residential development to K10. Per the SLT/K10 Transportation Corridor Overlay, this green space would be landscaped to screen the residential development. This method, a part of the 2006 plat, should be explored prior to acceptance of this request.



5. The applicant states in the application that the approval of this zoning will "set a developmental precedent for adjacent vacant parcels." The adjacent parcels indicated refer to the land to the south of the proposed development. Since the applicant specifically references this parcel and indicates that this will set a precedent, then the West of K10 Plan should be used as a guiding document as it addresses this parcel of land. This plan, adopted in 2009, is one of the latest planning documents and combines many of the current planning guidelines. Again, this document indicates the land south of the proposed development to be low-density development.

   As the applicant has indicated, the proposed development will be setting a precedent for future land uses. Should this be the case, then a majority of the land uses to the south will be predetermined to be multi-family, medium density land uses (see map below). This is supported by the proposed location of the Renaissance Drive as the applicant would more than likely propose multi-family between the road and K10. The proposed location and its connection point to Bob Billings will encourage medium density development. The map below begins to indicate the pre-determined extent of the southern land and, the quantity of medium density zoning, and is counter to the current adopted land use documents for this area.

The applicant and developer indicated in the neighborhood public meeting that they are currently in negotiations to control the use of the southern land. This statement reinforces the land uses will be pre-determined with the approval of the northern land uses.



6. Finally, the developer continually spoke at the meeting that this was "the only financially viable project for this land." This argument has been tried and failed before in Lawrence. The excuse of their inability to "make a project financially viable" should not be an excuse to discount the approved planning guidelines and documents. We all recognize the economic climate that our City and area have been in the last few years, and we would welcome a change. But this should not be an excuse to discard our planning principals and develop whatever the developer wants on this land.

We are not opposed to development. We encourage and want development on this land. The correct type of development will enhance our neighborhood and community. The correct type of road network, with connections to the north and south, would enhance and correct traffic issues. We would welcome an actual dialogue with the applicant and developer to discuss a compromise development.

We request, on all items associated with the Langston Heights Development, a deferral so that a dialogue may occur between the City, Developer, Applicant, and Neighborhood.

Respectfully submitted,

Andy and Debbie Pitts
6212 Palisades Drive

Diamondhead Residents Opposed to Langston Heights

Presented to the

City of Lawrence
KANSAS

December 10, 2012

History

The residents of the Diamondhead neighborhood in west Lawrence have united in our opposition to the rezoning required for proposed Langston Heights development. Some 35 families representing more than a hundred residents have signed on to lobby the Planning Commission.

The following pages detail our concerns. We start with our general belief that the area in which we chose to build and purchase our homes was in a single family neighborhood. The area's first plat, approved in 2006, indicated 67 single-family and 18 duplex residential lots. The new application proposes a 94% increase in dwelling units from the initial 2006 plan due to 24 four-plex units and 62 row houses.



The construction as proposed would require egress through two residential streets - Palisades Dr. and Crystal Ln as Renaissance Dr. would not be completed until some unknown future date. The developers themselves recognized that this would be the first instance in Lawrence where non-residential traffic would be forced through a residential area. Brian Sturm, spokesman for Landplan Engineering, likened it to an experiment at the December 3, 2012 informational meeting. The residents of this neighborhood would prefer not to be test subjects in a developer's experiment, nor should the Planning Commission allow that to be the case.

Horizon 2020

Brian Sturm in addressing the community, repeatedly referenced Horizon 2020 as justification for the proposed rezoning. A review of the document shows the proposed rezoning to be in direct conflict with the comprehensive plan. Horizon 2020 indicates this area to be low-density residential, and the document twice states a need to “Protect Areas Planned for Low-Density Development”.

Landplan Engineering, P.A.

Specific policy statements within Horizon 2020 counteract the statements and design of Landplan Engineering and the other applicants:

Policy 3.4: Minimize Traffic Impact through Neighborhoods

- The site design of a residential development should accommodate multiple points of access (direct and indirect) with attention to directing vehicular traffic to and from a development to collector and/or arterial street/roads.

Policy 3.6: Promote Neighborhood Identity

- Preserve and enhance the visual and environmental character of existing neighborhoods.

Policy 4.1 Levels of Service

- "The construction of new medium- or high-density residential development or the expansion of existing medium- or higher density residential development shall not be approved until the surrounding street/road system can provide an acceptable level of service"

Policy 4.3

- "Discourage the diversion of traffic to or from medium- and higher-density residential developments onto local residential street/roads through low-density residential neighborhoods."

Horizon 2020 also calls for the sites recommended for new medium-density residential development occupy transitional locations between single-family neighborhoods and office/commercial areas. But there are not areas for commercial development for which the medium-density housing could provide a buffer.

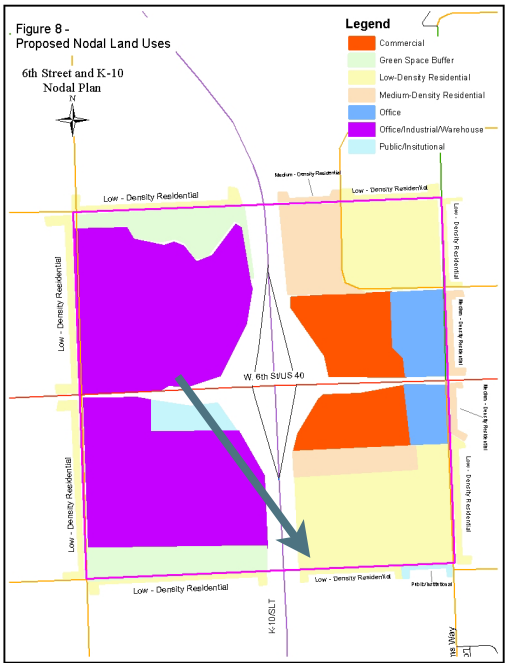
Furthermore, the Planning Commission has previously expressed concerns with this interpretation of the plan:

PC Minutes 11/16/05

“Comm. Hass indicated he would support the motion, but stated that he was losing his appetite for RM-D zoning because it has been abused in other parts of the community.”

6th & K-10 Nodal Plan

Additional planning documents address the area in more specificity. A Nodal Plan for the Intersection of West 6th Street & Kansas Highway 10 (K-10) designates the entire Diamondhead neighborhood as low density residential as detailed in the figure below. The plan defines low-density "to allow for single family dwelling, duplex, and attached dwellings but emphasis is placed on the residential uses." The zoning classifications indicate RS7 and RM12D but includes RM12 under the medium density classification.



The applicant states in the application that the approval of this zoning will "set a developmental precedent for adjacent vacant parcels." The adjacent parcels indicated refer to the land to the south of the proposed development.

As the applicant has indicated, the proposed development will be setting a precedent for future land uses. Should this be the case, then a majority of the land uses to the south will be predetermined to be multi-family, medium density land uses. This is supported by the location proposed of the street (Renaissance Drive) as the applicant would propose multi-family between the road and K10. The proposed location and its connection point to Bob Billings will encourage medium density development, which would conflict with the Nodal Plan.

West of K-10 Plan

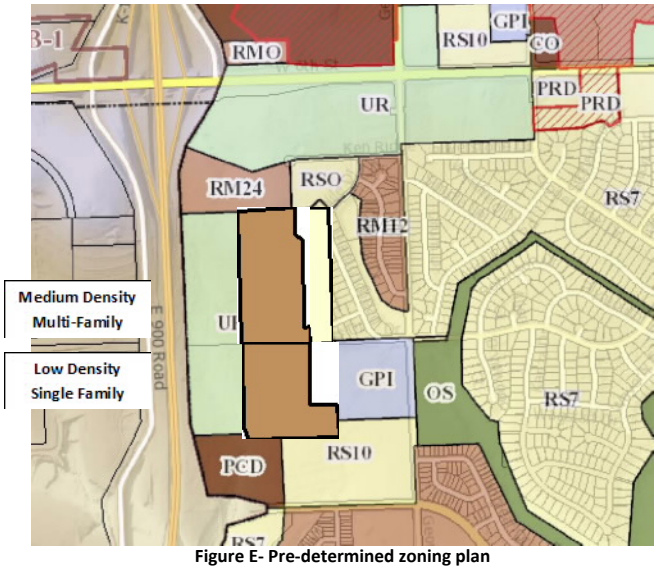


Figure E- Pre-determined zoning plan

The map at left indicates the pre-determined extent of the southern land and, the quantity of medium density zoning, is counter to the current adopted land use documents.

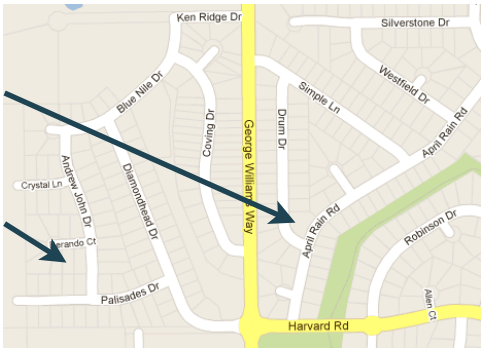
The applicant and developer indicated in the neighborhood public meeting that they are currently in negotiations to control the use of the southern land. This statement reinforces the land uses will be pre-determined with the approval of the northern land uses.

Precedent

Similar requests for rezoning adjacent to the Dlamondhead neighborhood have been denied for all the rationale presented in the preceding pages:

Denied

In Question



PC Minutes 1/25/06

Staff Finding

- The character of the area is a low-density, single family residential neighborhood. The area west of George Williams Way is planned as a mixed development including multiple types of residential development.

Staff Finding

- The subdivision layout and land use requests in the immediate area have conveyed a continuation of established low-density, single-family detached development pattern for this neighborhood. Development around the subject property has begun with an expectation of single-family detached development for the subject property. Property owners have made decisions based on recent previous actions for this area.

Staff Finding

- The property has been planned and platted for single-family development. If the request is denied the applicant still retains the ability to develop the property with single family homes. Approval would double the density and traffic generated[2] from the area.

- The Plan anticipates that low-density residential development will “continue to be the predominate land use in the City.” The most common method to assure compatibility is to extend or continue a particular zoning district. The approved and published RS-2 (Single-Family Residence) District expanded the low-density residential district in this area and was found to be consistent with the generalized land use expectation for residential development in 2004 per Z-4-15-04 and reaffirmed this decision in July 2005 per Z-06-35-05]. A subdivision plat for single-family residential development was approved and recorded as the Green Tree Subdivision in October 2004 as a requirement of the zoning.

- If approved, the result will be to sandwich a small pocket of duplex development along the east side of George Williams Way.

Staff Finding

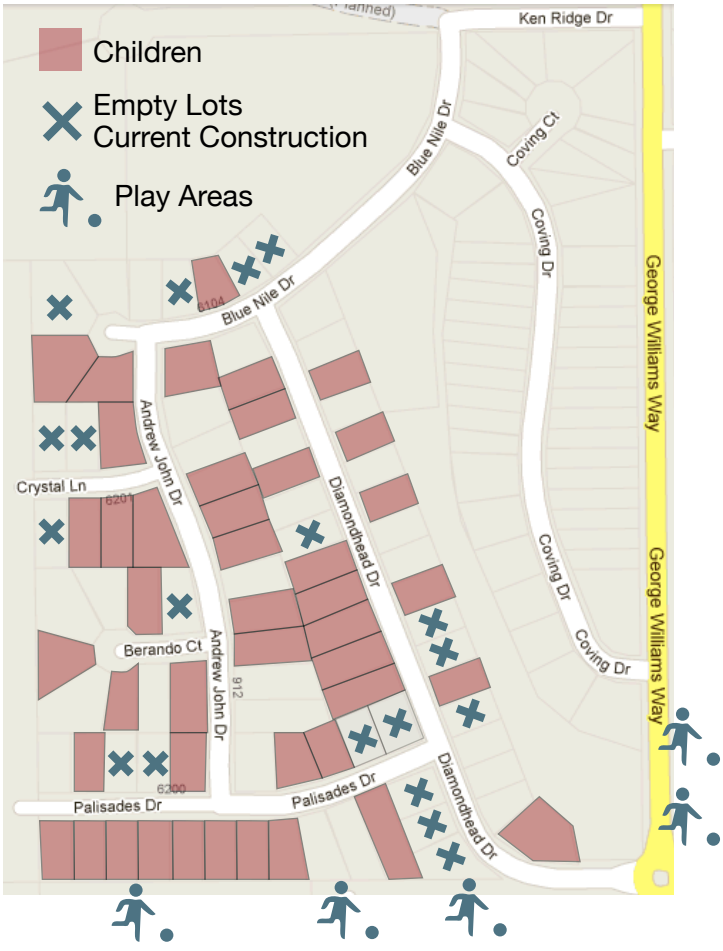
- The proposed request is not in conformance with Horizon 2020.

Traffic Safety

The citizens of the Diamondhead neighborhood are most concerned about the safety and well-being of our children. We believe that increased traffic, especially that of the younger and single type of residents that the developers expect to attract will unnecessarily put children at risk.

As Palisades Dr. and Crystal Ln. will be the only access to the row houses and multi-plexes, it invites the potential for a tragedy. The Diamondhead area is filled with with children of all ages and will be for many years to come.

The applicant references a traffic study that states the traffic counts are within the City requirements. The neighborhood was promised a copy of that study at the 12/3 informational meeting, but to date, it has not been provided. We are concerned the study does not take into account the impact of a neighborhood elementary school and multiple parks and their dramatic impact on the traffic pattern.



The map at left demonstrates the density of children in the neighborhood.

There exist a number of areas in and around the neighborhood where children would play. These have been marked just off the map and include:

- Two Separate Playgrounds
- Sports Fields
- Log Climbing Park
- Walking Trail

Also notice that not a single street in the community is a straight line. Considering the elevation change running along Andrew John Dr. one can envision the problems with sight lines for any driver, let alone one that is not used to driving in a family heavy residential neighborhood with children at play.

Traffic Congestion

In addition to the safety concerns, there remains the question of access. The streets in and around the neighborhood become congested on a daily basis along George Williams and at the Harvard roundabout in the morning and along Palisades Dr. each afternoon and any time there is an evening event at the Langston Hughes Elementary School. The applicant's cite a traffic study with peak times between 4pm and 6pm having adequate traffic flow. The peak times for this area are actually 8am to 9am and 3pm to 4pm due to school drop off and pickup.







The West of K-10 Plan, adopted July 2009, addresses neighborhood connectivity: "Streets within the various neighborhoods of this area shall be connected to each other. … connected streets provide multiple route options for vehicles which can help eliminate the choke points that are created when cars are forced onto a limited amount of streets that carry traffic in and out of neighborhoods."

Similar language is found within Horizon 2020: "Street systems that do not permit connections isolate neighbors and force traffic to concentrate on collectors. This type of street circulation should be avoided."

But the submitted rezoning application would increase residency in the area by 96% over the current zoning while not addressing any of the underlying problems with the current traffic situation. It would force more trips through Palisades Dr. and Crystal Ln.

Infrastructure

The current zoning has meant that the Diamondhead neighborhood was developed as single family with the future plan for a limited number of duplexes only. As such the lighting, sidewalks, crosswalks, signage, and other infrastructure have been implemented based on that plan.

The proposed rezoning for Langston Heights would require retrofitting the existing neighborhood with a variety of items. There currently exists sidewalks on a single side of the streets throughout the neighborhood and no crosswalks except for the roundabout at the intersection of Harvard and George Williams. As illustrated previous, the Diamondhead area is filled with children out at play and such a significant increase in residency and traffic would seem to necessitate changes to the existing layout.

None of the intersections in the community feature traffic signage. The applicants count at least 138 additional trips per hour with the traffic study, but fail to demonstrate its effect within the existing layout. We have already discussed the potential for pedestrian accidents, but the limited sight-lines and lack of any stop or yield signs is an invitation to traffic accidents.

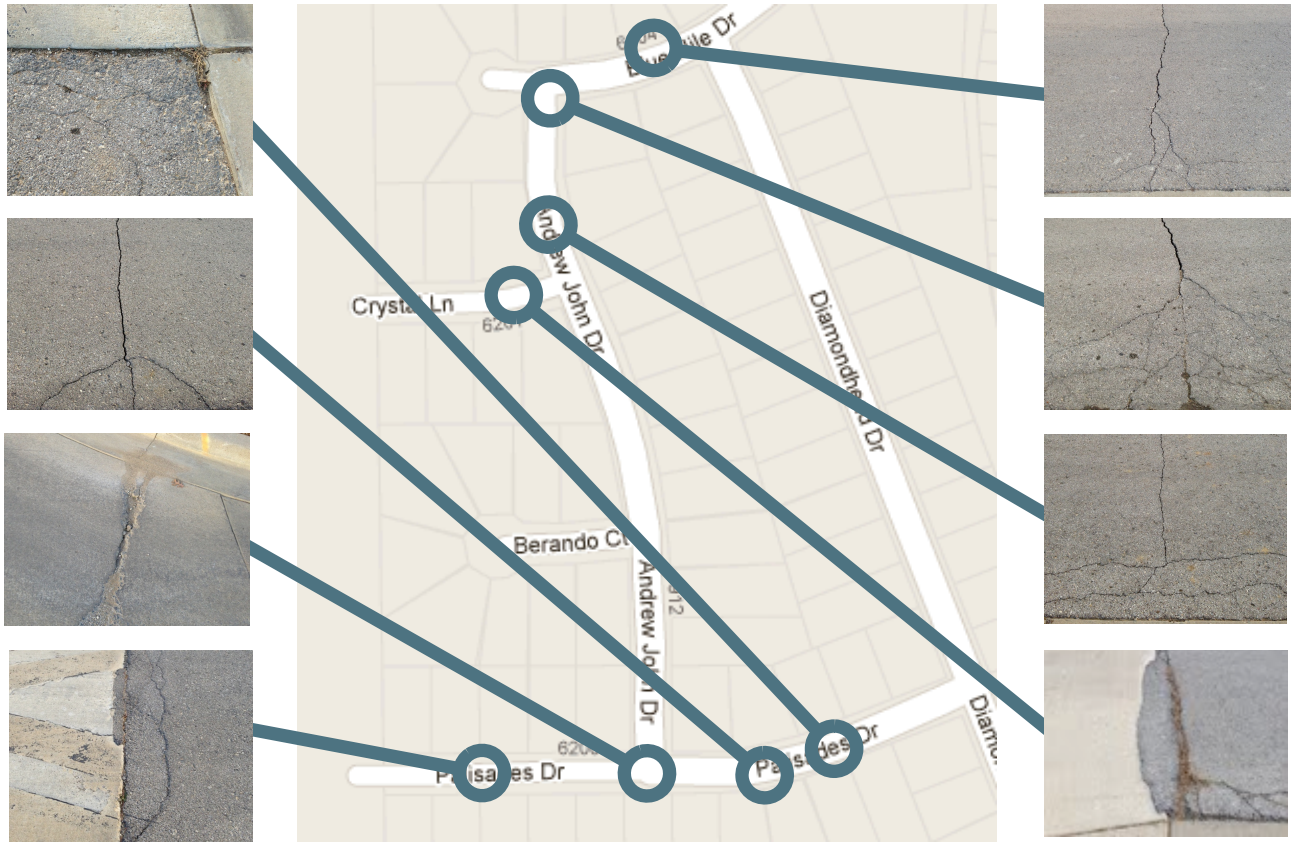
The streetlights throughout the area have similarly been installed for use in single family housing. The inclusion of additional multi-family housing could be cause for increased lighting. The residents of the area however are not keen on the idea of the additional lighting shining through their windows all night.

The roads too have been laid out for use in a low density area. The width in Diamondhead is 23', and with parking allowed on both sides, the streets can easily become unintended one-way's. Surely this is not appropriate for the style envisioned by the applicants.

Construction

In October, 2008 the City Auditor issued a Pavement Condition Summary. In this document both Palisades Dr and Crystal Lane received ratings of poor for the curbs and gutters while the pavement was rated 91.5 out of 100.

Since the issuing of the report four years ago, the conditions of our neighborhood streets have deteriorated. Below are images with their locations indicated on a map. The images shown reflect only a portion of the degradation of both the asphalt and concrete on the two proposed egresses.





It seems reasonable to expect that construction traffic will exasperate this problem. Heavy equipment, trucks carrying forms and supplies, concrete trucks, pouring cranes and endless trips by skilled laborers will serve to further decay the only egress through Palisades Dr. and Crystal Lane.

Marketplace

The applicants expressed at the 12/3 informational meeting that economic forces were the main rationale for changing the current zoning. While this may be true on a national, or even a regional level, a closer examination at West Lawrence reveals a different picture.

A recent headline and story get to the heart of the matter:

LAWRENCE JOURNAL-WORLD

Landlords trying to fill growing number of rental vacancies

There are also more apartment units. Since 2008, 997 apartment units have been built in Lawrence, with 55 built so far this year. Other projects in the works include a seven-story, 55-bedroom building on the corner of Ninth and New Hampshire streets and a 300-apartment complex on Sixth Street and Queens Road. Aug 13, 2011

The last complex mentioned is Hunter's Ridge, which is set to open soon. Plans filed this week by Lindsey Management call for a 630-unit apartment complex adjacent to Hunters Ridge. This area is a mere half mile from Diamondhead

Two additional complexes within a mile- Prairie Commons and Park West Gardens - plus current construction and vacancies on Coving Drive, a block over, would lead one to conclude that the area is saturated with medium and high density housing.

In a report published this September, The National Association of Realtors said that the median time a home was listed for sale on the market was 69 days in July. This represented a significant drop from both July 2011 and June 2012.

The homes in Diamondhead have been selling even faster - measured in weeks, not months. A local McGrew Real Estate agent said this week that "Houses have been moving really well in the Diamondhead area and that market in particular is strong for single family home sales.There was one there that sold in a day."

When you combine weak demand for higher density housing around the Diamondhead area with better than average sales of single family homes, it paints a clear picture. **This market needs more low density zoning, not less.**

The applicants should not be allowed to fundamentally and permanently alter the well-being of this neighborhood based on rationale that is suspect.

Community

The residents of our neighborhood have grown into a tight knit community. As most all neighbors do, we stop to talk with each other when we meet on the street. But more than that, we actively seek out each other's company, and welcome our neighbors into our homes. We plan activities to come together as a group and grow the sense of community that has developed here.



Annual Neighborhood Easter Egg Hunt



Halloween



Annual 4th of July Parade

Throughout the year, we gather together to participate in a variety of seasonal activities. Some are spontaneous as group sledding in the winter, or kids bike rides on sunny days. But many are planned in advance:

- Summer Cookout
- Easter Egg Hunt
- 4th of July Bike Parade
- Trick-or-Treating

We have come to think of the folks here as more than neighbors, they are our friends. We certainly welcome new faces to our neighborhood, however, we fear that the rezoning and subsequent construction of multi-plexes and row houses will alter the nature of the neighborhood and fragment our sense of community. Again we reference policy 3.6 of the Horizon 2020 plan which strives to "preserve and enhance the visual and environmental character of existing neighborhood.

The applicants' target market for their housing are not families, by and large it is younger singles. In addition to all of the issues the development would create with traffic, safety, and living conditions, it would alter the very fabric of the neighborhood we have all bought into.

Allied Entities

It is not just the residents of the Diamondhead neighborhood who oppose this application, there are also a number of groups who feel this would be the wrong move for our children, our families, our neighborhood, and our town. The following have expressed their opposition to the applicant's plan:

Langston Hughes Elementary School
Jackie Mickel, Principal

Langston Hughes Parent-Teacher Organization

West Lawrence Neighborhood Association, Incorporated
Alan Cowles, President

12/4/12

RECEIVED
DEC 06 2012
City County Planning Office
Lawrence, Kansas

Sandra Day, AICP/County Planner, City of Lawrence

RE: Landplan Engineering Informational Session December 3, 2012
Langston Heights Development

After attending the informational meeting last evening at Langston Hughes school, we are writing to ask you to consider deferring the rezoning of Langston Heights (Parcel west and south of Diamondhead) from UR to RM12 and RM12D. The increase in traffic, decrease in property values and changes to the 2006 plat are issues that need to be addressed. The new plan proposal is to build a mixture of single family homes, duplexes, and row houses. With only two streets (Crystal Lane and Palisades Drive) servicing current and additional units, traffic will be heavier than originally planned for these two streets. Crystal Lane and Palisades Drive were originally developed as a lead into other single family housing, not multifamily housing. Palisades already has issues on school days due to drop off and pick up from Langston Hughes Elementary School. Currently three new homes are being built on Diamondhead close to the school. That will mean new driveways from which residents will enter Diamondhead and reduce the amount of room for parents to park when dropping off and picking up children. Then add congestion at the round-a-bout on George Williams. I don't care what your traffic study says, the additional traffic will create safety problems. With undeveloped land to the south and north of the new plan, no one was able to tell us if, and when, any connecting access to the new development would be provided. Even if it did, traffic will still be pushed through low density housing. The Horizon 2020 plan specifically discourages this action.

Should this plan be approved, due to the direct impact of the multi family housing, property values in the Diamondhead subdivision will decrease. When we purchased our home in 2007, we knew additional low density housing would soon follow ot the west. This was based on the planning commission approval in January 2006 of single family homes in the Langston Heights area. We never would have purchased in this area has we known apartments and duplexes were to be built, and future potential home owners will feel the same.

Please see that this proposal does not go any further without modifications. We are not against the expansion of our subdivision to the west, but we are against the medium density zoning.

Thank you,

Edward C. Burrichter
6113 Palisades Dr

Colleen A. Burrichter
6113 Palisades Dr. Lawrence

From: Amy Miller
Sent: Thursday, December 06, 2012 6:54 PM
To: Sandra Day
Subject: Langston Heights Communications

Sandy,

Rod Laing came in today and wanted me to pass along his thoughts on the Langston Heights Subdivision PP and Zoning cases for inclusion as part of the communications on the project. He suggested that a condition could be placed on the multi-family residential zoning west of Renaissance Drive that building permits may not be issued on those dwellings until such time that Renaissance Drive connects to Bob Billings Parkway or the major street to the north. He thought that this would ease potential traffic concerns. Please include the above statement in the communications that go to the Planning Commission as part of their packet.

Thank you,

Amy Miller, AICP, CFM *Long-Range Planner*

From: Brian Sturm [mailto:brians@LANDPLAN-PA.COM]
Sent: Friday, December 07, 2012 2:27 PM
To: Sandra Day
Cc: bobdennsan@gmail.com; douglas.raney@gmail.com; RCJPHJ@me.com; Christopher Storm
Subject: PP-12-00228 - variance withdrawal; temp const esmt

Sandy,
On behalf of the applicant, I would like to incorporate the following two (2) items into the Planning Commissioners' packets for Monday's meeting regarding item #5A, the Preliminary Plat for Langston Heights Addition:

1. The applicant wishes to withdraw their request for a variance from Sec. 20-811(c). While the developer still has concerns about installing sidewalks that would essentially terminate in mid-block locations on Palisades Drive and Crystal Lane, they would rather design a subdivision that conforms to the current Subdivision Regulations and complete street policy. It's my understanding that the sidewalks to be shown on the south sides of Palisades Drive and Crystal Lane can be added to the Preliminary Plat as a condition of approval. It is also my understanding that the applicant can work with the City Engineer on an acceptable way to terminate these sidewalks on the east edge of the subdivision during the public improvement plan review process.
2. The applicant wishes to add, as a communication, the attached letter of intent which upon execution by both parties would allow for the creation of a temporary construction access easement over and across land owned by Alvamar, Inc. The developer understands the concerns neighbors in the Diamondhead subdivision have regarding potential construction traffic traveling through their neighborhood. This agreement, once signed by both parties, would allow that construction traffic to pass entirely across the ground presently owned by Alvamar on the south side of the subject property. With such an access easement in place, dump trucks, excavators and the like could pass from Bob Billings Parkway to the subject property without travelling on City streets, namely those in the Diamondhead subdivision. It is the developer's hope to have this letter executed by the time of Monday evening's PC meeting.

Please let me know if you have any questions regarding the above items.
Thank you,

Brian Sturm, RLA, ASLA, LEED AP
Project Landscape Architect
Licensed in KS

Landplan Engineering, P.A.
1310 Wakarusa Drive
Lawrence, Kansas 66049
v. 785.843.7530
f. 785.843.2410

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Letter of Intent

This letter reflects the mutual intentions of Langston Heights Development, LLC, and Alvamar, Inc. to enter into an agreement to create a temporary construction access road from Bob Billings Parkway to the property known as Langston Heights through property currently owned by Alvamar. Both parties intend for the road to be built before construction begins on Langston Heights. Alvamar agrees to provide an easement for this road and Langston Heights Development agrees to pay for the costs associated with building this road before construction begins. Langston Heights Development also agrees to pay one dollar ($1.00) to Alvamar as part of the agreement, regardless of whether construction begins.

_____ _____

Robert Santee Date

Officer, Langston Heights Development

_____ _____

Robert C. Johnson Date

Chairman of the Board, Alvamar, Inc.

LEAGUE OF WOMEN VOTERS®
OF LAWRENCE/DOUGLAS COUNTY

RECEIVED
DEC 19 2012
City County Planning Office
Lawrence, Kansas

December 10, 2012

To: Lawrence/Douglas County Planning Commission:

Re: Langston Heights, Items 5A, 5B, 5D

President
Melinda Henderson

President-Elect
David Burress

Vice President
Milton Scott

Secretary
Caleb Morse

Treasurer
Marjorie Cole

Directors

Margaret Arnold

Bonnie Dunham

James Dunn

Sally Hayden

Cille King

Ruth Lichtwardt

Marlene Merrill

The League of Women Voters of Lawrence/Douglas County has strong positions on neighborhood planning. We believe that "the primary urban planning unit should be the neighborhood, large enough to support the location of a nursery-elementary school, park...and should reduce to a minimum the use of the private car within each neighborhood." Therefore, we are concerned about the proposal for the multiple family lot configurations of the Langston Heights Addition and their proposed rezoning to RM districts.

We strongly support designing neighborhoods with housing types suited to families with children that are close to elementary schools with pedestrian ways designed for safe walking, and believe that it is very poor planning to locate multiple family housing that is not appropriately designed for this near our schools. Multiple family housing types can be designed for families with children, but must have the needed amenities such as privacy, open space and other facilities to make such units attractive for family life, which this proposed development does not have. Additionally, we support staff's recommendation to deny the applicant's request for a variance to allow sidewalks on only one side of streets.

Because of the effect this multiple family housing would have on the future development of the adjacent vacant land to the south of this tract, it can be predicted that this land also would become multiple family and not attractive for families with children. Because of the proximity that these two tracts have to Langston Hughes Elementary School, we believe that this would be very poor urban planning and a serious waste of potential that these two properties would have to reduce automobile use and utilize these valuable areas for encouraging families to live within walking distance to the school.

We believe that the reason that this type of poor urban planning is not uncommon in Lawrence is because of some serious deficiencies in our Land Development Code and how it leads to the interpretation of *Horizon 2020*:

- The multiple family districts do not specify housing type.
- The only distinction in our Comprehensive Plan (CP) in the designation of residential areas is based on density. Because of the long-standing interpretation of our CP, it is possible to allow all types of multiple family units from tall apartments to duplexes to achieve the gross densities that are typical for detached single family housing. Therefore, the density designation in our CP is not an appropriate prediction of use.
- The CP does not include the same goal that *Plan '95* did, which emphasized that development should be designed for the ultimate user and not to satisfy only the needs of the developer.

These factors eliminate the essential predictability that homeowners need to be able to have confidence in the stability and future of their neighborhoods when they make the substantial investment for living in a community. It tends to reduce the trust needed for a growing and thriving city to attract new residents. We ask that you take these factors into consideration when making your decision on this rezoning request. The future of our city depends on good urban planning. We would look forward to a discussion about making the necessary changes to our Land Development Code and *Horizon 2020* to create the predictability in our neighborhoods that we need.

Thank you for your consideration of these issues.

Melinda Henderson
President

Alan Black, Chair
Land Use Committee

PO BOX 1072 • LAWRENCE KS 66044-1072
league@sunflower.com • www.lawrenceleague.com
www.facebook.com/lwvldc • www.twitter.com/lwvldc

December 7, 2012

Sandra Day, AICP City/ County Planner, City of Lawrence:

RE: Rezoning Langston Heights

We are writing in opposition of the rezoning of Langston Heights. Our main areas of concern are traffic and child safety.

Our family moved to the Diamondhead subdivision 3 years ago. We chose the area based on several factors: the proximity to the elementary school, the community, and that the adjacent Langston Heights would be a similar neighborhood based on the 2006 plat.

Many families built in Diamondhead because the neighborhood to the West would be comparable. Langston Heights' preliminary plat of 2006 contained 67 single family homes and 18 duplexes. The new plat proposed by Land Plan would increase units by 94% in comparison to the 2006 plat. A 94% increase would greatly increase the amount of traffic on our residential streets.

Palisades and Crystal Lane are currently the only two inlets for Langston Heights. The roads leading to Langston Heights are narrow winding routes through residential areas with poor site lines.

At the December 3, informational meeting held by "Land Plan Engineering," Brian Sturm discussed the traffic study that was completed in September of 2012. The study claimed that the residential roads could support the rezoning of Langston Heights. Brian Sturm stated that the traffic study was done during the peak hours of traffic, 4:00 p.m. to 6:00 p.m. A traffic study done between 4:00 p.m. & 6:00 p.m. does not take into account the traffic at the school's dismissal hour. One of the main in-let/out-lets of Langston Heights is adjacent to a large elementary school. A traffic study done during the school's dismissal hour would provide more accurate information. 63% of the current Diamondhead households have children attending school. 63% of our neighborhood will be walking or driving during school arrival and dismissal times.

The sidewalks in the Diamondhead neighborhood would not support the 94% increase of population. Sidewalks in Diamondhead are only on one side of the street. Upon leaving Langston Hughes Elementary my children must cross Diamondhead Dr. (one of the only in-let/out-lets) This is the only intersection that contains a crosswalk. After walking up Diamondhead they must cross it again. They continue their walk home up Palisades, where they must cross Andrew John Dr. to reach the sidewalk. They walk north on Andrew John crossing Berando Ct. until they come upon Crystal Lane. (one of the other only in-let/outlets) To reach home they cross Andrew John Dr. again. Within a 3 block walk home, our children cross the street 5 times, encountering these soon to be heavily traveled roads. The future children of the Langston Heights neighborhood would also be traveling this dangerous route to their new home. Not only are we concerned about the safety of our own children, but the safety of the new families that will move into the Langston Heights development.

We love living in Lawrence and we love it because it gives us the small town feel we grew up with. We grew up in a town of 1500 where it was safe to walk down the street and everyone treated you like family. Our family has been searching for this sense of community for a while now and finally found it in Diamondhead. Our little neighborhood of all ages come together for an annual Memorial Day BBQ, 4th of July Parade, Pumpkin Carving, and Easter Egg Hunt. Children ride bikes, enjoy a game of basketball, and play tag outside. Neighbors help transport children, share recipes, help with heavy lifting, cook you meals when you're down, or let out the dog when you're away. Increasing the units by 96% from the 2006 plat to the proposed rezoning would only erode at the community we've created.

Lawrence is nationally known as a highly desirable community to live in. We need to continue to reflect on what drives people to Lawrence. Is it the multiple options of housing provided in a development, or is it the feeling of community we ALL provide?

Thank you for taking the time to read our concerns. We appreciate the opportunity to express our thoughts in the matter.

Sincerely,
Carisa, Dustin, Avery, & Sydney Stejskal

From: lauri di routh [mailto:lauridi@hotmail.com]
Sent: Monday, December 10, 2012 8:52 AM
To: Sheila Stogsdill
Subject: Comments for planning commission meeting 12/11/12

Ms. Stogsdill,

Please accept these comments for tonight's Planning Commission meeting. I respectfully request that these be shared with the Planning Commissioners and staff, and be included in the public record for tonight's meeting.
Please note that my comments herein are not intended to represent any organization or group. I offer these comments solely as an individual citizen and taxpayer.

RE: Long range planning work program, as submitted to the planning commission by Scott McCullough in November 2012.
I wish to express my concern about the City and County opting to postpone implementation of the environmental chapter of H2020 to a work schedule beyond 2013. This plan was crafted over the course of several years, and both citizens and the Sustainability Advisory Board play a role. I am troubled that this plan is being mothballed, at a time when we need it most. Given the current drought and its impact on both the built and natural environment, tending to our community's natural resources is more important now than ever. I ask that the PC make implemenation of the environmental chapter of H2020 a priority for 2013.

RE: Variances requested for the site plan and plat of the proposed Rock Chalk Village Park
I am troubled to see that the developer is requesting variances to the street connection requirements of the code, and also the sidewalk requirement of the code. Both of these items are integral to the City's Complete Streets plan, which was recently approved. While I appreciate the developer's stated intention of preserving trees on the property, without an inventory of said trees or any requirement for monitoring of tree preservation or removal during project construction, using trees as an excuse to minimize developer costs seems a bit disingenuous. In regard to street connectivity, it seems to me that allowing George William Way to remain a dead end street at the north end creates a bottleneck for the City's future rec center, and may create massive traffic problems on the property when large events are held at the KU facilities. At the very least, this variance should be reviewed and vetted, first, by traffic planners, to assess its impact. I believe that the requirements for sidewalks on both sides of the street should be upheld, and the developer's request for variances denied.

RE: Diamondhead Neighborhood Comments
I support the Diamondhead Neighborhood's right to preserve the nature and safety of their neighborhood. I ask that the PC reject the Landplan plat proposal as it would greatly expand the development of duplex and multifamily residential dwellings in this area, to the detriment of the existing neighborhood.

RE: planning commission packet structure

In reviewing the packet for this week's meeting, it is noted that the packet size of 57 MB makes it very difficult to load and open on a standard home computer. I had several people tell me that they had not even tried to do so, for fear that it would crash their computer system. While I understand that the files therein are large, I would like to see the PC use the City Commission's method of transmitting meeting information, using imbedded, topic-specific links on the agenda. This way, individual topic information can be opened and reviewed without the need to download the entire packet of 50+ MB of information. By breaking the packet up into managable chunks, it will make it easier for the public to access needed information and share with others who may wish to comment. Certainly, the PC wants to engage and solicit feedback from the public. I believe that the best way to do this would be to use imbedded links on the agenda, thereby reducing an evident barrier to accessing information.

I appreciate your consideration of my comments.

Sincerely,

Laura Routh
2235 East Drive
Lawrence, KS
979-3918

Memorandum
City of Lawrence
Planning Department

TO: **Lawrence Douglas County Planning Commission**

FROM: **Sandra Day, AICP, Planning Staff**

CC: **Applicant**

Date: **January 14, 2013**

RE: **Item No. 3: Langston Heights Residential Development**

Item No. 3A: PP-12-00228; Preliminary Plat
Item No. 3B: Z-12-00229; UR to RM12D
Item No. 3C: Z-12-00231; UR to RS7
Item No. 3D: Z-12-002323; UR to RM12
Item No. 3E: Z-13-00013: UR to RS5 as a lesser change of a portion of the RM12D application.

Attachments:
1. Revised Preliminary Plat
2. West of K10 Area Plan
3. Concept build-out plan

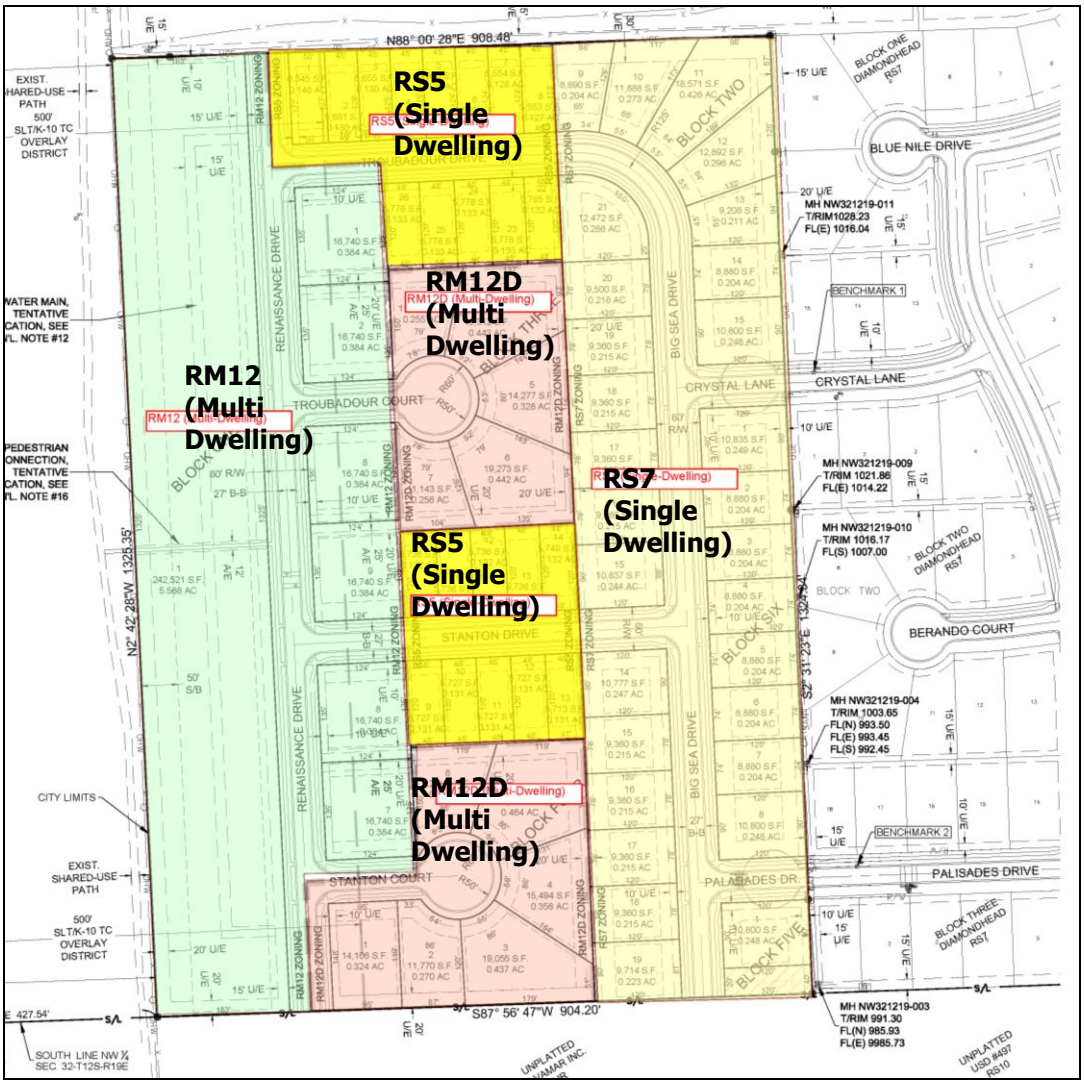
The purpose of this memo is to update the Commission on changes to the proposed development in response to comments from the December Planning Commission Meeting. The public hearing conducted in December resulted in a deferral of the proposed development applications with direction to address the following specific concerns.

- Increase presence of single-dwelling detached units and demonstrate the development is "predominantly single-dwelling residential" to comply with language found in the *6th Street and K-10 Highway Nodal Plan.*
- Explore providing additional access to Renaissance Drive to the south or north to alleviate the traffic impact of the proposed project. Associated to this is the issue of single loading Renaissance Drive as a design option.
- The effect of this development on future development to the south.

Presence of Single-Family
Significant changes have been made to the project that increase the overall percentage of detached residential units and reduce the total number of units proposed for this development. The revised project includes a request for 3.88 acres of RS5 zoning. The proposed development has, using a "lesser change", reduced the amount of RM12D to incorporate RS5 zoning. Section 20-1303 of the Development Code allows the modification of an application when the request is reduced in a manner specified by the Development Code.

The applicant has requested the Planning Commission consider a revision to the RM12D request to change a portion of the published RM12D request to RS5. This revision meets the requirements of the Lesser Change Table as highlighted below. Staff has assigned a specific case file number to the RS5 portion of the development request for tracking purposes.

The development request specifically amends the RM12D application to reduce the overall area from 8.33 acres of RM12D to 4.582 acres. The remaining 3.88 of the original request is proposed, as a lesser change, to RS5. The RS5 district is a single-dwelling residential district. This district is similar to the RS7 district in terms of uses. The RS5 district allows smaller lots with the minimum lot area established at 5,000 SF. The subdivision has been reconfigured to include the RS5 zoning and revised the interior street network to provide more separation between the development to the east and the multi-dwelling proposed to the west. The following graphic highlights the areas to be rezoned to the four different districts.



The following table provides a lot and density summary for the proposed Langston Heights development to show the changes between the previous plan and the current proposal. The December application included only 9.2 acres of detached housing as RS7 zoning. The revised application includes an additional 3.8 acres of detached housing as RS5 zoning.

	December 2012	January 2013
Gross RS7 District Acres	9.206	9.122
ROW Acres Tract	2.33	2.245 .109
Net RS7 Area Acres	6.873	6.768
Total Lots/Units	29/29	29/29
Density	4.219	4.285
Gross RM12D District Acres	8.33	4.582
ROW Acres	1.664	.723
Net RM12D area Acres	6.669	3.856
Total Lots/Units	25/50	11/22
Density	7.497	5.701
Gross RS5 District Acres		3.880
ROW Acres		.885
Net RS5 Area Acres		3.025
Total Lots/Units		23/23
Density		7.603
Gross RM12 District Acres	10.025	9.980
ROW Acres	2.11	2.107
Net RM12 Area Acres	7.908	7.873
Total Lots/Units	7/86	7/86
Density	10.875	10.923
Total Area	27.564	27.564
Total Units	165	160
Total Density	5.986	5.805

Table 1: Area Summary by Zoning District

The total number of units has been reduced by 5 and the overall density has been slightly reduced. Both the RS7 and the RS5 zoning districts represent single-dwelling detached residential development. The total number of detached housing proposed has increased from 29 in the December 2012 plan to 52 units in the current plan. The total number of duplex units has decreased from 50 units to 22 units. The RS7 district and the RM12 Districts have remained static between the two plans with no change in the total number of units and minor changes to the gross area of the two districts.

Land Use Development Pattern

Area	Acres	Percent
Total Area:	**186.45**	**100**
Developed Area:	43.38	23%
Proposed Development:	27.57	15%
Vacant Area:	115.5	62%

Table 2A: Summary of Developed and Undeveloped Land

Use	Acres	Percent
Single Family:	74.37	40%
Duplex:	14.89	20%
Multi-Dwelling:	22.76	12%
Commercial:	43.30	23%
UR	18.75	10%
Public	12.38	7%
Total	186.45	100%

The following information shows the existing and developing land use pattern for the area west of George Williams Way between W. 6th Street and Bob Billings Parkway [Diamondhead Neighborhood]. A substantial portion of the area is zoned for detached residential development. Based on the existing and proposed zoning and known land uses the Diamondhead Neighborhood area includes 74.4 acres of detached residential development and zoning. Table 2 summarizes the existing and proposed housing types for this area based on existing and proposed zoning.

A significant portion of the area is defined by the existing development pattern and zoning. The above image shows the existing and proposed development pattern and includes the future street connection between Bob Billings Parkway and Ken Ridge Drive. The 18 acres of UR is likely to be reconfigured into several zoning districts in the future including commercial and multi-dwelling. The proposed subdivision street connections from the Langston Heights Development would support the continuation of a detached housing pattern to the south. The following map shows graphically the existing and proposed housing types for this area based on the existing and proposed zoning.

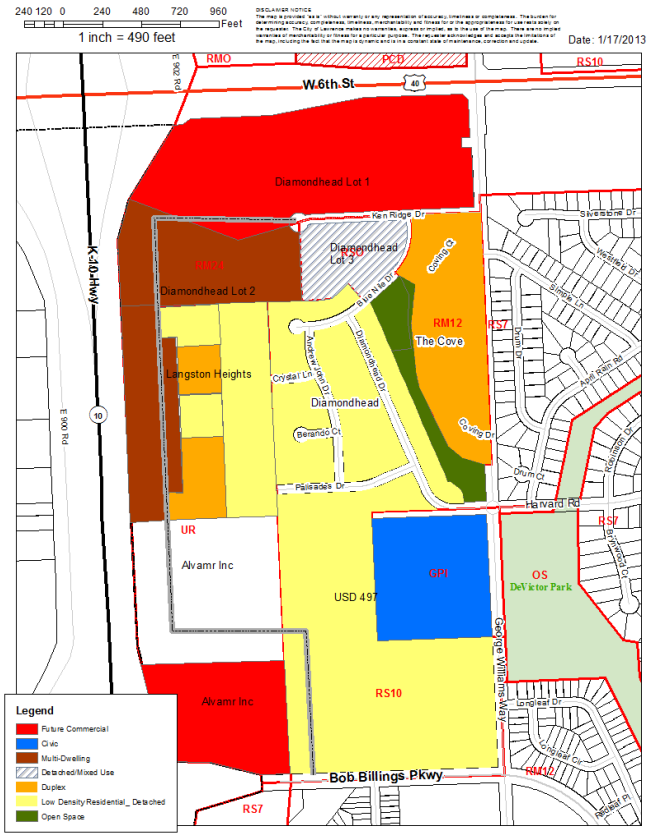


Figure 1 Map of Land Use

Renaissance Drive:

The location of Renaissance Drive provides the greatest buffer between K10 Highway to the west and the lower density residential development to the east. The design of the street provides the ability to develop on both sides of the street. Single loaded streets are generally inefficient in terms of construction and maintenance costs. This design provides the ability to provide development backing up to the highway that will provide

both a visual and noise buffer between the highway and the residential development to the east. Development both north and south will be required to extend Renaissance Drive north to Ken Ridge Drive and to the south to Bob Billings Parkway. Both streets have identified connection points. The connection to Bob Billings Parkway is being actively designed because of the K10 highway interchange to be constructed in the next year.

Access to Bob Billings Parkway:

KDOT, City Engineers, property owners and USD 497 have been working to establish designated access points as they relate to the pending interchange improvements of the SLT interchange with Bob Billings Parkway. This information is critical to the development of the property between Diamondhead Subdivision to the north and Bob Billings Parkway to the south. The access point is designated approximately 990' east of the intersection to avoid conflicts within the interchange and ramps. Access is intended to provide connectivity to the undeveloped parcels north of Bob Billings Parkway and connect to Renaissance Drive to the north. The finalized alignment will be platted based upon executed agreements of all parties and through the Subdivision Regulation process. The following exhibit shows the connection between Bob Billings Parkway and the proposed development to the north. This concept includes the subdivision design as of November 2012. The location of Renaissance Drive between the December and January versions has not changed. Renaissance Drive is proposed as a "double loaded" local connector street within the neighborhood.

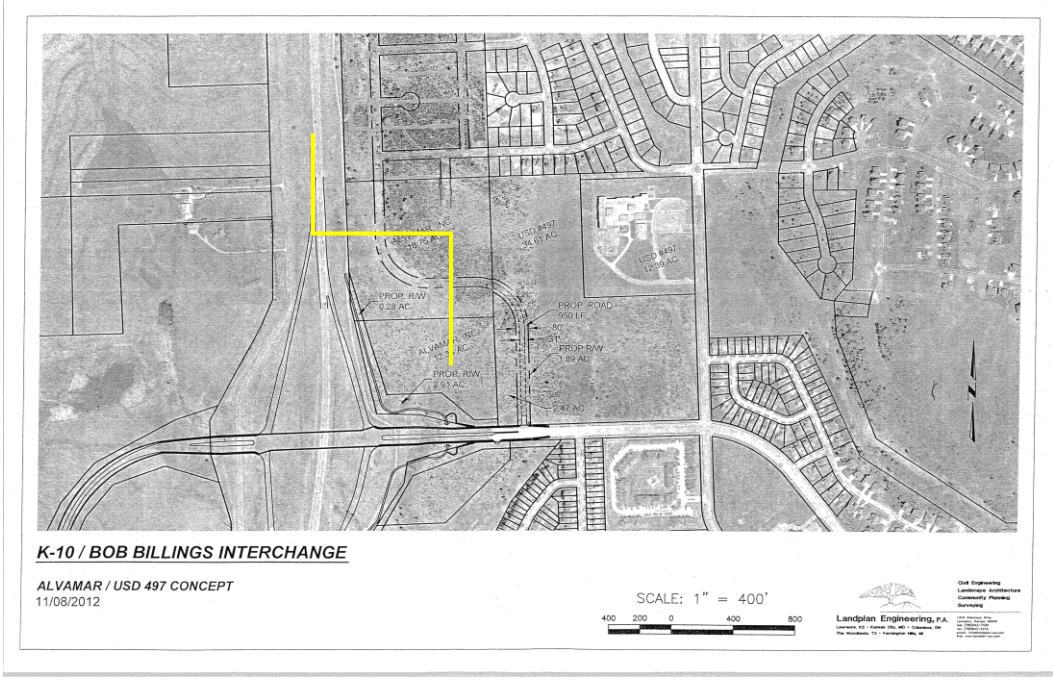


Figure 2: Renaissance Drive Extended South

The base document used in the concept includes the previous subdivision plat arrangement. The internal street connections to the Langston Heights subdivision have been revised since this concept plan was prepared. However, the location of Renaissance Drive and the access point to Bob Billings Parkway have not changed throughout this project.

Effect on future development to South
The proposed Subdivision extends the local street network to the south via Renaissance Drive and Big Sea Drive. The basic alignment of Renaissance Drive south of the subject property is being developed with KDOT and City staff and the adjacent property owners. The property along Bob Billings Parkway has been zoned for specific uses (PCD and RS10). The commercial use located on the northeast corner of Bob Billings Parkway and the SLT is likely to be requested for an expansion to the north and possibly east filling the gap created by the street alignment. The long-range land use plan (West of K10 Plan) indicates this area as suitable for future neighborhood commercial uses. Regional detention will also be required on this corner as the area develops. This will further reduce the developable land for commercial uses at the immediate intersection.

USD 497 owns acreage on the northwest corner of Bob Billings Parkway and George Williams Way. This area is zoned RS10 and may be developed with expanded school facilities or could also be developed residentially given the existing zoning. There remains 18 acres of UR zoning between the neighborhood commercial and the proposed Langston Heights development. The proposed subdivision extends Big Sea Drive to the south property line that accommodates an extension of the detached residential pattern to the south. This street could be extended to intersect Renaissance Drive or could terminate in a T or cul-de-sac intersection. A small area would remain between the highway and Renaissance Drive that could be developed with a transitional use between the proposed multi-dwelling and the neighborhood commercial use depending on the requirements for regional detention for the area. The townhouse pattern could be extended in this area with significant landscaping along areas that abut the commercial development.

The attached exhibit highlights one concept for future development to the south.

West of K-10 Plan
The area south of the Langston Heights Development is located within the boundary of the West of K10 Plan area. The plan recommends low-density residential land use between the highway and George Williams Way with the exception of the area designated for neighborhood commercial uses at the intersection of K10 and Bob Billings Parkway.

The residential land uses recommended in the plan state:

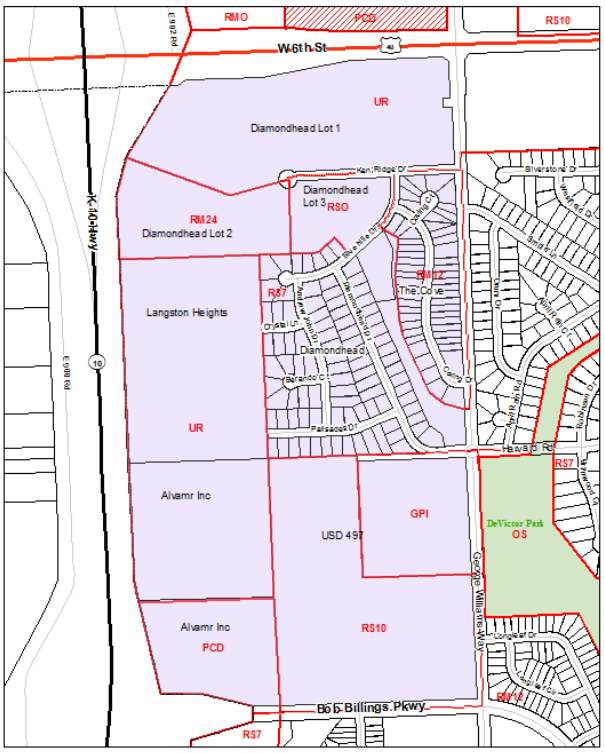
> ***Residential- Low Density***
> *The intent of the low-density residential use is to allow for single-dwelling, duplex and attached dwellings but emphasis is placed on residential type uses. Development in this area should be compatible with single-family character, which could include such uses as churches, small–scale daycares and institutional uses.*

The plan notes the primary uses as "*Detached dwellings, attached dwellings, duplex, group home, public and civic uses."* Applicable zoning districts include RS10, RS7, RS5 RM12D and PD. The Plan further states the maximum density recommended for areas recommended for low-density residential development is 6 dwelling units per acre.

Future Land Use Development Pattern

Based on the recommended land uses found in *Horizon 2020*, *West of K10 Highway Plan*, and the recent discussions with the Commission and the applicant staff prepared an example of a possible development pattern for the remaining undeveloped tracts of land. This concept plan is attached.

Land Use Summary Diamondhead Neighborhood Area						
Area/Description	**Acres**	**Zoning**	**Land Use**	**Density**	**Total Units**	**Subject Area**
Lot 1 Diamondhead	31	UR	vacant		0	
Lot 2 Diamondhead	12.78	RM24	vacant	24	306	
Lot 3 Diamondhead	6.07	RSO	vacant	15	91	
The Cove	10.3	RM12[1]	duplex	5.8	60	
Diamondhead Residential	20.7	RS7	sfr	4.2	89	
Langston Heights	***9.12***	***RS7***	***Sfr – Proposed***	***4.2***	***29***	
Langston Heights	***3.88***	***RS5***	***Sfr – Proposed***	***7.6***	***23***	
Langston Heights	***4.59***	***RM12D***	***Duplex-Proposed***	***5.7***	***22***	
Langston Heights	***9.98***	***RM12[2]***	***Multi - Proposed***	***10.92***	***86***	
Alvamar Inc	18.75	UR	vacant			
Alvamar Inc	12.3	PCD[3]	vacant	35	430	
USD 497	12.38	GPI	public	0	0	
USD497	34.6	RS10	vacant	4.3	148	
Total Area	**186.45**				**578**	



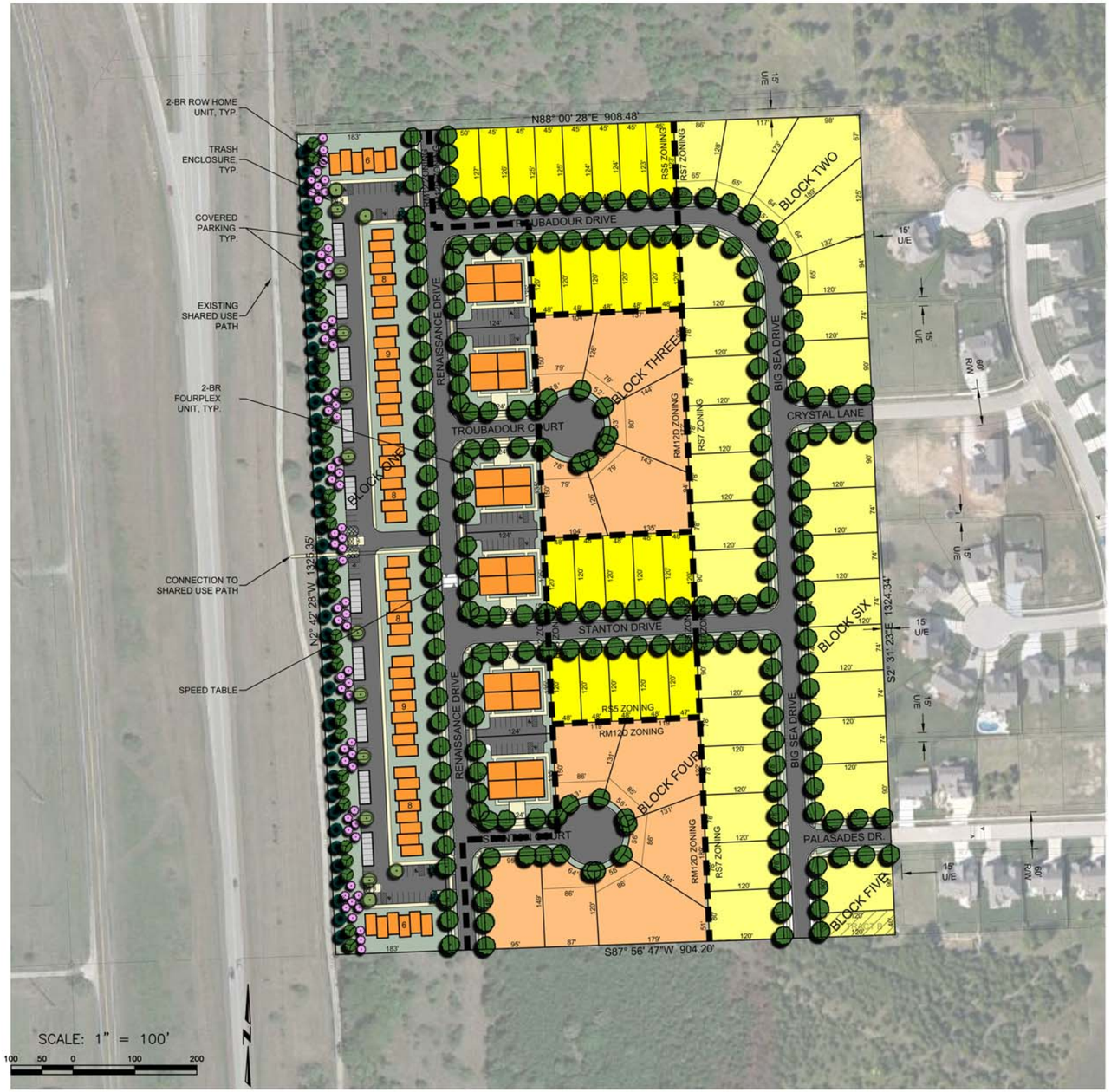
- Total Land Area 186.45 AC
- Developed Area 43.38 AC
- Vacant Land

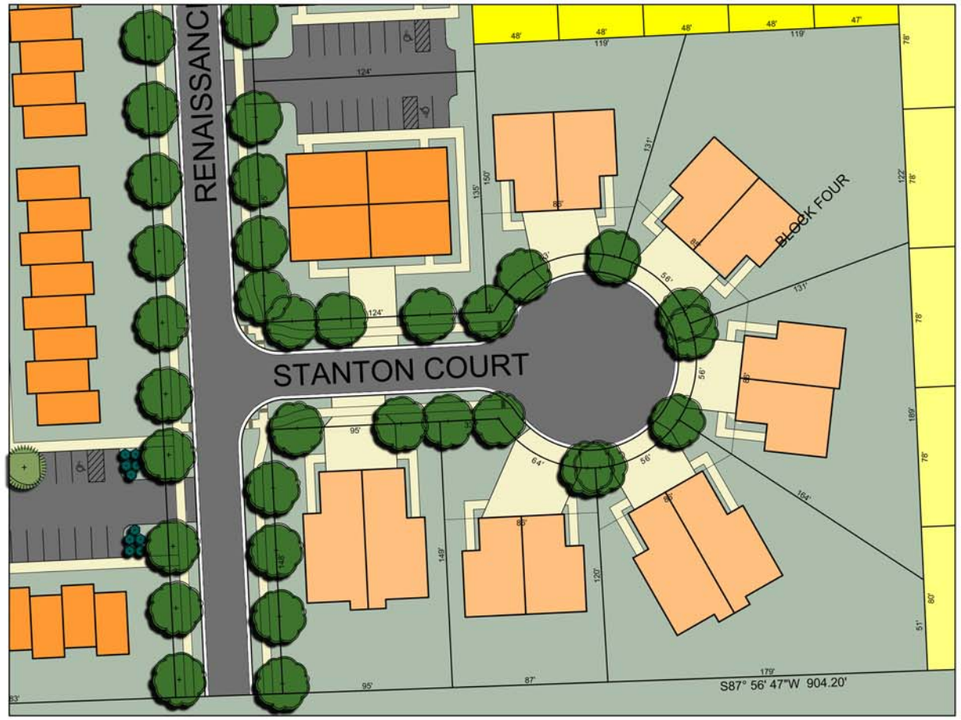
Table 3: Land Use Summary by parcel/Subdivision

[1] RM12 zoning allows multi-dwelling units. The Cove Subdivision is being developed to a less dense pattern with only two units (duplex housing) per lot.

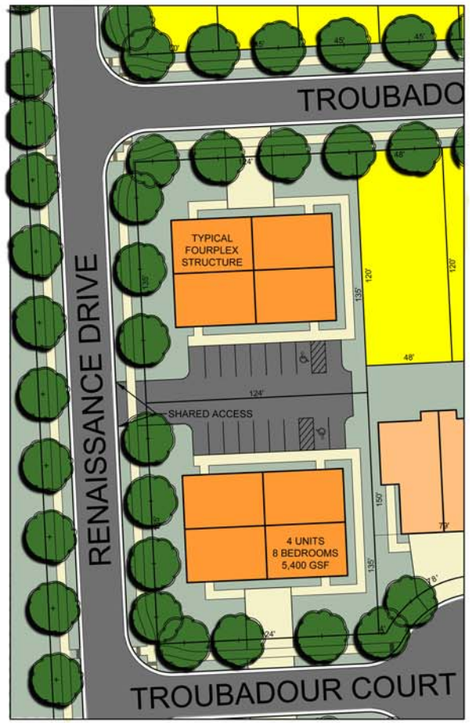
[2] RM12 zoning allows a total of 119 units. Proposed application is restricted to a lower density than district would allow by right.

[3] PCD allows 35 dwelling units per acre. Typical PCD zoning has not included a residential component or only a small percentage when present.





TYPICAL DUPLEX LAYOUT



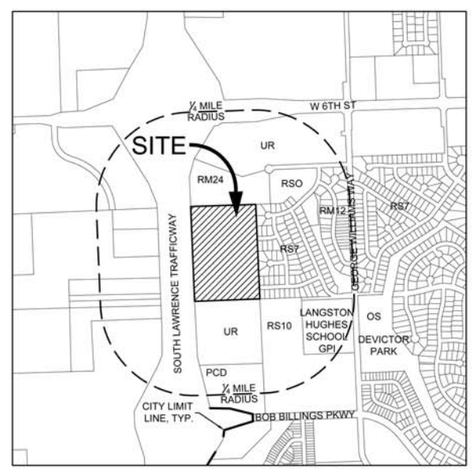
TYPICAL FOURPLEX LAYOUT

BUILDING SUMMARY:

PRODUCT TYPE	QUANTITY	UNITS	BEDROOMS
SINGLE-FAMILY HOME	52	52	N/A
DUPLEX	11	22	N/A
FOURPLEX	6	24	48
ROW HOME	62	62	124

**GROSS SUBDIVISION UNIT DENSITY = 160 UNITS / 27.564 AC = 5.805 UNITS/AC*

LOCATION MAP:



GENERAL NOTES:

1. OWNER: LANGSTON HEIGHTS, LC, 611 SAINT ANDREWS DRIVE, LAWRENCE, KANSAS 66047
2. LAND PLANNER/ CIVIL ENGINEER/ SURVEYOR: LANDPLAN ENGINEERING, P.A., 1310 WAKARUSA DRIVE, LAWRENCE, KANSAS 66049
3. EXISTING ZONING: UR
4. PROPOSED ZONING: RS7, RS5, RM12D, RM12
5. EXISTING LAND USE: VACANT
6. PROPOSED LAND USE: DETACHED DWELLING, DUPLEX, ATTACHED DWELLING
7. THE SUBJECT PROPERTY DOES NOT LIE WITHIN A SPECIAL FLOOD HAZARD AREA AS DEFINED BY FLOOD INSURANCE RATE MAP (FIRM); PANEL NO. 154, MAP NUMBER 20045C0154D, DOUGLAS COUNTY, KS., BEARING AN EFFECTIVE DATE OF AUGUST 5, 2010.
8. THIS SITE IS DESIGNATED LOW-DENSITY RESIDENTIAL IN A NODAL PLAN FOR THE INTERSECTION OF WEST 6TH STREET & KANSAS HIGHWAY 10 (K-10), DATED 11/11/03.
9. LOTS DEVELOPED WITHIN THE SLT/K10-TC SHALL BE DESIGNED TO COMPLY WITH THE MINIMUM DESIGN STANDARDS OF SECTION 20-307(c)(1).

ZONING SUMMARY:

RS7
GROSS AREA: 397,349 SF / 9.122 AC
RIGHTS-OF-WAY: 97,784 SF / 2.245 AC
TRACTS: 4,742 SF / 0.109 AC
NET AREA: 294,823 SF / 6.768 AC
TOTAL LOTS: 29
AVERAGE LOT AREA: 10,166 SF / 0.233 AC
MINIMUM LOT AREA: 8,880 SF / 0.204 AC
MAXIMUM LOT AREA: 18,571 SF / 0.426 AC
TOTAL UNITS: 29
UNIT DENSITY: 4.285 UNITS/AC

RS5
GROSS AREA: 169,017 SF / 3.880 AC
RIGHTS-OF-WAY: 37,224 SF / 0.855 AC
NET AREA: 131,793 SF / 3.025 AC
TOTAL LOTS: 23
AVERAGE LOT AREA: 7,187 SF / 0.144 AC
MINIMUM LOT AREA: 5,553 SF / 0.127 AC
MAXIMUM LOT AREA: 6,345 SF / 0.146 AC
TOTAL UNITS: 23
UNIT DENSITY: 7.603 UNITS/AC

RM12D
GROSS AREA: 199,594 SF / 4.582 AC
RIGHTS-OF-WAY: 31,505 SF / 0.723 AC
NET AREA: 168,089 SF / 3.859 AC
TOTAL LOTS: 11
AVERAGE LOT AREA: 15,281 SF / 0.351 AC
MINIMUM LOT AREA: 10,982 SF / 0.252 AC
MAXIMUM LOT AREA: 20,191 SF / 0.464 AC
TOTAL UNITS: 22
UNIT DENSITY: 5.701 UNITS/AC

RM12
GROSS AREA: 434,735 SF / 9.980 AC
RIGHTS-OF-WAY: 91,774 SF / 2.107 AC
NET AREA: 342,961 SF / 7.873 AC
TOTAL LOTS: 7
AVERAGE LOT AREA: 48,994 SF / 1.125 AC
MINIMUM LOT AREA: 16,740 SF / 0.384 AC
MAXIMUM LOT AREA: 242,521 SF / 5.568 AC
TOTAL UNITS: 86
UNIT DENSITY: 10.923 UNITS/AC

**GROSS SUBDIVISION UNIT DENSITY = 160 UNITS / 27.564 AC = 5.805 UNITS/AC*

Civil Engineering
Landscape Architecture
Community Planning
Surveying

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CONCEPT PLAN
LANGSTON HEIGHTS ADDITION,
CITY OF LAWRENCE
DOUGLAS COUNTY, KANSAS

REV	DATE	DESCRIPTION

DATE: 11/29/12
PROJECT NO.: 20121218
DESIGNED BY: TAH/LPE
DRAWN BY: BS
CHECKED BY: CMS

ISSUE
SHEET NO. 1 OF 1 SHEETS

FILE NAME: Q:\20121218\CAD\Concept-Exhibits\CONCEPT.dwg LAST SAVED BY: Brian Sturm SAVED DATE: 1/18/2013 3:01 PM PLOTTED: 1/18/2013 3:02 PM

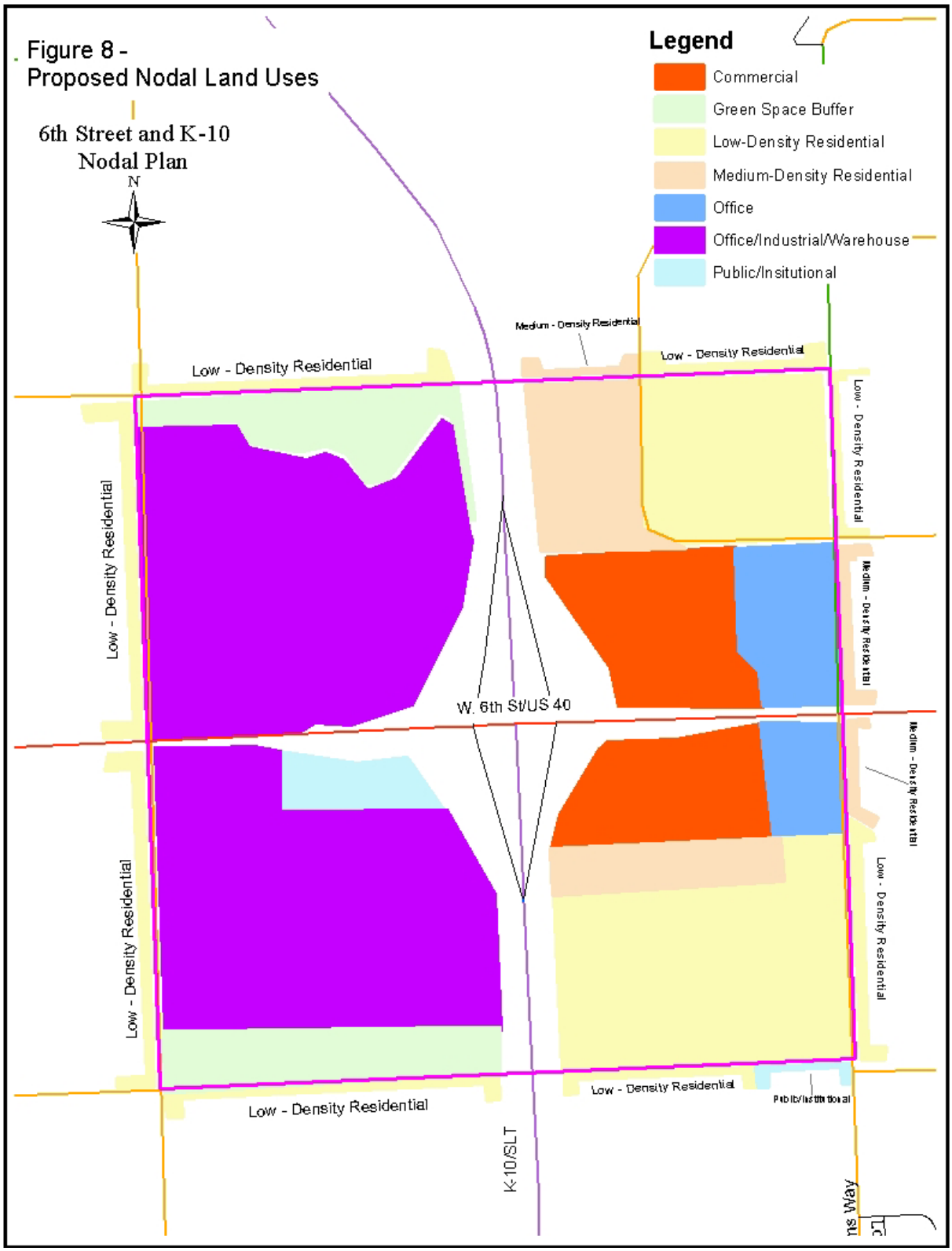


Figure 8 -
Proposed Nodal Land Uses
6th Street and K-10
Nodal Plan
N
Legend
Commercial
Green Space Buffer
Low-Density Residential
Medium-Density Residential
Office
Office/Industrial/Warehouse
Public/Insitutional
Low - Density Residential
Medium - Density Residential
Low - Density Residential
Low - Density Residential
Low - Density Reeidential
W. 6th St/US 40
Low - Density Residential
Low - Density Residential
Low - Density Residential
K-10/SLT

Memorandum
City of Lawrence
Planning Department

TO: **Lawrence Douglas County Planning Commission**

FROM: **Planning Staff**

CC: **Applicant**

Date: **January 18, 2013**

RE: **Item No. 3 Langston Heights Development**

- **Item No. 3B: Z-12-00229; UR to RM12D**
- **Item No. 3E: Z-13-00013: UR to RS5 as a lesser change of a portion of the RM12D application.**

Application of the Lesser Change Table

Section 20-1303 of the Development Code allows the modification of an application when the request is reduced in a manner specified by the Development Code. The Code states:

…any zoning district listed in the right-hand column of the Lesser Change Table that follows shall be considered a "lesser change " than a change to the Zoning District listed in the left–hand column of the same row of the table; in accordance with the cited section, a recommendation or action to amend the zoning map to assign the "lesser change" Zoning District to the land, rather than the Zoning District advertised in the notice, shall not require further notice."

This provision allows the Planning Commission to consider or to recommend changes to a specific zoning request without additional publication. In the specific case of the Langston Heights development application, the applicant is proposing to reduce a portion of the proposed RM12D district to RS5. The table below indicates all RS districts, with the exception of the RSO district are considered a lesser change from the RM12/RM12D Districts.

The application for RM12D has been revised to reduce the overall area and to consider a portion of the original request to be considered a lesser change to RS5 as discussed in the attached staff report.

Table of Lesser Changes	
Advertised/Proposed Zoning District	**Districts to be Considered a "Lesser Change"**
RS40	None
RS20	RS40
RS10	RS20 or RS40
RS7	RS10, RS-20 or RS40
RS5	Any other RS except RS3 or RSO
RS3	Any other RS except RSO
RSO	Any other RS except RS-3
RM12, RM12D	Any RS except RSO
RM15	RM12 or any RS except RSO
RM24	RM15, RM12 or any RS except RSO
RM32	Any RM or any RS
RMG	Any RM or any RS
RMO	RM15, RM12 or any RS
CN1	None
CN2	CN1, RSO or RMO
CD	CN1, CN2 or CC200
CC200	CN1 or CN2
CC400	CC200 or CN2
CR	CC400 or CC200
CS	CN1, CN2 or CO
IBP	None
IL	IBP or CN2
IM	IBP or IL
IG	IL, IM, IBP, or CN2
Other Zoning Districts	Not Applicable

PLANNING COMMISSION REPORT
Regular Agenda - Public Hearing Item

PC Staff Report
1/28/2013

ITEM NO 3B: Z-12-00229 UR (Urban Reserve) District to RM12D (Multi-Dwelling Residential) District; ~~8.564~~ 8.333 acres (SLD) AND

ITEM NO 3E: UR TO RS5; 3.88 ACRES; E SIDE OF K-10 & S OF W 6TH ST (SLD)

Z-12-00229: Consider a request to rezone approximately ~~8.564~~ 8.333 acres from UR (Urban Reserve) to RM12D (Multi-Dwelling Residential), located north and south of Crystal Lane and Palisades Drive extended, as shown in the preliminary plat of Langston Heights Addition. Submitted by Landplan Engineering, for Langston Heights, LC, property owner of record. **Deferred from the December 2012 Planning Commission Meeting.**

Note: Revised Language is shown in **blue bold** text.

Z-13-00015: Consider a request to rezone approximately 3.88 acres from UR (Urban Reserve) to RS5 (Single-Dwelling Residential), located along the east side of K-10 highway south of W. 6th Street and along the west side of a proposed street known as Renaissance Drive, as shown in the preliminary plat of Langston Heights Addition. Submitted by Landplan Engineering, for Langston Heights, LC, property owner of record.

This request has been modified to reduce the total area included in the proposed RM12D District from 8.33 acres to 4.582 acres. The balance of the acreage (3.88 acres) included in the original application is requested to be considered for RS5 (Single-Dwelling Residential) District zoning as a lesser change per section 20-1303 (c) of the Development Code. A memo regarding the use of the lesser change table has been included with this packet.

STAFF RECOMMENDATION: Staff recommends approval of the request to rezone approximately 4.582 acres from UR (Urban Reserve) District to RM12D (Multi Dwelling Residential) District based on the findings presented in the staff report and forwarding it to the City Commission with a recommendation for approval.

And

STAFF RECOMMENDATION: Staff recommends approval of the request to rezone approximately 3.88 acres from UR (Urban Reserve) District to RS5 (Single-Dwelling Residential) District based on the findings presented in the staff report and forwarding it to the City Commission with a recommendation for approval.

Reason for Request: *The developer, RSR, Inc., intends to subdivide and rezone the subject property to support duplex development (see attached concept plan).*

KEY POINTS
- Request is part of an overall development package that includes RS7 and RM12 Zoning and a preliminary plat.
- This district serves as a transitional use between the lower density development to the east and the proposed higher density and highway to the west.

ASSOCIATED CASES/OTHER ACTION REQUIRED
- Z-12-00229: ~~8.564 acres~~ **4.582 acres** from UR (Urban Reserve) to RM12D (Multi-Dwelling Residential)
- Z-12-00231: ~~9.206 acres~~ **9.122 acres** from UR (Urban Reserve) to RS7 (Single-Dwelling Residential)
- Z-12-00232: ~~10.025 acres~~ **9.980 acres** from UR (Urban Reserve) to RM12 (Multi-Dwelling Residential)
- **Z-13-00015: 3.88 acres from UR (Urban Reserve) to RS5 (Single-Dwelling Residential) as a lesser change from a portion of the proposed RM12D application.**
- PP-12-00228: Preliminary Plat Langston Heights

PLANS AND STUDIES REQUIRED
- *Traffic Study* – Not required for rezoning
- *Downstream Sanitary Sewer Analysis* – Not required for rezoning
- *Drainage Study* – Not required for rezoning
- *Retail Market Study* – Not applicable to residential request

ATTACHMENTS
- Area map
- Concept plan
- 6th & K-10 land use map
- **Lesser Change Table memo**

PUBLIC COMMENT RECEIVED PRIOR TO PRINTING
- Communications are attached.

Project Summary:
Proposed request is for ~~8.333~~ **4.582** acres to accommodate duplex development. This district is defined in Section 20-201 of the Development Code as corresponding to a "Medium-Density" comprehensive plan designation. This request is intended to be considered concurrently with the preliminary plat, PP-12-00228 Langston Heights. The preliminary plat lot configuration creates a net density of ~~7.4~~ **5.7** units per acres. This is a lower-density development pattern than the allowable density conveyed by the base zoning district. The RM12D district provides a land use transition between the detached residential portion of the subdivision to the east and the planned higher density development along the highway to the west.

This request has been modified to include a portion of the original 8.333 acres as RS5. The revised request extends detached dwelling lots along connector street within the overall development. The remaining duplex portion of the original application is concentrated around specific cul-de-sac street within the development.

1. CONFORMANCE WITH THE COMPREHENSIVE PLAN

Applicant's Response: *the Lawrence future Land Use Map (3-2) in Horizon 2020 does not specifically designate a land use for this subject property. The request conforms to the Residential Development Strategy (pg. 5-1) of providing appropriate transition zones between low-density residential land uses and more intensive residential development. When considered with the two (2) other rezoning applications accompanying this one, all three conform to the Residential Development Strategy (pg. 5-1) of providing a mixture of housing types, styles and economic levels for new residential development.*

This property is located within the boundary of the *6th Street and K-10 Nodal Plan*. This request is part of a package of requests that includes medium-density residential zoning in the form of duplex and multi-dwelling zoning districts and a preliminary plat that establishes the integrated layout of the overall development pattern planned for this area. The Nodal Plan, amended into the Comprehensive Plan, shows this area to be developed with low-density residential uses except for an area located along the south side of W. 6th Street and a portion of highway south of W. 6th Street. **The area plan land use map is attached to this report.**

The nodal plan provides a narrative description of the recommended land use development for each quadrant of the intersection of w. 6th Street and K-10 Highway. The plan states:

> ***The Southeast Corner***
>
> *Like its northern counterpart, this corner provides opportunity for a variety of residential, commercial, and office activities. This nodal plan designates the majority of this corner appropriate for residential development and the remaining area appropriate for commercial and office uses. This nodal plan also designates the majority of its residential uses appropriate for low-density, single-family neighborhoods with a small portion considered appropriate for medium-density residential development. This medium-density development serves as primary buffer between single-family neighborhoods and commercial activities. The commercial and office activities of the southeast corner along West 6th Street mirror those of the northeast corner - the majority of such activities are designated appropriate for commercial with the remainder for office uses.*
>
> *This nodal plan anticipates more low-density, single-family residential development in the areas surrounding this corner and therefore much of this corner was designated appropriate for similar development to maintain compatibility of surrounding land uses. Open space areas are also highly encouraged to serve as buffers between residential, commercial, and office land use activities, as well as provide opportunities for linkages to the surrounding neighborhoods to the southeast of this nodal study area.*

While the Nodal Plan specifically designates medium-density residential development appropriately as a buffer between single-family neighborhood and commercial activities, the proposed RM12 district request boundary employs this same concept to serve as a buffer between the single-family development to the east and the highway to the west. The **revised** RM12D/**RS5** request serves as the transitional use between the RS7 and the RM12 Districts. **The intent of the RS5 areas are to provide an increased presence of detached dwelling units on individual lots within the overall subdivision.**

In addition to density recommendations, *Horizon 2020* provides key strategies that are applicable to this development request and the related applications. They are:

- *Infill residential development should be considered prior to annexation of new residential areas.*
- *A mixture of housing types, styles and economic levels should be encouraged for new residential and infill developments.*
- *Compatible densities and housing types should be encouraged in residential neighborhoods by providing appropriate transition zones between low-density residential land uses and more intensive residential development, and between higher density residential uses and non-residential land uses.*
- *The character and appearance of existing residential neighborhoods should be protected and enhanced. Infill development, rehabilitation or reconstruction should reflect architectural qualities and styles of existing neighborhoods.*

This request represents infill development and the first step in a plan to provide a transition of uses between the existing development and the Highway. The proposed RM12D zoning is a medium-density residential district. **This request has been reduced with the revised preliminary plat from 8.462 acres to 4.5 acres. Additionally, an area originally intended for duplex development in the RM12D portion of the project has been revised to RS5 to accommodate detached housing on individual lots. The RS5 zoning district can be considered either a low density or medium density residential district (20-201) depending on the specific subdivision design.** When considering the proposed **requests for RM12D and RS5** ~~request for RM12D~~ concurrently with the preliminary plat, the impact of the **development proposal** is significantly reduced with a gross density of ~~only 6~~ **5.3** units per acre. **This area (8.462 acres) includes 22 duplexes and 23 detached units per the proposed subdivision (45 total units). The previous plan included 50 duplex units.** ~~Excluding the public right-of-way and including only the actual lots, the development density is approximately 7 dwelling units per acre for the RM12D portion of the development request.~~

Commercial areas and major traffic corridors are both considered high intensity uses. They both have a high traffic flow characteristic as well as noise and light that can impact lower intensity land uses. Future development of the subject property includes a 50' setback along the west property line to enhance the buffering of land use adjacent to the K-10 Highway. Of the land use plans completed along the edges of the existing city limits, uses along the K-10 Highway are predominantly higher intensity land uses. In some instances, the highway is abutted by open space which is typical of the regulatory floodplain in those sections. Higher intensity uses are appropriately located along highways with land use transitions provided to lower-intensity land uses.

The implementation of the land use recommendations of the comprehensive plan are implemented through the Development Regulations including zoning and subdivision design. The proposed request, when considered concurrently with the preliminary plat, complies with the low-density residential land use recommendations contained in the Nodal Plan.

Land Uses adjacent to K-10 Highway

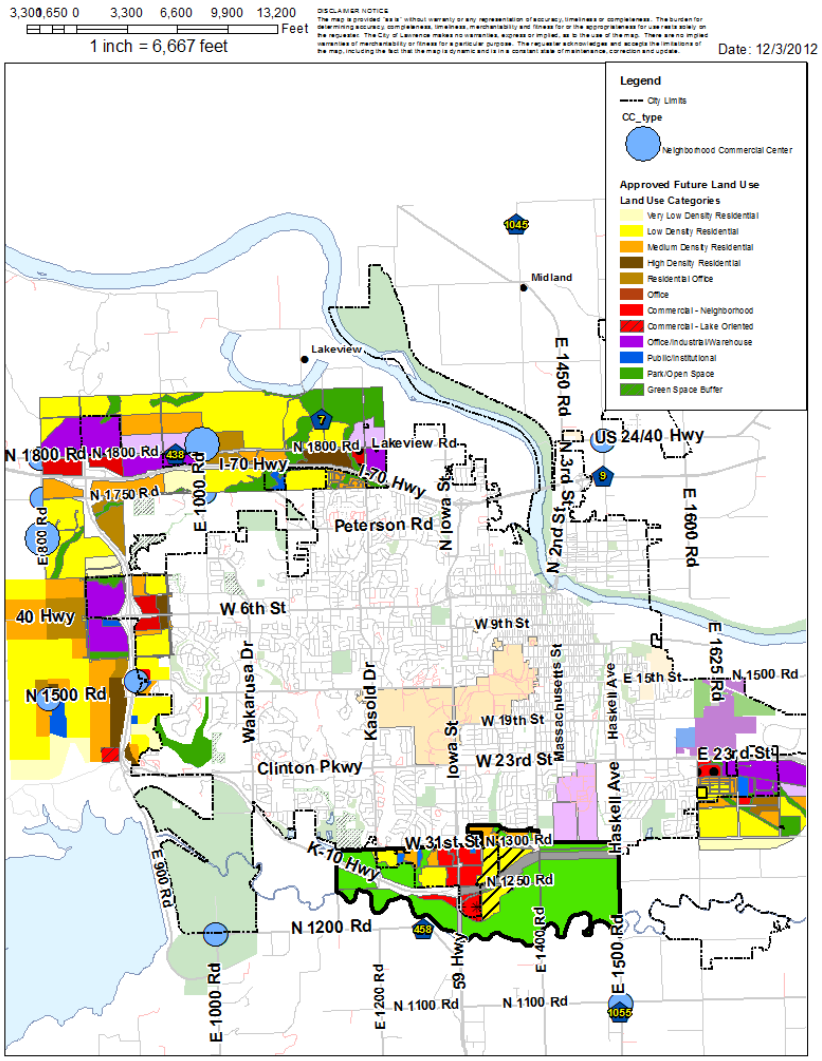


Figure 1: Land Uses

Staff Finding – This request, when considered with the proposed preliminary plat of Langston Height, complies with the low-density land use recommendations and provides a land use transition east to west for this area. **The revised request increases the presence of detached single-dwelling units in this development.**

2. ZONING AND USE OF NEARBY PROPERTY, INCLUDING OVERLAY ZONING

Current Zoning and Land Use:	UR (Urban Reserve) District; undeveloped property.
Surrounding Zoning and Land Use:	RM24 (Multi-Dwelling Residential) District to the north. Undeveloped land.
	Proposed RS7 (Single-Dwelling Residential) District to

the east. Developing residential subdivision to the east of the proposed development area.

UR (Urban Reserve) District to the south. Undeveloped land.

Existing UR (Urban Reserve) District and Proposed RM12 (Multi-Dwelling Residential) District to the west; undeveloped land. K-10 Highway is the west boundary of the development site.

Staff Finding – The proposed RM12D **and RS5** districts represent the central portion of the development area. Land to the immediate north, south, east and west are undeveloped. Land to the immediate east and west is proposed for detached and multi-dwelling development as part of this development request.

3. CHARACTER OF THE NEIGHBORHOOD

Applicant's Response: *The subject property is a vacant piece of abandon farmland. It is bordered to the west by the SLT right-of-way, which also includes the SLT recreation path. To the north lies vacant ground platted as part of the Diamondhead subdivision and zoned RM24. To the east lie properties platted under the Diamondhead subdivision, zoned RS7 and developed as detached single-family homes, all constructed within the past 5-7 years. To the south rests vacant unplatted property zoned UR and of similar natural character to the subject property. Langston Hughes School is a short distance to the southeast.*

The west portion of the development site abuts K-10 Highway (higher density proposed). The east portion of the development site abuts developing single-dwelling subdivision known as Diamondhead Subdivision. This requested RM12D district provides a transition of land use between the proposed detached and multi-dwelling structures.

This property is located within the West Lawrence Neighborhood. This section of the neighborhood includes several undeveloped parcels to the north and south along K-10 Highway. This neighborhood is characterized by the dominance of residential use, primarily low-density detached housing. Higher intensity uses are located along major streets in the neighborhood. Existing and planned non-residential uses are located at major intersections throughout the neighborhood.

Staff Finding – The overall neighborhood is characterized by residential uses. The area is bounded by K-10 Highway on the west and by George Williams Way, a collector street, on the east. Higher density zoning is located along the arterial streets of W. 6th Street to the north and Bob Billings Parkway to the south. The immediately surrounding areas, north and south, are undeveloped. Areas east of George Williams Way along W. 6th Street and Bob Billings Parkway have developed with higher intensity land uses expected along these types of arterial streets. **There are no changes to this finding of fact.**

4. PLANS FOR THE AREA OR NEIGHBORHOOD, AS REFLECTED IN ADOPTED AREA AND/OR SECTOR PLANS INCLUDING THE PROPERTY OR ADJOINING PROPERTY

As noted above this area is located within the boundary of the *6th Street and K-10 Highway Nodal Plan*. The area is generally recommended for low-density residential development with a small portion considered appropriate for medium density residential development. **This application has**

been revised to reduce the area intended for duplex development and increase the amount of detached housing in the central portion of the proposed development. The density of the central portion of the development has been reduced by the inclusion of the RS5 district. The overall proposed density within the central portion of the development has been reduced from 7.4 (medium density) to 5.3 (low-density) dwelling units per acre. This **revised** request is consistent with that land use recommendation.

Staff Finding – The **reduced area** proposed RM12D **with the proposed RS5** zoning is consistent with the low-density residential land use recommended in the nodal plan applicable to this area when reviewed concurrently with the preliminary plat.

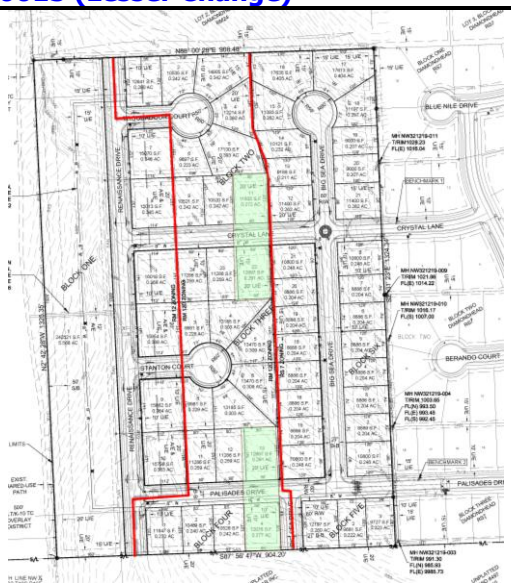
5. SUITABILITY OF SUBJECT PROPERTY FOR THE USES TO WHICH IT HAS BEEN RESTRICTED UNDER THE EXISTING ZONING REGULATIONS

Applicant's Response: *The UR district has served this vacant ground adequately but will not permit new development of any kind. Development that provides an appropriate transition from the existing RS7 neighborhood to the east, the future RM32 development to the north and the existing SLT to the west requires a new zoning classification*

Staff concurs that the UR zoning is no longer desirable given plans to develop the property. The current zoning serves as a holding zone until property is ready for development. **Following the December Planning Commission meeting, staff met with the applicant to identify specific concerns expressed in the public hearing. Expressed concerns identified the need to increase the presence of single-dwelling housing type and to provide an appropriate phasing for the multi-dwelling portion of the project through a street connection to Bob Billings Parkway. The original request included the central portion as a duplex development area as a transition between the single-family and multi-dwelling along the highway. The subdivision arrangement facilitated a direct connection between the proposed subdivision and the existing development to the east. This arrangement was found to be unsuitable.** ~~The proposed request is for RM12D to accommodate duplex development.~~

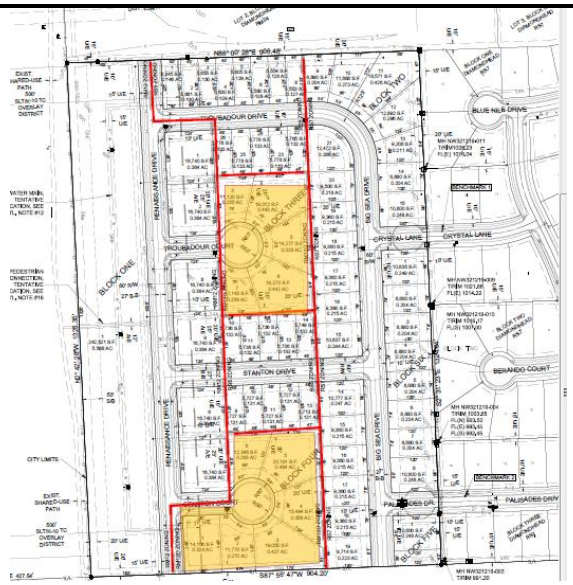
The proposed RM12D request has been modified by the applicant and reduced in area as discussed above. The overall density in the central portion of the development has been reduced and the project includes more detached housing lots than the previous arrangement. Considered concurrently with the preliminary plat **and the RS5 portion of the reduced request**, this specific development has a comparable, but slightly higher, overall density to the developed area to the east.

Approval of the request facilitates infill development and the provision of additional housing choices in this area. The suitability is made compatible to the area by providing larger duplex lots**, reducing the area proposed for duplex development, increasing the area for detached housing development,** and maintains a back-to-back relationship of the RM12D and RS7 **and RS5** districts.



Subdivision shows lot orientations with generally back-to-back development patterns.

Figure 2A: District Boundary December 2012



Subdivision shows reduced duplex development area.

Figure 2B: District Boundary January 2012

The RM12D is commonly referred to as "duplex zoning". The maximum density allowed in this district is 12 dwelling units per acre; however, the lot standards yield a practical density of **5.7 dwelling units per acre in this revised application.** The use of the RM12D district in this application facilitates an appropriate land use transition between low-density residential development and proposed higher-density residential development. The proposed request, when considered concurrently with the preliminary plat is at the lowest range of a medium-density residential development.

As part of the revised request the 3.888 acres has been proposed as RS5 in the central section of the development. The zoning district changes with the revised lot configuration provide greater transition within the development between the highway to the west and the developing subdivision to the east. This revised request improves the suitability for low-density residential development in this area.

Staff Finding – The existing UR (Urban Reserve) District is no longer a suitable zoning district for this property since development applications have been made. The **combined proposal of RM12D and RS5 districts** is intended as a land use transition between the existing and proposed detached residential development to the east and the highway and higher density development proposed to the west. This is a suitable use of the RM12D **and the RS5** district.

6. LENGTH OF TIME SUBJECT PROPERTY HAS REMAINED VACANT AS ZONED

Applicant's Response: *the property has remained vacant since being annexed into the City in the early 2000's.*

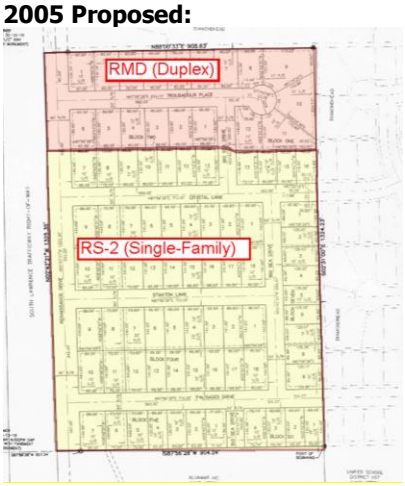
This property is undeveloped (vacant). The existing zoning, UR, was established in 2006 with the adoption of the Development Code. Prior to that time the property was zoned A (Agricultural). The surrounding area to the north and east (Diamondhead) was annexed and rezoned for various uses in October 1998.

Z-12-00015 (Lesser Change)

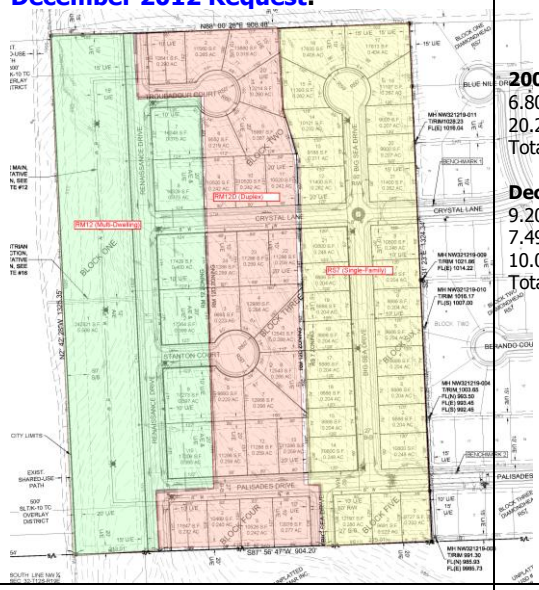
This property was part of a 27.23-acre request for RS-2 zoning submitted in October 2002 (Z-10-39-02) but later withdrawn and replaced by two later applications in 2005. (Z-9-63-05 and Z-9-64-05). The 2005 requests were for 6.8 acres of RMD (Duplex Residential District) and 20.77 Acres of RS-2 (Single-Family Residential District).

Development Density Comparison

2005 Proposed:



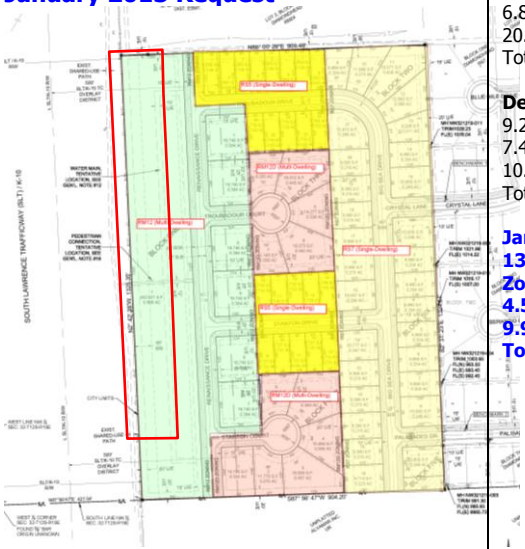
December 2012 Request:



2005 Proposed:
6.80 Acres – Duplex Zoning
20.22 Acres – Detached Residential Zoning
Total Units -104

December 2012 Request:
9.20 Acres – Detached Residential Zoning
7.49 Acres – Duplex Zoning
10.02 Acres – Multi-Dwelling Zoning.
Total Units - 165

January 2013 Request



Note: Lot 1, Block 1, outlined in red will not be developed until connection of Renaissance Drive to the south to Bob Billings Parkway, refer to Preliminary Plat.

2005 Proposed:
6.80 Acres – Duplex Zoning
20.22 Acres – Detached Residential Zoning
Total Units 104

December 2012 Request:
9.20 Acres – Detached Residential Zoning
7.49 Acres – Duplex Zoning
10.02 Acres – Multi-Dwelling Zoning.
Total Units - 165

January 2013 Request:
13.002 Acres – Detached Residential Zoning [9.122 + 3.88)
4.582 Acres – Duplex Zoning
9.980 Acres – Multi-Dwelling Zoning
Total Units – 160

Table 1: Summary of Land Use

These requests were approved by the Planning Commission on November 16, 2005. They were accompanied by a preliminary plat that included connected grid streets. The approval was subject to the recording of a final plat for the property. The Final Plat for the property was approved in 2006 and the approval was extended in 2008. The property owner did not complete the requirements and record the final plat. Therefore, the zoning was never published and made

effective. The 2005 request for RMD included the north portion of the subject property that abutted the RM24 zoning. The previous preliminary plat included only one block of duplex lots terminating in a cul-de-sec in the north portion of the 27-acre parcel. The highway was abutted by Renaissance Drive and included lots on only side of the street as a buffer to K-10 Highway.

Staff Finding – The area is undeveloped. The property was zoned A (Agricultural) from 1966 to 2006. The UR district was established in 2006 and remains to the present. **There are no changes to this finding of fact.**

7. EXTENT TO WHICH APPROVING THE REZONING WILL DETRIMENTALLY AFFECT NEARBY PROPERTIES

Applicant's Response: *Approving this rezoning will pose no detrimental effect to nearby properties. Approval will facilitate appropriate residential development adjacent to the SLT and set a development precedent for adjacent vacant parcels.*

Note: Staff has received significant communication from nearby property owners and residents, in advance of the December 2012 Planning Commission Meeting, with regard to the proposed development. A separate summary of concerns expressed by the immediate neighborhood is attached was attached to the December 2012 staff report ~~to this report~~ and is also applicable to Z-12-00232 (UR to RM12). New communications received for the January 28, 2013 meeting are attached to this report and applicable to the related requests.

The area to the north and south is undeveloped. As such, no direct detrimental impacts are anticipated for these properties. Approval of the rezoning request facilitates the extension of streets and utilities to this area. As the areas to the north and south develop, street connections will be made that connect the proposed development with the adjacent properties. Development of this property extends a benefit to the undeveloped properties by the extension infrastructure.

Refer to attached memo regarding development potential to the undeveloped land to the north and south. Additional information has been provided to staff regarding the extension of Renaissance Drive south to Bob Billings Parkway.

A concern related to this request as it could potentially impact nearby properties is expressed by residents of the developed area to the east. Previous land use approvals conveyed an expectation for continued low-density development in the form of detached dwelling units on individual lots. This request alters that expectation by moving the proposed duplex use from the north portion of the site to the central portion of the site.

Existing residences will experience an increase in traffic since the local streets currently dead-end at undeveloped property. An increase in traffic should be expected. The local street network has capacity to service this area even with the addition of the proposed development. There are no future collector streets planned for the area between George Williams Way and K-10 Highway between W. 6th Street and Bob Billings Parkway. Traffic generated from this area will utilize the local street network to access the larger collector and arterial street network per approved plans. Increased traffic on existing local streets should be expected. As the area develops, additional street connections will be made dispersing some local street traffic.

The proposed subdivision has been revised to alter the internal street network pattern. This is reflected in the boundaries of the associated zoning districts. The revised street

pattern reduces the direct connectivity between the proposed subdivision and the existing subdivision to the east while maintaining a minimal level of connection between the two subdivisions. This revised design will further reduce the impact of traffic in the area.

Updated traffic information was provided to City Staff and reviewed by the City's Traffic Engineer, City Engineer, and Senior Traffic Planner. Staff's conclusion of the traffic study is that with the connection of Renaissance Drive to Bob Billings Parkway and the internal street configuration the development is consistent with the regional MPO planning. The intensity of the proposed development will not have any unexpectedly high traffic impacts on the regionally significant road lines of W. 6th Street, Bob Billings Parkway and George Williams Way. The addition of the street connection to the south has the added benefit of providing a secondary access option to Langston Hughes Elementary School that will alleviate internal traffic concerns for the surrounding neighborhood streets.

Staff Finding – Detrimental impacts associated with this request are related to an increase in traffic. However, traffic generated by this project is within the parameters of local street traffic expected for the area. Other impacts such as value are related to other forces outside of the zoning analysis such as perception and construction quality.

The revised request includes a phasing of development of the multi-dwelling portion of the request that limits development until Renaissance Drive is connected to Bob Billings Parkway. This will reduce the overall traffic generated by the development though the existing local street connections. The revised rezoning requests also result in a reduction of the total number of units from 165 to 160 and increase the total number of detached housing consistent with the developing land use pattern of the area to the east.

8. THE GAIN, IF ANY, TO THE PUBLIC HEALTH, SAFETY AND WELFARE DUE TO THE DENIAL OF THE APPLICATION, AS COMPARED TO THE HARDSHIP IMPOSED UPON THE LANDOWNER, IF ANY, AS A RESULT OF DENIAL OF THE APPLICATION

Applicant's Response: *the gains to public welfare proposed by this application are the gains associated with creating appropriate transitional residential development adjacent to established neighborhoods and highway corridors. Denial of this application will perpetuate the vacancy of this land.*

Evaluation of this criterion includes weighing the benefits to the public versus the benefit of the owners of the subject property. Benefits are measured based on anticipated impacts of the rezoning request on the public health, safety, and welfare.

This request facilitates the development of vacant property for residential purposes. The project extends the city's infrastructure within the existing boundaries of the city as infill development. As streets are constructed additional connectivity to this area west of George Williams Way will be added.

This application has been specifically revised in response to comments made at the December 2012 Planning Commission meeting. This revised request reduces the area allocated to duplex development (RM12D) and increases the presence of detached

housing (RS5) within the proposed subdivision. The revised subdivision design and zoning pattern extend the opportunity for additional detached housing to the south.

If this application is denied, the applicant could seek a request for a different zoning district. Development of the property is anticipated for residential development since 2002. Development of this area is one of timing as it relates to the developer's schedule. There are no impediments to extending public infrastructure to this area. Development of the site facilitates vehicular and pedestrian connectivity.

The overall project has also been revised to limit the multi-dwelling portion of the request (RM12) until Renaissance Drive is connected to Bob Billings Parkway. This connection provides alternative access to the neighborhood to the street network with more direct connections to the collector and arterial street network.

Staff Finding – Approval of the request facilitates infill residential development between George Williams Way and K-10 Highway and the efficient extension of public services and utilities. **The revised request benefits the public by providing an appropriate land use transition, expanding the housing options in the immediate neighborhood, and increasing the presence of the detached housing pattern in the area consistent with development expectations for the area.**

9. PROFESSIONAL STAFF RECOMMENDATION

The purpose of the RM12D district is found in Section 20-204 of the Development Code. This district is included with all other RM districts. The Development Code states:

> *The primary purpose of the RM districts is to accommodate multi-dwelling housing. The districts are intended to create, maintain and promote higher density housing opportunities in areas with good transportation access.*

The RM12D district is further distinguished from other RM districts *"on the basis of building type and the maximum allowed net density. In the RM12D district, the building type is restricted to duplex or attached dwellings of 2 units. Only one principal building per lot is permitted in this District."*

Both the RM12D and the RM12 have the same density and dimensional standards. However, the RM12D district is generally used for duplex development or 2 dwelling units per lot. Each lot must be sufficiently large enough to accommodate a minimum of two units, applicable building setbacks and off-street parking. **This request has been revised and the RM12D portion has been reduced from 8.333 acres to 4.582 acres. The remaining acreage, as a lesser change, is proposed as RS5.**

The purpose of the RS5 district is found in Section 20-202 of the Development Code. The Development Code states:

> ***The primary purpose of the RS Districts is to accommodate predominantly single Detached Dwelling Units on individual Lots. The District are intended to create, maintain and promote housing opportunities for individual households, although they do permit nonresidential uses that are compatible with residential neighborhoods.***

The RS5 District is distinguished by having a minimum lot area of 5,000 SF and reduced yard setbacks. The RS5 District has a corresponding Comprehensive Plan Designation as either low-density or medium-density depending on the specific lot arrangement (20-201).

Staff has received numerous calls regarding the proposed Langston Heights development project specifically as it relates to the use of the RM12D and RM12 zoning districts. A key consideration in **this revised application is the** concurrent application of, **the reduced area intended for duplex development, the addition of the RS5 District, and the revised** preliminary plat that is used to define the boundary of each district of the request.

Previous applications provided either full development of the subject property for single-dwelling detached lots or provided duplex zoning as a transition from north to south. The only transition provided for K-10 Highway was a public street with a single row of lots facing the highway. The **revised** request provides a reasonable transition of land uses with back-to-back lot orientations and a decrease in intensity east of the highway. The RM12D portion of the request provides the specific buffer between the **multi-dwelling and single dwelling districts. The RS5 portion of the request provides transition between the RM12D and the** RS7 District.

CONCLUSION

The proposed use of **the reduced area of** RM12D zoning **and the addition of the RS5 zoning** is a reasonable approach for land use transition between existing development and the highway **when considered concurrently with the revised preliminary plat**. This request is part of a larger development request that integrates the land use, density and subdivision design for property. The project facilitates infill development and the efficient extension of utilities.

Proposed Land Use Transition – December 2012

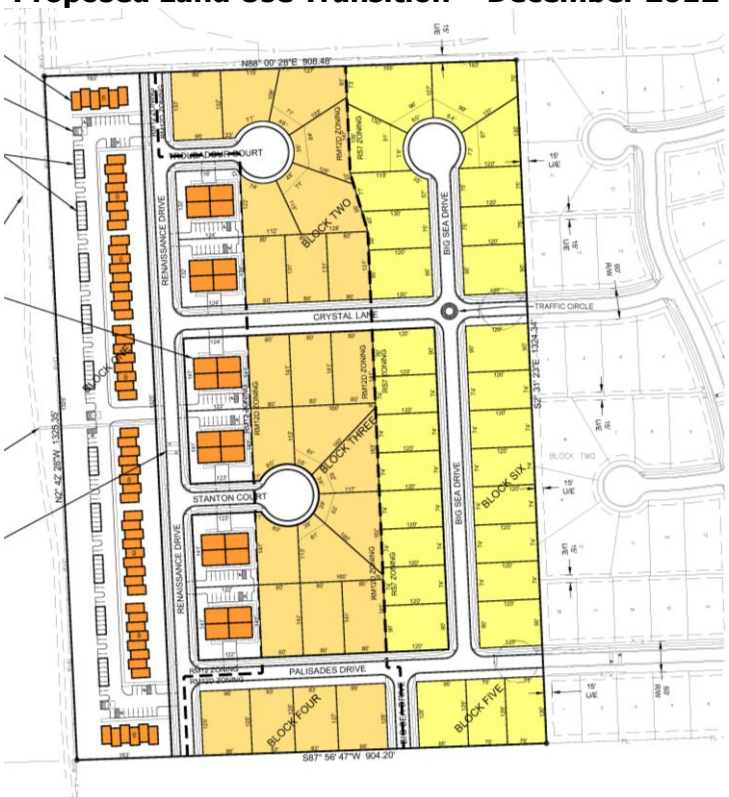
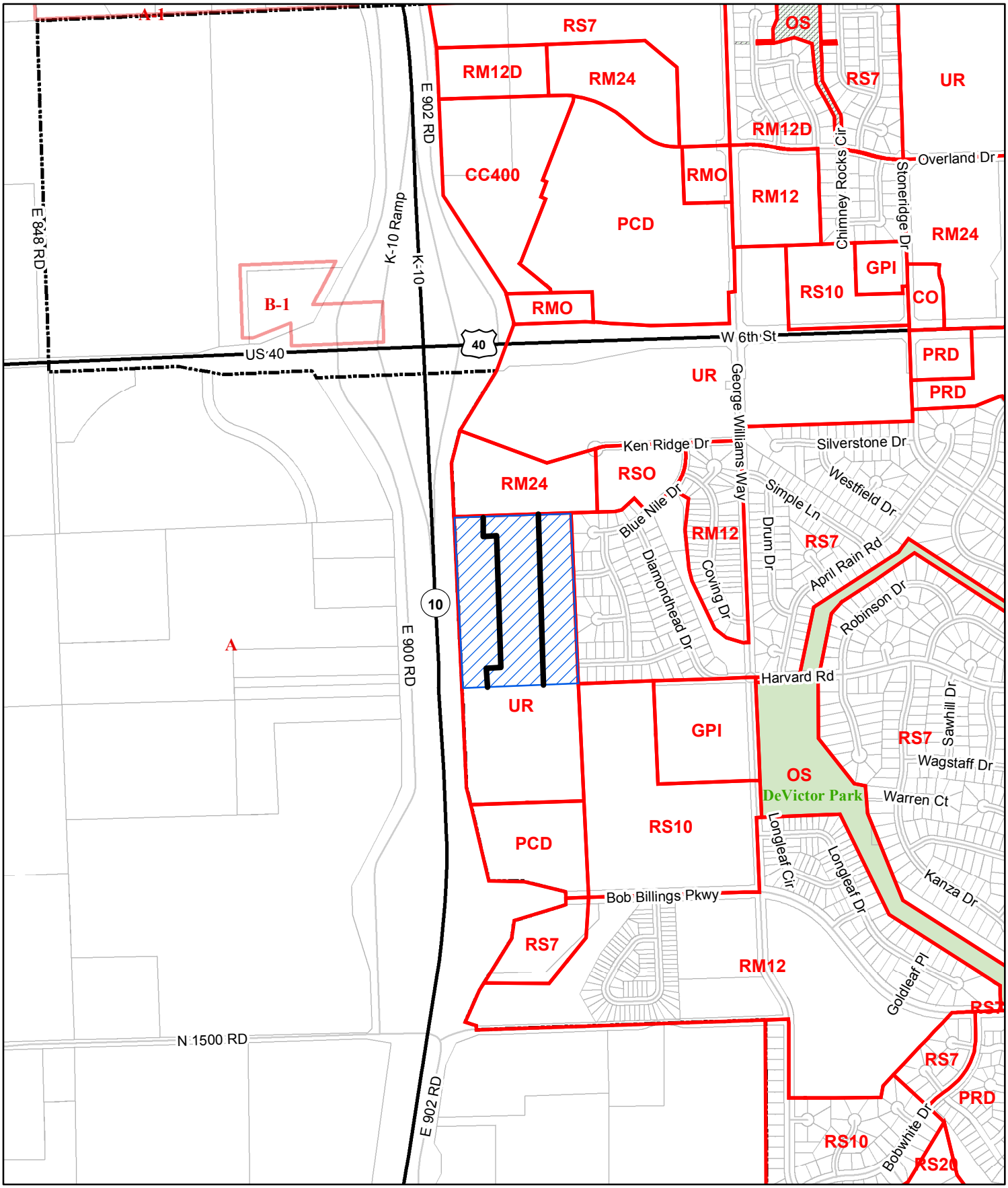


Figure 3A: Concept Plan 2012

Proposed Land Use Transition – January 2013



Figure 3B: Concept Plan2013



Z-12-00229: Rezone 8.5 acres from UR to RM12D
Z-12-00231: Rezone 9.2 acres from UR to RS7
Z-12-00232: Rezone 9.8 acres from UR to RM12
East of K-10 Highway & south of W. 6th St

Area Requested

Scale: 1 Inch = 1000 Feet

Lawrence-Douglas County Planning Office

January 2013

RECEIVED
JAN 28 2013
City County Planning Office
Lawrence, Kansas

LEAGUE OF WOMEN VOTERS®
OF LAWRENCE/DOUGLAS COUNTY

January 27, 2013

President
Melinda Henderson

President-Elect
David Burress

Vice President
Milton Scott

Secretary
Caleb Morse

Treasurer
Marjorie Cole

Directors
Margaret Arnold
Bonnie Dunham
James Dunn
Sally Hayden
Cille King
Ruth Lichtwardt
Marlene Merrill

Mr. Bruce Liese, Chairman
Members
Lawrence-Douglas County Metropolitan Planning Commission
City Hall
Lawrence, KS 66044

RE: ITEM NO. 3: PRELIMINARY PLAT AND REZONINGS FOR LANGSTON HEIGHTS ADDITION: E SIDE OF K-10 AND S OF W 6TH ST. (SLD)

Dear Chairman Liese and Planning Commissioners:

After studying the new Preliminary Plat and proposed rezonings for Langston Heights, we hope you will consider our original thoughts on this issue again. For your convenience, we have attached our original letter to you.

We do acknowledge that the issue of traffic from the multiple family development on Block One, Lot One has been alleviated to an extent. The restriction on Block One, Lot One development, until the connection to Bob Billings Parkway is opened, will help. This is the most intensive multiple family area. However, this issue still remains for traffic headed east and north from Block One, Lot One.

Also, the lack of predictability in the development of our neighborhoods is still a major problem in Lawrence. This is caused, among other reasons, by designations in our Comprehensive Plan of density only in the Area Plans coupled with the lack of definition of housing type in our multiple family districts. We describe this better in our attached letter.

We hope that you will consider our comments again because we believe they continue to apply here. Thank you.

Sincerely yours,

David Burress
President-Elect

Alan Black, Chairman
Land Use Committee

Attachment

PO BOX 1072 • LAWRENCE KS 66044-1072
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www.facebook.com/lwvldc • www.twitter.com/lwvldc

ATTACHMENT

LEAGUE OF WOMEN VOTERS®
OF LAWRENCE/DOUGLAS COUNTY

RECEIVED
DEC 19 2012
City County Planning Office
Lawrence, Kansas

December 10, 2012

To: Lawrence/Douglas County Planning Commission:

Re: Langston Heights, Items 5A, 5B, 5D

President
Melinda Henderson

President-Elect
David Burress

Vice President
Milton Scott

Secretary
Caleb Morse

Treasurer
Marjorie Cole

Directors

Margaret Arnold

Bonnie Dunham

James Dunn

Sally Hayden

Cille King

Ruth Lichtwardt

Marlene Merrill

The League of Women Voters of Lawrence/Douglas County has strong positions on neighborhood planning. We believe that "the primary urban planning unit should be the neighborhood, large enough to support the location of a nursery-elementary school, park...and should reduce to a minimum the use of the private car within each neighborhood." Therefore, we are concerned about the proposal for the multiple family lot configurations of the Langston Heights Addition and their proposed rezoning to RM districts.

We strongly support designing neighborhoods with housing types suited to families with children that are close to elementary schools with pedestrian ways designed for safe walking, and believe that it is very poor planning to locate multiple family housing that is not appropriately designed for this near our schools. Multiple family housing types can be designed for families with children, but must have the needed amenities such as privacy, open space and other facilities to make such units attractive for family life, which this proposed development does not have. Additionally, we support staff's recommendation to deny the applicant's request for a variance to allow sidewalks on only one side of streets.

Because of the effect this multiple family housing would have on the future development of the adjacent vacant land to the south of this tract, it can be predicted that this land also would become multiple family and not attractive for families with children. Because of the proximity that these two tracts have to Langston Hughes Elementary School, we believe that this would be very poor urban planning and a serious waste of potential that these two properties would have to reduce automobile use and utilize these valuable areas for encouraging families to live within walking distance to the school.

We believe that the reason that this type of poor urban planning is not uncommon in Lawrence is because of some serious deficiencies in our Land Development Code and how it leads to the interpretation of *Horizon 2020*:

- The multiple family districts do not specify housing type.
- The only distinction in our Comprehensive Plan (CP) in the designation of residential areas is based on density. Because of the long-standing interpretation of our CP, it is possible to allow all types of multiple family units from tall apartments to duplexes to achieve the gross densities that are typical for detached single family housing. Therefore, the density designation in our CP is not an appropriate prediction of use.
- The CP does not include the same goal that *Plan '95* did, which emphasized that development should be designed for the ultimate user and not to satisfy only the needs of the developer.

These factors eliminate the essential predictability that homeowners need to be able to have confidence in the stability and future of their neighborhoods when they make the substantial investment for living in a community. It tends to reduce the trust needed for a growing and thriving city to attract new residents. We ask that you take these factors into consideration when making your decision on this rezoning request. The future of our city depends on good urban planning. We would look forward to a discussion about making the necessary changes to our Land Development Code and *Horizon 2020* to create the predictability in our neighborhoods that we need.

Thank you for your consideration of these issues.

Melinda Henderson
President

Alan Black, Chair
Land Use Committee

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From: Andrew Pitts [mailto:APitts@TreanorArchitects.com]
Sent: Friday, January 25, 2013 8:29 AM
To: Brian Sturm
Cc: Christopher Storm; phils@LANDPLAN-PA.COM; bobdennsan@gmail.com; douglas.raney@gmail.com; timaherndon@att.net; Sandra Day
Subject: RE: Langston Heights Addition - revised Concept Plan

Brian-

Thank you for the revised concept. As I mentioned, we have been circulating the revision throughout the neighborhood. We had hoped this type of dialogue could have happened prior to our last meeting, but appreciate the developer continuing to review and refine the concept.

Honestly, the change still causes great discomfort amongst most of the neighborhood. One of the biggest issues still is the density. While there was a change from duplexes to the RS-5, this is an undesirable zoning adjacent to the RS-7. This will not change density (as is indicated in the staff report) and will lower the property values of the area. The type of home built in RS-5, regardless that it is a single-family detached home, will be long and narrow and out of context and scale with the balance of the neighborhood.

Another issue continues to be the four-plex development. These are extremely undesirable.

While I have only spoken to a few and do not know how well this would be received, I would offer the following ideas for your consideration:

1. In lieu of the RS-5, continue the RS-7 zoning down both Troubadour Drive and Stanton Drive to Renaissance Drive. This would be similar to the plan, but would remove the four-plexes at the end of those roads.

2. The other idea would be to continue the duplexes on both Troubadour Ct and Stanton Ct. to Renaissance Drive. This would remove the four-plexes and have each of these cul-de-sacs being only duplexes.

3. The street network and row-housing would remain as designed.

I believe these types of changes could find favor among some in the neighborhood. These changes, coupled with your agreement to not build the multi-family until the completion of Renaissance Drive could be very positive. Again, these are my ideas in an effort to continue the dialogue and try to move this project forward and not a denial. I cannot guarantee if any other neighbors would agree, but think this could bring a positive response.

Please consider these ideas and let me know if you have any questions.

Thanks,

Andy Pitts

From: Andrew Pitts [mailto:APitts@TreanorArchitects.com]
Sent: Wednesday, January 23, 2013 9:44 AM
To: Brian Sturm
Cc: Christopher Storm; phils@LANDPLAN-PA.COM; bobdennsan@gmail.com; douglas.raney@gmail.com; timaherndon@att.net; Sandra Day
Subject: RE: Langston Heights Addition - revised Concept Plan

Thank you. We have been circulating and trying to gather our comments.

Andrew Pitts

From: Brian Sturm [mailto:brians@LANDPLAN-PA.COM]
Sent: Monday, January 21, 2013 1:15 PM
To: Andrew Pitts
Cc: Christopher Storm; phils@LANDPLAN-PA.COM; bobdennsan@gmail.com; douglas.raney@gmail.com; timaherndon@att.net; sday@lawrenceks.org
Subject: Langston Heights Addition - revised Concept Plan

Andy,
As a follow-up to our last meeting on Thursday, 1/10/13, please find attached an electronic copy of the revised Concept Plan for Langston Heights Addition. Last week, Landplan submitted to the City a revised Preliminary Plat and zoning district boundaries based upon this concept. Most all of the features shown in the plan discussed at our meeting on the 10th remain as components in this concept:

- An overall reduction in units (160 down from 165)
- Phasing that prohibits the construction of the 62-unit row home community until Renaissance Drive is constructed and complete south to Bob Billings Parkway.
- A street layout that promotes traffic calming and minimizes interaction between traffic generated by the single-family and multi-family components of the project.

The developer chose to make one additional change following our meeting: replacement of 26 duplex units with 23 single-family units adjacent to Stanton Drive and Troubadour Drive. The comment issued by you and your neighbors that the concept easily allowed for the extension of the single-family component down these two streets spoke loudly to us. Ultimately the developer sees great merit in using a single-family detached product to define the look of the eastern half of the neighborhood while transitioning to the SLT with a spectrum of multi-family products. I hope that the residents of the Diamondhead neighborhood also see this change as an improvement.

In regards to the traffic generated by this new concept, I have prepared below a table that breaks down the trips generated by the Langston Heights development per street. This table examines each of the proposed plats for this project (the one approved in 2006, the one submitted last October, as well as this latest revision) and then based on our trip distribution model assigns the number of trips that would travel down each of the three access streets (Crystal Lane, Palisades Drive and Renaissance Drive) during the critical peak period (afternoon peak-hour on a typical weekday).

Street	**2006 Plat**	**2012 Plat**	**2013 Plat, Phase 1**	**2013 Plat, Phase 2**
Crystal Ln.	45 (45%)	60 (45%)	41 (45%)	62(45%)
Palisades Dr.	56 (55%)	74 (55%)	51 (55%)	30 (22%)
Renaissance Dr.	N/A	N/A	N/A	45 (33%)
Total Trips	**101 (100%)**	**134 (100%)**	**92 (100%)**	**137 (100%)**

I will say a few things about the information in this table:

- The phasing built into this latest Concept Plan ensures that the volume of Langston Heights traffic cutting through the Diamondhead neighborhood will remain below the levels exhibited with the plat approved in 2006 (92 down from 101).

- The total volume of trips generated by this latest Concept Plan is higher than that associated with the plat submitted last October (137 up from 134). This slight uptick is due to the proposed increase in single-family units (52 up from 29) and decrease in multi-family units (108 down from 136).
- Let me know if you would like to review a copy of the full addendum to the Traffic Impact Study that Landplan submitted to the City.

The Planning Commission will resume their consideration of the Preliminary Plat and rezoning requests at their meeting next Monday, the 28th. Don't hesitate to let me know if you or your neighbors have any questions or comments concerning the above information. Your efforts, thus far to continue the dialogue associated with this development, have helped produce a stronger design.
Thanks,

Brian Sturm, RLA, ASLA, LEED AP
Project Landscape Architect
Licensed in KS

Landplan Engineering, P.A.
1310 Wakarusa Drive
Lawrence, Kansas 66049
v. 785.843.7530
f. 785.843.2410

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Lawrence Public Schools
110 McDonald Drive
Lawrence, Kansas 66044-1063
Telephone: (785) 832-5000

LAWRENCE
PUBLIC SCHOOLS

January 16, 2013

Lawrence-Douglas County Planning Commission
ATT: Bruce Liese, Chair
City Hall, 6 East 6th Street
Lawrence, KS 66044

RE: Langston Heights Rezoning Applications
Z-12-0029, Z-12-00231 and Z-12-00232

Dear Planning Commissioners:

Unified School District No. 497 traditionally does not take positions on neighborhood developments. The school district is here to serve all children attending public schools and has no position regarding the merits of the proposed development or any other development. With that said, Principal Jackie Mickel has expressed concerns about a potential traffic increase near Langston Hughes Elementary School at the intersection of Harvard Road and George Williams Way.

Please be advised that the applicant's revised proposal is a reasonable attempt to remedy those traffic concerns. The connection of Renaissance Drive to Bob Billings Parkway is viewed as an ideal solution to presently existing traffic issues in and around Langston Hughes Elementary School. The district is discussing opportunities to create another entrance/exit using Renaissance Drive. We are appreciative of the input from all concerned stakeholders, as it appears to have resulted in meaningful progress on those subjects.

Sincerely,

Dr. Rick Doll
Superintendent of Schools

Lawrence Douglas County Planning Commissionors January 19, 2013
Bruce Liese, Chair
Scott McCullough, Director Planning and Development Services
Sandra Day, Current Planner

The Diamondhead Neighborhood, the neighborhood, is writing to request that the Lawrence Douglas County Planning Commission deny RSR Development, LLC, the developer, a request to re-zone Langston Heights Development during the upcoming January 28 meeting. The neighborhood feels the plat changes offered thus far by the developer are not dramatic enough to warrant acceptance by the neighborhood. We received the plan attached, LangstonHeights2.pdf on January 10. This is the result following a meeting on December 20. At the meeting on the 20th we discussed opportunities the neighborhood felt would make for a viable solution and at this time we do not feel we are seeing enough change in the attached plan.

We appreciate the opportunity awarded us by the planning commission to be a part of this process, but we feel the developer has not met specific needs: A need for reduction in density, a focus on traffic issues, and improvement to the overall character of the neighborhood.

We share Commissioner Lamer and Blaser's concern during the December 10 planning commission meeting that RM12 and RM12D do not constitute single family zoning within Langston Heights. We agree that the type of zoning within Langston Heights will effect the future development of land to the south, which will have a bearing on the overall character of the entire neighborhood. Horizon 2020 calls for expectations to be set for neighborhoods. Our neighborhood had the expectations established in the 2006 plat, which called for single-family homes with a small concentration of duplex units. Keeping in mind that the planning commission also predicts single-family housing to be developed in the land to the south, the expectation is there for Langston Heights to be developed as a single-family development. Commissioner Josserand also expressed concern for the amount of multifamily dwellings planned for Langston Heights. During a December 20 meeting at Landplan Engineering, Inc. we shared similar concerns with the developer, but we do not see our concerns reflected in the revised plat LangstonHeights2.pdf.

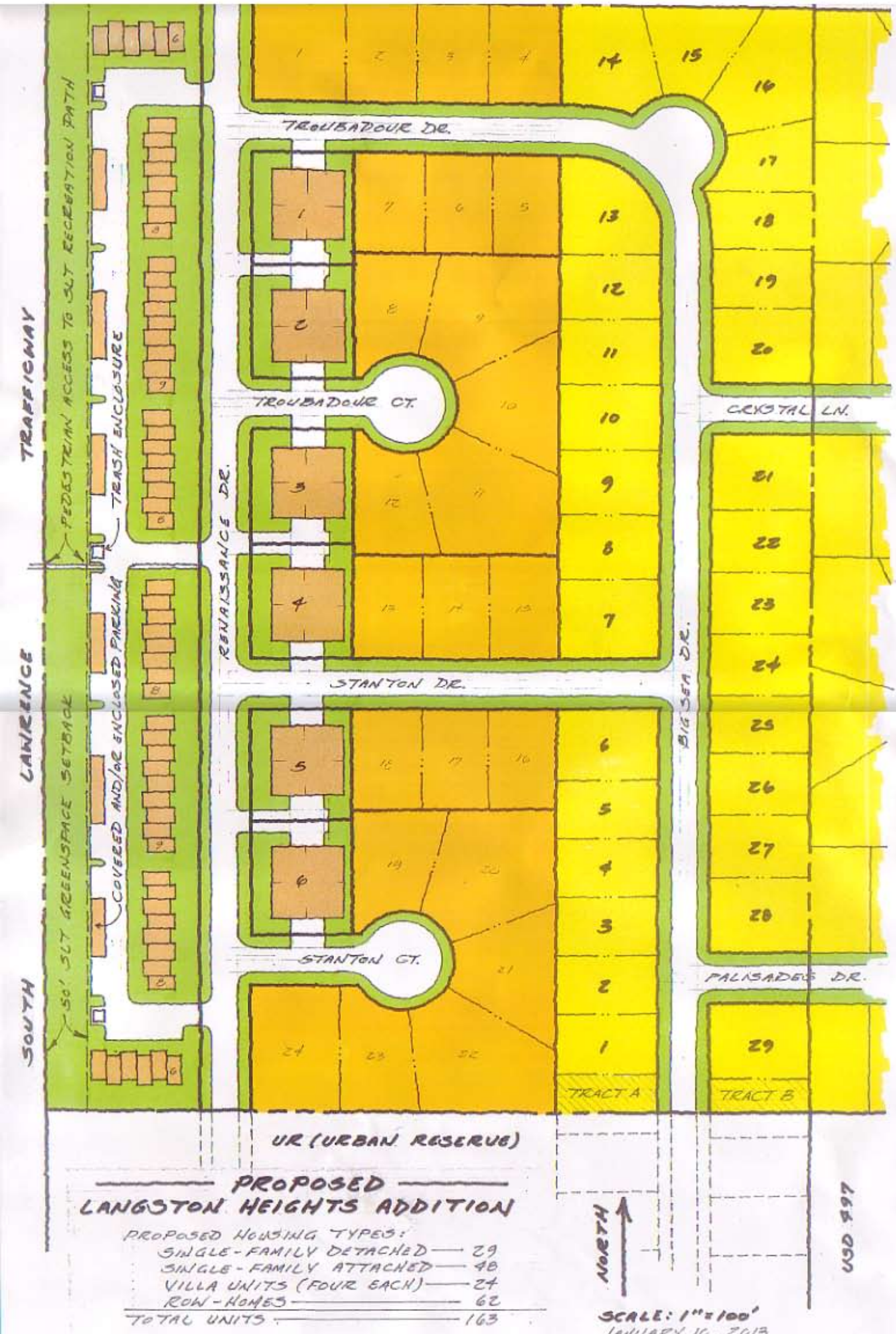
We also agree with Commissioners Josserand and Britten that high density traffic flowing into single family residence through Crystal Lane and Palisades Drive is a large problem. Without Renaissance Drive effectively connecting to 6th street and Bob Billings Drive, a traffic pattern through the existing neighborhood will establish. This traffic pattern has the potential to create unnecessary traffic that would not exist if Renaissance Drive were established at the beginning of the project.

As to the overall character, our neighborhood agrees with Commissioner Liese that this development should not be treated as an experiment. The concept of placing high-density housing flowing into single family residence remains in the revised plan for Langston Heights. A concept that is not seen anywhere else in Lawrence. Reconfiguration of roads was added to the revised plot, but the amount of high density still remains and although the overall average across the entire plat remains at 6 units per acre, the fact remains that the amount of high and medium density has not reduced.

Our neighborhood agrees with Commissioner Blaser that we are not giving respect to the land south of Langston Heights. The location of Reniasance Drive south and the decision on what is built in Langston Heights will effect the types of building planned for the land to the south, therefore setting the stage for the overall character of a high density neighborhood, which is not the expectation of the neighborhood, the West Lawrence Neighborhood Association, Horizon 2020 or the understanding of the Planning Commission members as stated during the December 10 meeting.

There is no reason why land east of K-10, south of 6th street and north of Bob Billings cannot receive the same level of respect as the design offered within the West of K-10 Plan. With new developments to Rock Chalk Park to the north of 6th street and George Williams Way and recent developments to acquire land to the south of Langston Heights by the developer, we feel it is time to create an East of K-10 comprehensive Plan. Therefore we respectively ask that you deny RSR Development, LLC the request to re-zone Langston Heights with the current plan LangsonHeights2.pdf.

Diamondhead Neighborhood



PROPOSED
LANGSTON HEIGHTS ADDITION

PROPOSED HOUSING TYPES:

SINGLE-FAMILY DETACHED	29
SINGLE-FAMILY ATTACHED	48
VILLA UNITS (FOUR EACH)	24
ROW-HOMES	62
TOTAL UNITS	163

SCALE: 1" = 100'
JANUARY 10, 2013

Sandra Day, AICP City/County Planner, City of Lawrence

RE: Landplan Engineering Informational Session December 3, 2012 Langston Heights Development

We are writing to ask you to consider deferring the rezoning of Langston Heights (Parcel west and south of Diamondhead) from UR to RM12 and RM12D in order to provide for a more agreeable development. The increase in traffic, decreased in property values and changes to the original 2006 plat are issues that need to be addressed.

The new plan proposal is to build a total of 165 housing units on 61 lots. With only 2 streets (Crystal Lane and Palisades Drive) servicing current and additional units, traffic will be heavier than originally planned for these two streets. This plan shows this with the numerous traffic calming devices located on the expanded Crystal Lane. Crystal Lane and Palisades were originally developed as a lead in to other single family housing, not medium density apartments. Typically, medium density housing is at the front of subdivisions, leading farther in to low density housing, this proposal is the exact opposite of that. Palisades already has issues on school days due to drop off and pick up from Langston Hughes Elementary School; it can't handle the additional traffic flow. Even when the future "proposed" access to 15th street and George Williams Way get added, traffic from this development will still be pushed through low density housing in nearly every direction. The Horizon 2020 plan specifically discourages this action with numerous aspects outlined in the bottom of this letter.

Should this plan be approved, due to the direct impact of the medium density housing, property values in the Diamondhead subdivision will decrease. When we bought our home back in 2007, we knew additional low density housing would soon follow to our west. This was based on the Planning Commission approval in January 2006 of single family homes in the Langston Heights area. We never would have bought our new home in this location had we known apartments and duplexes were to be built, and future potential home owners will feel the same way. We all based our decisions off this approved 2006 zoned plat for single family homes.

As you will see at the December 10th meeting, the Diamondhead subdivision is a unique neighborhood with a large population of kids. Traditions such as our July 4th parade, Easter egg hunts, neighborhood cookouts, and the general family feel among neighbors will be lost if this proposal passes.

Please see to it that this proposal does not go any further without modifications. We are not against the expansion of our subdivision to the west, we are against the medium density zoning; we would happily approve of low density zoning, which would expand on this great neighborhood.

Thank you for your time.

Sincerely,

Brian and Jennifer McCall

6201 Berando Court

Horizon 2020 Plan that relate to this proposal: Low-Density Residential Land Use

GOAL 3: Neighborhood Conservation (page 5-15, 5-16) Policy 3.3: Encourage Compatible infill Development Policy 3.4: Minimize Traffic Impact through Neighborhoods GOAL 4: Criteria for location of Low-Density Residential Development (page 5-17) Policy 4.2: Protect Areas Planned for Low-Density Development GOAL 5: Create a Functional and Aesthetic Living Environment (page 5-19, 5-20) Policy 5.5: Ensure Convenient and Logical Street/Road System Design

Medium and higher Density Residential Land use

GOAL 1: Criteria for Location of Medium and Higher Density Residential

Development

Policy 1.3: Identify Suitable Sites (page 5-23)□Policy 1.5: Ensure Adequate Infrastructure (page 5-24)□Policy 1.6: Consider Access (page 5-24)□Policy 1.7: Adhere to Designated Land Uses (page 5-24) GOAL 2:

Create a Functional and Aesthetic Living Environment Policy 2.6: Consider Residential Density and Intensity of Use (page 5-26) GOAL 4: Transportation Considerations (page 5-30, 5-31) ALL OF THEM

November 28, 2012

Sandra Day, AICP City/County Planner, City of Lawrence

RE: Landplan Engineering Informational Session December 3, 2012
Langston Heights Development

As a member of the Diamonhead subdivision (6th and George Williams Way), I and over 50 households in our neighborhood are concerned by the recent application to change the Langston Heights development. When our family purchased into our neighborhood our builder, Neal Ezel, told us the design of the subdivision to the west would be low-density housing similar to ours. I want to thank the Lawrence Planning Department for their hard work in developing our neighborhoods and their insightful design of planned unit developments. So I hope you will understand my concerns for changes in the current plan.

The 270% increase in family units to the new Langston Heights subdivision creates an increase in pressure on property values, traffic, children's safety and schools in our neighborhood. see below*

The Lawrence Planning Department has laid out a solid plan for adding a single-family Langston Heights Subdivision into the existing Diamondhead Subdivision creating a flow of single family homes into an existing single family neighborhood. The addition of high-density development causes high density traffic to flow into the existing low-density neighborhood. The Lawrence Planning Department exercises good design in neighborhoods that include high-density developments close to main arteries to the city and single family low-density located on the interior of a development. The revisions to Langston Heights do not show good design.

It is with great concern for our young children, our property values and the quality of our neighborhood that we ask you to defer from the revisions to Langston Heights Development.

Sheri and Mark Crabtree
820 Andrew John Drive

*Using the "Preliminary Plat Langston Heights" and the "Concept Plan Langston Heights" document, a summary of the change in units follows:

Number of Lots Block	Preliminary	Concept	
1	1	62	
2	21	36	
3	24	48	
4	4	8	
5	3	3	
6	8	8	
	61	165	270.49% increase

December 03, 2012

Ms. Day,

I'd like to take the opportunity to express my concerns about the proposed rezoning of the Langston Heights area in West Lawrence. My chief concern with the rezoning of the area is the multi-family units that are proposed at the site.

My family currently resides at 6201 Crystal Lane which is in the Diamondhead Subdivision. We have lived at this location for nearly two years and have thoroughly enjoyed the quality of life in our home. After much domestic debate we chose this location to build our new home based on a variety of different factors. First, the neighborhood is in a very close proximity to Langston Hughes School where our children would be afforded the opportunity to walk safely to school on a daily basis. Second, we researched the original platting of the area west of our home and it was all originally platted and zoned for what we thought was low-density residential dwellings. Finally and most importantly, the character and makeup of the neighborhood itself drew us to this area. As soon as we selected our site we were invited and included in neighborhood picnics, parades, parties and Easter-egg hunts. Our children routinely play with other neighborhood children in the area and are constantly riding bicycles and crossing streets in the neighborhood.

I feel the rezoning of this area to include multi-family living will dramatically increase the amount of through traffic flow through our neighborhood streets. The main traffic flow of these 165 units will run past many residences and sidewalks that children utilize on a daily basis. I don't believe rezoning this area would contribute to the greater good of the area or the community. I would strongly disagree with anyone who believed otherwise.

I'd like to comment on a couple of points:

First, when the area was rezoned from Agriculture District (A) to Duplex – Residential District (RM-D) in 2005 there was concern expressed from Planning Commissioner Haase that he would support the motion but was "losing his appetite for RM-D zoning because it had been abused in other parts of the community." Was Commissioner Haase a visionary as to what was on the horizon for this area with his comments? I would agree with Commissioner Haase that the placement of muti-dwelling living with the only means of access through a residential neighborhood is an abuse of what those neighborhoods are designed to provide. The traffic that will come with the rezoning will diminish the quality of life and safety of those in our neighborhood. In that very same planning meeting in 2005, Betty Lichtwardt with the League of Women Voters expressed her concern for pedestrian access to the school. I feel her concerns voiced in 2005 echo loudly today.

Second, I do not feel that rezoning an area to include 165 multi-family units with the only access being residential, neighborhood streets is a common practice in the city. With the current proposed plan of the area, the only access to these units would be on Palisades Drive or Crystal Lane. The precedent of

accessing multi-family units through established residential neighborhoods is not one I am aware of at any other area of the city. Generally, it is my understanding that higher density zoned areas would be zoned close to larger artery and collector streets. This planned area would be close to neither. This plan would also direct this traffic through a residential area that is frequented by our children whom walk to school daily.

Finally, I struggle with the necessity for the re-zoning of areas in Lawrence to multi-family if there are any concerns on what effects it may have on the surrounding residents and neighborhoods. A recent article in the Journal-World noted a developer whom recently pulled plans to construct an apartment complex off of 31st Street. The developer was quoted "We were very excited about that market at one time, but we have tempered that excitement." According to this developer, there is capacity in the muli-family living market in city. Why would it be in the best interest of city to re-zone the area where is could have an adverse affect on an already thriving neighborhood community? I unwaveringly feel this development would have an adverse affect on the neighborhood in which we reside.

I want to be clear that I understand the importance of thoughtful expansion and development of neighborhoods in our community. I however believe that multi-family living units should be concentrated in areas that are easily accessible to major thoroughfares. Rezoning this area would accomplish just the opposite. The amount of traffic this action will generate would be a danger to the residents and children of our neighborhood.

I do appreciate the opportunity to comment on this issue. I would ask that you please include these comments for the Planning Commission to review. Thank You for your time.

Sincerely,

Ryan, Tiffany, Lillian and Jackson Fike

6201 Crystal Lane

From: Rick Hird [mailto:rhird@petefishlaw.com]
Sent: Thursday, November 29, 2012 8:21 AM
To: Matt Gudenkauf
Cc: Scott McCullough
Subject: RE: Langston Heights Rezoning

Dear Matt,

This will confirm that I have received and read your letter regarding the zoning of Langston Heights. I truly appreciate your input in the process. I have copied Scott McCullough on this email so he can circulate your email to the Staff and all of the Planning Commissioners.

Rick

Richard W. Hird
Petefish, Immel, Heeb & Hird, LLP
842 Louisiana
P.O. Box 485
Lawrence, KS 66044
785-843-0450
785-843-0407 fax

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From: Matt Gudenkauf [mailto:mattgudenkauf@gmail.com]
Sent: Wednesday, November 28, 2012 8:52 PM
To: Rick Hird
Subject: Langston Heights Rezoning

Dear Richard:

We are writing to ask you to consider deferring the rezoning of Langston Heights (Parcel west and south of Diamondhead) from UR to RM12 and RM12D in order to provide for a more agreeable development. The increase in traffic, decreased in property values and changes to the original 2006 plat are issues that need to be addressed.

The new plan proposal is to build a total of 165 housing units on 61 lots. With only 2 streets (Crystal Lane and Palisades Drive) servicing current and additional units, traffic will be heavier than originally planned for these two streets. This plan shows this with the numerous traffic calming devices located on the expanded Crystal Lane. Crystal Lane and Palisades were originally developed as a lead in to other single family housing, not medium density apartments. Typically, medium density housing is at the front of subdivisions, leading farther in to low density housing, this proposal is the exact opposite of that. Palisades already has issues on school days due to drop off and pick up from Langston Hughes Elementary School; it can't handle the additional traffic flow. Even when the future "proposed" access to 15th street and George Williams Way get added, traffic from this development will still be pushed through low density housing in nearly every direction. The Horizon 2020 plan specifically discourages this action with numerous aspects outlined in the bottom of this letter.

Should this plan be approved, due to the direct impact of the medium density housing, property values in the Diamondhead subdivision will decrease. When we built our home back in 2008, we knew additional low density housing would soon follow to our west. This was based on the Planning Commission approval in January 2006 of single family homes in the Langston Heights area. We never would have built our new home

in this location had we known apartments and duplexes were to be built, and future potential home owners will feel the same way. We all based our decisions off this approved 2006 zoned plat for single family homes.

As you will see at the December 10th meeting, the Diamondhead subdivision is a unique neighborhood with a large population of kids. Traditions such as our July 4th parade, Easter egg hunts, neighborhood cookouts, and the general family feel among neighbors will be lost if this proposal passes.

Please see to it that this proposal does not go any further without modifications. We are not against the expansion of our subdivision to the west, we are against the medium density zoning; we would happily approve of low density zoning, which would expand on this great neighborhood.

Thank you for your time

Matthew and Erica Gudenkauf
6204 Crystal Lane
Lawrence, KS 66049
(785)830-9802

Horizon 2020 Plan that relate to this proposal:

Low-Density Residential Land Use

GOAL 3: Neighborhood Conservation (page 5-15, 5-16)
- Policy 3.3: Encourage Compatible infill Development
- Policy 3.4: Minimize Traffic Impact through Neighborhoods

GOAL 4: Criteria for location of Low-Density Residential Development (page 5-17)
- Policy 4.2: Protect Areas Planned for Low-Density Development

GOAL 5: Create a Functional and Aesthetic Living Environment (page 5-19, 5-20)
- Policy 5.5: Ensure Convenient and Logical Street/Road System Design

Medium and higher Density Residential Land use

GOAL 1: Criteria for Location of Medium and Higher Density Residential Development
- Policy 1.3: Identify Suitable Sites (page 5-23)
- Policy 1.5: Ensure Adequate Infrastructure (page 5-24)
- Policy 1.6: Consider Access (page 5-24)
- Policy 1.7: Adhere to Designated Land Uses (page 5-24)

GOAL 2: Create a Functional and Aesthetic Living Environment
- Policy 2.6: Consider Residential Density and Intensity of Use (page 5-26)

GOAL 4: Transportation Considerations (page 5-30, 5-31)
- ALL OF THEM

November 27, 2012

Sandra Day, AICP
City/County Planner
6 East 6th street
Lawrence, KS 66044

RE: Langston Heights Addition
Planning Commission Agenda Items on December 10, 2012

Sandra,

We are writing to express our concerns associated with the four items on the Planning Commission agenda for December 10th for the Langston Heights development. We are responding to the material that has been currently submitted to the City for the application (application, plat, concept plans, etc.) The applicant and developer are holding a meeting with the neighborhood, but have scheduled this meeting (December 3rd) with limited to no time to be able to respond prior to the issuance of the staff report. We are submitting this prior to that meeting in order to be reviewed prior to the completion of the staff report and for inclusion on the packet to the Planning Commission.

The comments below represent the views and opinions of many within our neighborhood concerning the proposed zoning request and preliminary plat for the Langston Heights Addition. While many of us would welcome the proposed land to remain an open area, we all recognized that it would be developed as an extension of our neighborhood. Many of us, and those specifically on Palisades Drive and Crystal Lane, reviewed the current plans for this parcel of land prior to purchasing our home. While often there is limited knowledge of undeveloped area adjacent to a development, this was not the case with our neighborhood. There was a plat developed and approved by the Planning Commission and City Commission for this parcel of land. While the plat was never signed or recorded, it still provided a glimpse to the intentions of the land owner of their vision for this parcel of land.

We have attempted to address each specific agenda item individually but many of these issues crossover between items. Where this occurs we have indicated reference notes as appropriate.

PP-12-00228 Preliminary Plat for Langston Heights Addition: There are many concerns with the proposed plat and the proposed layout and land uses. Many of these concerns could be addressed should the land to the north and south of the proposed area be developed prior to or at the same time as this development. Obviously this is unrealistic to assume and the plat must be considered as development would not occur for some time to the north or south. Items of note include:

1. This is the second plat filed for this parcel of land. The first was approved in early 2006. This plat indicated 67 single-family and 18 duplex residential lots. While it is our understanding that is was never fully executed, it still provides reference to an alternate concept by the same land owner for this land.
2. Horizon 2020 indicates this area to be low-density residential. The application indicates that the Lawrence future land use map does not specifically designate a land use for this property. This is incorrect. The Nodal Plan for the Intersection of West 6th and KS 10 address this area as low-density. We understand that the project, as it relates to density, is using the entire land area to calculate the number of units per acre. We would caution the continued use of this method as it has recently caused conflicts in other areas of our community.

3. The plat indicates the extension of two local residential streets (Palisades Drive and Crystal Lane.) These two streets will be the only access point into the new development. Section 20-204 (e) of the Land Development Code indicates that "RM Districts are intended for implementation along Residential Collector, Collector and some Arterial Streets." Neither of these streets meets this requirement.
4. Renaissance Drive in the 2006 plat, the 2012 plat draft and on the concept plan (submitted by the applicant) all have indicated that this street would be a collector street. The current plat has changed this street to a local street. Should the RM zoning designation remain then the district should be accessed in accordance to the Development Code and Renaissance Drive shall remain as a collector street.
5. Renaissance Drive appears to be the proposed "connector" street from George Williams (via Ken Ridge) to the north and Bob Billings Parkway to the south. The use of this street in this manner is logical and would serve as a residential collector street for these neighborhoods and future development. As noted above though, it is unknown when this street would be completed and until such time, would not serve as a collector street. Regardless, this street should remain as a collector or residential collector street,
6. Should the RM zoning designation remain then a condition to the plat should be added that, until such time that Renaissance Drive is completed to either the north or the south, the RM zoning district should **not** be allowed to be developed. This would allow the collector street to be developed as required by the development code.
7. The request for variance on the sidewalks should be denied. While regulation may have changed from the time the adjacent land was developed and sidewalks were not installed on both sides of the local streets, this should not prevent the owner from providing walks per the Development Code. Sidewalks add to the "live-able" character of a neighborhood. In addition, as a neighborhood with many young children, sidewalks on both sides of a street eliminate the need to cross the street as often. Most of the children in this neighborhood enjoy the opportunity to walk to elementary school, and with the increased vehicle traffic of the development, the sidewalks on both streets would add to the safety of the neighborhood.
8. A traffic calming device, similar to the roundabout at Crystal Lane and Big Sea Drive, should be installed at Palisades and Big Sea Drive. While there is a speed hump in the mid block of Palisades this device does not appear to reduce the speed of vehicles in the neighborhood on this street or the adjacent streets.

Item Z-12-00220: Rezone to RM12D

1. RM Districts are intended for implementation along Residential Collector, Collector and some Arterial Streets. As noted above, neither Palisades Drive nor Crystal Lane qualifies as these street types.
2. The medium density zoning will be accessed through an existing low-density residential area and a proposed low-density residential area. There are no recent developments in Lawrence where this occurs. All other RM12 zoning is accessed from an adjacent collector street and not through a lower density residential neighborhood on a local street.
3. This zoning will pre-determine a portion of the land use to the south. The RM12D zoning adjacent to the southern edge will pre-determine RM12D zoning adjacent. The application specifically states, in Item 2, that this zoning change will develop "precedent for adjacent vacant properties." It can only be assumed, given the relationship of the developer of this parcel of land to the land owner to the south, that it is the intention to continue medium density residential to the south. This is counter to the future land uses indicated in Horizon 2020 for low-density residential.
4. Item 3 in the application indicates that the rezoning "will pose no detrimental effect to the nearby properties." This statement is unfounded. The increased traffic with medium density zoning and the unknown level of quality of the development could directly impact the adjacent property uses and land values. Unless the owner proposes restrictions to the type of development that could occur, materials

5. If this rezoning is to be considered in concert with the other two rezoning applications then a Planned Unit Development (PUD) should be required to ensure the type of development proposed with the plat is the actual development.
6. Item 6 of application indicates that "denial of this application will perpetuate the vacancy of this land." This statement is unfounded. This is the second plat for this portion of land by the same developer. There are obvious multiple uses for this parcel of land. Denial will not perpetuate vacancy. It is obvious that this parcel will be developed, but the question is whether the medium density zoning is appropriate.

Item Z-12-00231 : There is no opposition to Item Z-12-00231 to rezone land from UR to RS7. This land change is the expected zoning for this parcel of land considering the existing adjacent land uses. This zoning change is also expected as it represents the intention of a plat developed by the same land owner, Langston Heights L.C. in 2006. This plat was a document many of us referenced prior to purchasing our home.

Item Z-12-00232: Rezone to RM12

1. Many of the issues for this development are identical to the issues associated with the RM12D rezoning. Please refer to items 1, 2,4,5, and 6.
2. This zoning will pre-determine a portion of the land use to the south. The location of Renaissance Drive and its connection to the South, along with the RM12, will predetermine the land south of this development and west of Renaissance Drive to continue the RM12 or higher zoning designation. This, coupled with the RM12D predetermined zoning, will raise the density from low density residential to medium-density residential. This is counter to the indication of the Horizon 2020 land uses for this area. The application specifically states, in Item 2 that this zoning change will develop "precedent for adjacent vacant properties." It can only be assumed, given the relationship of the developer of this parcel of land to the land owner to the south, that it is the intention to continue medium density residential to the south. This is counter to the future land uses indicated in Horizon 2020.
3. Item 3 in the application indicates that the rezoning "will pose no detrimental effect to the nearby properties." This statement is unfounded. The increased traffic with medium density zoning and the unknown level of quality of the development could directly impact the adjacent property uses and land values.

We apologize for the length and depth of this letter, but the quantity of items to be considered and the complexity of each issue requires a proper response. We look forward to being able to hear from the applicant and owner at their presentation next week and will respond accordingly should the situation dictate.

We hope that you consider these issues prior to the completion of the staff report and, as previously noted, include this correspondence in the packet to the Planning Commission.

Respectfully submitted,

Andy and Debbie Pitts
6212 Palisades Drive

From:	Michael Whittlesey
To:	Sandra Day
Subject:	Langston Heights
Date:	Thursday, November 29, 2012 10:41:55 PM

Dear Sandra:

I am writing in opposition to the possible re-zoning of the Langston Heights development from a low density plan to a high density plan. The ramifications of this re-zoning would drastically effect the entire community and safety of the Diamondhead Development and the Langston Hughes Elementary school. The increase in traffic on Crystal lane and Palisades Dr that would come with the high density development would be approximately an additional 400 cars on streets that directly feed an elementary school. The majority of the residence in the Diamondhead Development built in the area under the knowledge that the original zoning of the Langston Heights was a low density plan. We all built in the area with the idea that it would remain a safe place to raise our children and with easy and safe access to Langston Hughes Elementary. Palisades Dr access to Diamondhead Dr is the main route that parents take daily to drop of their children to LH Elementary. Diamondhead Dr has become a one lane road as parents, in not only the Diamondhead Development but from other neighborhoods, use the access that Diamondhead Dr has to Langston Hughes Elementary to drop of their children. The design and road infrastructure of the Diamondhead Development was not built to handle the additional increase in traffic proposed with the re-zoning of the Langston Heights Development to a high density design. The infrastructure of the road might be able to handle the increase traffic but the density of housing projected in the traffic planning of the roads was for single family homes in the adjacent land use. Diamondhead development has sidewalks on only one side of the road as the design of the neighborhood and future development would not have the traffic load that would require sidewalks on both sides of the road. We all knew the Langston Heights would be developed but as a low density project with additional single family homes. Please consider the safety, quality of life, and infrastructure ramifications to all three communities Langston Heights, Diamondhead and Langston Hughes Elementary that this re-zoning would cause.

My wife and most in our immediate community actually commute out of Lawrence daily. However, we choose to build in this development because of the current residence, the sense of community, and the safety of the current planning of this area. We looked into the future planning of this development and where told it was zoned as single family to continue the continuity of the current development. As parents of 2 young children this was the ideal neighborhood considering safety, community togetherness, other children to play with and the closeness of schools. Rezoning this plot would drastically impact the safety of all these children playing in the area.

Thank you for your time and service.

Michael Whittlesey
6209 Crystal Lane
Lawrence KS

Sent from my iPad

Sandra L. Day, AICP, *City/County Planner*
Planning Division
P.O. Box 708, Lawrence, KS 66044
Office (785) 832-3161 | Fax (785) 832-3160
RE: Land plan Engineering Informational Session December 3, 2012
Langston Heights Development
December 5, 2012

Dear Sandra Day:

As a member of the Diamondhead subdivision, my husband and I are very concerned by the recent application to change the Langston Heights development. When we purchase our home, we were told that the design of the subdivision to the west would be low-density housing similar to ours. We want to thank the Lawrence Planning Department for their hard work in developing our neighborhoods and their insightful design of planned unit developments. We hope you will understand our concerns for changes in the current plan.

The 270% increase in family units to the new Langston Heights subdivision creates an increase in pressure on property values, traffic, children's safety and schools in our neighborhood. We feel that the proposed zoning does not guarantee any specific types of building. We feel left in the dark with the current proposal. We want to know if this design has worked well in other neighborhoods in Lawrence. If it has not, why our neighborhood should be a test case for what appears to be bad design.

We are not against the expansion of our subdivision to the west, we are against the medium density zoning; we would happily approve of low density zoning which would expand on this great neighborhood.

It is with great concern for our young children, our property values and the quality of our neighborhood that we ask you to defer from the revisions to Langston Heights Development.

Please include our letter in the Langston Heights Planning Packet!

Thank you very much for your time and consideration!

Sincerely,

Xiufen Bi and Gary Jiang
824 Diamondhead Dr.

From: Andrew Pitts [APitts@TreanorArchitects.com]
Sent: Wednesday, December 05, 2012 12:52 PM
To: Scott McCullough
Cc: markandsheri; lhanna@HNTB.com; ryanlfike@gmail.com; Boedeker; carisa@freshsound.com; tiffanyfike@gmail.com; donherbel@att.net; mattgudenkauf@gmail.com; dltate180@gmail.com; Bradley R. Finkeldei; Crabtree, Mark A.; dustin@freshsound.com; ahanna356@gmail.com; Home; Erica Gudenkauf; bigalcowles@gmail.com; lindalh2009@att.net; nate@lawrencewesleyan.com; shubhshar@gmail.com; mcsparky45@yahoo.com; thepitts@sunflower.com
Subject: December 10th Planning Commission: Langston Heights Agenda Items

Scott-

On behalf of our family and numerous others within the Diamondhead Neighborhood we are requesting consideration of moving Agenda Items No 5A, 5B, 5C and 5D to earlier in the Planning Commission meeting.

We ask this in order to accommodate the members of our neighborhood that wish to speak on these items. A significant portion of our neighborhood are families with children and a significant portion of these children are elementary or younger. While we have coordinated babysitting for neighborhood families at neighbors homes, we have parents that will need to leave to be able to ensure our children are in bed at a reasonable hour, especially on a school night.

This was best illustrated at the public meeting held this last Monday evening at Langston Hughes Elementary school. The meeting started at 7pm and we had approximately 50 neighbors in attendance. By 8pm many needed to leave to be able to attend to their children's needs.

We recognize the importance of the agenda items prior to this item and the amount of public or commission discussion that may occur. But we also believe that it would be a disservice for those that would like to address this item should the discussion linger on the later in the evening.

I want to thank you for your consideration on this item and look forward to the meeting on Monday.

Sincerely,

Andrew Pitts

December 6, 2012

Sandra Day, AICP
City/County Planner
6 East 6th street
Lawrence, KS 66044

RE: Langston Heights Addition
Additional Correspondence for
Planning Commission Agenda Items on December 10, 2012

Sandra,

Please accept the following correspondence to supplement our prior letter. This letter shall address items addressed at the neighborhood meeting held by the applicant and developer and the recently issued staff report.

On December 3rd, the applicant and developer held a neighborhood meeting at Langston Hughes Elementary School to address this proposal. Approximately 50 people were in attendance, and a majority of these were residents of the Diamondhead neighborhood. It was a very spirited discussion of the issues. There were many comments by the developer of opening a dialogue with the neighborhood of their concerns and issues with this proposal. We all welcomed this proposition. From the start of this process we have all supported development; the concern has, and continues to be, the type of zoning that is proposed. Unfortunately no dialogue has occurred.

Repeatedly the developer spoke of involving the neighborhood in decisions. They indicated the neighborhood would have a say in covenants associated with the multi-family. Unless this discussion occurs prior to the re-zoning then there would be not guarantee of compliance with this statement. Often the applicant and developer contradicted themselves in statements throughout the evening.

Items of note include:

1. The applicant continually stated that this development was in compliance with Horizon 2020. This caused confusion since their application stated that the future land use map and Horizon 2020 did "not specifically designate a land use for the subject property." The staff report correctly identified that the West 6th / K10 Nodal Plan addresses this area. But the staff report seems to interpret the document broadly, only referencing certain sections and failing to reference others.

2. The Nodal plan specifically addresses the Diamondhead and Langston Heights area. The nodal plan indicates that "this intersection is envisioned as a multiple-use activity center of low-, medium-, and high-density residential development; commercial, office, research, and industrial activities; public, semi-public, and institutional uses; and parks, recreational, and green/open space opportunities." It further states for the Southeast Corner, that the corner provides an opportunity for a variety of residential, commercial, and office activities. This nodal plan "also designates the majority of its residential uses appropriate for low-

density, **single-family** neighborhoods with a **small** portion considered appropriate for medium-density residential development. This medium-density development serves as primary buffer between single-family neighborhoods and commercial activities." It further states that "This nodal plan anticipates more low-density, single-family residential development in the areas surrounding this corner and therefore much of this corner was designated appropriate for similar development to maintain compatibility of surrounding land uses." The staff report quotes specific sections but fails to address the statement "appropriate for low-density, single-family neighborhoods." It only constantly quotes "a mixture of housing types… should be encouraged." We do not dispute the need for a mixture of housing types, but the question is whether this proposal is the correct mixture or the correct location? The developer and applicant admitted at the neighborhood meeting that this type and mix of development "has not been tried or developed in Lawrence." Why is this established successful neighborhood the place to try this experiment?

3. The staff report also discounts the traffic issues associated with the increased density that have been addressed by the neighborhood and accepts the traffic report by its "data and numbers". City development documents discuss the required need for neighborhood connectivity. It states that "streets within the various neighborhoods of this area shall be connected to each other. …Connected streets provide multiple route options for vehicles which can help eliminate the choke points that are created when cars are forced onto a limited amount of streets that carry traffic in and out of neighborhoods." We would concur with this statement. Without the complete development of the north/south road (Renaissance Drive) then all of the development traffic would be forced onto two local streets. The applicant has produced a traffic study that states the traffic counts are within the City requirements. We do not argue this fact. But neither the traffic study nor the staff report takes into account the impact of a neighborhood elementary school and its dramatic impact on the traffic pattern.

   Every morning and afternoon Diamondhead Drive becomes a double loaded drop off and pick up location. Children must maneuver between parked and slowly moving vehicles. The applicant, at the public meeting, stated that this issue was a minor "blip" in the traffic study. This "blip" has been one of the primary focuses of the Langston Hughes Site Council for numerous years. The site council has pushed for additional crossing guards, no parking restrictions, a school zone, and, most recently, added a fence to help limit pedestrian traffic from Diamondhead. Issues still persist.

   With the additional traffic associated with the increased density, the poor planned lack of sidewalks on both sides of the street (and specifically on the side of the street adjacent to the school,) this "blip" could be devastating if a child is injured because of this poor planning. Traffic studies, numbers, computer simulations will not depict the accurate scenario that we see every day in our neighborhood. The additional traffic associated with the increased density will compound this issue. As local traffic avoids the Diamondhead / Harvard round-a-bout at various times of day, all traffic will be focused to Ken Ridge Drive. This will create a significant choke point at this intersection.

4. Much in the staff report speaks of the desire of a mix of housing types within each neighborhood. We would support this guiding principal. The current zoning to the east of the Diamondhead development is an excellent development of RM12 Duplex homes. To the north of the neighborhood is existing zoning of RM24. This will provide a transition from the RS7 single family development to the future planned office / commercial development to the north. It has been discussed by the applicant and in the staff report of the need to "buffer" K10 with higher density multi-family housing. It has been discussed by the applicant the need to buffer the RM24 to the north. Other solutions are viable solutions to this proposal and examples can be found in the West of K10 Plan.

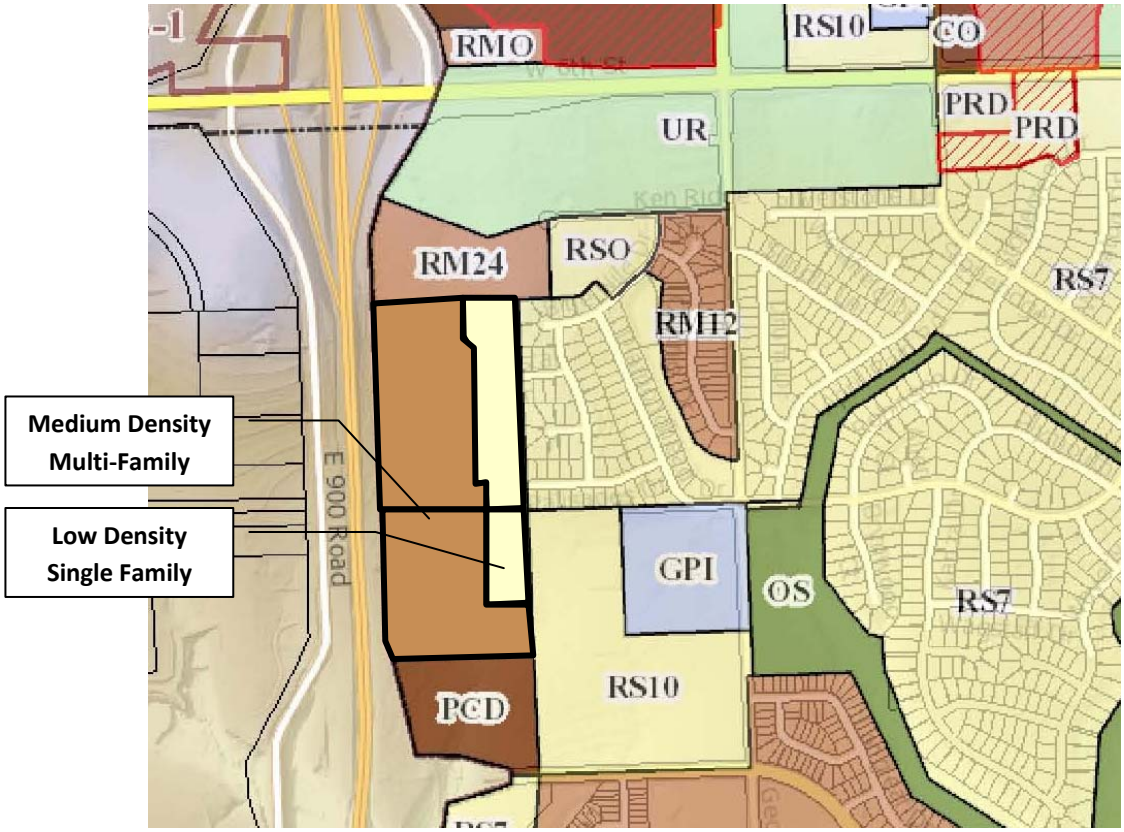
The staff report suggests that a variety of "step down" developments are required to appropriately transition the single-family development to the north and the west. As one of our most recent planning documents, the West of K10 Plan provides current planning ideas and guidelines for all new development in this area. It presents the concepts of "Traditional Neighborhood Design" (TND) versus the conventional land use development concepts. The document speaks about the challenges that arise when placing new developments adjacent to existing development. "Compatible land uses should be located adjacent to each other…" This document also presents concepts on buffering the K10 corridor counter to the proposed development. The concept illustrates an "outer" road concept with a green space to buffer commercial and residential development to K10. Per the SLT/K10 Transportation Corridor Overlay, this green space would be landscaped to screen the residential development. This method, a part of the 2006 plat, should be explored prior to acceptance of this request.



5. The applicant states in the application that the approval of this zoning will "set a developmental precedent for adjacent vacant parcels." The adjacent parcels indicated refer to the land to the south of the proposed development. Since the applicant specifically references this parcel and indicates that this will set a precedent, then the West of K10 Plan should be used as a guiding document as it addresses this parcel of land. This plan, adopted in 2009, is one of the latest planning documents and combines many of the current planning guidelines. Again, this document indicates the land south of the proposed development to be low-density development.

   As the applicant has indicated, the proposed development will be setting a precedent for future land uses. Should this be the case, then a majority of the land uses to the south will be predetermined to be multi-family, medium density land uses (see map below). This is supported by the proposed location of the Renaissance Drive as the applicant would more than likely propose multi-family between the road and K10. The proposed location and its connection point to Bob Billings will encourage medium density development. The map below begins to indicate the pre-determined extent of the southern land and, the quantity of medium density zoning, and is counter to the current adopted land use documents for this area.

The applicant and developer indicated in the neighborhood public meeting that they are currently in negotiations to control the use of the southern land. This statement reinforces the land uses will be pre-determined with the approval of the northern land uses.



6. Finally, the developer continually spoke at the meeting that this was "the only financially viable project for this land." This argument has been tried and failed before in Lawrence. The excuse of their inability to "make a project financially viable" should not be an excuse to discount the approved planning guidelines and documents. We all recognize the economic climate that our City and area have been in the last few years, and we would welcome a change. But this should not be an excuse to discard our planning principals and develop whatever the developer wants on this land.

We are not opposed to development. We encourage and want development on this land. The correct type of development will enhance our neighborhood and community. The correct type of road network, with connections to the north and south, would enhance and correct traffic issues. We would welcome an actual dialogue with the applicant and developer to discuss a compromise development.

We request, on all items associated with the Langston Heights Development, a deferral so that a dialogue may occur between the City, Developer, Applicant, and Neighborhood.

Respectfully submitted,

Andy and Debbie Pitts
6212 Palisades Drive

Diamondhead Residents Opposed to Langston Heights

Presented to the

City of Lawrence
KANSAS

December 10, 2012

History

The residents of the Diamondhead neighborhood in west Lawrence have united in our opposition to the rezoning required for proposed Langston Heights development. Some 35 families representing more than a hundred residents have signed on to lobby the Planning Commission.

The following pages detail our concerns. We start with our general belief that the area in which we chose to build and purchase our homes was in a single family neighborhood. The area's first plat, approved in 2006, indicated 67 single-family and 18 duplex residential lots. The new application proposes a 94% increase in dwelling units from the initial 2006 plan due to 24 four-plex units and 62 row houses.



The construction as proposed would require egress through two residential streets - Palisades Dr. and Crystal Ln as Renaissance Dr. would not be completed until some unknown future date. The developers themselves recognized that this would be the first instance in Lawrence where non-residential traffic would be forced through a residential area. Brian Sturm, spokesman for Landplan Engineering, likened it to an experiment at the December 3, 2012 informational meeting. The residents of this neighborhood would prefer not to be test subjects in a developer's experiment, nor should the Planning Commission allow that to be the case.

Horizon 2020

Brian Sturm in addressing the community, repeatedly referenced Horizon 2020 as justification for the proposed rezoning. A review of the document shows the proposed rezoning to be in direct conflict with the comprehensive plan. Horizon 2020 indicates this area to be low-density residential, and the document twice states a need to “Protect Areas Planned for Low-Density Development”.

Landplan Engineering, P.A.

Specific policy statements within Horizon 2020 counteract the statements and design of Landplan Engineering and the other applicants:

Policy 3.4: Minimize Traffic Impact through Neighborhoods

- The site design of a residential development should accommodate multiple points of access (direct and indirect) with attention to directing vehicular traffic to and from a development to collector and/or arterial street/roads.

Policy 3.6: Promote Neighborhood Identity

- Preserve and enhance the visual and environmental character of existing neighborhoods.

Policy 4.1 Levels of Service

- "The construction of new medium- or high-density residential development or the expansion of existing medium- or higher density residential development shall not be approved until the surrounding street/road system can provide an acceptable level of service"

Policy 4.3

- "Discourage the diversion of traffic to or from medium- and higher-density residential developments onto local residential street/roads through low-density residential neighborhoods."

Horizon 2020 also calls for the sites recommended for new medium-density residential development occupy transitional locations between single-family neighborhoods and office/commercial areas. But there are not areas for commercial development for which the medium-density housing could provide a buffer.

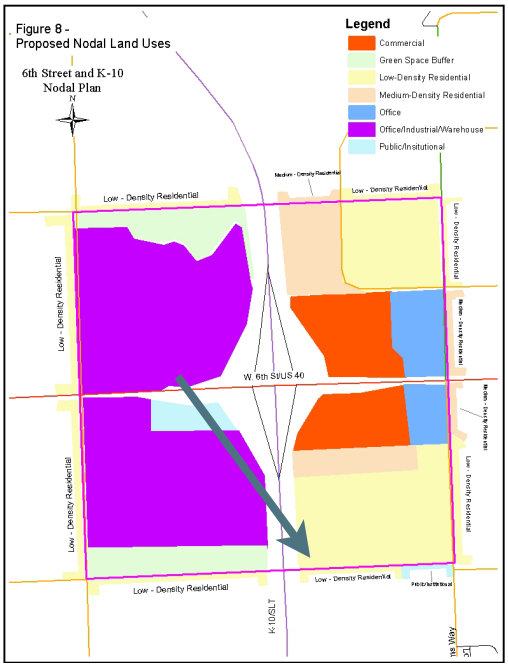
Furthermore, the Planning Commission has previously expressed concerns with this interpretation of the plan:

PC Minutes 11/16/05

“Comm. Hass indicated he would support the motion, but stated that he was losing his appetite for RM-D zoning because it has been abused in other parts of the community.”

6th & K-10 Nodal Plan

Additional planning documents address the area in more specificity. A Nodal Plan for the Intersection of West 6th Street & Kansas Highway 10 (K-10) designates the entire Diamondhead neighborhood as low density residential as detailed in the figure below. The plan defines low-density "to allow for single family dwelling, duplex, and attached dwellings but emphasis is placed on the residential uses." The zoning classifications indicate RS7 and RM12D but includes RM12 under the medium density classification.



The applicant states in the application that the approval of this zoning will "set a developmental precedent for adjacent vacant parcels." The adjacent parcels indicated refer to the land to the south of the proposed development.

As the applicant has indicated, the proposed development will be setting a precedent for future land uses. Should this be the case, then a majority of the land uses to the south will be predetermined to be multi-family, medium density land uses. This is supported by the location proposed of the street (Renaissance Drive) as the applicant would propose multi-family between the road and K10. The proposed location and its connection point to Bob Billings will encourage medium density development, which would conflict with the Nodal Plan.

West of K-10 Plan

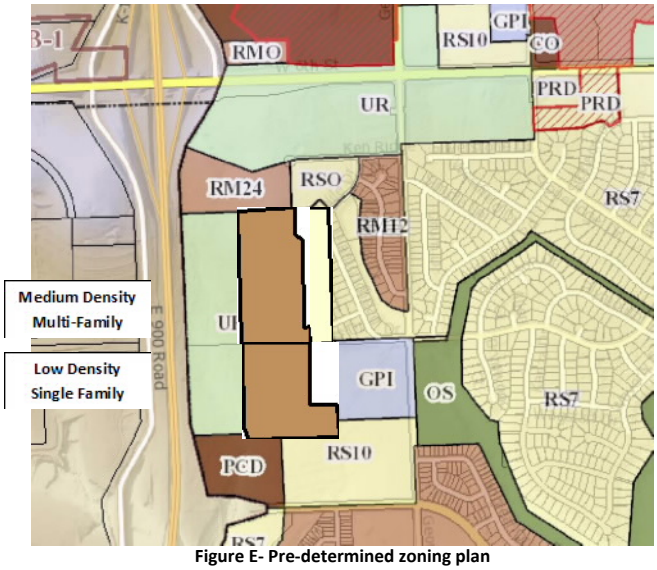


Figure E- Pre-determined zoning plan

The map at left indicates the pre-determined extent of the southern land and, the quantity of medium density zoning, is counter to the current adopted land use documents.

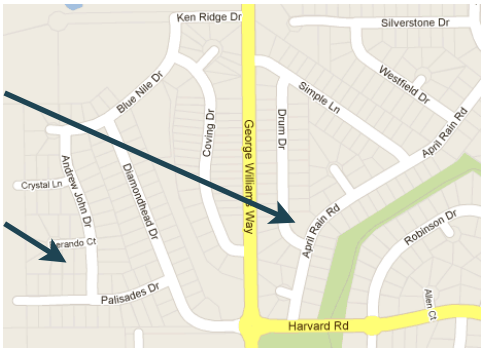
The applicant and developer indicated in the neighborhood public meeting that they are currently in negotiations to control the use of the southern land. This statement reinforces the land uses will be pre-determined with the approval of the northern land uses.

Precedent

Similar requests for rezoning adjacent to the Dlamondhead neighborhood have been denied for all the rationale presented in the preceding pages:

Denied

In Question



PC Minutes 1/25/06

Staff Finding

- The character of the area is a low-density, single family residential neighborhood. The area west of George Williams Way is planned as a mixed development including multiple types of residential development.

Staff Finding

- The subdivision layout and land use requests in the immediate area have conveyed a continuation of established low-density, single-family detached development pattern for this neighborhood. Development around the subject property has begun with an expectation of single-family detached development for the subject property. Property owners have made decisions based on recent previous actions for this area.

Staff Finding

- The property has been planned and platted for single-family development. If the request is denied the applicant still retains the ability to develop the property with single family homes. Approval would double the density and traffic generated[2] from the area.

- The Plan anticipates that low-density residential development will “continue to be the predominate land use in the City.” The most common method to assure compatibility is to extend or continue a particular zoning district. The approved and published RS-2 (Single-Family Residence) District expanded the low-density residential district in this area and was found to be consistent with the generalized land use expectation for residential development in 2004 per Z-4-15-04 and reaffirmed this decision in July 2005 per Z-06-35-05]. A subdivision plat for single-family residential development was approved and recorded as the Green Tree Subdivision in October 2004 as a requirement of the zoning.

- If approved, the result will be to sandwich a small pocket of duplex development along the east side of George Williams Way.

Staff Finding

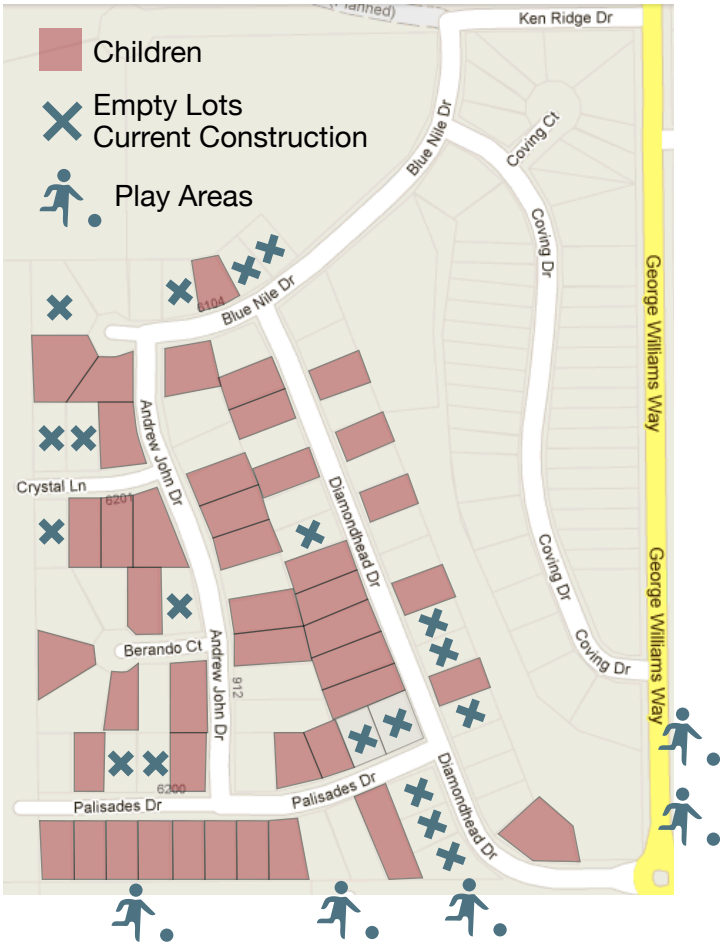
- The proposed request is not in conformance with Horizon 2020.

Traffic Safety

The citizens of the Diamondhead neighborhood are most concerned about the safety and well-being of our children. We believe that increased traffic, especially that of the younger and single type of residents that the developers expect to attract will unnecessarily put children at risk.

As Palisades Dr. and Crystal Ln. will be the only access to the row houses and multi-plexes, it invites the potential for a tragedy. The Diamondhead area is filled with with children of all ages and will be for many years to come.

The applicant references a traffic study that states the traffic counts are within the City requirements. The neighborhood was promised a copy of that study at the 12/3 informational meeting, but to date, it has not been provided. We are concerned the study does not take into account the impact of a neighborhood elementary school and multiple parks and their dramatic impact on the traffic pattern.



The map at left demonstrates the density of children in the neighborhood.

There exist a number of areas in and around the neighborhood where children would play. These have been marked just off the map and include:

- Two Separate Playgrounds
- Sports Fields
- Log Climbing Park
- Walking Trail

Also notice that not a single street in the community is a straight line. Considering the elevation change running along Andrew John Dr. one can envision the problems with sight lines for any driver, let alone one that is not used to driving in a family heavy residential neighborhood with children at play.

Traffic Congestion

In addition to the safety concerns, there remains the question of access. The streets in and around the neighborhood become congested on a daily basis along George Williams and at the Harvard roundabout in the morning and along Palisades Dr. each afternoon and any time there is an evening event at the Langston Hughes Elementary School. The applicant's cite a traffic study with peak times between 4pm and 6pm having adequate traffic flow. The peak times for this area are actually 8am to 9am and 3pm to 4pm due to school drop off and pickup.







The West of K-10 Plan, adopted July 2009, addresses neighborhood connectivity: "Streets within the various neighborhoods of this area shall be connected to each other. … connected streets provide multiple route options for vehicles which can help eliminate the choke points that are created when cars are forced onto a limited amount of streets that carry traffic in and out of neighborhoods."

Similar language is found within Horizon 2020: "Street systems that do not permit connections isolate neighbors and force traffic to concentrate on collectors. This type of street circulation should be avoided."

But the submitted rezoning application would increase residency in the area by 96% over the current zoning while not addressing any of the underlying problems with the current traffic situation. It would force more trips through Palisades Dr. and Crystal Ln.

Infrastructure

The current zoning has meant that the Diamondhead neighborhood was developed as single family with the future plan for a limited number of duplexes only. As such the lighting, sidewalks, crosswalks, signage, and other infrastructure have been implemented based on that plan.

The proposed rezoning for Langston Heights would require retrofitting the existing neighborhood with a variety of items. There currently exists sidewalks on a single side of the streets throughout the neighborhood and no crosswalks except for the roundabout at the intersection of Harvard and George Williams. As illustrated previous, the Diamondhead area is filled with children out at play and such a significant increase in residency and traffic would seem to necessitate changes to the existing layout.

None of the intersections in the community feature traffic signage. The applicants count at least 138 additional trips per hour with the traffic study, but fail to demonstrate its effect within the existing layout. We have already discussed the potential for pedestrian accidents, but the limited sight-lines and lack of any stop or yield signs is an invitation to traffic accidents.

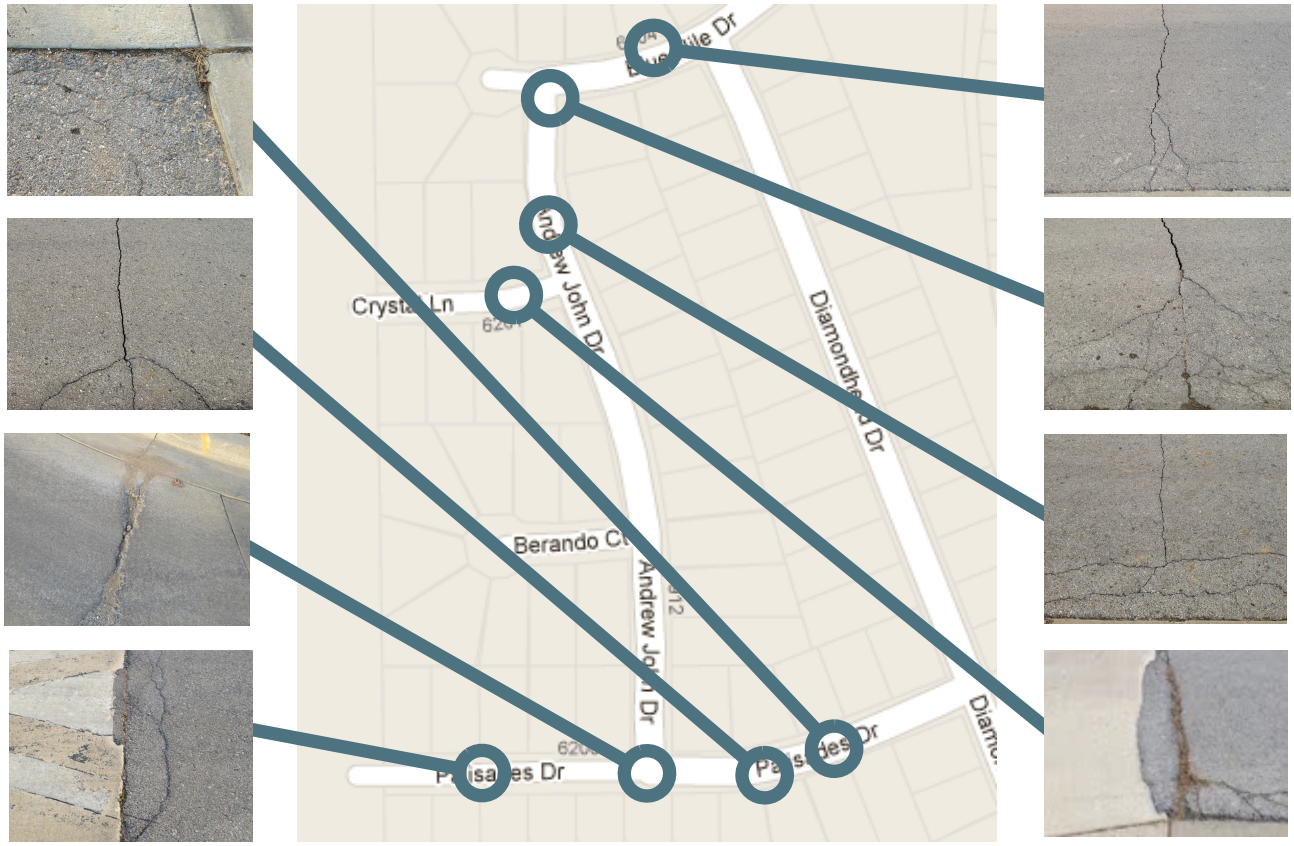
The streetlights throughout the area have similarly been installed for use in single family housing. The inclusion of additional multi-family housing could be cause for increased lighting. The residents of the area however are not keen on the idea of the additional lighting shining through their windows all night.

The roads too have been laid out for use in a low density area. The width in Diamondhead is 23', and with parking allowed on both sides, the streets can easily become unintended one-way's. Surely this is not appropriate for the style envisioned by the applicants.

Construction

In October, 2008 the City Auditor issued a Pavement Condition Summary. In this document both Palisades Dr and Crystal Lane received ratings of poor for the curbs and gutters while the pavement was rated 91.5 out of 100.

Since the issuing of the report four years ago, the conditions of our neighborhood streets have deteriorated. Below are images with their locations indicated on a map. The images shown reflect only a portion of the degradation of both the asphalt and concrete on the two proposed egresses.





It seems reasonable to expect that construction traffic will exasperate this problem. Heavy equipment, trucks carrying forms and supplies, concrete trucks, pouring cranes and endless trips by skilled laborers will serve to further decay the only egress through Palisades Dr. and Crystal Lane.

Marketplace

The applicants expressed at the 12/3 informational meeting that economic forces were the main rationale for changing the current zoning. While this may be true on a national, or even a regional level, a closer examination at West Lawrence reveals a different picture.

A recent headline and story get to the heart of the matter:

LAWRENCE JOURNAL-WORLD

Landlords trying to fill growing number of rental vacancies

There are also more apartment units. Since 2008, 997 apartment units have been built in Lawrence, with 55 built so far this year. Other projects in the works include a seven-story, 55-bedroom building on the corner of Ninth and New Hampshire streets and a 300-apartment complex on Sixth Street and Queens Road. Aug 13, 2011

The last complex mentioned is Hunter's Ridge, which is set to open soon. Plans filed this week by Lindsey Management call for a 630-unit apartment complex adjacent to Hunters Ridge. This area is a mere half mile from Diamondhead

Two additional complexes within a mile- Prairie Commons and Park West Gardens - plus current construction and vacancies on Coving Drive, a block over, would lead one to conclude that the area is saturated with medium and high density housing.

In a report published this September, The National Association of Realtors said that the median time a home was listed for sale on the market was 69 days in July. This represented a significant drop from both July 2011 and June 2012.

The homes in Diamondhead have been selling even faster - measured in weeks, not months. A local McGrew Real Estate agent said this week that "Houses have been moving really well in the Diamondhead area and that market in particular is strong for single family home sales.There was one there that sold in a day."

When you combine weak demand for higher density housing around the Diamondhead area with better than average sales of single family homes, it paints a clear picture. **This market needs more low density zoning, not less.**

The applicants should not be allowed to fundamentally and permanently alter the well-being of this neighborhood based on rationale that is suspect.

Community

The residents of our neighborhood have grown into a tight knit community. As most all neighbors do, we stop to talk with each other when we meet on the street. But more than that, we actively seek out each other's company, and welcome our neighbors into our homes. We plan activities to come together as a group and grow the sense of community that has developed here.



Annual Neighborhood Easter Egg Hunt



Halloween



Annual 4th of July Parade

Throughout the year, we gather together to participate in a variety of seasonal activities. Some are spontaneous as group sledding in the winter, or kids bike rides on sunny days. But many are planned in advance:

- Summer Cookout
- Easter Egg Hunt
- 4th of July Bike Parade
- Trick-or-Treating

We have come to think of the folks here as more than neighbors, they are our friends. We certainly welcome new faces to our neighborhood, however, we fear that the rezoning and subsequent construction of multi-plexes and row houses will alter the nature of the neighborhood and fragment our sense of community. Again we reference policy 3.6 of the Horizon 2020 plan which strives to "preserve and enhance the visual and environmental character of existing neighborhood.

The applicants' target market for their housing are not families, by and large it is younger singles. In addition to all of the issues the development would create with traffic, safety, and living conditions, it would alter the very fabric of the neighborhood we have all bought into.

Allied Entities

It is not just the residents of the Diamondhead neighborhood who oppose this application, there are also a number of groups who feel this would be the wrong move for our children, our families, our neighborhood, and our town. The following have expressed their opposition to the applicant's plan:

Langston Hughes Elementary School
Jackie Mickel, Principal

Langston Hughes Parent-Teacher Organization

West Lawrence Neighborhood Association, Incorporated
Alan Cowles, President

12/4/12

RECEIVED
DEC 06 2012
City County Planning Office
Lawrence, Kansas

Sandra Day, AICP/County Planner, City of Lawrence

RE: Landplan Engineering Informational Session December 3, 2012
Langston Heights Development

After attending the informational meeting last evening at Langston Hughes school, we are writing to ask you to consider deferring the rezoning of Langston Heights (Parcel west and south of Diamondhead) from UR to RM12 and RM12D. The increase in traffic, decrease in property values and changes to the 2006 plat are issues that need to be addressed. The new plan proposal is to build a mixture of single family homes, duplexes, and row houses. With only two streets (Crystal Lane and Palisades Drive) servicing current and additional units, traffic will be heavier than originally planned for these two streets. Crystal Lane and Palisades Drive were originally developed as a lead into other single family housing, not multifamily housing. Palisades already has issues on school days due to drop off and pick up from Langston Hughes Elementary School. Currently three new homes are being built on Diamondhead close to the school. That will mean new driveways from which residents will enter Diamondhead and reduce the amount of room for parents to park when dropping off and picking up children. Then add congestion at the round-a-bout on George Williams. I don't care what your traffic study says, the additional traffic will create safety problems. With undeveloped land to the south and north of the new plan, no one was able to tell us if, and when, any connecting access to the new development would be provided. Even if it did, traffic will still be pushed through low density housing. The Horizon 2020 plan specifically discourages this action.

Should this plan be approved, due to the direct impact of the multi family housing, property values in the Diamondhead subdivision will decrease. When we purchased our home in 2007, we knew additional low density housing would soon follow ot the west. This was based on the planning commission approval in January 2006 of single family homes in the Langston Heights area. We never would have purchased in this area has we known apartments and duplexes were to be built, and future potential home owners will feel the same.

Please see that this proposal does not go any further without modifications. We are not against the expansion of our subdivision to the west, but we are against the medium density zoning.

Thank you,

Edward C. Burrichter
6113 Palisades Dr

Colleen A. Burrichter
6113 Palisades Dr. Lawrence

From: Amy Miller
Sent: Thursday, December 06, 2012 6:54 PM
To: Sandra Day
Subject: Langston Heights Communications

Sandy,

Rod Laing came in today and wanted me to pass along his thoughts on the Langston Heights Subdivision PP and Zoning cases for inclusion as part of the communications on the project. He suggested that a condition could be placed on the multi-family residential zoning west of Renaissance Drive that building permits may not be issued on those dwellings until such time that Renaissance Drive connects to Bob Billings Parkway or the major street to the north. He thought that this would ease potential traffic concerns. Please include the above statement in the communications that go to the Planning Commission as part of their packet.

Thank you,

Amy Miller, AICP, CFM *Long-Range Planner*

From: Brian Sturm [mailto:brians@LANDPLAN-PA.COM]
Sent: Friday, December 07, 2012 2:27 PM
To: Sandra Day
Cc: bobdennsan@gmail.com; douglas.raney@gmail.com; RCJPHJ@me.com; Christopher Storm
Subject: PP-12-00228 - variance withdrawal; temp const esmt

Sandy,
On behalf of the applicant, I would like to incorporate the following two (2) items into the Planning Commissioners' packets for Monday's meeting regarding item #5A, the Preliminary Plat for Langston Heights Addition:

1. The applicant wishes to withdraw their request for a variance from Sec. 20-811(c). While the developer still has concerns about installing sidewalks that would essentially terminate in mid-block locations on Palisades Drive and Crystal Lane, they would rather design a subdivision that conforms to the current Subdivision Regulations and complete street policy. It's my understanding that the sidewalks to be shown on the south sides of Palisades Drive and Crystal Lane can be added to the Preliminary Plat as a condition of approval. It is also my understanding that the applicant can work with the City Engineer on an acceptable way to terminate these sidewalks on the east edge of the subdivision during the public improvement plan review process.
2. The applicant wishes to add, as a communication, the attached letter of intent which upon execution by both parties would allow for the creation of a temporary construction access easement over and across land owned by Alvamar, Inc. The developer understands the concerns neighbors in the Diamondhead subdivision have regarding potential construction traffic traveling through their neighborhood. This agreement, once signed by both parties, would allow that construction traffic to pass entirely across the ground presently owned by Alvamar on the south side of the subject property. With such an access easement in place, dump trucks, excavators and the like could pass from Bob Billings Parkway to the subject property without travelling on City streets, namely those in the Diamondhead subdivision. It is the developer's hope to have this letter executed by the time of Monday evening's PC meeting.

Please let me know if you have any questions regarding the above items.
Thank you,

Brian Sturm, RLA, ASLA, LEED AP
Project Landscape Architect
Licensed in KS

Landplan Engineering, P.A.
1310 Wakarusa Drive
Lawrence, Kansas 66049
v. 785.843.7530
f. 785.843.2410

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Letter of Intent

This letter reflects the mutual intentions of Langston Heights Development, LLC, and Alvamar, Inc. to enter into an agreement to create a temporary construction access road from Bob Billings Parkway to the property known as Langston Heights through property currently owned by Alvamar. Both parties intend for the road to be built before construction begins on Langston Heights. Alvamar agrees to provide an easement for this road and Langston Heights Development agrees to pay for the costs associated with building this road before construction begins. Langston Heights Development also agrees to pay one dollar ($1.00) to Alvamar as part of the agreement, regardless of whether construction begins.

_____ _____

Robert Santee Date

Officer, Langston Heights Development

_____ _____

Robert C. Johnson Date

Chairman of the Board, Alvamar, Inc.

LEAGUE OF WOMEN VOTERS®
OF LAWRENCE/DOUGLAS COUNTY

RECEIVED
DEC 19 2012
City County Planning Office
Lawrence, Kansas

December 10, 2012

To: Lawrence/Douglas County Planning Commission:

Re: Langston Heights, Items 5A, 5B, 5D

President
Melinda Henderson

President-Elect
David Burress

Vice President
Milton Scott

Secretary
Caleb Morse

Treasurer
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Directors

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Cille King

Ruth Lichtwardt

Marlene Merrill

The League of Women Voters of Lawrence/Douglas County has strong positions on neighborhood planning. We believe that "the primary urban planning unit should be the neighborhood, large enough to support the location of a nursery-elementary school, park...and should reduce to a minimum the use of the private car within each neighborhood." Therefore, we are concerned about the proposal for the multiple family lot configurations of the Langston Heights Addition and their proposed rezoning to RM districts.

We strongly support designing neighborhoods with housing types suited to families with children that are close to elementary schools with pedestrian ways designed for safe walking, and believe that it is very poor planning to locate multiple family housing that is not appropriately designed for this near our schools. Multiple family housing types can be designed for families with children, but must have the needed amenities such as privacy, open space and other facilities to make such units attractive for family life, which this proposed development does not have. Additionally, we support staff's recommendation to deny the applicant's request for a variance to allow sidewalks on only one side of streets.

Because of the effect this multiple family housing would have on the future development of the adjacent vacant land to the south of this tract, it can be predicted that this land also would become multiple family and not attractive for families with children. Because of the proximity that these two tracts have to Langston Hughes Elementary School, we believe that this would be very poor urban planning and a serious waste of potential that these two properties would have to reduce automobile use and utilize these valuable areas for encouraging families to live within walking distance to the school.

We believe that the reason that this type of poor urban planning is not uncommon in Lawrence is because of some serious deficiencies in our Land Development Code and how it leads to the interpretation of *Horizon 2020*:

- The multiple family districts do not specify housing type.
- The only distinction in our Comprehensive Plan (CP) in the designation of residential areas is based on density. Because of the long-standing interpretation of our CP, it is possible to allow all types of multiple family units from tall apartments to duplexes to achieve the gross densities that are typical for detached single family housing. Therefore, the density designation in our CP is not an appropriate prediction of use.
- The CP does not include the same goal that *Plan '95* did, which emphasized that development should be designed for the ultimate user and not to satisfy only the needs of the developer.

These factors eliminate the essential predictability that homeowners need to be able to have confidence in the stability and future of their neighborhoods when they make the substantial investment for living in a community. It tends to reduce the trust needed for a growing and thriving city to attract new residents. We ask that you take these factors into consideration when making your decision on this rezoning request. The future of our city depends on good urban planning. We would look forward to a discussion about making the necessary changes to our Land Development Code and *Horizon 2020* to create the predictability in our neighborhoods that we need.

Thank you for your consideration of these issues.

Melinda Henderson
President

Alan Black, Chair
Land Use Committee

PO BOX 1072 • LAWRENCE KS 66044-1072
league@sunflower.com • www.lawrenceleague.com
www.facebook.com/lwvldc • www.twitter.com/lwvldc

December 7, 2012

Sandra Day, AICP City/ County Planner, City of Lawrence:

RE: Rezoning Langston Heights

We are writing in opposition of the rezoning of Langston Heights. Our main areas of concern are traffic and child safety.

Our family moved to the Diamondhead subdivision 3 years ago. We chose the area based on several factors: the proximity to the elementary school, the community, and that the adjacent Langston Heights would be a similar neighborhood based on the 2006 plat.

Many families built in Diamondhead because the neighborhood to the West would be comparable. Langston Heights' preliminary plat of 2006 contained 67 single family homes and 18 duplexes. The new plat proposed by Land Plan would increase units by 94% in comparison to the 2006 plat. A 94% increase would greatly increase the amount of traffic on our residential streets.

Palisades and Crystal Lane are currently the only two inlets for Langston Heights. The roads leading to Langston Heights are narrow winding routes through residential areas with poor site lines.

At the December 3, informational meeting held by "Land Plan Engineering," Brian Sturm discussed the traffic study that was completed in September of 2012. The study claimed that the residential roads could support the rezoning of Langston Heights. Brian Sturm stated that the traffic study was done during the peak hours of traffic, 4:00 p.m. to 6:00 p.m. A traffic study done between 4:00 p.m. & 6:00 p.m. does not take into account the traffic at the school's dismissal hour. One of the main in-let/out-lets of Langston Heights is adjacent to a large elementary school. A traffic study done during the school's dismissal hour would provide more accurate information. 63% of the current Diamondhead households have children attending school. 63% of our neighborhood will be walking or driving during school arrival and dismissal times.

The sidewalks in the Diamondhead neighborhood would not support the 94% increase of population. Sidewalks in Diamondhead are only on one side of the street. Upon leaving Langston Hughes Elementary my children must cross Diamondhead Dr. (one of the only in-let/out-lets) This is the only intersection that contains a crosswalk. After walking up Diamondhead they must cross it again. They continue their walk home up Palisades, where they must cross Andrew John Dr. to reach the sidewalk. They walk north on Andrew John crossing Berando Ct. until they come upon Crystal Lane. (one of the other only in-let/outlets) To reach home they cross Andrew John Dr. again. Within a 3 block walk home, our children cross the street 5 times, encountering these soon to be heavily traveled roads. The future children of the Langston Heights neighborhood would also be traveling this dangerous route to their new home. Not only are we concerned about the safety of our own children, but the safety of the new families that will move into the Langston Heights development.

We love living in Lawrence and we love it because it gives us the small town feel we grew up with. We grew up in a town of 1500 where it was safe to walk down the street and everyone treated you like family. Our family has been searching for this sense of community for a while now and finally found it in Diamondhead. Our little neighborhood of all ages come together for an annual Memorial Day BBQ, 4th of July Parade, Pumpkin Carving, and Easter Egg Hunt. Children ride bikes, enjoy a game of basketball, and play tag outside. Neighbors help transport children, share recipes, help with heavy lifting, cook you meals when you're down, or let out the dog when you're away. Increasing the units by 96% from the 2006 plat to the proposed rezoning would only erode at the community we've created.

Lawrence is nationally known as a highly desirable community to live in. We need to continue to reflect on what drives people to Lawrence. Is it the multiple options of housing provided in a development, or is it the feeling of community we ALL provide?

Thank you for taking the time to read our concerns. We appreciate the opportunity to express our thoughts in the matter.

Sincerely,
Carisa, Dustin, Avery, & Sydney Stejskal

From: lauri di routh [mailto:lauridi@hotmail.com]
Sent: Monday, December 10, 2012 8:52 AM
To: Sheila Stogsdill
Subject: Comments for planning commission meeting 12/11/12

Ms. Stogsdill,

Please accept these comments for tonight's Planning Commission meeting. I respectfully request that these be shared with the Planning Commissioners and staff, and be included in the public record for tonight's meeting.
Please note that my comments herein are not intended to represent any organization or group. I offer these comments solely as an individual citizen and taxpayer.

RE: Long range planning work program, as submitted to the planning commission by Scott McCullough in November 2012.
I wish to express my concern about the City and County opting to postpone implementation of the environmental chapter of H2020 to a work schedule beyond 2013. This plan was crafted over the course of several years, and both citizens and the Sustainability Advisory Board play a role. I am troubled that this plan is being mothballed, at a time when we need it most. Given the current drought and its impact on both the built and natural environment, tending to our community's natural resources is more important now than ever. I ask that the PC make implemenation of the environmental chapter of H2020 a priority for 2013.

RE: Variances requested for the site plan and plat of the proposed Rock Chalk Village Park
I am troubled to see that the developer is requesting variances to the street connection requirements of the code, and also the sidewalk requirement of the code. Both of these items are integral to the City's Complete Streets plan, which was recently approved. While I appreciate the developer's stated intention of preserving trees on the property, without an inventory of said trees or any requirement for monitoring of tree preservation or removal during project construction, using trees as an excuse to minimize developer costs seems a bit disingenuous. In regard to street connectivity, it seems to me that allowing George William Way to remain a dead end street at the north end creates a bottleneck for the City's future rec center, and may create massive traffic problems on the property when large events are held at the KU facilities. At the very least, this variance should be reviewed and vetted, first, by traffic planners, to assess its impact. I believe that the requirements for sidewalks on both sides of the street should be upheld, and the developer's request for variances denied.

RE: Diamondhead Neighborhood Comments
I support the Diamondhead Neighborhood's right to preserve the nature and safety of their neighborhood. I ask that the PC reject the Landplan plat proposal as it would greatly expand the development of duplex and multifamily residential dwellings in this area, to the detriment of the existing neighborhood.

RE: planning commission packet structure

In reviewing the packet for this week's meeting, it is noted that the packet size of 57 MB makes it very difficult to load and open on a standard home computer. I had several people tell me that they had not even tried to do so, for fear that it would crash their computer system. While I understand that the files therein are large, I would like to see the PC use the City Commission's method of transmitting meeting information, using imbedded, topic-specific links on the agenda. This way, individual topic information can be opened and reviewed without the need to download the entire packet of 50+ MB of information. By breaking the packet up into managable chunks, it will make it easier for the public to access needed information and share with others who may wish to comment. Certainly, the PC wants to engage and solicit feedback from the public. I believe that the best way to do this would be to use imbedded links on the agenda, thereby reducing an evident barrier to accessing information.

I appreciate your consideration of my comments.

Sincerely,

Laura Routh
2235 East Drive
Lawrence, KS
979-3918

PLANNING COMMISSION REPORT
Regular Agenda – Action Item

PC Staff Report
1/28/13

ITEM NO. 4: COMPREHENSIVE PLAN AMENDMENT TO HORIZON 2020 CHAPTER 6 to add policies for the Auto-Related Commercial Centers designation (DDW)

CPA-5-5-11: Consider Comprehensive Plan Amendment to Chapter 6 of Horizon 2020 to add policies for the Auto-Related Commercial Centers designation. *Initiated by Planning Commission 5/25/11*.

STAFF RECOMMENDATION: Staff recommends approval of this comprehensive plan amendment to *Horizon 2020* Chapter 6, Commercial Land Use, to add policies for the Auto-Related Commercial Centers designation, and recommends forwarding this comprehensive plan amendment to the Lawrence City Commission with a recommendation for approval.

STAFF RECOMMENDATION: If appropriate, approve and sign Planning Commission Resolution PCR-13-00010.

KEY POINTS

1. Auto-Related Commercial Centers are a unique type of commercial development that have auto intensive uses. They typically have a small amount of commercial square footage under roof, but require a large amount of acreage for parking or sales display.
2. A policies section for the Auto-Related Commercial Centers is not currently within Horizon 2020 Chapter 6, Commercial Land Use.
3. A couple changes were also made to the existing Auto-Related Commercial Centers description.

SUMMARY

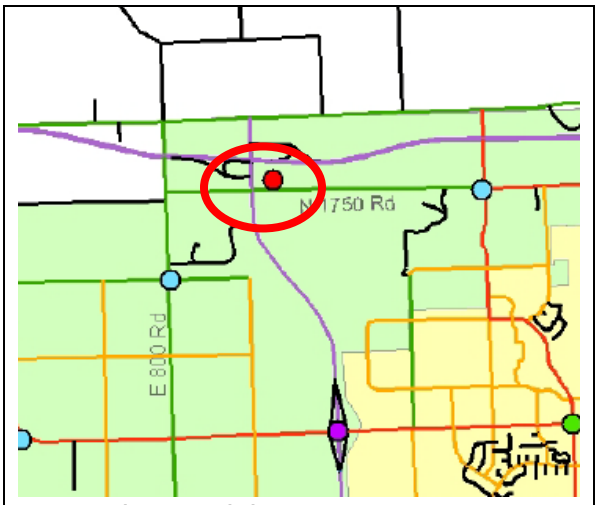
CPA-5-5-11: This Comprehensive Plan Amendment was initiated by the Planning Commission on 5/25/11. The purpose of the amendment is to add policies to the Auto-Related Commercial Centers.

There are no other items related to this CPA.

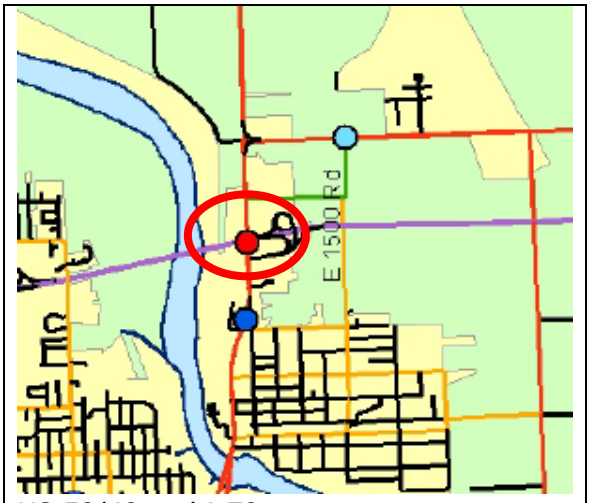
STAFF REVIEW
The purpose of this amendment is to add policies to the Auto-Related Commercial Centers. In addition, a couple changes were made to the Auto-Related Commercial Centers description.

The policies were created by extracting information from the existing Auto-Related Commercial Centers description. The changes made to the existing description are meant to provide additional clarification to the description.

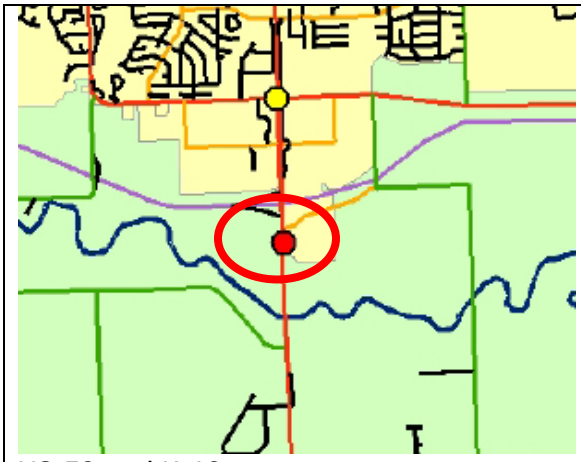
Horizon 2020 recommends the following intersections as potential future Auto-Related Commercial Centers:



I-70 and K-10 Highway



US-59/40 and I-70


US-59 and K-10

Staff reviewed this amendment based upon the comprehensive plan amendment review criteria listed below [identified in Chapter 17 (Implementation) of *Horizon 2020*].

Included on the last page of this staff report is the proposed amendment to Chapter 6 (Commercial Land Use). If approved, this amendment will be added to the Auto-Related Commercial Centers description on page 6-11, and new policies will be added to page 6-40.

COMPREHENSIVE PLAN AMENDMENT REVIEW

1. Does the proposed amendment result from changed circumstances or unforeseen conditions not understood or addressed at the time the Plan was adopted?

The proposed amendment is not the result of changed circumstances or unforeseen conditions. The Auto-Related Commercial Centers description in Chapter 6 does not contain policies like the other Commercial Center descriptions and therefore is inconsistent with the rest of Chapter 6.

This amendment addresses those inconsistencies by adding new policies to the Auto-Related Commercial Centers.

2. Does the proposed amendment advance a clear public purpose?

The proposed amendment is an advancement of a clear public purpose in that it adds policies to the Auto-Related Commercial Centers where they do not currently exist. Policies provide cleaner expectations to the development community. Correcting this inconsistency advances a clear public purpose.

3. Is the proposed amendment consistent with the long-range goals and policies of the plan?

The proposed amendment helps further the goals and policies for commercial land use while staying consistent with the overall intent of *Horizon 2020* by clarifying Auto-Related Commercial Center policy for redevelopment and new centers. The proposed amendment adds new policies and makes a couple changes to the description of the Auto-Related Commercial Centers.

4. Does the proposed amendment result from a clear change in public policy?

As the City of Lawrence and unincorporated Douglas County continue to grow and expand, there is a need to include the opportunity for development and redevelopment of large areas into Auto-Related Commercial Centers. These developments can offer the opportunity for auto-related commercial services at the intersections of major roadways. Auto-Related Commercial Center policies are missing in *Horizon 2020*. The proposed amendment is adding those policies to Horizon 2020.

PROFESSIONAL STAFF RECOMMENDATION

Staff recommends approval of this comprehensive plan amendment to *Horizon 2020* Chapter 6, Commercial Land Use, to add policies for the Auto-Related Commercial Centers designation, and recommends forwarding this comprehensive plan amendment to the Lawrence City Commission with a recommendation for approval.

Attachments:

- Proposed new text (new text is <u>underlined,</u> deleted text is ~~struck through~~)

Amendment #1: Page 6-11, *Chapter 6, Horizon 2020* (describing Auto-Related Commercial Centers):

- ***Auto-Related Commercial Centers***

A unique type of commercial development is an Auto-Related Commercial Center. These centers include a wide variety of uses such as auto sales and repair, truck stops, restaurants, hotels, and other similar uses that attract a large amount of the traveling public. However, these uses are not limited to Auto-Related Commercial Centers. A common feature of all these uses is that they typically have a small amount of commercial square footage under roof, but require a large amount of acreage for parking or sales display.

Because these centers have a limited variety of uses and a relatively small amount of commercial square footage, Auto-Related Commercial Centers do not fit within the definition of a Community or Regional Commercial Center. These types of centers are very auto intensive and therefore need to be directed to areas that have an ability to handle the intensive nature of an Auto-Related Commercial Center.

Auto-Related Commercial Centers shall be located at the intersection of two state or federally designated highways. To ensure that the Auto-Related Commercial Centers develop in a planned manner that provides a positive benefit to the community, Auto-Related Commercial Centers shall have a lot length-to-depth ratio ~~of~~ between 1.1 and 3:2 and must be a minimum of 20 acres in size.

All the potential locations of an Auto-Related Commercial Center are in areas that serve as "gateways" into the city. Since they are in "gateway" areas, any proposal for an Auto-Related Commercial Center shall be closely scrutinized for architectural appearance, landscaping, signage, etc.

Amendment #2: Page 6-40, New Criteria for Auto-Related Commercial Centers:

Policy 3.15: Criteria for Auto-Related Commercial Centers

A. Auto-Related Centers shall be located at the intersection of two state or federally designated highways.

B. Auto-Related Centers shall have a lot length-to-depth ratio between 1:1 and 3:2 and shall be a minimum of 20 acres in size.

C. As Auto-Related Centers are located in areas that serve as "gateways" to the city, any proposal shall be closely scrutinized for architectural appearance, landscaping, signage, etc.

LEAGUE OF WOMEN VOTERS®
OF LAWRENCE/DOUGLAS COUNTY

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JAN 28 2013
City County Planning Office
Lawrence, Kansas

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Melinda Henderson

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Cille King
Ruth Lichtwardt
Marlene Merrill

January 27, 2013

Mr. Bruce Liese, Chairman
Members
Lawrence-Douglas County Metropolitan Planning Commission
City Hall
Lawrence, KS 66044

RE: ITEM NO. 4: COMPREHENSIVE PLAN AMENDMENT TO HORIZON 2020 CHAPTER 6 to add policies for the Auto-Related Commercial Centers designation (DDW)

Dear Chairman Liese and Planning Commissioners:

A recent change in the Zoning Ordinance has been to interpret the use category of Truck Stops, not as the original interpretation of the refueling provision for trucks included in filling stations, but rather as a separate, massive, multi-use overnight stop for trucks and their drivers. This change caused the City Commission and Planning Commission to give the Truck Stop Use its own category in the Land Development Code, restrict it to the CR (Regional Commercial District) and to IG (the General Industrial District), and require both Districts to obtain a Special Use Permit (SUP) before being approved. According to the thinking at the time, the SUP would allow the Commissions to attach the necessary conditions that would alleviate the "externalities" that accompany this very intensive use.

We understand that the purpose of the Text Amendment to Horizon 2020 to describe the conditions on the SUP to "add policies for the Auto-Related Commercial Centers designation" is to include Truck Stop Use.

However, along with this TA is a more vivid Location Map of the proposed locations for "Auto-Related Commercial Centers" that includes the new Truck Stop Use. This isn't a change in the proposed locations of Auto Related Commercial Centers, but because the potential intensity of the district has been considerably increased with the addition of the new definition of Truck Stop, these designations take on new meaning. We strongly object to these proposed locations if they include Truck Stops, and ask that you reconsider this district so as not to include the Truck Stop Use in these locations.

Our reasons are as follows:

1. I-70 is the probable intended location when traveling from the south to the north on Highway 59. Because there are two truck stops on I-70 near our city, truck stops are not needed in Lawrence.

This is suggested in the Staff Report of June 12, 2012.

2. The "externalities" of truck stops (quoted from the June 12, 2012 Staff Report) including the constant activity of "truck and passenger vehicle traffic, parking lot lighting, sound and smell from idling engines, and substantial amounts of pavement," are very environmentally damaging effects. In addition, the potential for undesirable activities make the community better served when their location is isolated, such as is currently the case with the existing truck stops on I-70 both east and west of Lawrence.

3. Truck Stops are very large and intensive uses. It seems counterproductive to locate them at the Gateways to our city where the impression of Lawrence would then be immediate and extremely negative. Our land uses are supposed to benefit our city. We suggest that including Truck Stops in our Land Development Code in the proposed locations of Auto Related Commercial Centers would have the opposite effect.

Please reconsider the placement of Truck Stops in our Land Development Code and in Horizon 2020. It is doubtful that they are an appropriate land use in their new proposed locations in Lawrence.

Thank you for considering our letter.

Sincerely yours,

David Burress
President-Elect

Alan Black, Chair
Land Use Committee

Memorandum
City of Lawrence – Douglas County
Planning & Development Services

To: **Lawrence-Douglas County Planning Commission**

From: **Planning Staff**

Date: **For January 28, 2013 Planning Commission Meeting**

RE: **Sand Dredging Report**

Introduction

This report is an outcome of discussions held with the Planning Commission and Board of County Commissioners as sand dredging applications were processed in 2011 and 2012. The Board of County Commissioners requested this research and the report was included on the 2012 Long-Range Planning Work Program.

Purpose

The importance of the sand and gravel resource is that it is an elemental building block in all construction/development phases. It is presumed that locating these facilities in Douglas County is more cost effective than bringing in the material from another county. The product has a narrow ratio of production cost versus the cost of transporting such a heavy material. A shorter hauling distance will help lower the cost of the resource.

The primary source of sand and gravel in Douglas County is found in the area around the Kansas River. There may be isolated areas with sand and gravel deposits in other parts of Douglas County, but requests for new sand and gravel excavation are most likely to come for properties near the Kansas River. The Kansas River is the major source of sand and gravel deposits. As the river has changed course, or flooded through the years, it has left behind sand and gravel deposits. In addition, current Federal and State policies direct these facilities out of the river and onto land adjacent to the river. Therefore, the focus of this report is the areas around the Kansas River and not locations within the Kansas River.

This report will review those areas along the Kansas River that appear to have the greatest potential for sand and gravel extraction. This information was gathered from materials from the Kansas Geological Survey and with the assistance of Lawrence Brady, Senior Scientific Fellow, Emeritus, Kansas Geological Survey. Researchers have taken core samples along the river in years past. That information was evaluated to show how much resource was available, and also how much overburden was present above the resource. Areas that are most favorable for resource extraction are those areas with a large amount of resource with the least amount of overburden. Those areas are generally co-located in flood prone areas. General large areas are shown on the

following maps. Within those larger areas, there may be multiple properties that have potential for sand and gravel extraction.

The report will identify issues for potential policy discussion and also detail the land use issues of each area. The report does not try to speak to the economic viability of extracting sand and gravel resources within each of the areas. The report also does not seek to evaluate the potential impacts, if any, to landowners in each area, or to the Kansas River from sand dredging operations. Site specific issues, unknown at this time, would be reviewed and evaluated during the analysis of specific projects.

Discussion Issues

FAA Wildlife Hazard Mitigation Buffer

This report excludes those areas that are primarily located within the Federal Aviation Administration's (FAA) Wildlife Hazard Mitigation Buffer, which is a 10,000' buffer around the Lawrence Airport. Sand and gravel extraction will create land depressions that will fill with water and attract waterfowl. Waterfowl gathering in areas around airports can pose hazards to airplanes. Therefore, the 10,000' buffer has been put in place around the airport as a means to evaluate potential impacts from development proposals.

City of Eudora Source Water Protection Overlay Zone

The City of Eudora's Source Water Protection Overlay Zone was amended into the Douglas County Zoning Regulations in 2007 to implement the city's Source Water Protection Plan. A number of water quality protection measures related to various land uses are included in the overlay zone regulations. Section 12-322A of the Douglas County Zoning Regulation is attached at the end of this report.

Transportation

Some of the identified areas have better access to major transportation corridors than the other areas. For instance, Area 1 contains relatively isolated corridors compared with Area 2, which essentially has direct access to major transportation corridors. The policy discussion would be how the Planning Commission and the Board of County Commissioners should weigh the competing value of transportation access in their decision making process.

Flood Hazard Areas

The majority of the areas, since they are located along the Kansas River, are located within regulatory Flood Hazard Areas. All development with the regulatory flood hazard area needs to obtain all necessary permits.

Class I & II Soils v. Sand and Gravel Extraction: There are areas identified in this report where there will be a competition for resources if a proposal is put forth to mine sand and gravel in an area where the sand and gravel resource lies under a Class I & Class II soils resource. The same natural processes that deposit nutrients for soils are also responsible for depositing the sand and gravel resource. The policy discussion would be how the Planning Commission and the Board of County Commissioners should weigh the value of these resources in their decision making process.

Scenic River Road: Access to potential sand and gravel operations within areas 4 and 5 may in some manner utilize the Scenic River Road to access the area. The Scenic Road includes a number of different County road sections. The Functional Classification of the Road east of Lecompton is primarily a minor collector, although it has an urban collector designation south of Lake View Lake. West of Lecompton the road is primarily a local road. Sand dredging activities will be introducing large dump trucks making multiple trips per day to a road system meant for tourism-type traffic and local traffic. Should impact to the Scenic River Road be considered when evaluating sand dredging proposals?

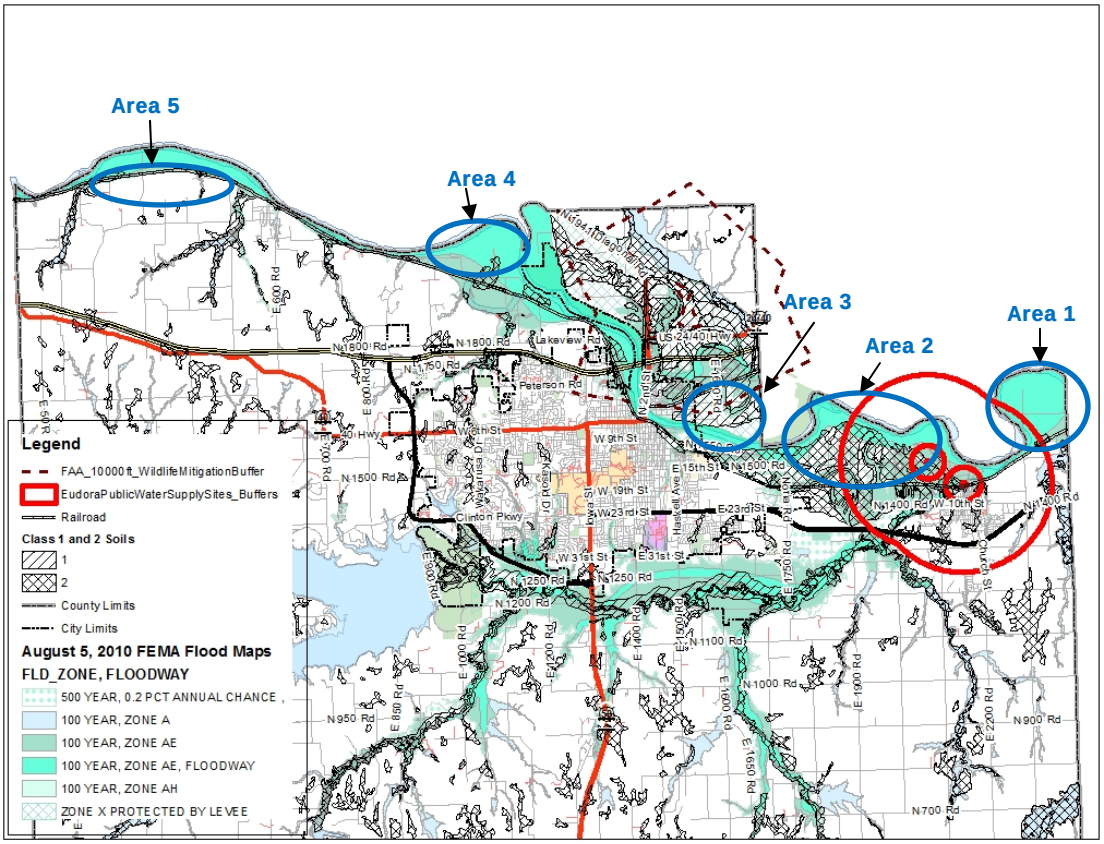
Reclamation Plans

Reclamation plans are required to be submitted as part of any application for sand dredging. A principal purpose of the reclamation plans is to note the proposed end use following the removal of the sand reserves and explain how it is to be achieved. Typically, large water bodies are created which may be used for recreation and some land areas are reclaimed through the replacement of overburden, top soil, and revegetation. Reclamation typically occurs sequentially with the extraction of the natural resource so that the overburden is utilized immediately upon extraction and large stockpiles are not necessary. The reclamation plans should note the type of reclamation which will be employed and provide a general time frame for the reclamation. Reclamation plans should also note the long-term measures being taken to protect the ground water from stormwater flow such as the on-going maintenance of the perimeter berms. With the reclamation plans being a part of the application submittal, they are made available to the public and are considered as part of the public hearing process.

Potential Locations

The map below shows the potential sand dredging locations that are identified in this report. The 5 areas are outlined in blue and are located along the Kansas River throughout Douglas County. The map below also shows the FAA Wildlife Hazard Mitigation Buffer, Class I & II Soils, the City of Eudora Source Water Protection Overlay Zone (outlined in red) and the Flood Hazard Areas.

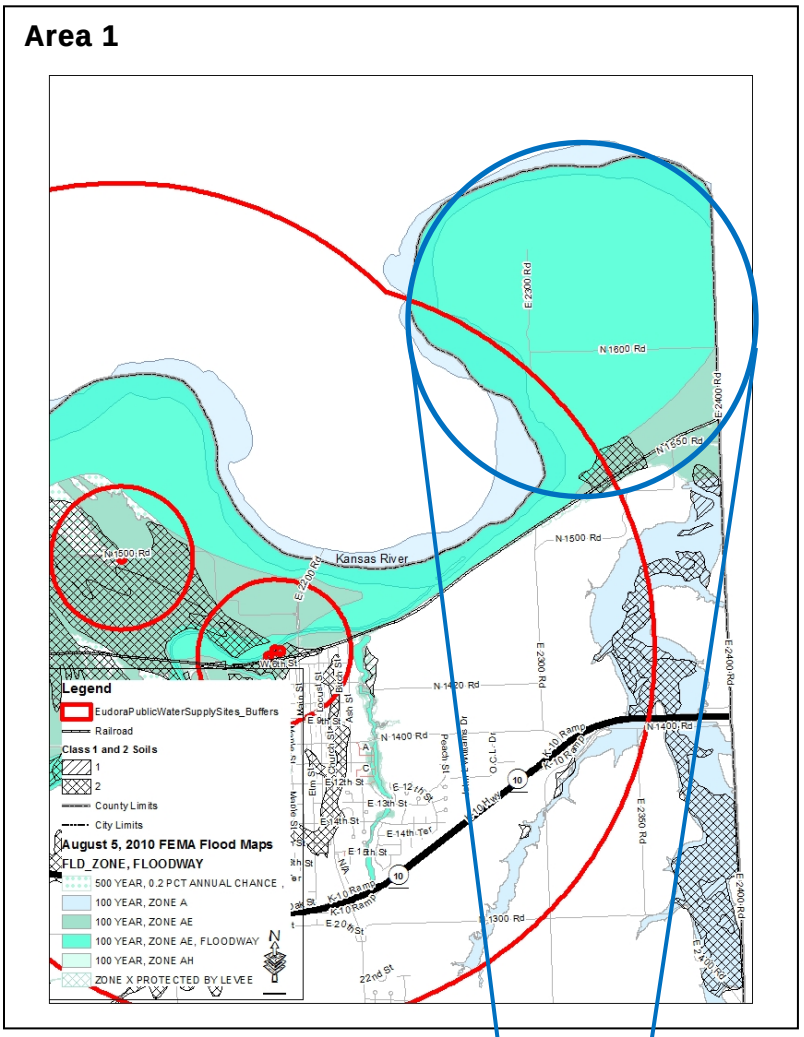
Each location and the identified land use issues for the areas are discussed on the following pages. As mentioned in the issues section, the majority of the Grant Township area north of Lawrence is excluded from this report because of the FAA's Wildlife Hazard Mitigation Buffer.

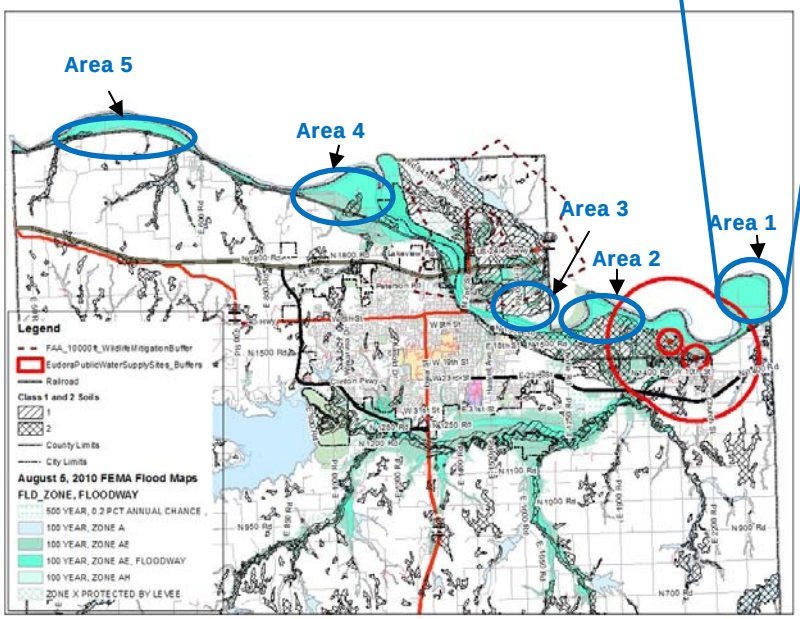


Area 1
Located north and east of Eudora, in the northeast corner of Douglas County.

Issues

- There is very little residential development in the immediate area.
- There is a limited amount of Class II soils.
- Most of the area is outside the Eudora Source Water Protection Overlay Zone.
- Transportation access through the area is challenged by the hilly terrain and lack of roads.
- There isn't a direct route to K-10 Highway.
- There is a rail line to cross south of the area.
- The westernmost portion is within the Eudora Source Water Protection Overlay Zone.

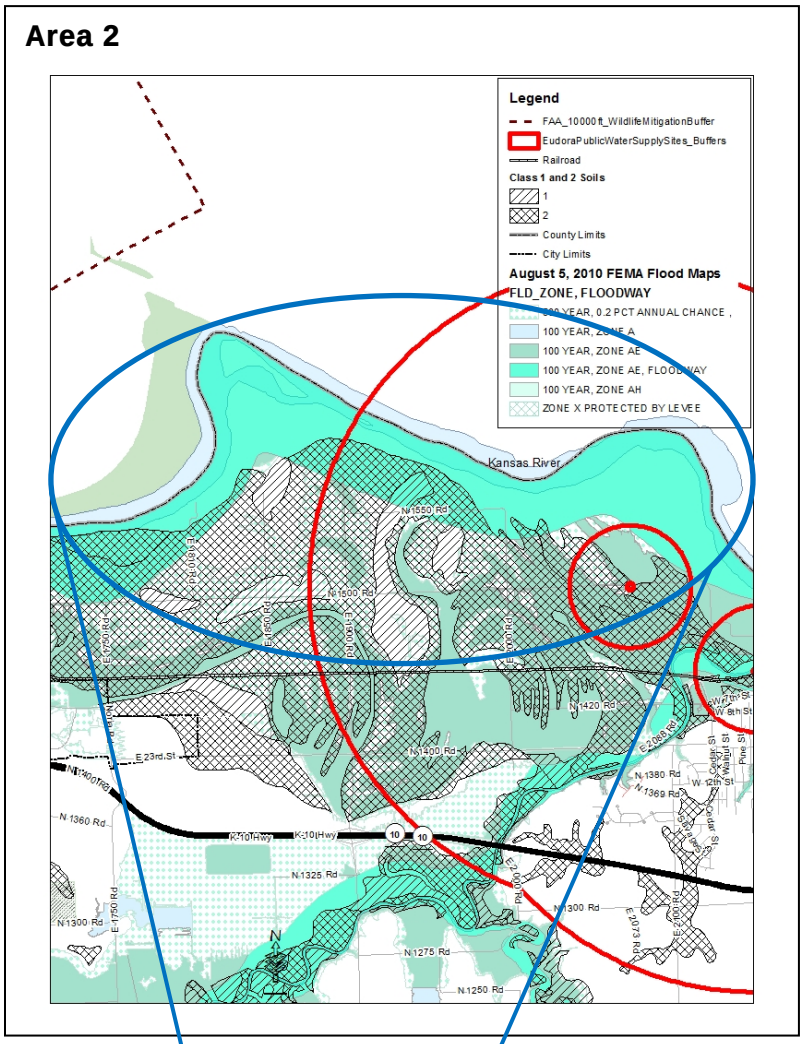


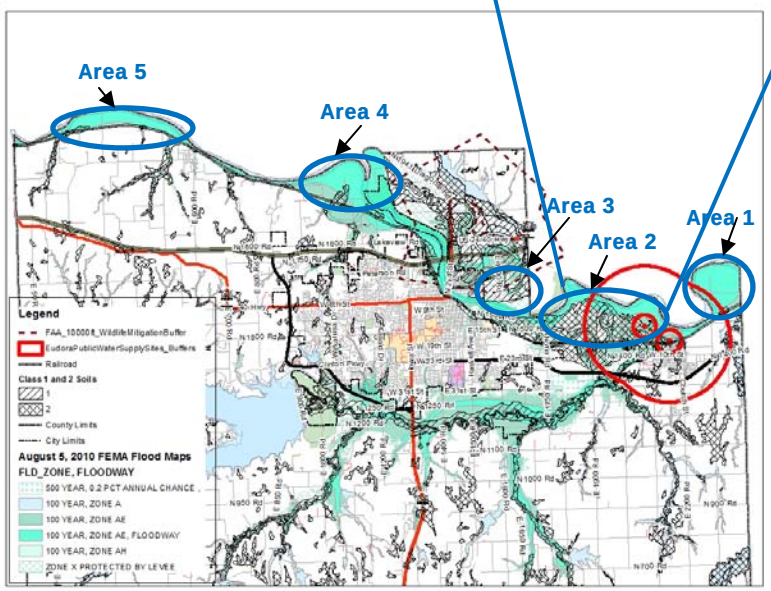


Area 2
Located between Eudora and Lawrence.

Issues

- Residential uses are limited in the area.
- There is a relatively direct route to K-10 Highway and I-70.
- There is an existing sand and gravel extraction pit in the area.
- The area is outside of the FAA's Wildlife Mitigation Buffer.
- A portion of the area is outside the Eudora wellhead protection buffer the Eudora Source Water Protection Overlay Zone, and a portion of the area is within Eudora's Source Water Protection Overlay Zone.
- Class I and Class II soils are present throughout nearly the entire area.
- There is a rail line to cross to access K-10



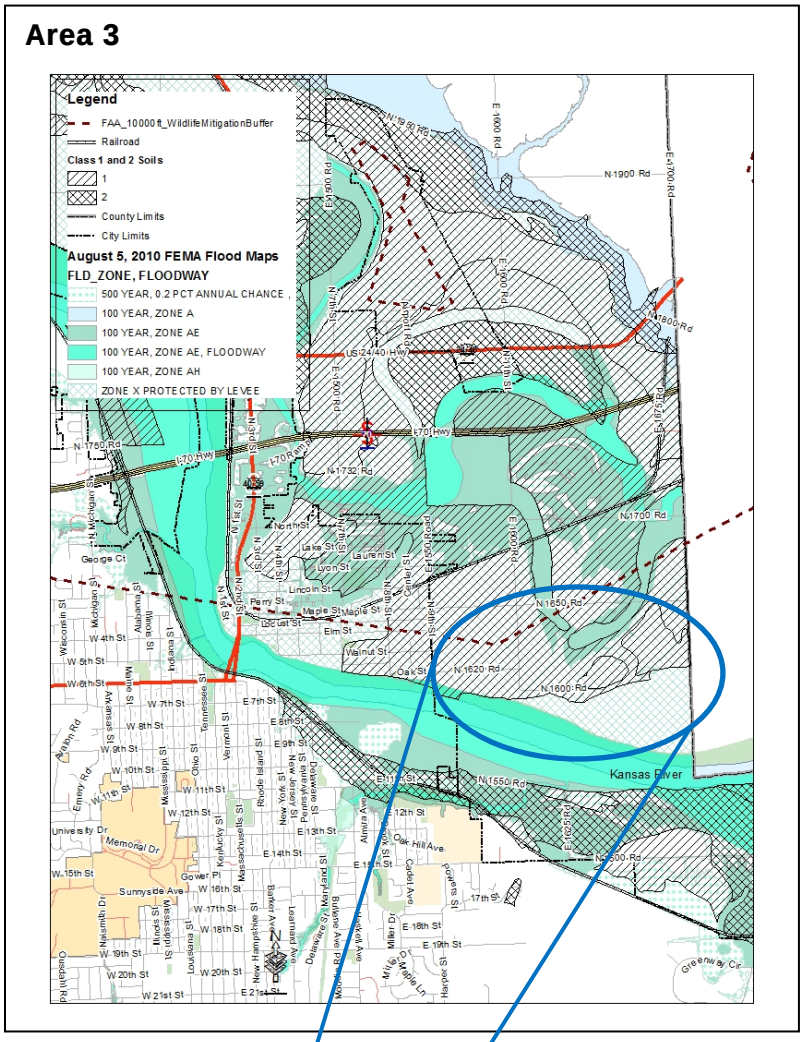


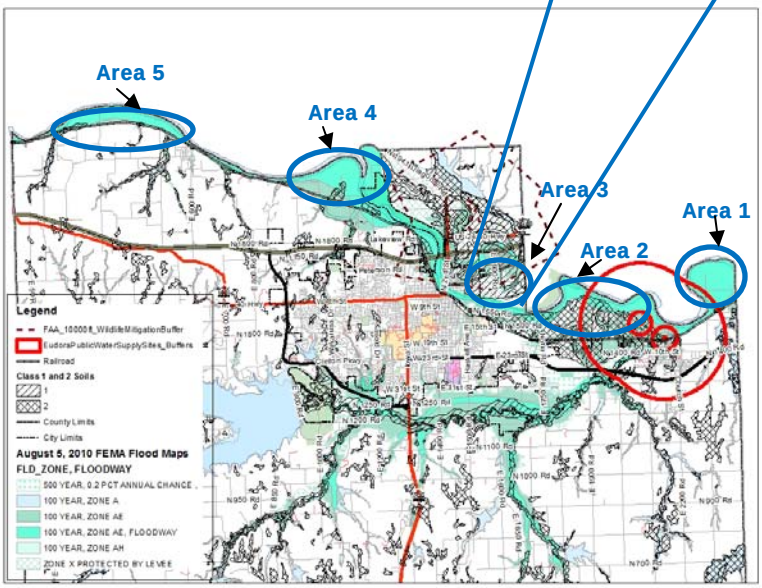
Area 3

Located north of the Kansas River in the southeastern portion of Grant Township.

Issues

- A portion of the area is outside the FAA's Wildlife Hazard Mitigation Buffer.
- A portion of the area is within the FAA's Wildlife Hazard Mitigation Buffer.
- The area has poor access as trucks likely will have to pass through the residential areas of North Lawrence to get to a major roadway.
- A portion of the area is covered by Class I soils.
- There is urban residential in the area.



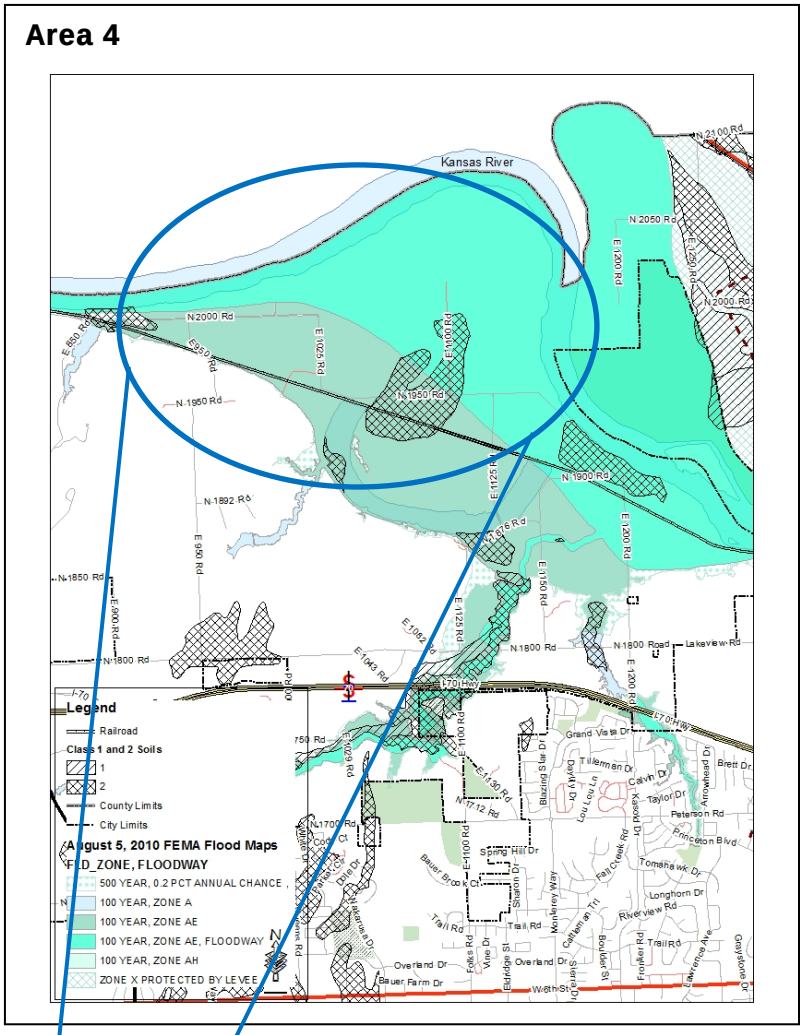


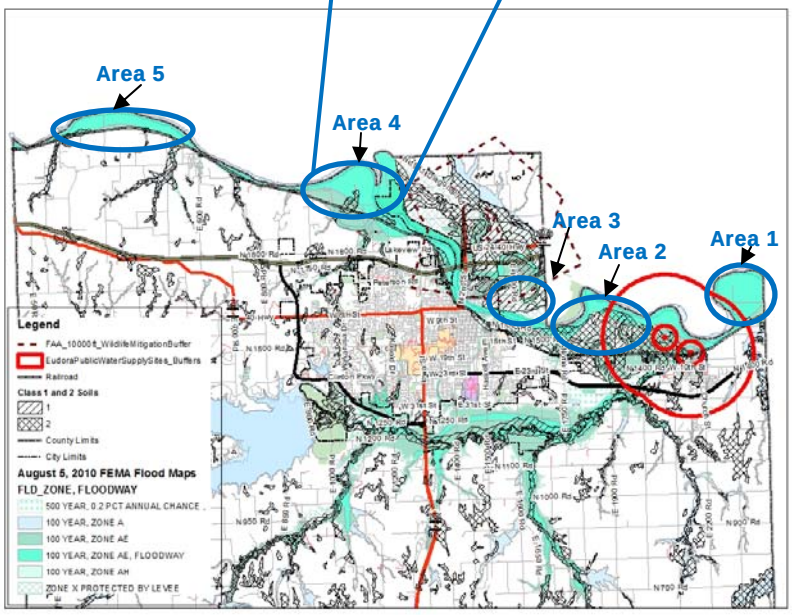
Area 4

Located south and west of the Kansas River and north of Lawrence.

Issues

- Limited amounts of Class II soils.
- Limited residential development in the immediate area.
- The area is outside the FAA's Wildlife Hazard Mitigation Buffer.
- Transportation routes to a major road are provided.
- Transportation routes will have to be improved.
- There is a rail crossing involved with travelling south from the area.
- The area is accessed via the Scenic River Road



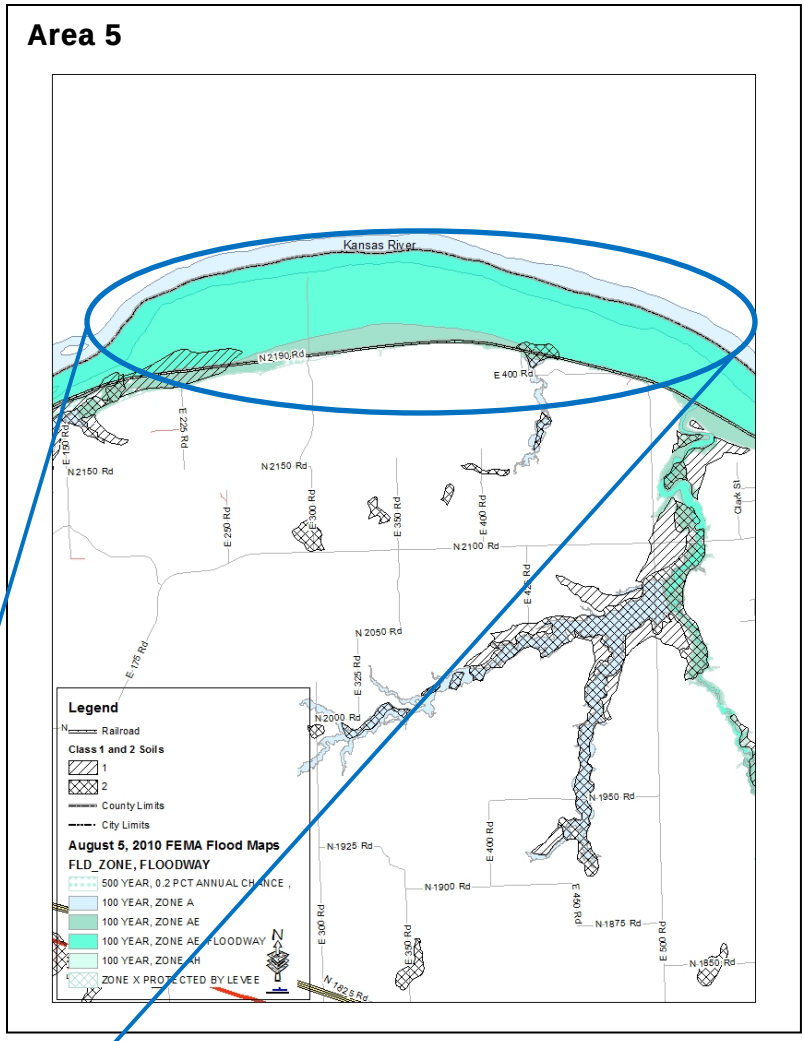


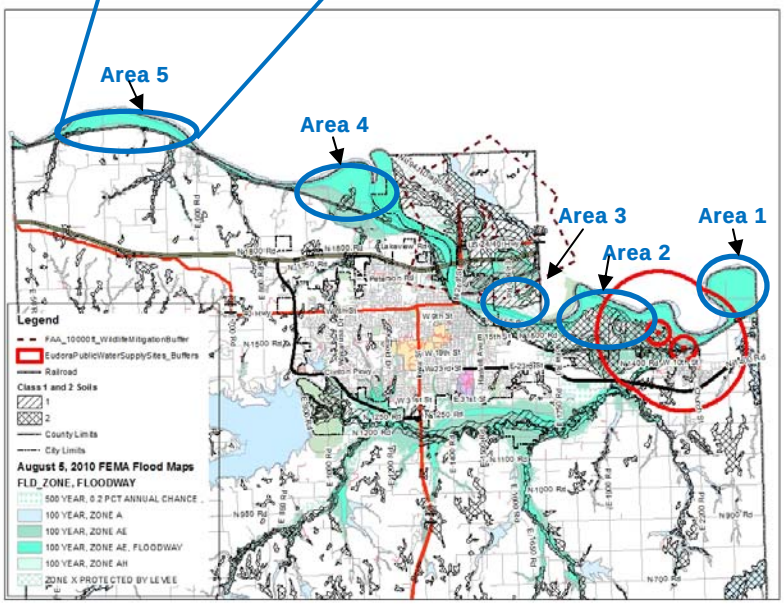
Area 5

Located in the northwest portion of Douglas County, west of Lecompton.

Issues

- There is limited residential in the immediate area.
- There is limited amounts of Class I soils.
- There is not a good direct route to a major roadway.
- There is a rail crossing involved with transporting materials out of the area.
- The area is accessed via the Scenic River Road.
- Lecompton draws water from wells that are located between the city and the river. Since this area is upstream of Lecompton's water wells, any sand dredging proposal should be reviewed for potential impacts on Lecompton's water supply.





12-322A CITY OF EUDORA SOURCE WATER PROTECTION OVERLAY ZONE

A Source Water Protection Overlay Zone has been identified to implement the City of Eudora's Source Water Protection Plan. This Overlay Zone encompasses the City's designated public water sources and a two-mile radius around each water source. Only the unincorporated areas within a two-mile radius of the water sources will be subject to the protection measures outlined below. The official Eudora Source Water Protection Overlay Zone map is located in the City of Eudora Source Water Protection Plan, which is available at the Lawrence-Douglas County Planning Office and Eudora City Hall. The Official Douglas County Zoning Map shall also include the Eudora Source Water Protection Overlay Zone.

For development applications, which include the following uses within the City of Eudora's Source Water Protection Overlay Zone, the associated water quality protection measures shall be utilized and noted on site plans, certificates of survey, and plats:

Use	Water Quality Protection Measure
Auto Truck Repair Service	Discharge to Publicly Owned Treatment Works (POTW). Manage oil products and used oil so that it is not in contact with water.
Construction and Mining Machinery	Discharge to POTW.
Golf Course	Proper application of fertilizers and pesticides. Proper cleaning of equipment and disposal of chemicals.
Highway and Street Construction	Erosion and sediment control.
Meat Packing Plant Manufacturing	Wastewater pre-treatment and/or discharge to POTW.
Single-family Housing Construction	Proper cleaning and disposal of household hazardous waste. Proper storage, application, and clean up of pesticides and fertilizers.
Veterinary Services, Specialties	Discharge to POTW.
Deciduous Tree Fruit Orchard	Minimize the use of chemicals and pesticides. Maintain good erosion control practices.
Farm Product Warehousing and Storage	Keep the area clean of grain. Use grease traps.
General Farm, Primarily Crop	Maintain good erosion control practices and minimize the use of chemicals.
Repair Services, Not Elsewhere Classified	Discharge to POTW.

Memorandum
City of Lawrence
Planning and Development Services Department

To: **David L. Corliss, City Manager**

From: **Planning Staff**

cc: **Diane Stoddard, Assistant City Manager**
Cynthia Wagner, Assistant City Manager

Date: **November 29, 2012**

Re: **Downtown Redevelopment Issues and Opportunities – analyzing where the height, mass and scale of a particular part of downtown could be changed with new or re-development.**

Recommendation

Review information in this report and refer the matter to the Historic Resources Commission and Planning Commission with specific direction to discuss the information in this report and provide comments/recommendations on the following issues:

1. The level and location of density and height in the Downtown area.
2. With input from the Public Works Department, discuss whether the Downtown Design Guidelines appropriately address the nature of parking (angled and parallel) in the Downtown area and whether intersection improvements, such as traffic circles, would be appropriate to serve the multi-modal demands in the Downtown area.
3. The establishment of policies that address the use of city surface parking lots as development demand increases.

Note: This study and any referral to the HRC and/or the PC is not intended to delay any application in process in the downtown area.

Background

Staff was directed to complete a downtown survey that evaluates development and redevelopment opportunities primarily along New Hampshire, Massachusetts, Vermont and Rhode Island Streets between 6th street and 11th street to determine the areas of downtown where the height, mass and scale could be altered from current conditions.

Downtown is recognized as a special place. The physical layout of blocks, streets, and buildings at a pedestrian scale create a rich environment for living, working, and playing. Attributes such as permitted uses, building setback, sidewalk width, design of storefronts, canopies and signs, and building height, mass and scale all contribute to the uniqueness of the downtown area.

The land uses associated with new projects is usually not an issue, as most developments will be mixed use and the permitted uses of the Commercial Downtown (CD) District are not an issue. What is often discussed is the height, mass and scale of a project relative to the character of downtown and its flanking residential neighborhoods. This memo identifies the areas where the height, mass and scale of a particular part of downtown could be changed with new or re-development and also proposes policies to refine the expectations for development in downtown.

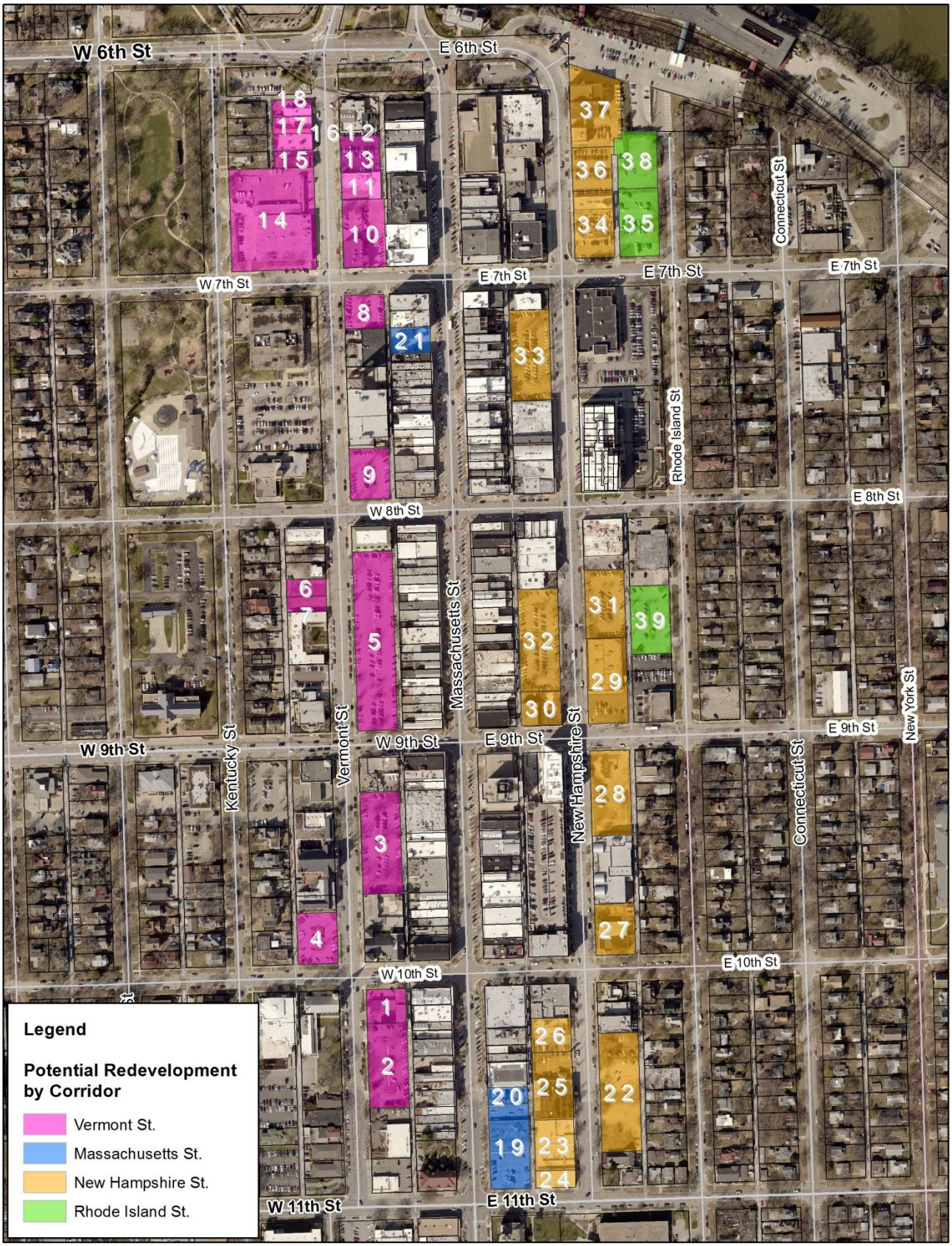
The table and map contained in this report reflect 39 parcels identified by staff for new or redevelopment. The parcels represent general development opportunities based on a visual survey by staff and are not being presented as parcels advocated by staff for development or redevelopment. The survey may not represent every development opportunity and it does not take into account owner and/or public input. Public and property owner input is encouraged as the HRC and PC consider this report.

There are approximately 227 parcels in the downtown area studied in this report. Of those parcels, 4 are privately held and vacant and 11 are city-owned and used as surface parking lots. These 15 parcels represent the areas of downtown where the height, mass and scale could be altered from current conditions the greatest extent. The remaining 24 parcels contain some level of height, mass and scale but could redevelop with additional square feet if the owner chose to pursue such.

Parcels Identified for Development Potential

	Vermont St. Corridor	Massachusetts St. Corridor	New Hampshire St. Corridor	Rhode Island St. Corridor	Total	Total Square Footage[1]
City Parking Lots	6	0	3	2	11	305,463.81
Privately Owned	10	2	11	1	24	432,453.54
Vacant	2	1	1	0	4	60,808.78
Total	18	3	15	3	39	798,726.13

[1] Square feet does not include rights-of-way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E 11th St
Connecticut St
Rhode Island St
Massachusetts St
Vermont St
Kentucky St
New Hampshire St
New York St
Legend
Potential Redevelopment by Corridor
Vermont St.
Massachusetts St.
New Hampshire St.
Rhode Island St.

Most of downtown is considered "built-out" in a physical sense, especially Massachusetts Street, and will not likely redevelop in any significant way. However, redevelopment of certain built-out properties is not out of the question and is identified in this memo. For example, there has been periodic discussion of redeveloping the Allen Press property at 11th and New Hampshire. This building could be razed and a new building constructed. The proposal would need to take into account the Downtown Design Guidelines, the surrounding fabric of downtown, as well as several historic sites. In any event, though, the character of that area of downtown would surely change and the historic review process and Downtown Design Guidelines exist to ensure that the change to the height, mass and scale is appropriate.

Downtown Character

The downtown area possesses diverse, yet cohesive physical attributes that collectively serve to illuminate periods of the City's historical development, and that contribute to its overall character. One of the most visible attributes is the remarkably consistent pattern of urban-commercial buildings, wide streets, and alleyways that were constructed over extended periods of time. On block after block we still find dense rows of two and three story, brick or stone buildings with elaborate cornice treatments, upper story offices or residences, and first-floor retail storefronts. Taller, more massive buildings create visual emphasis at select block corners. Alleyways cut between or pass behind buildings, permitting easy pedestrian access and allowing services or deliveries to occur 'off-stage.'

Lawrence's downtown is located on a generally level area which slopes gently down to the Kansas River to the north. Diagonal parking is provided along Massachusetts Street, and there are wide concrete sidewalks with curbs, light standards, and stop lights at intersections. The outside edges of the district are defined either by vacant lots and parking lots, most of which were formed by the demolition of historic commercial buildings; non-historic buildings; or historic buildings which have been irreversibly altered. Most of the existing buildings in this district have identical setbacks; i.e., most are constructed to the edge of the property line along the sidewalks.

Downtown is generally built out at a height of 1-3 stories with a few exceptions (US Bank building, AT&T tower, Eldridge Hotel; and more recently Hobbs-Taylor Lofts and 901 New Hampshire). The Downtown Design Guidelines encourage heights for new buildings that are compatible with their surrounding context and directs taller structures to the ends or corner of a block.

Discussion

It is conventional wisdom that increasing the residential density of a downtown maintains its health and vitality. That is true for Lawrence and the code requires a mix of uses so that there is a symbiotic relationship between residents, workers, and shoppers downtown.

One main discussion point is how buildings' height, mass and scale on Vermont and New Hampshire streets relate to Massachusetts Street on the one hand, and the residential neighborhoods to their other side on the other hand. The Downtown Design Guidelines state the following about the height of Massachusetts Street:

> "By historic development, dense rows of two and three story commercial storefront buildings, anchored by larger structures on the block corners, make up the single most identifying characteristic of downtown Lawrence's primary corridor."

The Guidelines also state the following about where density, and thus height, should occur in Downtown:

> "Densities are expected to be greater along Massachusetts Street and less dense along peripheral streets. Massachusetts Street blocks should be anchored with significant structures at the corners, with an emphasis on retail uses at the street level."

The Guidelines state the following about the height of new development:

> "The height of new buildings and additions shall relate to the prevailing heights of nearby buildings. New construction that greatly varies in height from adjacent buildings shall not be permitted."

Density is usually implemented through building height and massing. Under the currently adopted guidelines, Massachusetts Street would be taller, overall, than Vermont and New Hampshire Streets; however, as this report reflects, the overwhelming majority of parcels poised for development are on Vermont and New Hampshire Streets. If Downtown's density is to increase, then it must do so on Vermont and New Hampshire Streets since Massachusetts Street is predominantly built-out at a height of 2-3 stories.

The Downtown Design Guidelines hold Massachusetts Street as the denser street, yet the opportunities to increase density through height exist on Vermont and New Hampshire Streets.

It is important to note that there are 15 properties in all of the downtown area that are either vacant or developed as a city parking lot. Each of these properties will need to be judged in their historic context, as well as pursuant to the Downtown Design Guidelines.

For example, there are only 3 vacant/parking lot properties on the east side of New Hampshire Street that do not have current development approvals and would be considered new development if actually developed. These three locations have vastly different contexts and the public process used to site plan a development proposal would theoretically yield the most appropriate building design for each context.

The approval process typically includes a public meeting at the HRC and site planning, which includes notice to owners within 200' and to neighborhood organizations registered with the city. The site plan process also includes an appeal process for aggrieved parties to appeal to the City Commission.

A recent request to provide angled parking and a roundabout at 9th Street and New Hampshire Street triggered City Commission discussion on the topics. The Downtown Design Guidelines include a standard that requires on-street parking on Massachusetts Street be angled and parking on Vermont and New Hampshire Streets to be parallel. The Guidelines are silent on intersection improvements such as roundabouts. Staff has not completed a comprehensive study as to the appropriateness and impacts of installing more angled parking on New Hampshire and Vermont Streets or whether intersection improvements, such as roundabouts, would serve the needs of all transportation users – vehicles, pedestrians, bicyclists, disabled, etc. If we expect future requests to install angled parking or alternative intersection improvements, then these issues should be studied and the Downtown Design Guidelines revised to implement the new direction.

City-owned parking lots

As noted above, there are 11 city-owned surface parking lots and 4 private vacant lots that have potential to develop. The city-owned parking lots have received some attention recently for their development opportunities. As long as these parcels maintain their function as public parking in some capacity, it is feasible that they may also be built up for a mixed use project. The following policies may be helpful when considering developing any city-owned lot:

1. Any development on a city-owned lot should maintain the same number of, or more, public parking spaces as existing at time of development, as well as accommodate all of the code-identified demand generated by the proposed uses, even though there is no requirement to provide parking in the CD district. This is so parking is not reduced in a relative manner due to the increased demand of any new development.
2. Any city-owned lot should undergo a public process for consideration for development. One process option, for example, would be to issue a Request for Proposals so that all development options are considered as the lot is converted.
3. All development should adhere to the development standards of the Downtown Design Guidelines, any historic review, and any other codes, policies, and processes adopted at the time of development.

Downtown Survey of Parcels

The attached maps and table detail the current use, context, and potential for development or redevelopment for the identified parcels. Development potential has been included on a rated scale: high, medium, or low. The parcels represent general development opportunities based on a visual survey by staff and are not being presented as parcels advocated by staff for development or redevelopment. The survey may not represent every opportunity and it does not take into account owner and/or public input. Public and property owner input is encouraged as the HRC and PC consider this report.

Definitions for these ratings have been provided below to provide understanding of the thought process applied when rating each parcel. Photos have been provided to illustrate the pedestrian-scale view of the parcels. A brief description of each corridor follows the table below.

Rating of Development Potential	Definition
High	Parcel… • …is/contains a parking lot • …is/contains a vacant lot • …is adjacent to a parking lot or vacant lot • …has been mentioned in previous discussions regarding development and redevelopment opportunities
Medium	Parcel… • …is adjacent to parcels with high potential and could be included in a larger redevelopment project • …has underutilized surface parking • …has varying ratings amongst portions of the building • …is currently a vacant building • …is located in an area with larger scale redevelopment opportunities
Low	Parcel has the potential to expand because of its location and proximity to redeveloping buildings.

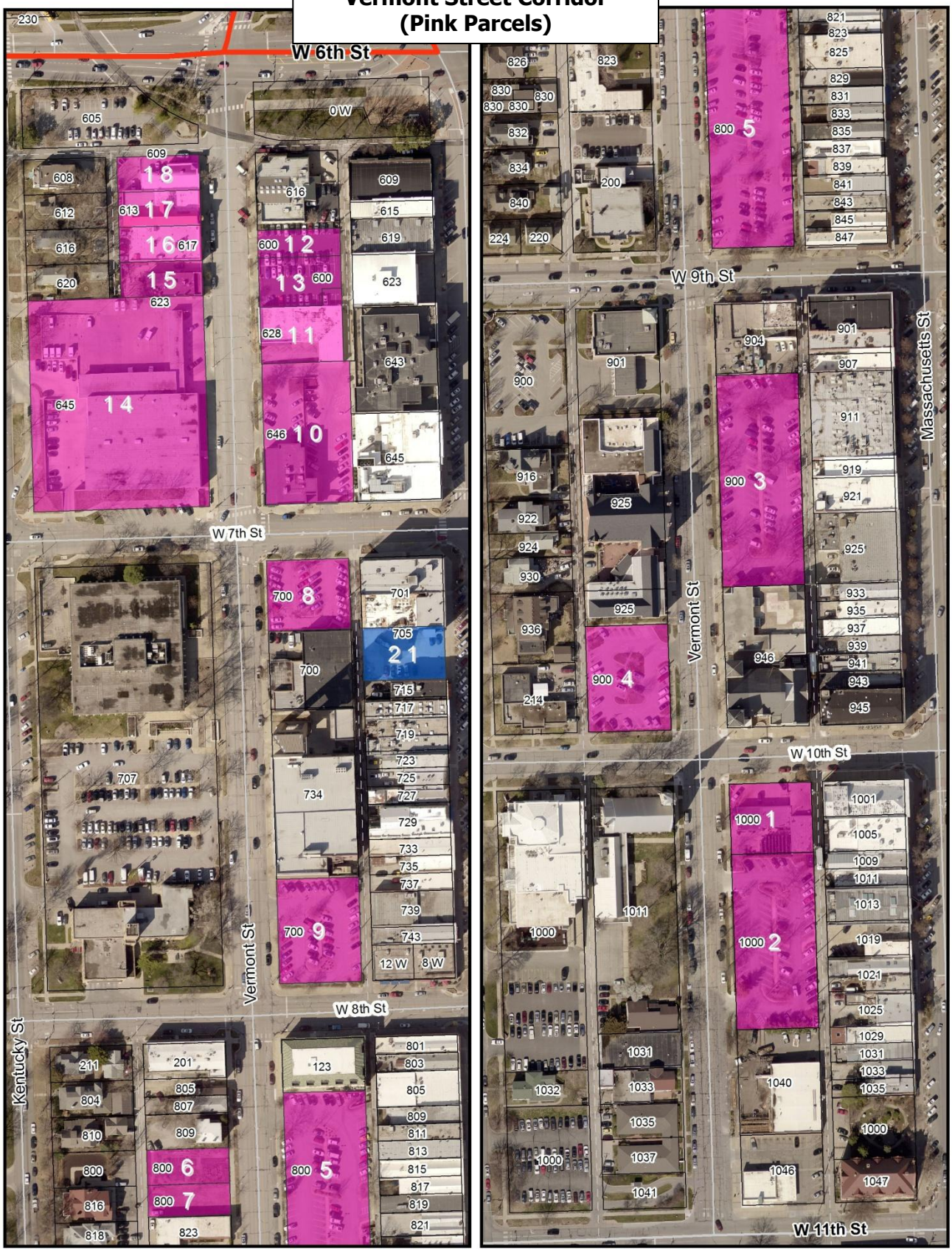
Vermont Street Corridor

Vermont Street has commercial zoning to its east along the adjacent Massachusetts Street and residential zoning to its west along the adjacent Kentucky Street. There are a variety of civic uses on Vermont Street. including the Lawrence Public Library and US Post Office. With exceptions such as Trinity Episcopal Church, First United Methodist Church and Plymouth Congregational Church that offer architectural height to the streetscape, buildings are 1-2 stories tall.

With 6 city parking lots on Vermont Street in the surveyed area, there is opportunity to enhance the current parcels that function as access to Downtown buildings and events. 11 identified parcels, including 4 city parking lots, are adjacent to an alley that neighbors the buildings on the west side of Massachusetts Street. This alley includes business entrances and pedestrian usage.

The Vermont Street parcels identified are shown in pink on the map on the following page and details are located on the attached table, corresponding with the number on the parcel.

Vermont Street Corridor
(Pink Parcels)

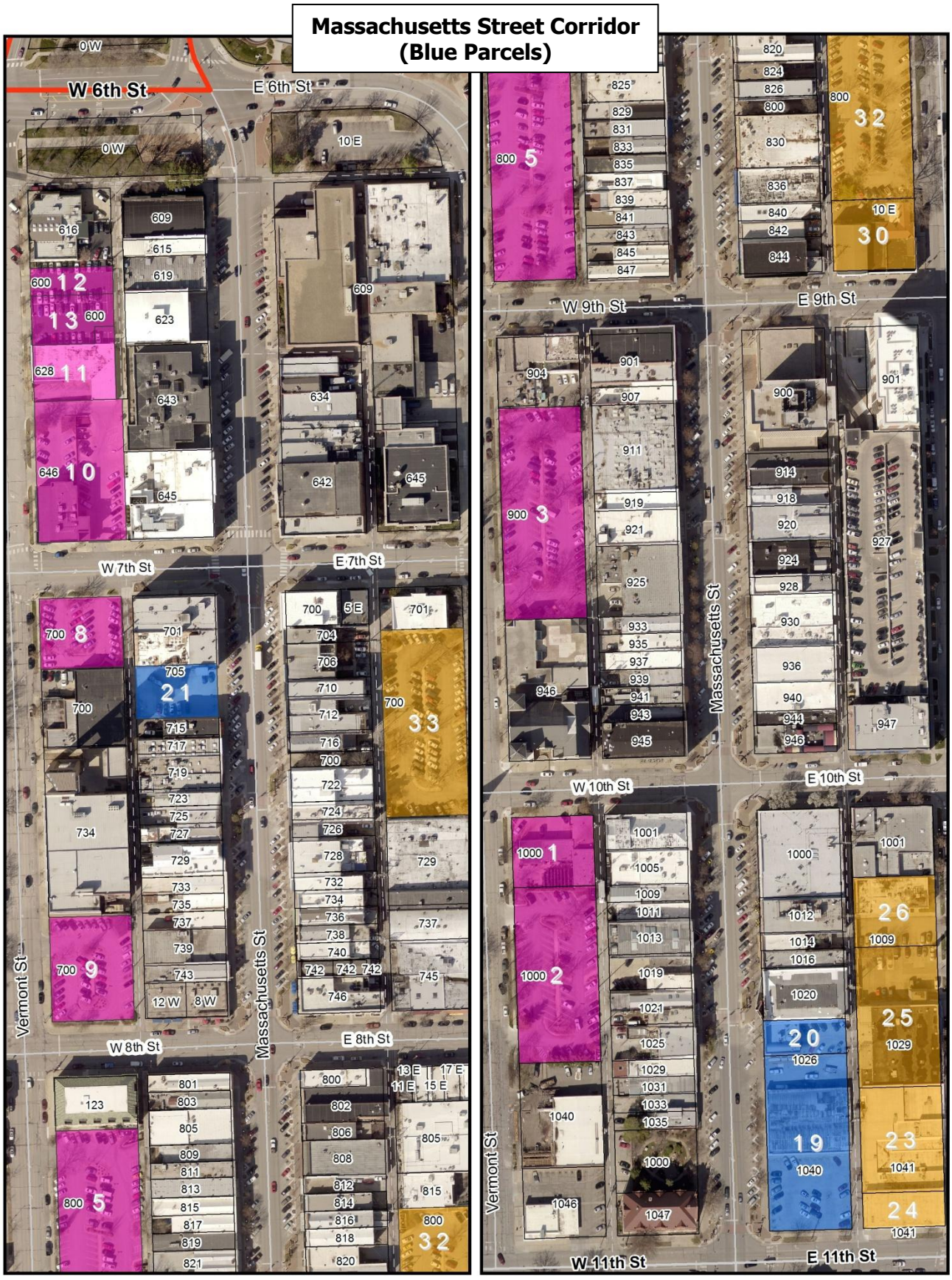


Massachusetts Street Corridor

Massachusetts Street has commercial zoning and a mix of uses to its east and west along the adjacent New Hampshire and Vermont Streets. Three identified parcels are either currently vacant or contain parking lots, yielding minimal opportunities for development or redevelopment.

The Massachusetts Street parcels identified are shown in blue on the map on the following page and details are located on the attached table, corresponding with the number on the parcel.

Massachusetts Street Corridor (Blue Parcels)



New Hampshire Street Corridor

New Hampshire Street has commercial zoning to its west along the adjacent Massachusetts Street and a mix of commercial and residential zoning to its east along the adjacent Rhode Island Street. With 901 New Hampshire, Hobbs Taylor Lofts and The Lawrence Arts Center, New Hampshire Street contains height that its neighboring streets do not have. There are, however, smaller scaled properties and buildings that are generally 1-3 stories tall.

The former Allen Press building provides opportunity for redevelopment on New Hampshire Street. Of the corridors studied, New Hampshire Street also has the highest volume of vacant parcels that provide opportunity for developing underutilized land.

3 city parking lots provide off-street parking to the downtown area.

The New Hampshire Street parcels identified are shown in orange on the map on the following page and details are located on the attached table, corresponding with the number on the parcel.

New Hampshire Street Corridor (Orange Parcels)


E 6th St
Riverfront Plz
10 E
6 E
612
37
609
38
36
632
634
Rhode Island St
34
644
35
210
642
645
E 7th St
E 7th St
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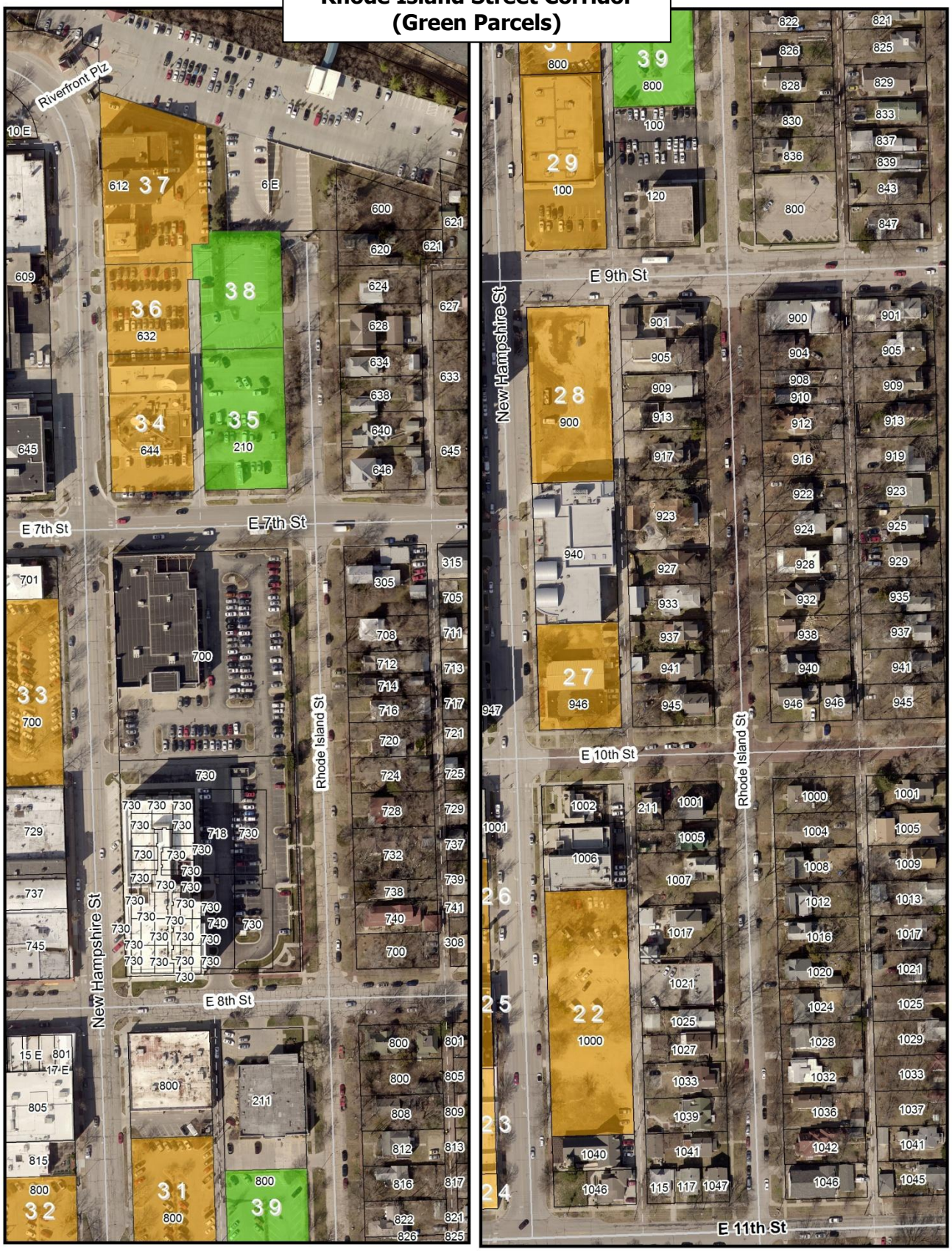
Rhode Island Street Corridor

The Rhode Island Street parcels identified are shown in green on the map on the following page and details are located on the attached table, corresponding with the number on the parcel.

Three parcels are identified between 6th and 9th Streets. Development of these parcels will need to take into account the residential zoning and uses across Rhode Island Street.

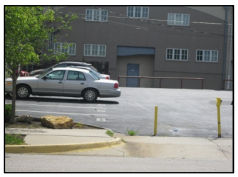
Rhode Island Street Corridor
(Green Parcels)



Summary

The majority of the development or redevelopment opportunities are located along Vermont and New Hampshire Streets. 15 of the 39 parcels identified are existing city owned parking lots or vacant property and will be judged within the context of their surrounding properties and the Downtown Design Guidelines.

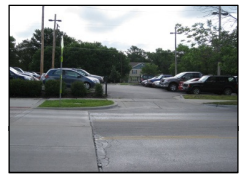
#	Site	Current Use/Tenant	Context	Potential for Development or Redevelopment	Photo of Parcel
Vermont Street Corridor					
1	1000 VERMONT ST (North)	D&D Tire Inc	1 story; rated high because it is adjacent to a City Parking Lot	High	
2	1000 VERMONT ST (South)	City Parking Lot	1-3 story buildings adjacent	High	
3	900 VERMONT ST (East)	City Parking Lot	2 story buildings adjacent	High	
4	900 VERMONT ST (West)	City Parking Lot	1-2 story buildings adjacent; pedestrian alley containing business entrances adjacent; across from Lucy Hobbs Taylor house	High	
5	800 VERMONT ST (East)	City Parking Lot	1-3 story buildings adjacent	High	
6	800 VERMONT ST (North & West)	Vacant	2 story buildings adjacent	High	
7	800 VERMONT ST (South & West)	Vacant	1 story building adjacent	High	

#	Site	Current Use/Tenant	Context	Potential for Development or Redevelopment	Photo of Parcel
8	700 VERMONT ST (North)	City Parking Lot	1-2 story buildings adjacent	High	
9	700 VERMONT ST (South)	City Parking Lot	2 story buildings adjacent	High	
10	646 VERMONT ST	Chamber of Commerce and Jos A Bank	2 story; parking areas have high potential	Medium	 
11	628 VERMONT ST	Vacant	1 story	Medium	
12	600 VERMONT ST (North)	Private Parking Lot	1-2 story buildings adjacent	High	
13	600 VERMONT ST (South)	Private Parking Lot	1-2 story buildings adjacent	High	
14	645 VERMONT ST	US Post Office	1 story	High	

#	Site	Current Use/Tenant	Context	Potential for Development or Redevelopment	Photo of Parcel
15	623 VERMONT ST	Dempsey's Pub	1 story	Medium	
16	617 VERMONT ST	New Hope	1 story	Medium	
17	613 VERMONT ST	Luminous Neon Inc	1 story	Medium	
18	609 VERMONT ST	First State Bank & Trust	1 story	Medium	

#	Site	Current Use/Tenant	Context	Potential for Development or Redevelopment	Photo of Parcel
Massachusetts Street Corridor					
19	1040 MASSACHUSETTS ST	Parking Lot & Allen Press Building	1-2 story buildings adjacent	High	
20	1026 MASSACHUSETTS ST	Einstein Bros Bagels and Private Parking	1 story buildings adjacent	Medium	 
21	705 MASSACHUSETTS ST	Vacant	1-5 story buildings adjacent	High	
New Hampshire Street Corridor					
22	1000 NEW HAMPSHIRE ST	Vacant	1-2 story buildings adjacent	High	
23	1041 NEW HAMPSHIRE ST (North)	Allen Press Building	1-2 Story	High	
24	1041 NEW HAMPSHIRE ST (South)	Allen Press Building	1-2 Story	High	

#	Site	Current Use/Tenant	Context	Potential for Development or Redevelopment	Photo of Parcel
25	1029 NEW HAMPSHIRE ST	Scotch Dry Cleaners, Maceli's, and Private Parking	2 Story; rated medium because it is adjacent to parcels with high potential	Medium	 
26	1009 NEW HAMPSHIRE ST	Recovery & Hope Network Inc, Douglas County Casa, Cottonwood Inc,	2 Story	Medium	 
27	946 NEW HAMPSHIRE ST	Salvation Army Church	1 Story	High	
28	900 NEW HAMPSHIRE ST	Vacant	Proposed 5 story building	High	
29	100 E 9TH ST	Gegenheimer Lan DDS, Martin-Smith Personnel Svc, Adecco Employment Svc, Lawrence Bank, and Black Hills Energy	1 Story	High	
30	10 E 9TH ST	Personalized Family Dental, Z's Divine Espresso, Hip Mom Jewelry, Led Source, Horizon Analog, The Fix Salon, and New Hampshire St. Law Offices	2 Story	Low	 
31	800 NEW HAMPSHIRE ST (East)	City Parking Lot	1 story buildings adjacent	High	

#	Site	Current Use/Tenant	Context	Potential for Development or Redevelopment	Photo of Parcel
32	800 NEW HAMPSHIRE ST (West)	City Parking Lot	1-2 story buildings adjacent	High	
33	700 NEW HAMPSHIRE ST	City Parking Lot	1-2 story buildings adjacent	High	
34	644 NEW HAMPSHIRE ST	Freestate Production and Private Parking	1 story; rated medium because it is a corner parking lot	Medium	
36	632 NEW HAMPSHIRE ST	Private Parking Lot	1.5-3.5 story buildings adjacent	High	
37	612 NEW HAMPSHIRE ST	Ellington CMS & Marketplace (division of World Co) and Private Parking	3.5 Story Stone & 2 Story Brick	High	

#	Site	Current Use/Tenant	Context	Potential for Development or Redevelopment	Photo of Parcel
Rhode Island Street Corridor					
38	609 NEW HAMPSHIRE ST	City Parking Lot	1-2 story buildings and parking adjacent	Medium	
35	210 E 7TH ST	Private Parking Lot	Adjacent to Freestate Production	High	 
39	800 RHODE ISLAND ST	City Parking Lot	1-2 story buildings adjacent	High	

Memorandum
City of Lawrence
Douglas County
Planning & Development Services

TO: **Planning Commission**

FROM: **Sheila M. Stogsdill, Assistant Director**

CC: **Scott McCullough, Director**
David Cronin, City Engineer

Date: **January 28, 2013**

RE: **Misc. No. 1 – Variance Request for Revised Preliminary Plat for Former Farmland Property (PP-12-00101)**

The Planning Commission is asked to approve a variance request from a sidewalk requirement in Section 20-811(c)(1)(i) associated with a revision to the Preliminary Plat for the Former Farmland Property (PP-12-00101) located at 2700 E 23rd Street. The request is to construct sidewalk on only one side of the access road adjacent to Tract B. Tract B is encompassed by Westar permanent easement and will not be a separate development parcel. The public improvement plans have been designed to provide an open ditch section for stormwater improvements along the west side of this road. Construction of a sidewalk on this side would require installation of an underground drainage system.

The public improvement plans indicate a 6' wide sidewalk will be constructed on the east side of the access road. Sidewalks will also be provided on both sides of O'Connell Road located approximately 200' to the east. The details related to the infrastructure were not known at the time the preliminary plat was approved by the Planning Commission in September 2012.

Section 20-811(c)(1)(i) requires a 5' wide sidewalk to be installed on both sides of local streets.

Section 20-811(c)(1)(iii) provides that an applicant may request a variance for the requirement to construct part of or all of the sidewalks in a subdivision in accordance with the variance procedures outlined in Section 20-813(g).

Section 20-813(g)(2) states: A variance shall not be granted unless all of the following apply:

Criteria 1: Strict application of these regulations will create an unnecessary hardship upon the subdivider;

The City Engineer has indicated that the stormwater drainage system has been designed to be an open channel along the west side of the access road connecting the highway frontage road and the East-West Street within the subdivision. Because Tract B is a Westar easement there will be no frontage along the west side of the access road for development. The stormwater system would need to be redesigned as a closed system in order to construct a sidewalk on the west side of the access road. A wider than required sidewalk is proposed on the east side to compensate. A parallel north-south street into the business park will be constructed approximately 200 feet to the east and will include 6' sidewalks on both sides of the street.

Staff Finding: Redesign of the stormwater system to accommodate a sidewalk on the west side of the access road would be an unnecessary hardship.

Criteria 2: The proposed variance is in harmony with the intended purpose of these regulations; and

The proposed open channel stormwater system is an integral part of the natural drainage system found throughout the park. The variance permits retention of the open ditch design and provides a wider than required sidewalk on the east side of the access road.

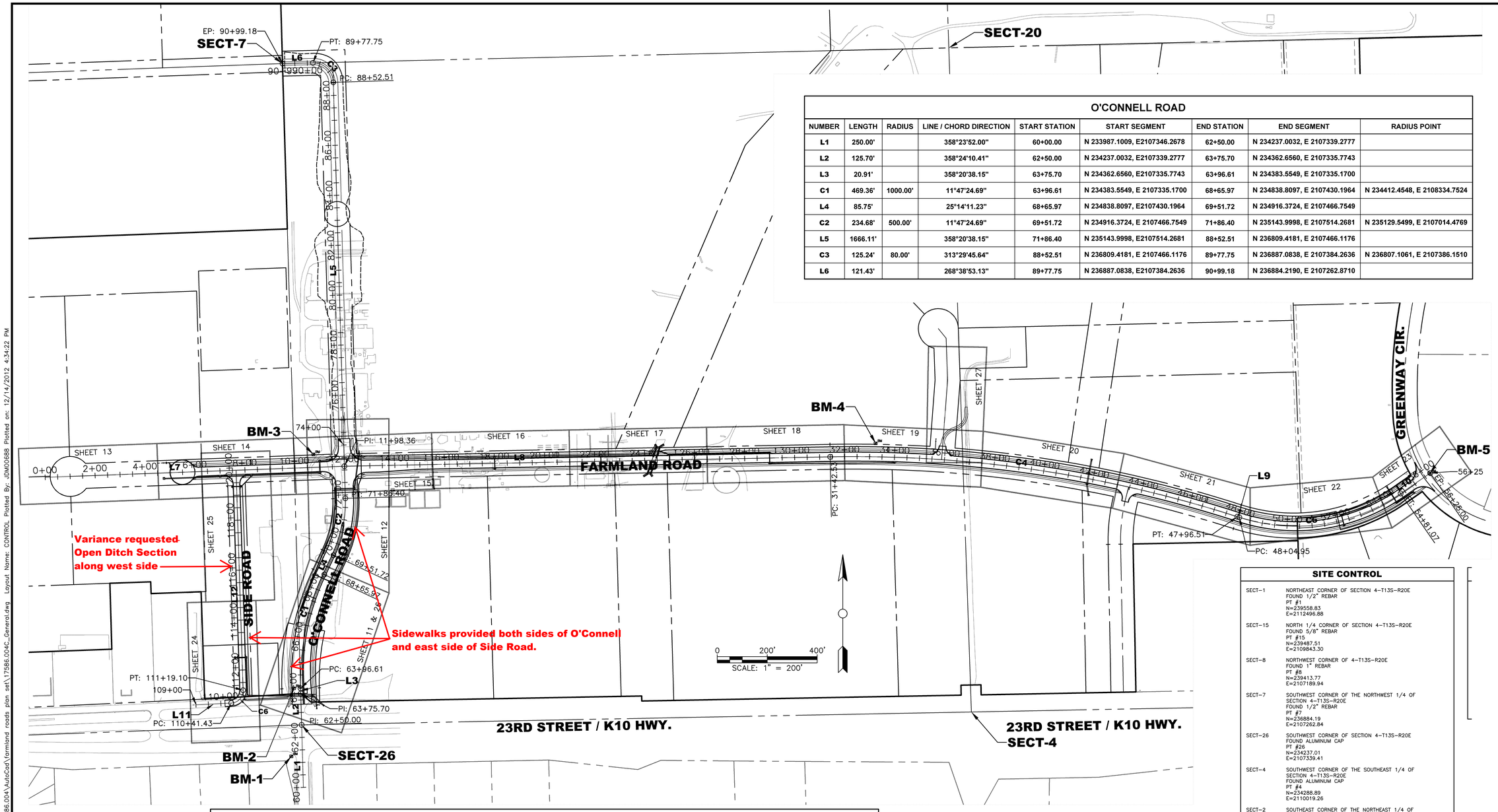
Staff Finding: Alternate pedestrian improvements are provided with a 6' sidewalk on the east side of the access road and the sidewalks to be constructed at the main entry street into the business park. The variance accommodates the stormwater improvements that have been designed and is in harmony with the overall purpose of the subdivision regulations.

Criteria 3: The public health, safety and welfare will be protected.

The public improvement plans include a 6' wide walk along the east side of the access road and 6' wide walks along both sides of the nearby entrance street. Sidewalk connections are also provided along the highway frontage road.

Staff Finding: The proposed design provides adequate alternatives for pedestrians entering the business park from the south. The public health, safety and welfare will be protected.

Recommendation: Staff recommends approval of the variance request from Section 20-811(c)(1)(i) to construct only one sidewalk adjacent to the east side of the Access Road included in the Former Farmland Property Subdivision.



O'CONNELL ROAD								
NUMBER	LENGTH	RADIUS	LINE / CHORD DIRECTION	START STATION	START SEGMENT	END STATION	END SEGMENT	RADIUS POINT
L1	250.00'		358°23'52.00"	60+00.00	N 233987.1009, E2107346.2678	62+50.00	N 234237.0032, E 2107339.2777	
L2	125.70'		358°24'10.41"	62+50.00	N 234237.0032, E2107339.2777	63+75.70	N 234362.6560, E 2107335.7743	
L3	20.91'		358°20'38.15"	63+75.70	N 234362.6560, E2107335.7743	63+96.61	N 234383.5549, E 2107335.1700	
C1	469.36'	1000.00'	11°47'24.69"	63+96.61	N 234383.5549, E 2107335.1700	68+65.97	N 234838.8097, E 2107430.1964	N 234412.4548, E 2108334.7524
L4	85.75'		25°14'11.23"	68+65.97	N 234838.8097, E2107430.1964	69+51.72	N 234916.3724, E 2107466.7549	
C2	234.68'	500.00'	11°47'24.69"	69+51.72	N 234916.3724, E 2107466.7549	71+86.40	N 235143.9998, E 2107514.2681	N 235129.5499, E 2107014.4769
L5	1666.11'		358°20'38.15"	71+86.40	N 235143.9998, E2107514.2681	88+52.51	N 236809.4181, E 2107466.1176	
C3	125.24'	80.00'	313°29'45.64"	88+52.51	N 236809.4181, E 2107466.1176	89+77.75	N 236887.0838, E 2107384.2636	N 236807.1061, E 2107386.1510
L6	121.43'		268°38'53.13"	89+77.75	N 236887.0838, E2107384.2636	90+99.18	N 236884.2190, E 2107262.8710	

FARMLAND ROAD								
NUMBER	LENGTH	RADIUS	LINE / CHORD DIRECTION	START STATION	START SEGMENT	END STATION	END SEGMENT	RADIUS POINT
L7	1198.36'		87°52'29.71"	0+00.00	N 235228.0654, E2106313.0156	11+98.36	N 235272.5020, E 2107510.5529	
L8	1944.17'		88°53'27.28"	11+98.36	N 235272.5020, E2107510.5529	31+42.53	N 235310.1335, E 2109454.3590	
C4	1653.98'	5000.00'	98°22'03.04"	31+42.53	N 235310.1335, E 2109454.3590	47+96.51	N 235070.5390, E 2111083.2805	N 230311.0702, E 2109551.1393
L9	8.44'		107°50'38.80"	47+96.51	N 235070.5390, E2111083.2805	48+04.95	N 235067.9533, E 2111091.3129	
C5	676.12'	738.00'	81°35'53.64"	48+04.95	N 235067.9533, E 2111091.3129	54+81.07	N 235163.3249, E 2111737.0307	N 235770.4509, E 2111317.4570
L10	143.93'		55°21'08.47"	54+81.07	N 235163.3249, E2111737.0307	56+25.00	N 235245.1528, E 2111855.4362	

SIDE ROAD								
NUMBER	LENGTH	RADIUS	LINE / CHORD DIRECTION	START STATION	START SEGMENT	END STATION	END SEGMENT	RADIUS POINT
L11	141.43'		87°10'01.23"	109+00.00	N 234317.4349, E2106916.3975	110+41.43	N 234324.4251, E 2107057.6566	
C6	77.67'	50.00'	42°39'56.17"	110+41.43	N 234324.4251, E 2107057.6566	111+19.10	N 234375.9658, E 2107105.1597	N 234374.3640, E 2107055.1853
L12	880.90'		358°09'51.12"	111+19.10	N 234375.9658, E2107105.1597	120+00.00	N 235256.4121, E 2107076.9399	

BENCHMARKS		
BM-1	N=234111.27 E=2107298.01 ELEV.=890.80	
BM-2	N=234383.53 E=2107308.49 ELEV.=890.59	
BM-3	N=235320.09 E=2107386.29 ELEV.=884.98	
BM-4	N=235364.12 E=2109636.37 ELEV.=885.68	
BM-5	N=235243.36 E=2111852.93 ELEV.=856.93	
BM-6	N=237081.32 E=2112647.09 ELEV.=818.45	

PROJECT COORDINATES:
STATE PLANE COORDINATES SCALE FACTOR – 0.999936527
HORIZONTAL DATUM – NAD 83
VERTICAL DATUM – NAVD 88

SITE CONTROL	
SECT–1	NORTHEAST CORNER OF SECTION 4–T13S–R20E FOUND 1/2" REBAR PT #1 N=239558.83 E=2112496.88
SECT–15	NORTH 1/4 CORNER OF SECTION 4–T13S–R20E FOUND 5/8" REBAR PT #15 N=239487.51 E=2109843.30
SECT–8	NORTHWEST CORNER OF 4–T13S–R20E FOUND 1" REBAR PT #8 N=239413.77 E=2107189.94
SECT–7	SOUTHWEST CORNER OF THE NORTHWEST 1/4 OF SECTION 4–T13S–R20E FOUND 1/2" REBAR PT #7 N=236884.19 E=2107262.84
SECT–26	SOUTHWEST CORNER OF SECTION 4–T13S–R20E FOUND ALUMINUM CAP PT #26 N=234237.01 E=2107339.41
SECT–4	SOUTHWEST CORNER OF THE SOUTHEAST 1/4 OF SECTION 4–T13S–R20E FOUND ALUMINUM CAP PT #4 N=234288.89 E=2110019.26
SECT–2	SOUTHEAST CORNER OF THE NORTHEAST 1/4 OF SECTION 4–T13S–R20E FOUND 1/2" REBAR PT #2 N=237009.66 E=2112605.94
SECT–20	CENTER CORNER OF SECTION 4–T13S–R20E FOUND 5/8" REBAR W/CAP CLS 110 PT #20 N=236947.14 E=2109929.14
SECT–3	SOUTHEAST CORNER OF SECTION 4–T13S–R20E FOUND 5/8" REBAR PT #3 N=234340.60 E=2112715.07
SECT–5	SOUTHWEST CORNER OF THE SOUTHEAST 1/4 OF SECTION 5–T13S–R20E FOUND 5/8" REBAR PT #5 N=234139.42 E=2104712.34
SECT–6	NORTHWEST CORNER OF THE SOUTHEAST 1/4 OF SECTION 5–T13S–R20E FOUND 5/8" REBAR PT #6 N=236790.20 E=2104622.69
SITE BM	SQUARE CUT ⊕ CENTER OF MANHOLE N=234111.27 E=2107298.01 ELEV.=890.80 PT #1045

PROJECT CONTROL ALIGNMENT DATA TABLES

FARMLAND ROADS PROJECT
STREET, STORM SEWER, & WATERLINE IMPROVEMENTS
LAWRENCE, KANSAS

#	DESCRIPTION	DATE	BY

BARTLETT & WEST
544 COLUMBIA - LAWRENCE,KS 66049
PHONE 785.749.4474 FAX 785.749.3961
WWW.BARTWEST.COM

DESIGNED BY:	JDM
DRAWN BY:	JDM
APPROVED BY:	BTA
DESIGN PROJ:	17586.004
CITY PROJ:	PW 1224
SCALE:	AS NOTED
DATE:	DEC. 2012
DRAWING NO:	3
SHEET NO:	3 of169

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Drawing Name: w:\Proj\17000\17586\17586.004\AutoCad\Farmland roads plan set\17586.004C_General.dwg Layout Name: CONTROL Plotted By: JDM03688 Plotted on: 12/14/2012 4:34:22 PM
Last edit on: 00/00/00

Memorandum
City of Lawrence – Douglas County
Planning & Development Services

TO: **Lawrence-Douglas County Metropolitan Planning Commission**

FROM: **Mary Miller, Planner**

CC: **Scott McCullough, Director of Planning and Development Services**
Sheila Stogsdill, Assistant Director of Planning

Date: **For January 30, 2013 meeting**

RE: **ITEM NO. 8 CONDITIONAL USE PERMIT FOR PENNY SAND PIT; N 1500 RD & E 1850 RD (MKM)**

CUP-12-00099: Consider a Conditional Use Permit for sand excavation and extraction for Penny Sand Pit, approximately 434 acres located on the NE Corner of N 1500 Road & E 1850 Road. Submitted by Landplan Engineering, for William Penny & Van LLC, property owners of record. *Joint meeting with Eudora Planning Commission. (The Planning Commission voted at their October meeting to forward the CUP to the County Commission. The CUP application is being returned to Planning Commission for a new public hearing after identification of error in mailed public notice for the October meeting.)*

The recommended conditions included with this memo have been revised based on discussions with the applicant and the City of Eudora representatives. New language is shown in ***bold print*** *and deleted text is ~~struckthrough~~. The date in the heading has been revised to 2013. The changes made are intended to provide clarity to the condition.*

Attachments:
Attachment A— Original Planning Commission staff report
Attachment B— Independent Consultant (Conestoga Rovers & Associates) report
Attachment C— CUP plans
Attachment D-- Communications and previous Planning Commission minutes

Background:
- The Conditional Use Permit (CUP) application was considered at a joint Lawrence-Douglas County and Eudora Planning Commission meeting on October 22, 2012 and was forwarded to the County Commission with the following recommendations:

The Lawrence-Douglas County Metropolitan Planning Commission voted 4 to 3 to forward the CUP application to the County Commission with a recommendation for approval subject to certain conditions of approval.

The Eudora Planning Commission voted 4 to 1 to forward the CUP application to the County Commission with a recommendation that the item be deferred to allow time for studies be conducted to obtain additional data related to the groundwater issues.

- The County Commission considered the CUP application at their November 28, 2012 meeting and voted unanimously to defer action to the January 2, 2013 meeting. The Commission directed the County Engineer to contract with an independent consulting firm to review the various reports which have been supplied by hydrology and water resource experts on the sand pits potential to impact the groundwater.

- Prior to the January 2, 2013 County Commission meeting, a technical error in public notification was identified which required the application to be returned to the Planning Commission for a new hearing. The 1000 ft notification area extended into Leavenworth County and the Leavenworth residents were not notified. (Figure 1) As a result the item was removed from the January 2nd County Commission agenda and returned to the Planning Commission following re-notification.

- In the interim, the independent consultant completed their review of the various reports and information that had been provided with the CUP application and communications.

Staff Discussion:

The original staff report is included with this memo as Attachment A. The independent consultant's report is included as Attachment B. The independent consultant's review stated the following:

"In summary, our review does not indicate that there are any major problems or concerns with regard to the proposed operation; however, we have several recommendations for further assessment to confirm this position and implement precautionary measures and best management practices for the operation (presuming they are not already addressed). We further recommend that the proponent be responsible for the implementation of these measures subject to review/approval by a competent professional – either a public agency representative or a third-party consultant." (Page 1, Conestoga-Rovers and Associates December 20, 2012 letter report to Keith Browning)

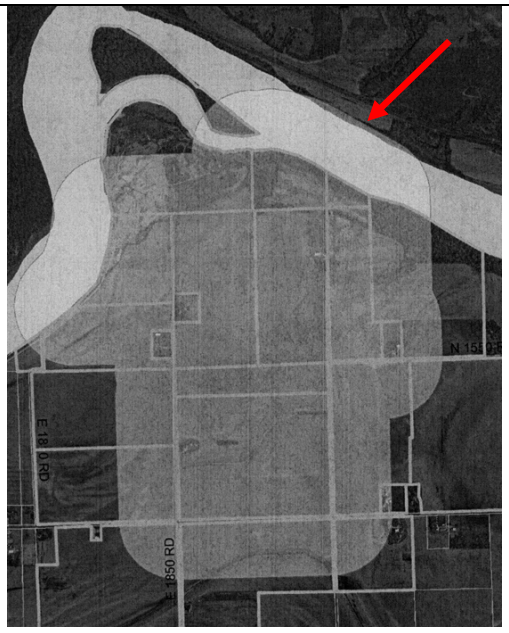

Figure 1. Notification area. Arrow marks the area north of the KS River in Leavenworth County.

Staff prepared a set of conditions based on the consultant's recommendations. These are listed below, followed by a complete set of recommended conditions. Staff has discussed the option of having the County contract with the independent consultant for the studies necessary for the pre-dredging report with the provision that the applicant would reimburse the County for any monies spent and/or pay the 3rd party consultant when the report is complete. The Conditional Use Permit and the pre-dredging report would be placed back on the County Commission agenda for consideration. At that time, any additional measures determined to be necessary from the pre-dredging report by the County Engineer would be considered. The conditions of the CUP could be revised if necessary, based on the information provided in the pre-dredging report. The County Commission will consider this option when the CUP is forwarded to them for consideration; however, staff wanted the Planning Commission to know that this is being discussed.

Conditions related to the Conestoga-Rovers & Associates Report:

Conditions 1 to 8 are based on recommendations from Conestoga-Rovers and Associates. These conditions are divided into 2 groups: those which must be completed before the conditional use is released to the Douglas County Zoning and Codes Department for a permit and those which are ongoing measures and best management practices for the sand dredging operation.

Conditions which must be met prior to the release of the Conditional Use to the Zoning and Codes Department for permit:

The following actions must be taken prior to the release of the Conditional Use to the Zoning and Codes Department for the Conditional Use Permit. (*Staff recommends that an independent consulting firm be retained to complete Conditions 1 through 5 and submit a pre-dredging report. Staff recommends the independent consulting firm work directly for the County, as opposed to the applicant. If this avenue is taken the County would pay the consultant's fee following the execution of an agreement between the applicant and the County Commission which specifies that the applicant for the CUP would reimburse the County Commission for the expense following completion of the pre-dredging report which is accepted by the County Engineer. This decision would be made by the County Commission during their consideration of the Conditional Use Permit.)*

1. A pre-dredging report shall be provided to the County Engineer for review and to the Planning Office for the CUP file. The CUP will be placed back on the County Commission's agenda for discussion of the results of the pre-dredging report and any recommendations provided by the 3rd party consultant. The County Commission may revise the conditions of the CUP based on the results of this report. The pre-dredging report shall:

    a. Determine the potential zone of influence through the following steps:

        i. Take field measurements to determine the current groundwater table and flow direction.

ii. Determine the anticipated maximum dewatering influence from maximum rate of sand and water extraction, evaporation, and any other water consumption. The information provided should include the proposed rate of sand and water extraction or taking from the pond while recognizing the recycling of water. (Page 5 of the consultant's report explains that this assessment could be completed based on existing information.)

iii. The results and an exhibit of the potential zone of influence shall be included with the pre-dredging report.

b. Confirm existing groundwater and/or soil quality to ensure there is no significant contamination from existing site area and operations, including an initial environmental site assessment (ESA) of potential sources and existence of contamination (if an ESA has not already been conducted) through the following:

i. Installation and sampling of groundwater wells in down-gradient area in locations approved by the County Engineer.

ii. Soil assessment to determine suitability of soils for placement below water with reclamation.

iii. The results shall be included in the pre-dredging report.

The County Engineer will determine if further investigation and remedial actions are necessary based on the results. Should potential contaminant sources be identified during the ESA process, the test pits shall be installed and additional soil testing shall be conducted per the County Engineer's recommendation.

c. Establish baseline water quality and quantity conditions within potential zone of influence through a private water well survey of both up-gradient and down-gradient wells. Such survey is subject to landowner access permission. This information shall be included in the pre-dredging report.

d. Determine the location **and number** of groundwater monitoring wells **to be installed by the applicant.** ~~on the south and east sides of the site~~. The location of these wells must approved by the County Engineer and an exhibit showing their location included in the pre-dredging report.

2. The applicant shall prepare and submit a fuel/chemical handling and spill response plan for the County Engineer's approval.

Ongoing conditions – Best Management Practices and Precautionary Measures:
(these conditions are to be listed on the CUP plan)

3. Document the sand production levels and effective water consumption on an annual basis to aid in interpretation of monitoring data. Provide an annual report to the Zoning and Codes Department.

4. Monitor groundwater levels in adjacent private water supply wells **(subject to property owner's permission)** within the potential zone of influence on a quarterly basis. This information shall be provided to the Zoning and Codes Department in a quarterly report.

5. Monitoring of groundwater levels in monitoring wells ~~on south and east sides of site~~ on a quarterly basis. (In early years, monitoring while extraction is occurring in the NW part of the site will help confirm the zone of influence.) This information shall be provided to the Zoning and Codes Department in a quarterly report.

    a. If any changes are determined in the potential zone of influence, adjustments will be made to the monitoring wells as deemed necessary by the County Engineer.

6. Install berms along the perimeter of the pit to prevent runoff from entering the pit.

7. The Zoning and Codes Department shall be notified if any fill import is proposed throughout the operation of the pit. Any fill import must be sampled and analyzed for chemical suitability and the results provided to the Zoning and Codes Department for approval prior to installation.

8. Remediate/report any spills in accordance with the fuel/chemical handling and response plan.

Conditions as revised by the Lawrence-Douglas County metropolitan Planning Commission on October 22, 2012:

9. The approval is contingent upon the issuance of all State and/or Federal permits which are required for this operation.

10. An agreement designating responsibility for the ongoing maintenance of the berms to the property owner shall be executed and recorded with the Register of Deeds prior to the release of the CUP plans to the Zoning and Codes Office. A copy of the agreement shall be provided to the Planning Office for the file.

11. A copy of the easement for the off-site access drive shall be provided to the Planning Office for the file prior to the release of the CUP plans to the Zoning and Codes Office.

12. The applicant shall obtain a Flood Plain Development Permit from the Director of Zoning and Codes prior to the release of the CUP plans.

13. The reclamation plan shall be revised with the following changes prior to release of the CUP plans:

    a. The plan shall note the requirement that the lake that is being created will have a varied shoreline and will appear natural in appearance.

b. The plan shall note that the intended use of the lake, when mining and reclamation is complete, is to be a recreational feature.

c. The plan shall note the maximum slope of the lake shoreline for a specified depth to insure that the slopes are of a grade that it would be possible for a person or animal that accidentally entered the lake to exit.

d. The plan shall explain the sequential nature of the reclamation process; that overburden produced in one phase will be used to reclaim previously excavated areas.

e. The reclamation plan shall note that topsoil will be placed over the overburden in areas that are to be reclaimed as farmland, shoreline, or berms. If topsoil is to be stockpiled and stored it must be vegetated to prevent erosion.

14. The applicant shall submit a revised CUP plan with the following changes:

a. A detailed landscaping plan for the buffer area surrounding the McElwee house will be submitted.

b. The Book and Page number of the recorded easement for the off-site access road shall be noted on the CUP plan.

c. The ownership shall be noted as Van, LLC as well as Penny's Concrete Inc. on the CUP plan.

d. The on-site residential structure on the east side of the property will be shown on the CUP plan as on the reclamation plan.

e. If stockpiling of overburden is to occur on the subject property, the CUP or operation plan should note the maximum height and approximate location. The stockpiles should be placed as far from the existing residences as possible.

f. List the following CUP conditions on the plan:

i. Hours of operation are 6:30 AM to 6:30 PM, Monday through Friday. No removal, transfer, or placement of overburden is permitted outside these operating hours; however dredging and extraction of sand may exceed these hours when necessary.

ii. The approval for this Conditional Use is valid for 30 years. An extension request for the CUP must be submitted prior to the expiration date or a new CUP application must be submitted. The Zoning and Codes office shall conduct 5 year administrative reviews to insure compliance with the CUP, operation, and reclamation plans.

iii. Only exterior lighting in the areas to be excavated will be the dredge lighting as required by the U.S. Coast Guard

iv. The scale house, processing plant, sediment pond, and stockpile area, approved with CUP-2-2-79, will be used to serve the subject property.

v. Sales of overburden, topsoil, sand or aggregate products will occur only on the portion of the property that contains the scale house on the CUP plan.

vi. Truck traffic will utilize Noria Road (E 1750 Road), and is restricted from using N 1500 Road or E 1850 Road.

vii. The applicant shall work with the Army Corps of Engineers to determine how the existing wetlands on the property will be treated. Prior to any

excavation in Phase 21, the applicant will provide documentation to the Planning Office on the wetlands indicating whether the wetlands will be maintained on site or if they will be mitigated elsewhere. If the wetlands will be maintained on site, the operation plan will be revised to include the protection measures and the property owner shall submit a revised CUP plan for administrative review/approval of the wetland setbacks. If the wetlands are to be mitigated, a revised CUP plan shall be submitted to note the removal of the wetlands.

15. The following improvements to nearby roads and intersections shall be completed per the County Engineer's approval before issuance of a permit for the Conditional Use :
    a. Realignment of the entrance to the sand facility so that it opposes the Noria Road intersection at N 1500 Road.
    b. Pavement of a 100 ft long section of the site access drive just north of N 1500 Road, as recommended in the TIS.
    c. Reconstruction of pavement in the Noria Road (E 1750 Road)/N 1500 Road intersection. The existing surfacing is likely a crushed rock base that has been chip sealed. This will not stand up to the increased truck traffic crossing N 1500 Road.
    d. Construction of an eastbound right turn lane on Route 442 (N 1400 Road) at Route 1057 (E 1900 Road). This is mentioned as a desirable improvement in the TIS. Pavement on the existing shoulder at this location is not adequate for the projected amount of truck traffic.

16. The applicant **shall** install ~~3 observations wells and one control well~~ **monitoring wells as recommended by Conestoga Rovers and Associates in the pre-dredging report**. **These wells shall be installed prior to the release of the Conditional Use Permit.** The City of Eudora shall be allowed to monitor those wells on an ongoing basis.

(*The following condition was recommended by staff following discussions with KDOT.)*

17. Dredging on the subject property shall not occur concurrently with dredging on the property to the north as approved with CUP-2-2-79.

Memorandum
City of Lawrence
Planning & Development Services

TO: **Lawrence-Douglas County Metropolitan Planning Commission**

FROM: **Mary Miller, Planner**

CC: **Scott McCullough, Director of Planning and Development Services**
Sheila Stogsdill, Assistant Director of Planning

Date: **For January 30, 2012 meeting**

RE: **ITEM NO. 8 CONDITIONAL USE PERMIT FOR PENNY SAND PIT; N 1500 RD & E 1850 RD (MKM)**

CUP-12-00099: Consider a Conditional Use Permit for sand excavation and extraction for Penny Sand Pit, approximately 434 acres located on the NE Corner of N 1500 Road & E 1850 Road. Submitted by Landplan Engineering, for William Penny & Van LLC, property owners of record. *Joint meeting with Eudora Planning Commission. (The Planning Commission voted at their October meeting to forward the CUP to the County Commission. The CUP application is being returned to Planning Commission for a new public hearing after identification of error in mailed public notice for the October meeting.)*

Attachments:
Attachment A— Original Planning Commission staff report
Attachment B— Independent Consultant (Conestoga Rovers & Associates) report
Attachment C— CUP plans
Attachment D-- Communications and previous Planning Commission minutes

Background:
- The Conditional Use Permit (CUP) application was considered at a joint Lawrence-Douglas County and Eudora Planning Commission meeting on October 22, 2012 and was forwarded to the County Commission with the following recommendations:

  The Lawrence-Douglas County Metropolitan Planning Commission voted 4 to 3 to forward the CUP application to the County Commission with a recommendation for approval subject to certain conditions of approval.

  The Eudora Planning Commission voted 4 to 1 to forward the CUP application to the County Commission with a recommendation that the item be deferred to allow time for studies be conducted to obtain additional data related to the groundwater issues.

- The County Commission considered the CUP application at their November 28, 2012 meeting and voted unanimously to defer action to the January 2, 2013 meeting. The Commission directed the County Engineer to contract with an independent consulting firm to review the various reports which have been supplied by hydrology and water resource experts on the sand pits potential to impact the groundwater.

- Prior to the January 2, 2013 County Commission meeting, a technical error in public notification was identified which required the application to be returned to the Planning Commission for a new hearing. The 1000 ft notification area extended into Leavenworth County and the Leavenworth residents were not notified. (Figure 1) As a result the item was removed from the January 2nd County Commission agenda and returned to the Planning Commission following re-notification.

- In the interim, the independent consultant completed their review of the various reports and information that had been provided with the CUP application and communications.

Staff Discussion:

The original staff report is included with this memo as Attachment A. The independent consultant's report is included as Attachment B. The independent consultant's review stated the following:

> *"In summary, our review does not indicate that there are any major problems or concerns with regard to the proposed operation; however, we have several recommendations for further assessment to confirm this position and implement precautionary measures and best management practices for the operation (presuming they are not already addressed). We further recommend that the proponent be responsible for the implementation of these measures subject to review/approval by a competent professional – either a public agency representative or a third-party consultant."* (Page 1, Conestoga-Rovers and Associates December 20, 2012 letter report to Keith Browning)

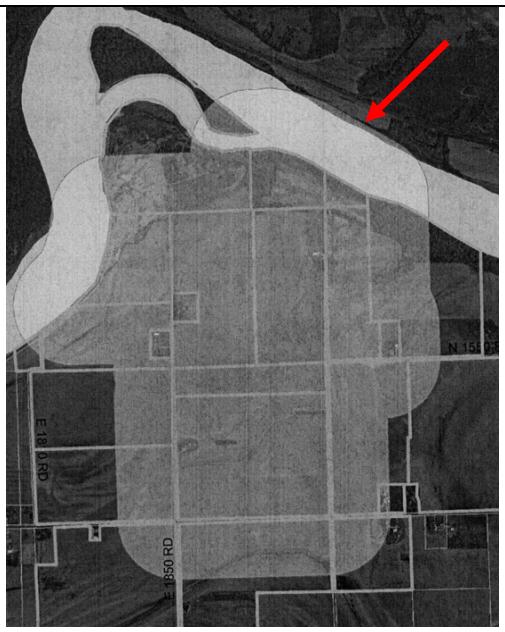

Figure 1. Notification area. Arrow marks the area north of the KS River in Leavenworth County.

Staff prepared a set of conditions based on the consultant's recommendations. These are listed below, followed by a complete set of recommended conditions. Staff has discussed the option of having the County contract with the independent consultant for the studies necessary for the pre-dredging report with the provision that the applicant would reimburse the County for any monies spent and/or pay the 3rd party consultant when the report is complete. The Conditional Use Permit and the pre-dredging report would be placed back on the County Commission agenda for consideration. At that time, any additional measures determined to be necessary from the pre-dredging report by the County Engineer would be considered. The conditions of the CUP could be revised if necessary, based on the

information provided in the pre-dredging report. The County Commission will consider this option when the CUP is forwarded to them for consideration; however, staff wanted the Planning Commission to know that this is being discussed.

Conditions related to the Conestoga-Rovers & Associates Report:

Conditions 1 to 8 are based on recommendations from Conestoga-Rovers and Associates. These conditions are divided into 2 groups: those which must be completed before the conditional use is released to the Douglas County Zoning and Codes Department for a permit and those which are ongoing measures and best management practices for the sand dredging operation.

Conditions which must be met prior to the release of the Conditional Use to the Zoning and Codes Department for permit:

The following actions must be taken prior to the release of the Conditional Use to the Zoning and Codes Department for the Conditional Use Permit. (*Staff recommends that an independent consulting firm be retained to complete Conditions 1 through 5 and submit a pre-dredging report. Staff recommends the independent consulting firm work directly for the County, as opposed to the applicant. If this avenue is taken the County would pay the consultant's fee following the execution of an agreement between the applicant and the County Commission which specifies that the applicant for the CUP would reimburse the County Commission for the expense following completion of the pre-dredging report which is accepted by the County Engineer. This decision would be made by the County Commission during their consideration of the Conditional Use Permit.)*

1. A pre-dredging report shall be provided to the County Engineer for review and to the Planning Office for the CUP file. The CUP will be placed back on the County Commission's agenda for discussion of the results of the pre-dredging report and any recommendations provided by the 3rd party consultant. The County Commission may revise the conditions of the CUP based on the results of this report. The pre-dredging report shall:

    a. Determine the potential zone of influence through the following steps:

        i. Take field measurements to determine the current groundwater table and flow direction.

        ii. Determine the anticipated maximum dewatering influence from maximum rate of sand and water extraction, evaporation, and any other water consumption. The information provided should include the proposed rate of sand and water extraction or taking from the pond while recognizing the recycling of water. (Page 5 of the consultant's report explains that this assessment could be completed based on existing information.)

        iii. The results and an exhibit of the potential zone of influence shall be included with the pre-dredging report.

b. Confirm existing groundwater and/or soil quality to ensure there is no significant contamination from existing site area and operations, including an initial environmental site assessment (ESA) of potential sources and existence of contamination (if an ESA has not already been conducted) through the following:

   i. Installation and sampling of groundwater wells in down-gradient area in locations approved by the County Engineer.

   ii. Soil assessment to determine suitability of soils for placement below water with reclamation.

   iii. The results shall be included in the pre-dredging report.

   The County Engineer will determine if further investigation and remedial actions are necessary based on the results. Should potential contaminant sources be identified during the ESA process, the test pits shall be installed and additional soil testing shall be conducted per the County Engineer's recommendation.

c. Establish baseline water quality and quantity conditions within potential zone of influence through a private water well survey of both up-gradient and down-gradient wells. Such survey is subject to landowner access permission. This information shall be included in the pre-dredging report.

d. Determine the location of groundwater monitoring wells on the south and east sides of the site. The location of these wells must approved by the County Engineer and an exhibit showing their location included in the pre-dredging report.

2. The applicant shall prepare and submit a fuel/chemical handling and spill response plan for the County Engineer's approval.

Ongoing conditions – Best Management Practices and Precautionary Measures:
(these conditions are to be listed on the CUP plan)

3. Document the sand production levels and effective water consumption on an annual basis to aid in interpretation of monitoring data. Provide an annual report to the Zoning and Codes Department.

4. Monitor groundwater levels in adjacent private water supply wells within the potential zone of influence on a quarterly basis. This information shall be provided to the Zoning and Codes Department in a quarterly report.

5. Monitoring of groundwater levels in monitoring wells on south and east sides of site on a quarterly basis. (In early years, monitoring while extraction is occurring in the

NW part of the site will help confirm the zone of influence.) This information shall be provided to the Zoning and Codes Department in a quarterly report.

a. If any changes are determined in the potential zone of influence, adjustments will be made to the monitoring wells as deemed necessary by the County Engineer.

6. Install berms along the perimeter of the pit to prevent runoff from entering the pit.

7. The Zoning and Codes Department shall be notified if any fill import is proposed throughout the operation of the pit. Any fill import must be sampled and analyzed for chemical suitability and the results provided to the Zoning and Codes Department for approval prior to installation.

8. Remediate/report any spills in accordance with the fuel/chemical handling and response plan.

Conditions as revised by the Lawrence-Douglas County metropolitan Planning Commission on October 22, 2012:

9. The approval is contingent upon the issuance of all State and/or Federal permits which are required for this operation.

10. An agreement designating responsibility for the ongoing maintenance of the berms to the property owner shall be executed and recorded with the Register of Deeds prior to the release of the CUP plans to the Zoning and Codes Office. A copy of the agreement shall be provided to the Planning Office for the file.

11. A copy of the easement for the off-site access drive shall be provided to the Planning Office for the file prior to the release of the CUP plans to the Zoning and Codes Office.

12. The applicant shall obtain a Flood Plain Development Permit from the Director of Zoning and Codes prior to the release of the CUP plans.

13. The reclamation plan shall be revised with the following changes prior to release of the CUP plans:
    a. The plan shall note the requirement that the lake that is being created will have a varied shoreline and will appear natural in appearance.
    b. The plan shall note that the intended use of the lake, when mining and reclamation is complete, is to be a recreational feature.
    c. The plan shall note the maximum slope of the lake shoreline for a specified depth to insure that the slopes are of a grade that it would be possible for a person or animal that accidentally entered the lake to exit.
    d. The plan shall explain the sequential nature of the reclamation process; that overburden produced in one phase will be used to reclaim previously excavated areas.

e. The reclamation plan shall note that topsoil will be placed over the overburden in areas that are to be reclaimed as farmland, shoreline, or berms. If topsoil is to be stockpiled and stored it must be vegetated to prevent erosion.

14. The applicant shall submit a revised CUP plan with the following changes:
    a. A detailed landscaping plan for the buffer area surrounding the McElwee house will be submitted.
    b. The Book and Page number of the recorded easement for the off-site access road shall be noted on the CUP plan.
    c. The ownership shall be noted as Van, LLC as well as Penny's Concrete Inc. on the CUP plan.
    d. The on-site residential structure on the east side of the property will be shown on the CUP plan as on the reclamation plan.
    e. If stockpiling of overburden is to occur on the subject property, the CUP or operation plan should note the maximum height and approximate location. The stockpiles should be placed as far from the existing residences as possible.
    f. List the following CUP conditions on the plan:
        i. Hours of operation are 6:30 AM to 6:30 PM, Monday through Friday. No removal, transfer, or placement of overburden is permitted outside these operating hours; however dredging and extraction of sand may exceed these hours when necessary.
        ii. The approval for this Conditional Use is valid for 30 years. An extension request for the CUP must be submitted prior to the expiration date or a new CUP application must be submitted. The Zoning and Codes office shall conduct 5 year administrative reviews to insure compliance with the CUP, operation, and reclamation plans.
        iii. Only exterior lighting in the areas to be excavated will be the dredge lighting as required by the U.S. Coast Guard
        iv. The scale house, processing plant, sediment pond, and stockpile area, approved with CUP-2-2-79, will be used to serve the subject property.
        v. Sales of overburden, topsoil, sand or aggregate products will occur only on the portion of the property that contains the scale house on the CUP plan.
        vi. Truck traffic will utilize Noria Road (E 1750 Road), and is restricted from using N 1500 Road or E 1850 Road.
        vii. The applicant shall work with the Army Corps of Engineers to determine how the existing wetlands on the property will be treated. Prior to any excavation in Phase 21, the applicant will provide documentation to the Planning Office on the wetlands indicating whether the wetlands will be maintained on site or if they will be mitigated elsewhere. If the wetlands will be maintained on site, the operation plan will be revised to include the protection measures and the property owner shall submit a revised CUP plan for administrative review/approval of the wetland setbacks. If the wetlands are to be mitigated, a revised CUP plan shall be submitted to note the removal of the wetlands.

15. The following improvements to nearby roads and intersections shall be completed per the County Engineer's approval before issuance of a permit for the Conditional Use :
    a. Realignment of the entrance to the sand facility so that it opposes the Noria Road intersection at N 1500 Road.
    b. Pavement of a 100 ft long section of the site access drive just north of N 1500 Road, as recommended in the TIS.
    c. Reconstruction of pavement in the Noria Road (E 1750 Road)/N 1500 Road intersection. The existing surfacing is likely a crushed rock base that has been chip sealed. This will not stand up to the increased truck traffic crossing N 1500 Road.
    d. Construction of an eastbound right turn lane on Route 442 (N 1400 Road) at Route 1057 (E 1900 Road). This is mentioned as a desirable improvement in the TIS. Pavement on the existing shoulder at this location is not adequate for the projected amount of truck traffic.

16. The applicant install 3 observations wells and one control well. The City of Eudora shall be allowed to monitor those wells on an ongoing basis.

(*The following condition was recommended by staff following discussions with KDOT.)*

17. Dredging on the subject property shall not occur concurrently with dredging on the property to the north as approved with CUP-2-2-79.

PLANNING COMMISSION REPORT
Regular Agenda
Joint Meeting with Eudora Planning Commission

PC Staff Report
09/24/12 (Corrected)

ITEM NO. 1: CONDITIONAL USE PERMIT FOR PENNY SAND PIT; N 1500 RD & E 1850 RD (MKM)

CUP-12-00099: Consider a Conditional Use Permit for sand excavation and extraction for Penny Sand Pit, approximately 434 acres located on the NE Corner of N 1500 Road & E 1850 Road. Submitted by Landplan Engineering, for William Penny & Van LLC, property owners of record. *Joint meeting with Eudora Planning Commission.*

STAFF RECOMMENDATION: Staff recommends approval of the Conditional Use Permit for Penny Sand Pit and forwarding it to the Board of County Commissioners with a recommendation for approval based on the findings of fact found in the body of the staff report subject to the following conditions:

1) The approval is contingent upon the issuance of all State and/or Federal permits which are required for this operation including the Army Corps of Engineers.
2) An agreement designating responsibility for the ongoing maintenance of the berms to the property owner shall be executed and recorded with the Register of Deeds prior to the release of the CUP plans to the Zoning and Codes Office. A copy of the agreement shall be provided to the Planning Office for the file.
3) A copy of the easement for the off-site access drive shall be provided to the Planning Office for the file prior to the release of the CUP plans to the Zoning and Codes Office.
4) The applicant shall obtain a Flood Plain Development Permit from the Director of Zoning and Codes prior to the release of the CUP plans.
5) The reclamation plan shall be revised with the following changes prior to release of the CUP plans:
   a. The plan shall note the requirement that the lake that is being created will have a varied shoreline and will appear natural in appearance.
   b. The plan shall note that the intended use of the lake, when mining and reclamation is complete, is to be a recreational feature.
   c. The plan shall note the maximum slope of the lake shoreline for a specified depth to insure that the slopes are of a grade that it would be possible for a person or animal that accidentally entered the lake to exit.
   d. The plan shall explain the sequential nature of the reclamation process; that overburden produced in one phase will be used to reclaim previously excavated areas.
   e. The reclamation plan shall note that topsoil will be placed over the overburden in areas that are to be reclaimed as farmland, shoreline, or berms. If topsoil is to be stockpiled and stored it must be vegetated to prevent erosion.
6) The applicant shall submit a revised CUP plan with the following changes:
   a) A detailed landscaping plan for the buffer area surrounding the McElwee house will be submitted.

b) The Book and Page number of the recorded easement for the off-site access road shall be noted on the CUP plan.

c) The ownership shall be noted as Van, LLC as well as Penny's Concrete Inc. on the CUP plan.

d) The on-site residential structure on the east side of the property will be shown on the CUP plan as on the reclamation plan.

e) If stockpiling of overburden is to occur on the subject property, the CUP or operation plan should note the maximum height and approximate location. The stockpiles should be placed as far from the existing residences as possible.

f) List the following CUP conditions on the plan:

i. Hours of operation are 6:30 AM to 6:30 PM, Monday through Friday. No removal, transfer, or placement of overburden is permitted outside these operating hours; however dredging and extraction of sand may exceed these hours when necessary.

ii. The approval for this Conditional Use is valid for 30 years. An extension request for the CUP must be submitted prior to the expiration date or a new CUP application must be submitted. The Zoning and Codes office shall conduct 5 year administrative reviews to insure compliance with the CUP, operation, and reclamation plans.

iii. The only exterior lighting in the areas to be excavated will be the headlights on the dredge.

iv. The scale house, processing plant, sediment pond, and stockpile area, approved with CUP-2-2-79, will be used to serve the subject property.

v. Sales of overburden, topsoil, sand or aggregate products will occur only on the portion of the property that contains the scale house on the CUP plan.

vi. Truck traffic will utilize Noria Road (E 1750 Road), and is restricted from using N 1500 Road or E 1850 Road.

vii. The applicant shall work with the Army Corps of Engineers to determine how the existing wetlands on the property will be treated. Prior to any excavation in Phase 21, the applicant will provide documentation to the Planning Office on the wetlands indicating whether the wetlands will be maintained on site or if they will be mitigated elsewhere. If the wetlands will be maintained on site, the operation plan will be revised to include the protection measures and the property owner shall submit a revised CUP plan for administrative review/approval of the wetland setbacks. If the wetlands are to be mitigated, a revised CUP plan shall be submitted to note the removal of the wetlands.

7) The following improvements to nearby roads and intersections shall be completed per the County Engineer's approval before issuance of a permit for the Conditional Use :

a. Realignment of the entrance to the sand facility so that it opposes the Noria Road intersection at N 1500 Road.

b. Pavement of a 100 ft long section of the site access drive just north of N 1500 Road, as recommended in the TIS.

c. Reconstruction of pavement in the Noria Road (E 1750 Road)/N 1500 Road intersection. The existing surfacing is likely a crushed rock base that has been chip sealed. This will not stand up to the increased truck traffic crossing N 1500 Road.

d. Construction of an eastbound right turn lane on Route 442 (N 1400 Road) at Route 1057 (E 1900 Road). This is mentioned as a desirable improvement in the TIS. Pavement on the existing shoulder at this location is not adequate for the projected amount of truck traffic.

Reason for Request: *"The owner wishes to conduct sand excavation, extraction and processing operations on the subject property in conjunction with the existing agricultural uses."*

KEY POINTS

- Per Section 12-319-4.11 of the Zoning Regulations for the Unincorporated Territory of Douglas County, mining and excavation uses are permitted in the A and V-C Districts when approved as a Conditional Use.
- The area is encumbered with floodplain including the regulatory floodway and floodway fringe of the Kansas River.
- Previous Conditional Use Permits were approved for the river dredging operation to the north and northwest of the subject property. The Conditional Use Permits are not being combined with this request; however, the processing plant and access drive on the property with the previous Conditional Use Permits will be utilized. These previous Conditional Use Permits are discussed in more detail later in the report.

ATTACHMENTS

A – Public Communications received prior to printing of this staff report.
B – Traffic Impact Study and Addendum
C – Plans
D – Ground Water Report

DESCRIPTION OF USE

The applicant is requesting a Conditional Use Permit to allow pit dredging on the subject property. The applicant has an existing Conditional Use Permit for river dredging in the property along the river, north of the subject property [CUP-2-2-79] and a CUP was approved for river dredging on the property to the west owned by David and Carmiletta Penny. The applicant has been operating the two river dredging operations and intends to utilize the access drive which was constructed for the river dredging facilities. The intent is also to use the same processing plant, currently located in the middle of the existing stockpiles; however, it will be moved to the subject property in the location marked on the CUP plan after the first few phases. The reclamation plan indicates that portions of the property will be reclaimed for agricultural uses and the remainder will be reclaimed as a lake.

ASSOCIATED CASES/OTHER ACTION REQUIRED

- Approval of Conditional Use Permit by Board of County Commissioners.
- Conditional Use Permit Plan released to the Zoning and Codes Office.
- Issuance of permit for the Conditional Use by the Zoning and Codes Office following application and determination that all conditions have been met.

PUBLIC COMMENT RECEIVED PRIOR TO PRINTING

- August 9th phone call from Carl McElwee, adjacent property owner listing the following concerns with the project: 1) unstability of the river bank, 2) possible pollution of the aquifer, and 3) loss of prime agricultural soils.
- Staff met with Carl McElwee on August 31st to discuss his concerns with the CUP. Mr. McElwee provided a letter and reference material which is included in Attachment A.
- Petition from nearby property owners on September 17th in opposition to the sand pit.
- Letter from David Penny, president of Master's Dredging Company, requesting deferral. This letter is included in Attachment A.
- Letter from Carl McElwee on September 18th in opposition to the deferral request, Attachment A.

GENERAL INFORMATION

Current Zoning and Land Use:	V-C (County- Valley-Channel), F-W (Floodway Overlay) and F-F (Floodway Fringe Overlay) Districts; rural residential and agriculture.
Surrounding Zoning and Land Use:	To the west: V-C (Valley-Channel), and F-W (Floodway Overlay) Districts; rural residential and agriculture. To the north: V-C (Valley-Channel), and F-W (Floodway Overlay) Districts; river dredging operation approved with CUP-2-2-79 and the Kansas River. To the east: V-C (Valley-Channel), F-W (Floodway Overlay) and F-F (Floodway Fringe Overlay) Districts; rural residential and agriculture. To the south: V-C (Valley-Channel), and F-F (Floodway Fringe Overlay) Districts; rural residential and agriculture. (Figure 1)

Site Summary:	
Subject Property:	465 acres
Proposed Buildings:	No new buildings are being proposed.
Off Street Parking Required:	1 space per 2 employees. 4 employees/ 2 spaces are required.
Off Street Parking Provided:	2 spaces provided on property to north, included within CUP-2-2-79.

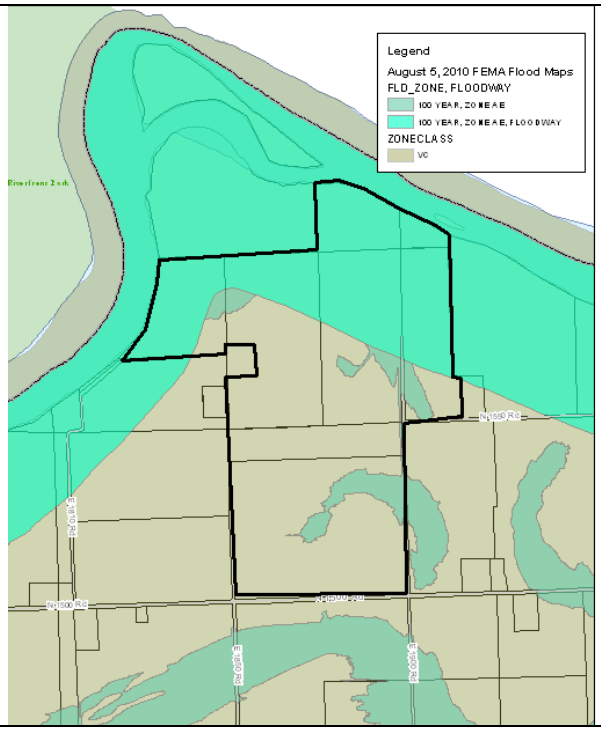

Figure 1a. Zoning in the area.

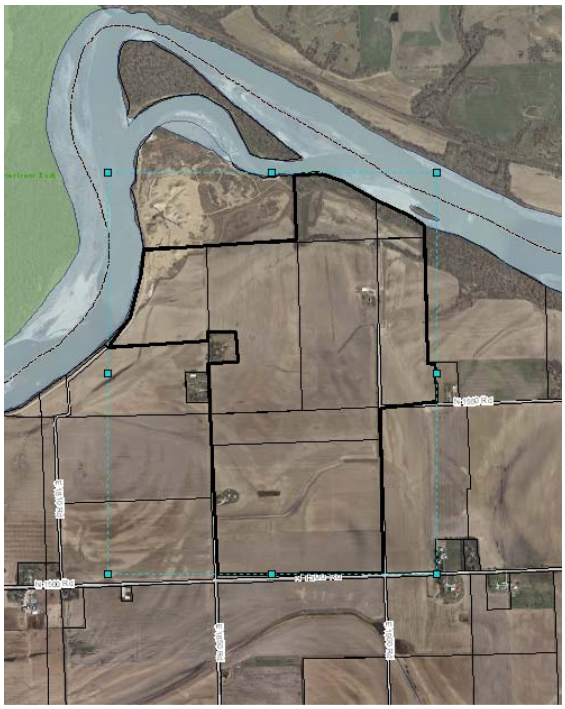

Figure 1b. Land use in the area.

I. ZONING AND USES OF PROPERTY NEARBY

The subject property contains approximately 465 acres and is located northwest of the intersection of N 1500 and E 1900 Roads in portions of Sections 25, 26, 35, and 36 in Township 12 South, Range 20 East.

The nearby area is zoned V-C (Valley Channel), a protective zoning district that was created prior to the construction of Clinton Dam and development of the FEMA Flood Insurance Rate Maps for property which was prone to flooding. The V-C District permits the following limited land uses: agricultural land uses, public or private commercial recreational facilities and structures, open space, and farm dwellings provided a minimum area of 5 acres per dwelling unit is provided. Per Section 12-319-4.05, mining, extraction, and excavation of raw materials in the V-C District require approval of a Conditional Use Permit (CUP) and approval of a reclamation plan. Land uses in the area include rural residences, agricultural land uses, and mining/excavation land uses approved with CUPs. Conditional Use Permits which have been approved in this area for sand dredging are listed below and the areas included are shown in Figure 2.

- A Conditional Use Permit application, CUP-2-2-79, for river dredging was submitted in 1979 for the area north of the subject property. Planning Commission voted to recommend approval at their April 25, 1979 meeting.
- A Conditional Use Permit application, CUP-1-3-91, was submitted in 1991 for approximately 130 acres located to the west of the subject property to permit river dredging along the shore and pit dredging on the remainder. The Planning Commission voted to recommend approval of the river dredging at their March 27, 1991 meeting but voted to recommend denial of the pit operation at their May 22, 1991 meeting. The minutes indicated the vote for denial was based primarily on concerns with the possibility of contamination of ground water and local wells and the possibility of the pit accelerating the changing of the river's course.
- Various extensions were approved for CUP-1-3-91 and a new file number, CUP-3-3-01, was assigned in 2001 for that extension. On December 17, 2001, the County Commission approved a 5 year extension of the CUP through December 31, 2006. CUP-1-3-91 expired as the Corps of Engineer permit was issued after the expiration date of Dec. 31, 2006.
- CUP-06-04-08 was submitted in 2008 to replace the expired CUP-1-3-91. Planning Commission voted to recommend approval at their August meeting. County Commission approved the CUP on September 17, 2008. The CUP will expire December 31, 2012 unless a new Army Corps of Engineers permit is obtained and approved by the Zoning and Codes Director.

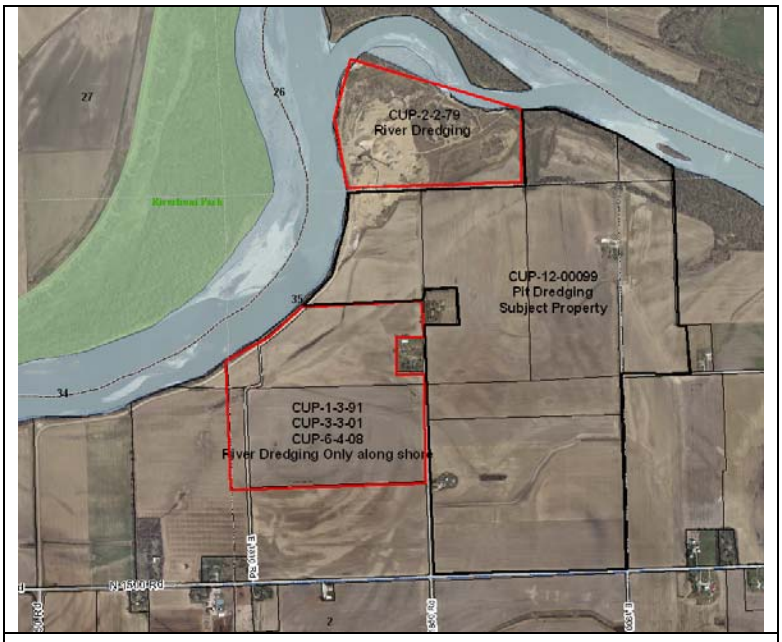

Figure 2. Approximate area included in CUPs for sand dredging in the area. Previously approved CUPs outlined in red, subject property in black.

Staff Finding – The area is zoned V-C (Valley Channel) and portions are encumbered by the Regulatory Floodway and the Regulatory Floodway Fringe. The predominate land uses in the area are agriculture, mining and extraction, and rural residential. The proposed land use, mining and excavation, is permitted in the V-C District and has been approved in the area.

II. CHARACTER OF THE AREA

The subject property is located east of the City of Lawrence and is outside of, and adjacent to, the Urban Growth Area boundary. This is an agricultural area with scattered rural residences. Natural features in the area include the Kansas River, which borders the area to the north and is the dividing line between Douglas and Leavenworth Counties; riparian woodlands along the Kansas River; floodplain; and high quality agricultural soils. The property has good access to the transportation network through N 1500 Road, which is classified as a minor collector on the Major Thoroughfares Map. N 1500 Road connects E 15th Street with County Route 1061 (E 2200 Road), both classified as minor arterials.

Staff Finding – This is predominately an agricultural area with scattered rural residences, floodplain, and natural resources in the form of sand reserves and high quality agricultural soils. N 1500 Road, a minor collector, provides a connection through the area to minor arterials to the east and west.

III. SUITABILITY OF SUBJECT PROPERTY FOR THE USES TO WHICH IT HAS BEEN RESTRICTED

Applicant's response:

> *"A Conditional Use Permit (CUP) was granted to Dunbar in 1979 for removal of sand from the river bank. The original permit covered an area approximately 114 acres gross in size which is approximately located in the northwest corner of the CUP request. The mining is a use that is allowed in V-C (Valley Channel)."*

Existing Uses

Uses allowed in the V-C District include farms, truck gardens, orchards, nurseries, grazing, hunting and fishing, public or private commercial recreation facilities and structures, preserves, reservations and other similar open uses, and farm residences when located on a minimum of 5 acres. Mining and excavation activities are permitted as a Conditional Use. A Conditional Use requires approval though a public review process. Section 12-319 of the County Zoning Regulations states:

> *"Recognizing that certain uses may be desirable when located in the community, but that these uses may be incompatible with other uses permitted in a district, certain conditional uses listed in Section 12-319-4 below, when found to be in the interest of the public health, safety, morals and general welfare of the community may be permitted, except as otherwise specified, in any district from which they are prohibited.*"

The property is partially encumbered by the Regulatory Floodway and Regulatory Floodway Fringe. Per Section 12-328 of the County Zoning Regulations, the purpose of the floodplain management regulations is to protect individuals and property from flood hazards or flooding by providing for the orderly and safe development of the floodplain for the most advantageous uses which are consistent with the health, safety, and welfare of the general public. Any development in the area requires review and issuance of a floodplain development permit by the Zoning and Codes Office.

Proposed Uses

The property has many features which suit it well for the mining and excavation use which is being requested. It is located adjacent to the Kansas River in an area with sand reserves and has good access to the major transportation network. The property is located at the western reaches of the Eudora Wellhead Protection Zone and is outside the FAA 10,000 ft Wildlife Mitigation Area. (Figure 3) Conditional Use Permits for river dredging have been approved for the property to the north and an off-site access drive was constructed to accommodate this facility. There is little residential development in the area; however, 4 residences are within very close proximity to the area proposed to be pit mined with 2 of these being located on the subject property. The area is not served by a rural water district, but relies on well water. Care must be taken through the approval and operation process to minimize any negative impacts to the nearby residences.

The subject property is located in a large contiguous area of high quality agricultural soils. (Figure 4) There is a conflict between the two natural resources in that the removal of the underground sand deposits will remove the high quality soils in this location. The fact that sand reserves are typically located near the river, and often within the floodplain makes it difficult to avoid locating in areas with high quality soils.

Staff Finding – The property is well suited to the agricultural and residential uses to which it has been restricted by the V-C Zoning District. The property is also suited to the Conditional Use of mining and excavation provided that appropriate measures are taken to minimize negative impacts on nearby residences. A policy decision for the Commission would be a decision regarding the competing natural resources in the area: high quality agricultural soils and off-river sand reserves.

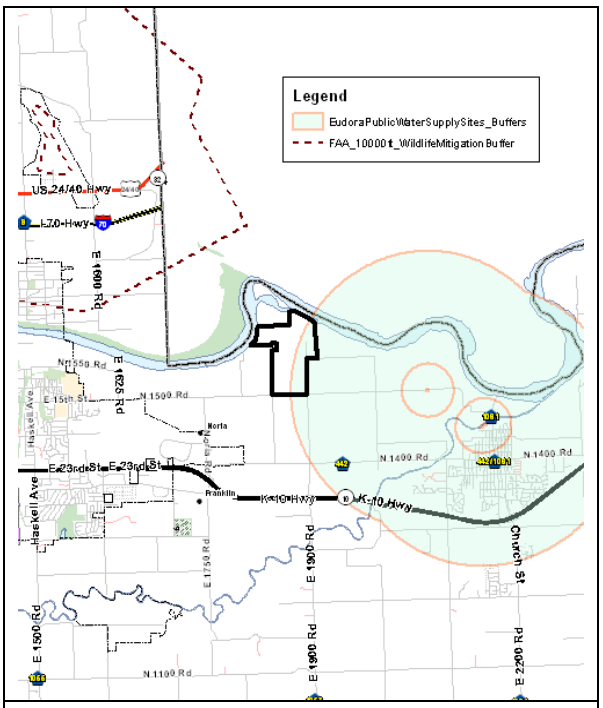

Figure 3. Eudora Wellhead Protection Zone and FAA Wildlife Mitigation Area.

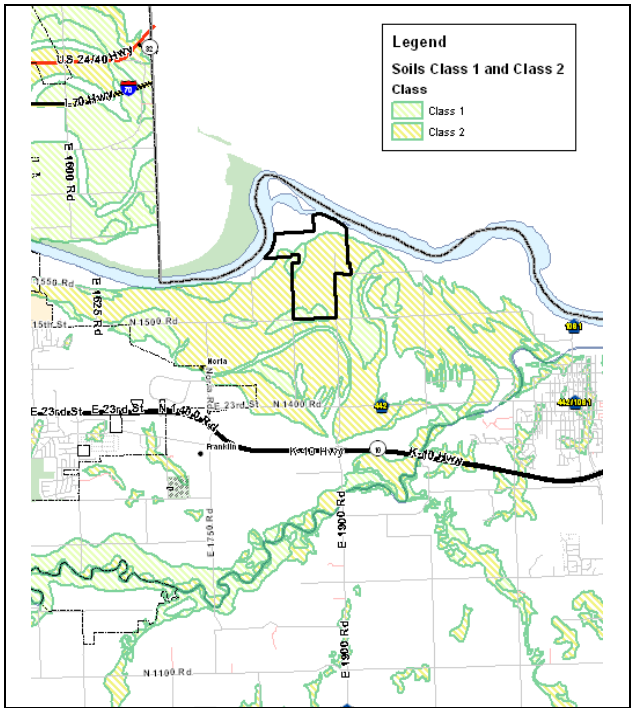

Figure 4. High Quality Agricultural Soils in the area. Subject property outlined.

IV. LENGTH OF TIME SUBJECT PROPERTY HAS REMAINED VACANT AS ZONED

Staff Finding – The V-C District permits limited development of agricultural, recreational uses or farm residences. The property has been used for farming and 2 farm residences were constructed on the property in the early 1900s. There has been no other development on the subject property.

V. EXTENT TO WHICH REMOVAL OF RESTRICTIONS WILL DETRIMENTALLY AFFECT NEARBY PROPERTY

Applicant's Response:

> *"No detriment to nearby properties will occur. This CUP request maintains existing agricultural uses on the land while adding employment and revenue opportunities in northeast Douglas County. The Corps of Engineers regulate the mining activity on the river along with several other governmental agencies which require permits."*

The proposed use will produce permanent changes in the area. Agricultural uses will continue as mining occurs by phase; however, eventually all phases will be mined. The reclamation plan shows some areas being returned to farmland, particularly around the residence on the east side of the property and the area in the northwest corner of the subject property adjacent to the Kansas River and the rest being reclaimed as a lake. An access drive installed for an earlier CUP will be utilized and this will have direct access to a paved road.

Sand pits have the possibility to detrimentally affect nearby properties through the following:

- **Stockpiles**: Overburden, topsoil, and finished products of sand and aggregate will be stockpiled on the area. The placement, height, and maintenance of stockpiles to prevent dust pollution are important considerations to reduce any negative impact. The applicant indicated that overburden would be used primarily to construct the perimeter berms and for reclamation of previously excavated phases. If stockpiling of overburden is proposed on the subject property, the CUP plan should note the maximum height and location. The stockpiles should be kept as far from the existing residences as possible to reduce visual impact.
- **Ground water:** As mentioned earlier, properties in this area are not served by public water and must rely on well water. The mining will occur above and below the water table. It would be important to study any impact the mining activity could have on the quality of ground water and the quantity available to nearby wells. The applicant provided a study on the impact of the mining activity on groundwater. The study looked at wells which are registered with Division of Water Resources, Kansas Department of Agriculture. It is important to note that some wells in the area were installed prior to the requirement to register. The study was prepared by Carl E. Nuzman, P.E., P.HG, a consulting engineer and hydrogeologist. The following are excerpts taken from the study:
    a. The report provided the following information on the quantity of water available for the wells: *"A well can decrease in yield due to biological fouling and lack of property maintenance but unless the static water level has a substantial decline reducing the saturated thickness, the yield available from the aquifer remains constant."* (Page 5, Nuzman report.)
    b. And the following recommendation in relation to the McElwee well: *"The C. McElwee domestic well is up-gradient from the sand pit and down-gradient from the Kansas River. Although the property is about 5 acres in area, it is recommended that the set back of the pit mining be 300 feet from his property line. The radius of influence of the domestic well is less than 300 feet and will not be adversely affected by the sandpit."* (page 8, Nuzman report.)
    c. Regarding the impact of the sand pit on the quantity of water available for other wells in the area: "*Sand pits beneficially support the yield of wells that are down-gradient from a pit that is within the area of influence of a well."* (Page 8, Nuzman report.)

d. "*Due to the hydraulic gradient of the valley aquifer system and recharge to the aquifer from rainfall, the aquifer flow to the City wells is from the west-southwest. The Penny sand pit will be a half mile north of the capture zone of the City wells and will have no influence on the Eudora public water supply wells*." (page 7, Nuzman report)

The report recommended that a 300 ft setback be maintained between the property boundary of any residence out parcel and the active dredging of sand from the pit and concluded that the proposed sand pit lake that will be developed will have no effect on the McElwee wells, Public Wholesale Water Supply District No. 25 or the City of Eudora's wells or water supply. The applicant provided a revised CUP plan with the 300 ft setback shown.

- **River channel:** Concern was raised that allowing the pit mining to occur so close to the river could accelerate a change in the river channel, especially during flood events. The river is naturally working to change its channel in this location. Wakefield Dort, a retired KGS professor, examined the channel changes in the Kansas River and Carl McElwee provided an excerpt of one of his publications in his materials. Staff contacted a hydrologist with the USGS (United States Geological Survey) Midwest Division, Kyle E Juracek, for his opinion on the impact of the dredging operation and pit on the river channel. Mr. Juracek indicated that the location of a lake could result in channel change in the event of a flood but pointed out that the river channel may change as a result of a flooding event even without a lake in close proximity. Rip-rap including large pieces of concrete and smaller infill pieces has been placed on the Kansas River shore to stabilize it since the river dredging operation began.

- **Visual impact:** To minimize the visual impact on nearby properties, particularly the residential properties that are in close proximity to the mining area, it is necessary to establish well-landscaped buffers and to place limits on the location and height of stockpiled materials. The Operation Plan indicates that excess overburden and topsoil might be sold. To minimize activity near these residences, sales should be by delivery only or occur on the northern area where the scale house is shown on the CUP. The reclamation plan should provide details about the lake which is to be created, showing the approximate boundaries, and shape. Development of a lake that is an attractive natural feature could be a positive impact on the area.

- **Traffic:** The applicant provided a Traffic Impact Study (TIS) and addendum which are included with this report as Attachment B. The TIS estimated that on a high production day as many as 200 trucks a day could be expected (400 truck trips as these would be round trips). The increase in truck traffic that would result from the sand plant expansion would be 20 trucks a day (40 trip-ends, 20 in and 20 outbound trips). The applicant's consultant provided an amended TIS which explains that the traffic generation estimated in the original TIS assumed that the river dredging operation and the sandpit operation would be occurring concurrently. The applicant indicated that the primary reason for the expansion of the plant is to switch over the river dredging to off-river pit dredging maintaining its current rate of sand distribution at approximately 1,000 (+/-) tons on an average day. The TIS indicates that all truck traffic will utilize Noria Road, and will not use N 1500 Road; this should be listed as a condition on the CUP plan. When the sand pit dredging operation replaces the river dredging the estimated number of trucks serving the site will be around 40 trucks per day. The consultant also clarified that the 200 trucks per day estimate was based on a high productivity day, 5000 tons, which may still occur but on a very infrequent basis.

  Based on this information, traffic can be assumed to be about 40 trucks a day on an average day and up to 200 trucks a day on a high productivity day.

These documents were provided to the County Engineer for review, and also to the City Engineer as some of the roads used to access the plant lie within the City of Lawrence. The County Engineer recommended the following improvements to nearby roads and intersections to accommodate the increased traffic associated with the sand pit:

a. Realignment of the entrance to the sand facility so that it opposes the Noria Road intersection at N 1500 Road.

b. Pavement of a 100 ft long section of the site access drive just north of N 1500 Road, as recommended in the TIS.

c. Reconstruction of pavement in the Noria Road (E 1750 Road)/N 1500 Road intersection. The existing surfacing is likely a crushed rock base that has been chip sealed. This will not stand up to the increased truck traffic crossing N 1500 Road.

d. Construction of an eastbound right turn lane on Route 442 (N 1400 Road) at Route 1057 (E 1900 Road). This is mentioned as a desirable improvement in the TIS. Pavement on the existing shoulder at this location is not adequate for the projected amount of truck traffic.

These changes shall be noted as conditions of approval which must be met before the Conditional Use Permit is issued.

- **Activity:** A sand pit operation includes the removal of overburden with heavy equipment, the dredging of sand, processing and sale of the sand/aggregate products, and reclamation activities. These activities could have an impact on surrounding properties due to lighting or noise. The operation plan indicates that typical hours of operation will be Monday through Friday from 6:30 AM to 6:30 PM. There may be extenuating circumstances which would require operation on Saturdays or for dredging to occur beyond the regular hours of operation due to the nature of the construction business. The operation of the dredge should be low impact as the 4 headlights that are on the dredge provide the only lighting when operating at night and the dredge operates relatively quietly. It should be noted as a condition of approval that no removal, transfer, or placement of overburden which requires heavy equipment would be permitted outside these operating hours. This will serve to keep the higher intensity uses within the regular business hours.

Staff Finding –Potential negative impacts the proposed use could have on nearby properties include the noise and activity associated with the mining, reduced visual appeal created by stockpiles of overburden or topsoil, impacts on well water, and traffic. Conditions should be placed the CUP to minimize potential negative impacts on nearby properties.

VI. RELATIVE GAIN TO THE PUBLIC HEALTH, SAFETY AND WELFARE BY THE DESTRUCTION OF THE VALUE OF THE PETITIONER'S PROPERTY AS COMPARED TO THE HARDSHIP IMPOSED UPON THE INDIVIDUAL LANDOWNERS

Applicant's Response:
"*No identifiable gain will result by denial of this request; no identifiable hardship will result from its approval."*

Evaluation of the relative gain weighs the benefits to the community-at-large vs. the benefit of the owners of the subject property. There are many factors to consider when locating a sand pit, and this location meets the geographic criteria of being outside the FAA 10,000 ft wildlife mitigation area, has good access to the arterial roadway system, and is in a lowly populated area. Denial of the

request for a Conditional Use Permit would affect the individual landowner by prohibiting the use of the property for the off-river sand dredging pit.

Denial of the CUP request may benefit the area property owners by preventing the proposed mining activity and possible negative impacts. Denial may benefit the public by retaining the high quality soils. Denial may also detrimentally affect the public in that it will prohibit production of sand and aggregate materials from a local source. With the recent move away from river dredging, appropriate locations for pit mining must be found.

Staff Finding – Denial of the CUP would result in a hardship to the applicant and public in that it would prohibit the applicant from operating a sand pit to produce sand and aggregate products from local reserves. Denial of the CUP may benefit the public at large by maintaining the high quality soils which are present. To weigh the benefit the denial of the CUP would have on the public, protection of high quality soils, versus the impact it would have, loss of potential sand and aggregate production from a local source, it is necessary to choose between these two natural resources in this location.

VII. CONFORMANCE WITH THE COMPREHENSIVE PLAN

The subject property is not located within an identified urban growth area. The comprehensive plan recommends that agricultural uses continue to be the predominant land use within the areas of the county beyond the designated urban growth areas. Uses permitted in the rural area should continue to be limited to those which are compatible with agricultural production and uses. The mining activity and the resultant lake would be compatible with agricultural production and uses.

Chapter 16 Policy 2.7 "*Encourage the protection of High Quality Agricultural Land in Douglas County for current and future agricultural use.*" (page 16-15, *Horizon 2020)*
This policy contains the following 4 steps to encourage the protection of High Quality Agricultural Land:

- Including the protection of High Quality Agricultural Land as a key assumption in the sector planning process.
- Establishing tools to protect High Quality Agricultural Land for farming and make its protection economically feasible for the land owner.
- Maintaining an inventory of High Quality Agricultural Land in Douglas County and track the amount lost to urbanization.
- Encourage and develop policies that support agri- and eco-tourism.

Chapter 16: *Resource Management*
"This section encourages the responsible use of marketable natural resources within Douglas County through proper extraction and reclamation methods. They are essential to sustainable development activity, primarily in the form of low cost raw materials, such as sand, gravel, timber, oil, gas, and stone, etc." (page 16-21, *Horizon 2020*)

The Comprehensive Plan recommends both the encouragement of the protection of High Quality Agricultural Land and the responsible use of marketable natural resources.

Staff Finding – The proposed use is in general conformance with the recommendations in the Comprehensive Plan; however, it is proposing the use of marketable natural resources rather than the protection of High Quality Agricultural Land.

STAFF REVIEW

As discussed earlier, there are two approved Conditional Use Permits for river dredging in this area, CUP-2-2-79 and CUP-06-04-08. CUP-06-04-08 replaced an expired Conditional Use Permit, CUP-1-3-91, which had requested both river and pit mining for the area to the west of the subject property (Figure 2). The river dredging request was approved but the pit dredging request was denied. CUP-2-2-79 was approved for the property to the north of the subject property. The processing plant, scale house and stockpiles are currently located on this property. The scale house and stockpiles would remain in this location; however, the processing plant would be located to the east onto the property within the current CUP in later phases of excavation. An easement was dedicated in 1979 for the access drive and this access drive will continue to provide access for the subject property. A copy of this easement shall be provided to the Planning Office for the file.

Most of the neighbor's concerns were addressed in an earlier section of this report dealing with possible negative impacts to surrounding properties; however, another concern was raised regarding the perpetual maintenance of the berms in the future to insure that stormwater runoff does not enter the lake. Staff recommends that an agreement placing the responsibility for the perpetual maintenance of the berms on the property owner should be executed and recorded with the Register of Deeds prior to the release of the CUP permit.

Wetlands are present on the subject property as shown on the CUP plan. The applicant's intention is to either protect the wetlands or mitigate them off-site; however, the decision has not been made at this time. The applicant shall work with the Army Corps of Engineers to determine how the existing wetlands on the property will be treated. Prior to any excavation occurring in the phase adjacent to the phase containing the wetlands, the applicant should provide documentation to the Planning Office indicating the plans for the wetlands, whether they will be maintained on site or if they will be mitigated elsewhere. If the wetlands are to be maintained, the operation plan should be revised to include the protection measures and the revised plan should be submitted to the Planning Office for administrative approval of the wetland setbacks and protection measures.

The applicant indicated that their long term plan for the area is to reclaim the areas to farmland as shown on the reclamation plan and to create a lake for recreational use in the remainder. A note should be added to the reclamation plan which indicates that the lake will be contoured with a more natural shape than the rectangular shape shown on the plan and to note the intended use following reclamation.

The previously approved CUP restricted sand pit access on E 1810 Road to employees and required customers and commercial trucks to use the established access drive. A note to this effect should be included on the CUP plan.

Due to the nature of mining and excavation uses, the approval time frames are typically for 30 years. This allows time for the mining, excavation and reclamation of the land. An extension request may be submitted to the Planning Office for public hearing before the Planning Commission and action by the County Commission. The Zoning and Codes office shall conduct 5 year reviews to insure compliance with the CUP, operation, and reclamation plans.

The applicant explained the mining process will begin with excavation of the overburden in Phase 1 and the dredge will be moved in for removal of sand when possible. A picture of the dredge and the processing plant is included in Figure 5. The mine is to be sequentially reclaimed which means that that earlier phases will be in the reclamation process as later phases are being excavated. The first few phases are planned to be reclaimed as farm land so overburden from later phases will be placed in the area to be reclaimed. Topsoil will then be applied and vegetation planted. As they move

through the phases the overburden will be excavated and placed within the previously created pit. Overburden will also be used to create the perimeter berms which will keep stormwater runoff from surrounding areas from entering the lake. This is an important step is preventing pollution of ground water. There may be some incidental sales of excess overburden or topsoil but this would occur on the property with the scale house. All stockpiling of finished material will occur on the area designated on CUP-2-2-79. A note should be added to the plan that states that the area shown on CUP-2-2-79 with the scale house, processing plant, sediment pond, and stockpile area will also be used to serve the subject property and CUP.



Figure 5a. Picture of processing plant which will remain on the north portion of the property.



Figure 5b. Picture of dredge which will be used for mining operations.

Public Communications

Public Communications included with this staff report in Attachment A include a letter from adjacent land owner, Carl McElwee, expressing his concerns with the possible impact the proposal may have on the area; a petition signed by neighbors in opposition to the project; a request for deferral from adjacent property owner, Dave Penny, and a letter of opposition to the deferral request from Carl McElwee. The concerns raised in Carl McElwee's letter have been discussed throughout this staff report. Staff does not typically make recommendations when deferrals are requested, but the letters have been provided for the Commission's consideration.

Joint Hearing

County Resolution No 80-5 established the policy that a joint hearing be held for requests within 3 miles of the incorporated cities in Douglas County so that the County Commission would have the benefit of both Planning Commissions' recommendations. The subject property is approximately 2 miles west of the Eudora City Limits; therefore, a joint meeting is being held between the Lawrence/Douglas-County Metropolitan Planning Commission and the City of Eudora Planning Commission and their recommendations will be forwarded to the Board of County Commissioners.

Conclusion

Approval of a Conditional Use can be tailored to address specific issues such as intensity or frequency of use, include time limitations, and provide screening requirements. The recommended conditions respond to the specific nature of this request. The sand pit, as conditioned, should be compatible with nearby land uses.

CONESTOGA-ROVERS & ASSOCIATES

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December 20, 2012 Reference No. 080649

Mr. Keith A. Browning, P.E.
Director of Public Works
Douglas County Public Works
1242 Massachussetts Street
Lawrence, KS 6604-3350

Dear: Mr. Browning

Re: Review of Hydrogeology Considerations for Open Pit Aggregate Mining Application
Penny's Concrete and Sand LLC, Douglas County, Kansas

Conestoga-Rovers & Associates (CRA) is pleased to provide this report on our third-party review findings on the hydrogeologic considerations of the proposed open pit mining application by Penny's Concrete and Sand LLC (Penny's) in Douglas County, west of Eudora. In particular, the focus of our review was the potential of the proposed sand facility to contaminate the aquifer and threaten downgradient (down-aquifer) wells. Our review is based primarily on the documents provided, our experience and expertise in these matters, as wells as other publicly available information.

1.0 SUMMARY AND RECOMMENDATIONS

In summary, our review does not indicate there are any major problems or concerns with regard to the proposed operation; however we have several recommendations for further assessment to confirm this position and implement precautionary measures and best management practices for the operation (presuming they are not already addressed). We further recommend that the proponent be responsible for the implementation of these measures subject to review/approval by a competent professional – either a public agency representative or a third-party consultant.

Our recommendations include the following:

1.1 PRIOR TO APPROVAL

1. Determination of the current groundwater table and flow direction based by field measurements.
2. Determination of anticipated maximum dewatering influence from maximum rate of sand (and water) extraction, evaporation, and any other water consumption. This

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would include clarification on the proposed rate of sand and water extraction or taking from the pond (recognizing the recycling of water).

3. Confirmation of existing groundwater or soil quality to ensure there is no significant contamination from existing Site area and operations, including a screening assessment of potential sources and existence of contamination and installation and sampling of groundwater wells in downgradient area. Assessment should include suitability of soils for placement below water in support of site rehabilitation plans. If any problems are indicated, they should be further investigated and evaluated as to whether any remedial actions are necessary.

4. Private water well survey to establish baseline water quantity and water quality conditions within potential zone of influence (#1 and #2, above). Such survey would be subject to landowner access permission and include areas upgradient as well as downgradient from the site.

5. Prepare and submit a fuel/chemical handling and spill response plan.

6. Commit to documenting sand production levels and effective water consumption on an annual basis to aid in interpretation of monitoring data

1.2 DURING OPERATIONS

1. Monitoring of groundwater levels in adjacent private water supply wells. Zone to be established based on predicted zone of influence (#1 and #2, above).

2. Monitoring of groundwater levels in dedicated monitoring wells installed on south and east sides of site. Monitoring in early years while extraction is occurring in the northwest part of the site will help confirm the zone of influence predicted above (#1 and #2, above).

3. Periodic (quarterly) monitoring of water quality in downgradient area using monitoring wells and private water supply wells (if available).

4. Prevent runoff from off-site as well as on-site areas from flowing into the pit lake.

5. Any fill import must be sampled and analyzed for chemical suitability.

6. Remediate/report any spills in accordance with fuel/chemical handling and response plan (#5 above).

2.0 REVIEW

Based on the scope and timing of this review we have not attempted to document a detailed recounting of the technical information, positions presented by various stakeholders, and our response to individual points raised. Instead we have focused on the primary considerations and our assessment of the potential for concern based on our experience and knowledge elsewhere. We'd be happy to provide further assistance to the County if that is desired.

While the focus of our review is related to the potential to contaminate water quality for down-gradient wells, we also offer some comments regarding water quantity considerations as we believe they are important to the overall understanding of the proposed operation and some of the issues being raised. It is important to recognize, however, that the water quality considerations described herein, may be adequately addressed without fully addressing the water quantity concerns.

2.1 EXTRACTION PLANS

The Penny Sand and Gravel operation has filed an extraction plan that involves removal of sands and gravels by mechanical means in an area to the south of the Kansas River between Lawrence and Eudora. Materials will be removed and processed on-site via washing and sizing for use as construction materials and other uses in the local area. The materials are alluvium (placed by water) and generally in the sand range as far as particle size and range in thickness depending on where in the Kansas River Valley you are.

Mining methods in this and the many other operations generally consist of removal by excavators, draglines and haulage by on and off-road capable trucks and in some cases conveyor systems to the processing area. Penny has indicated that a sand dredge will be employed at this facility for some of the removal as well. Sand and water are directed to the processing facility with the water returned to a settling pond. Surface water run-off in proximity to the pit area will be diverted direct to the Kansas River using berms to minimize pit inflows. The pit bottom will be roughly 70 feet (ft) below current grade at the deepest upon completion. There are planned set-backs from the river and adjacent properties during and after extraction and reclamation are complete. The pit will be partially backfilled with materials for which no market is found but include only materials originally extracted from the pit area.

2.2 WATER QUANTITY CONSIDERATIONS

Assessment of the proposed undertaking is challenged by the lack of current groundwater level and flow information in the site region as well as the lack of a quantitative assessment of the potential influence of the proposed undertaking.

Groundwater Flow Directions

The existing groundwater levels and flow directions appear to not be defined. Reference is made to historical studies that reflect fundamentally different conditions and no determination of current conditions is presented.

Nuzman (September 12, 2012, Exhibit D) presents an analysis based on data from KGS Bulletin 130, Part 3 (1958) showing a northeastward groundwater flow direction in the site area.

McElwee (September 18, 2012, Figure 1) and Terrane Resources Co. (September 17, 2012 and October 28, 2012) present groundwater contours from KGS Bulletin 206, Part 2 (1975). McElwee suggests a due east flow direction through the site area; however the groundwater contours show a groundwater depression to the south-southwest of the site, indicating a southwestward component of groundwater flow. The depression is presumably associated with groundwater pumping in this area; however, the exact conditions at the time of analysis and at the present time are not apparent in this review.

None of the above information is current and therefore does not define the current groundwater levels or groundwater flow direction. The lack of current definition, particularly in light of the opposing flow directions presented above, prevents a determination of what water supplies may actually be considered downgradient of the site.

Potential Influence of Proposed Operations

The mining operation involves the removal of sand from below the groundwater table, creating a pond (part of which is subsequently proposed to be filled in). The proposed operation is by dredge; however, its overall effect would be similar if it was by other means such as excavator or dragline. The effect of sand extraction on water quantity relates to two primary aspects. First is the removal of volume from below the water table, the second is the change in evaporation by changing a vegetated land area to a pond.

The removal of volume from below the water table relates to the removal of both sand and water in the course of the mining operation. While the water is recycled back to the pit lake, the

volume of sand is not. Each cubic foot of sand removed, must be replaced by an equivalent volume of water (accounting for the drainage of pore water from the sand back to the pond and evaporation loss from stockpiles). This volume replacement has the same kind of dewatering effect on the surrounding groundwater flow system as pumping of water.

Based on available information a rough estimate of the sand quantity within the mining footprint is in the 625,000,000 cubic foot (ft^3)range (based on an extraction area of 12,500,000 square feet, an excavation depth of 70 ft and an average of 20 ft of "overburden" that is not considered product and would be returned to the pit). The reviewed information indicates a 25 year extraction period and therefore the annual production rate (assuming equal amounts each year) would be about 25,000,000 ft^3. The dredge set-up at Penny's redirects water back to the pit after going through a settling pond system so the effective dewatering rate will be less. Assuming an average drainable (i.e., de-waterable using planned separation technology) porosity of 0.30 (i.e., 70 percent volume removal from below a groundwater level about 20 ft below surface), the production rate corresponds to a dewatering rate of 17,500,000 ft^3 per year or 33 ft^3 per minute or 250 gallons per minute (gpm) on an average annual basis.

The increased evaporation from creating a pond also manifests itself as a dewatering effect from the pond. A net evaporative loss will result in a draw of water from the aquifer. The maximum open water area would be on the order of 12,000,000 million square feet. Using an incremental net loss estimate of 29 inches of water per year (surface water evaporation (52 inches) minus existing evapotranspiration (23 inches)) an additional dewatering effect of 29,000,000 cubic feet per year or 55 ft^3 per minute or about 415 gpm can be estimated.

The combined effect of the two dewatering components above is about 665 gpm on an average annual basis. This estimate appears to be a reasonably modest dewatering rate compared to the aquifer yield and size of the extraction pond that will be created; however additional information and analysis would be needed to confirm this estimate and the potential influence on groundwater drawdown and groundwater flow directions. While theoretical calculations may show predicted influences many hundreds or even more than a thousand feet, these are expected to be limited to small theoretical changes and would not correlate to actual noticeable changes in water supply conditions for private well or municipal wells.

However, we are not aware that Penny's or their consultant have conducted such an assessment. Conducting such an assessment would assist in understanding the proposed operation and the potential implications thereof. This assessment can likely be completed based on existing information and would not require extensive field investigations such as pumping tests.

We note that the comparison to the effect of in-river dredging is not analogous as any "dewatering effect" (as described above) would clearly be masked by the flow in the Kansas River.

3.0 WATER QUALITY

3.1 EXPERIENCE WITH AGGREGATE EXTRACTION AND WATER QUALITY

Experience throughout North America and the world has shown that aggregate (sand/gravel) extraction from unconsolidated deposits such as the proposed operation by Penny's sand pit are compatible with groundwater supplies.

A study conducted by the Ontario Ministry of Natural Resources (2006) entitled ***Applied Research on Source Water Protection Issues in the Aggregate Industry Phase 1 Findings*** conducted a comprehensive international literature study and did not identify any instances of an aggregate extraction operation impacting municipal water supplies.

CRA has been involved in numerous aggregate sites, including sites with below water sand extraction with adjacent water supply wells. We are not aware of any instances where aggregate operations have impacted water supplies. CRA is familiar with specific instances of active and historic aggregate sites, both above and below water, that are within the wellhead capture zones of municipal wells. While some of these wells have existing issues with fertilizer and road salt issues, there are no issues identified in relation to the aggregate operations.

A specific example is The Caledon Village Well (No. 3) operated by the Region of Peel (north of Toronto, Canada). This is a clear example of a municipal well operating successfully and the siting of new wells in close proximity to aggregate extraction. Caledon Well 3 has been in operation since 1982 and is located immediately west of Highway 10, with active licensed aggregate extraction areas in close vicinity around the wellhead on both sides of Highway 10.

The municipal well draws water from an unconfined sand and gravel aquifer. The aggregate extraction operations include both above and below the water table extraction within the Wellhead Protection Areas (WHPAs). The WHPA include an extraction pond approximately 300 ft upgradient of the wellhead in the same aquifer.

The water supply from Well 3 remains suitable for water supply as confirmed through monitoring programs and indicated by the following statement from the Region of Peel: "over the previous 26 years…the water quality from Well 3 has been excellent…water taking from an aquifer adjacent to an aggregate extraction site, when operated with 'due diligence' …

can co-exist." Similar statements by their consultants and other agencies confirm that there is no evidence that aggregate activities have had a negative impact on drinking water quality over the past monitoring years while the aggregate sites were in operation within the WHPA (CVCA, 2012) and water quality was found to be excellent and that the remaining aquifer provides effective in-situ filtration (Geo Kamp Ltd, supply consultants).

The Region of Peel completed an Environmental Assessment to establish a new municipal well to increase the water supply for the Caledon/Alton area in 2011. The preferred location selected for the new well is the same area as Well 3, completed in the same unconfined aquifer interval between the active aggregate operations on either side of Highway 10.

Further, our experience has shown that water quality impacts to municipal wellfields in unconsolidated materials are more likely to be impacted by untreated run-off from industry, roadways, large retail complexes, wastewater system storm event overflows and other situations rather than aggregate operations.

In instances where water quality concerns are raised with respect to aggregate operations, they typically do not result in adverse impacts down-gradient. Common factors in areas where there is more likely to be concern are use of pit pond as a receiver of area runoff – particularly in an urban setting – and uncontrolled use resulting in contamination of pond water from garbage/waste disposal, recreational use, including animal or human waste, etc. It is noted that even if there is some change in water quality that does not necessarily mean there is a negative impact to potability, particularly at a distant receptor. For example, a surface pond may result in some desirable reduction in hardness which might otherwise be higher than desirable from a water supply perspective.

3.2 WATER QUALITY CONSIDERATIONS

Typically no chemicals are used in the processing and the only potential contaminants involved with operations are the fuels and fluids (e.g., hydraulics, coolants, lubricants) associated with necessary equipment. These fluids are limited in volume and can be readily observed and cleaned-up if accidentally released through an appropriate management, monitoring, and spill response plan.

Potential concerns for off-site sources of water quality impacts have been raised by others, including runoff (sediment, pesticides, herbicides, biological parameters). The primary control for such measures is to prevent the runoff of surface water (stormwater) into the pit. Such controls are reportedly planned (Nuzman, September 12, 2012, page 8) and also includes

settling of process water from the dredging operation to limit recycling of fines (fine-grained overburden) back into the pit pond. Ideally, runoff from active un-mined site areas will also be prevented from running off into the pit pond, particularly where equipment is active/stored, agriculture is ongoing, or the ground is otherwise being worked (e.g., soil stripping).

Further, since the site appears to be in continued use as an active agricultural area (as well as existing aggregate operations), there is some potential for existing contaminants (e.g., pesticide/herbicide, hydrocarbons, etc.) in the soil or groundwater from past use or spills. It is recommended there be a confirmation of no existing groundwater or soil contamination from existing Site area and operations, including a screening assessment of potential sources and existence of contamination and installation and sampling of groundwater wells in downgradient area. Assessment should include suitability of soils for placement below water in support of site rehabilitation plans (see below). If any problems are indicated, they should be further investigated and evaluated as to whether any remedial actions are necessary

Under rehabilitated site conditions (post mining), the primary consideration is the potential for biological impacts associated with the open water pond being in hydraulic connection with the groundwater flow system as this has the potential to influence water quality in the local area. Other potential impacts can be controlled by preventing surface water inflow (as above) and controlling land use to prevent unrelated sources of contamination (e.g., illegal dumping). Potential for biological impacts can be minimized by managing after use to limit the potential for biological factors such as occur with recreational use (garbage/littering, swimming/bathing, pet wastes, etc.).

The proposed site plans include the placement of non-aggregate soils in to the northern part of the pit pond. Some simple precautions are recommended to limit potential water quality concerns, include assessment of existing soil conditions (as above) and separating any soils with elevated organic (non-mineral) content such as topsoil from deeper soils so that they can be placed at an elevation that will remain above the pond level. No vegetation or woody debris should be place below the pond level (some minor amounts of logs/stumps may be appropriate if part of aquatic habitat creation).

The available information does not indicate the likelihood of any credible water quality concern from the proposed aggregate operations for municipal water supply. However, the location and protection of adjacent private water supplies is less clear based on the available information. The report by Nuzman indicates a minimum separation of 300 ft while notes associated with what appears to be a presentation by Penny's or their representative indicates the closest private well is 1200 ft ("Point 4" on page 4 of notes). While 1200 ft appears more than adequate and 300 ft may well be adequate, clear identification of what wells are

downgradient (or may be under future conditions) and potential travel times is warranted. In the event of potential concern for downgradient private wells in relatively close proximity to the site, a water quality monitoring program would be advantageous to confirm there is no impact to water wells. Alternatively, as a precautionary measure or in the event of an identified impact, well-head water quality treatment could be provided by the operator. Although there are not precise bounds on potential distances or travel times for impacts, they are limited and based on our knowledge of various guidelines, standards and practices a zone less than 500 or 1000 ft or 100 to 200 days travel time from the pit would appear to address the potential for influence. As noted above, based on the present information, it is not apparent who is presently down-gradient of the site nor who will be under operating conditions.

Thank you for the opportunity to provide this review for Douglas County. Please don't hesitate to contact us if you have any questions regarding this information or if you have need of further assistance in this matter.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES





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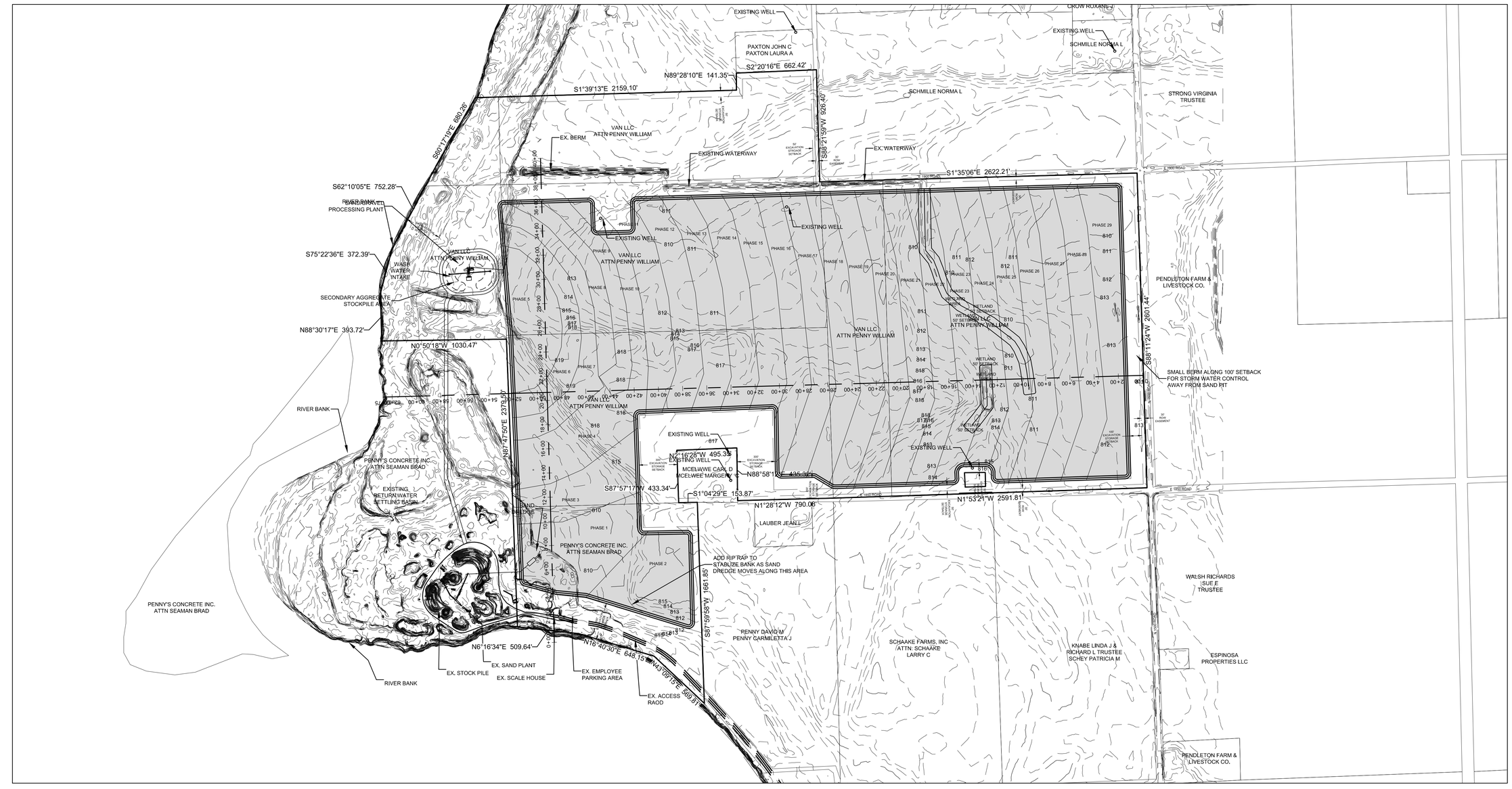
J. Richard Murphy, P.Eng. (Ontario)

JRM/kf/2

cc: Travis Kogl, CRA
Mike Staffileno, CRA


EXISTING WELL
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PAXTON LAURA A
S2°20'16"E 662.42'
N89°28'10"E 141.35'
S1°39'13"E 2159.10'
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VAN LLC
ATTN PENNY WILLIAM
EX. BERM
EXISTING WATERWAY
S88°21'59"W 926.40'
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CROW ROXANE J
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SCHMILLE NORMA L
SCHMILLE NORMA L
STRONG VIRGINIA
TRUSTEE
S1°35'06"E 2622.21'
E 1900 ROAD
S62°10'05"E 752.28'
RIVER BANK
PROCESSING PLANT
S75°22'36"E 372.39'
WASH WATER INTAKE
SECONDARY AGGREGATE STOCKPILE AREA
N88°30'17"E 393.72'
N0°50'18"W 1030.47'
RIVER BANK
N87°47'50"E 2379.50'
PENNY'S CONCRETE INC.
ATTN SEAMAN BRAD
EXISTING RETURN WATER SETTLING BASIN
PENNY'S CONCRETE INC.
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WETLAND
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50' SETBACK



Approx. Reclamation Schedule

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□A□E 4□10	A□RO□2027□2037
□A□E 10□17	A□RO□2037□2047
□A□E 17□24	A□RO□2047□2057
□A□E 24□30	A□RO□2057□2067

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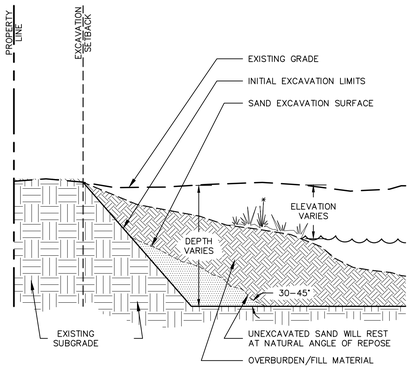

Typical Reclamation/Restoration
Outer Edges of Lake

NOT TO SCALE

SCALE: 1" = 300'

300 150 0 300 600

A Reclamation Plan for

Penny Sand Lawrence Facility

Douglas County, Kansas

Civil Engineering
Landscape Architecture
Community Planning
Surveying

Landplan Engineering, P.A.
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PENNY SAND FACILITY
CONDITIONAL USE PERMIT
RECLAMATION PLAN

REV	DATE	DESCRIPTION
1	9.17.12	POND SIZE

DATE:	8/03/11
PROJECT NO.:	20101019
DESIGNED BY:	LPE/KVC
DRAWN BY:	LPE
CHECKED BY:	RDD/CLM

ISSUE A

SHEET NO. R-001

OF 2 SHEETS

FILE NAME: G:\20121146\CAD\Planning\CUP\121146C-CUP.dwg LAST SAVED BY: CL Maurer SAVED DATE: 9/17/2012 9:17 AM PLOTTED: 9/17/2012 9:20 AM

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GENERAL

With the current restrictions which The Corps of Engineers has placed on dredging sand from the Kansas River, many river dredging operations have had their permits suspended or restricted, and will be forced to terminate their dredging operations. Although the Kansas River is being restricted for the dredging of sand, the need for this raw material for construction and development continues. Throughout the river valley / river channel sand is one of the natural resources available for local mining.

Extraction Process

Overburden Removal: A location will be selected for the first stage of sand removal. This location is referenced on the Site Plan as Phase 1. Within this location, topsoil and overburden are removed to expose the sand deposit by means of appropriate earthmoving equipment. Overburden is defined as any earthen material lying above the aggregates. Topsoil and overburden will be used to grade the site as necessary. Excavation will be no closer than 50 feet from any property line. Overburden will be retained for use in reclamation with any excess materials stockpiled and available for resale.

Extraction: Excavation will continue until the water table is exposed. At this point. the material will be dredged from the pit, pumped to the processing plant.

Material Processing:

As sand is extracted, it is pumped to the plant for processing. Through plant processing, sand will be sorted by particle size and blended to make a quality product that can be used in concrete, asphalt, ice control, masonry, glass, insulation or specifications provided for a particular project.

The processing plant uses water from the excavated lake to wash sand over a series of screens separating the material into different classifications of material. The processing plant contains vibrating screens with various size of openings. After the material is sorted, these materials will be stockpiled via radial stackers or front end loaders. Pea gravel, river rock will also be stockpiled.

Water used during the operations will be diverted either to a sedimentation pond where solids suspended in these waters can settle out or in the event the material is of a coarser nature will return directly to the excavated lake.

With wet processing, we would expect minimal dust to be created during the process. Dust exposure is monitored by Mine Safety Health Administration to assure minimal risks to our employees and therefore also to surrounding areas.

Noise levels are monitored, as well, by MSHA for assurance the decibel levels do not exceed the safety standards.

Material Handling

Finished material is conveyed to stockpiles consisting of various grades fine aggregates. The primary stockpiles are generally 30-40 feet tall. Stockpiles will vary in height. The material will be transported by trucks. The trucks are loaded either by a conveyor / bin or a front end loader, weighed to assure the truck weight is approximately the requested weight or within the legal gross tagged weight, ticketed and then travel to their destination.

Existing access roads will be maintained to promote drainage thus preventing excessive erosion or tracking of mud onsite or offsite. The approximate location of existing access roads, stockpiles, scalehouse and main entrance are shown on the Site Plans.

Reclamation

Reclamation for an off-river dredging operation occurs over the entire lifespan of the operation as the excavated lake reaches its limits. Reclamation involves the restoration of the perimeter of the mining site, leaving a permanent body of water. The reclamation plan will include the placement of fill material along the bank to create a uniformly sloped and stabilized bank to create an area that can be vegetated and maintained. Reclamation plans must be submitted, approved and annually monitored by the State Conservation Commission.

Phased excavation schedules have been provided on the Site Plan. These schedules are approximations and will vary due to the economic demand, the variability of the deposits and the desire to maintain the current agriculture as long as feasibly possible. Similarly, an approximate reclamation schedule has been provided on the Reclamation Plan. Annual reporting to the State Conservation Commission monitors "affected" acreage and any changes to the reclamation plan.

Since reclamation is performed when the excavated lake has reached its limits for the specific phase, it is not uncommon for the first reclamation to occur up to 10 years following the beginning of the operation.

When extraction operations at this site are complete, the final reclamation will include the restoration of all remaining banks, the removal of the processing plant, scalehouse, scales and all other associated equipment and buildings from the site. The processing plant and stockpile areas may be returned to agricultural land or other uses that will be beneficial to the property or owner.

Local, State and Federal Requirements

Penny's will adhere to all applicable State and Federal Requirements / Regulations. Each required State and Federal permit for this project, will be obtained prior to the commencing of operations which the specific permit regulates. As these permits are obtained, copies will be submitted to the Douglas County Planning Department.

U.S. Army Corps of Engineers:

Clean Waters Act – The U.S. Army Corps of Engineers requires a Section 404 Permit for the discharge of dredged or fill materials into the Waters of the U.S. (regulated rivers, streams, lakes, wetland areas, etc.). This facility is an off-river operation and does not discharge into Waters of the U.S. An official wetland delineation has not been performed for this site. There exists potential wetland areas within the project boundaries, which have been delineated based on aerial photography and site visits. All operations are designed to have no impact on the potential wetland areas. A 50-foot buffer has been provided to ensure the project does not encroach upon potential wetland areas. Therefore, a permit application will not be filed with the U.S. Army Corps of Engineers as pertaining to Section 404 of the Clean Waters Act.

Excavation Near a Levee - There are no levees along the Kansas River near this project, therefore, there will be no excavation within the Critical Area of the levee and no permitting will be required.

Kansas Department of Agriculture – Division of Water Resources:

Water Structures – DWR Water Structures Section requires that, per K.A.R. 5-43-5 of the Rules and Regulations (K.S.A. 82a-012 to 305a), a minimum setback of 50 feet be maintained from the bank of a channel to any sand dredging operations located outside the channel of any stream. A natural riparian buffer currently exists between the northern boundary of the project and the Kansas River. The minimum width of this buffer is approximately 300 feet. The buffer is to remain intact undisturbed.

Water Appropriation - DWR Water Appropriation Section requires an Application for Approval to Change the Place of Use, The Point of Diversion or the Use Made of the Water under an Existing Water Right. There will be no new uses or change of uses of water rights associated with this project. DWR Water Appropriation Section requires permits for all sand and gravel pits in townships where the net average annual potential for net evaporation is greater than 18 inches per year. The potential net evaporation for this site is approximately 6 inches per year; therefore, this permit will not be required. DWR also requires a Notice of Intent to Open or Expand a Sand or Gravel Pit Operation. This NOI has been requested.

Floodplain Management - DWR Floodplain Management Section will require a permit for the placement of fill within the floodplain per K.A.R. 5-45 of the Rules and Regulations (K.S.A. 24-126). All permanent fills and unconsolidated mass storage stockpiles located within the floodway require approval from the Chief Engineer with 'no-rise" certification.

Kansas Department of Health and Environment:

Stormwater and Erosion Protection – An erosion control plan for construction will be filed with KDHE and a permit will be required under the Kansas General Permit for Stormwater Runoff Associated with Construction Activities. An application for permit will be filed following approval of the Conditional Use Permit.

Because of the industrial nature of the project, a permit will be required for all stormwater runoff originating from an industrial activity. Penny's will develop and implement a Stormwater Pollution Prevention Plan for the site, to be reviewed and approved by KDHE. An application for permit has been requested.

The predominance of stormwater from onsite will drain back into the water body created by the extraction process. Stormwater from offsite shall be conveyed to the existing wetland areas, as occurs in the existing condition, and will only be allowed to enter the excavation pond during flooding events.

Water – Currently Penny's is permitted for an onsite well used for irrigation. When it is time for the plugging or elimination of this well, the KDHE Bureau of Water – Geology Section will be contacted and the proper paperwork will be filed.

Fugitive Dust – Penny's will utilize water trucks and apply dust suppressants to control fugitive dust within the site as needed. However, since the product processed in this operation is drawn from a body of water, the typical need for dust suppressant in minimal.

State Conservation Commission:

Mining Permit/License – The proposed site is subject to the "Surface Mined Land Conservation and Reclamation Act", K.S.A. 49-602 *et seq*. Penny's holds License No. 95-064, which must be renewed annually. The current license expires December 31, 2012.

Mine Registry - As required by State law, this site will be registered with the SCC prior commencing with the mining process. Penny's will file an application to register the site as a mine site with the SCC following approval of the CUP.

Reclamation Bonding – As required by State law, license holders are required to post a bond or other acceptable financial security to the SCC and a Reclamation Plan, detailing the post-mining land use and the reclamation process, must be filed and approved by the SCC prior to any mining taking

place on the proposed mine. The bond application / letter of credit will be filed with the SCC upon approval of the CUP.

Department of Wildlife and Parks:

Action Permit – A request will be made to the Kansas Department of Wildlife and Parks for an environmental review of the site for potential endangered species or critical habitats. Based on the findings of the review, the need for an action permit will be determined. KDWP may also request additional review from the Department of the Interior or the U.S. Fish and Wildlife Service.

Environmental Protection Agency:

Spill Prevention, Control and Countermeasure Plan – Penny's may maintain a fuel tank for fueling loaders used for the loading of sand into trucks. Fuel for the dredge will not be stored onsite. Fueling of the dredge will be performed by fuel stored offsite. Other fuel or petroleum-based products used for generators or maintenance will occur in amounts smaller than 55 gallons, which is the minimum container size that that is required to be documented in an SPCC Plan. Overall, the amount of petroleum-based materials stored at this site will not exceed the levels (1,320 gallons) required by the EPA for implementing an SPCC Plan.

Operation Times: Typically hours of operation would be Monday – Friday 6:30 AM – 6:30 PM. There may be extenuating circumstances which would require Penny's to maintain operating hours on Saturdays or to extend the normal hours of operation due to the nature of the construction business. Many clients, including State agencies and City governments require construction activities to be completed at odd hours for the safety of the general public. Weather conditions and / or the necessity to provide materials for the hazardous conditions as it relates to snow and ice to state and local agencies may also result in the need to extend hours of operation. Projects / contracts may have such stringent completion dates and / or penalties for exceeding working days it would necessitate the extension of hours of operation.

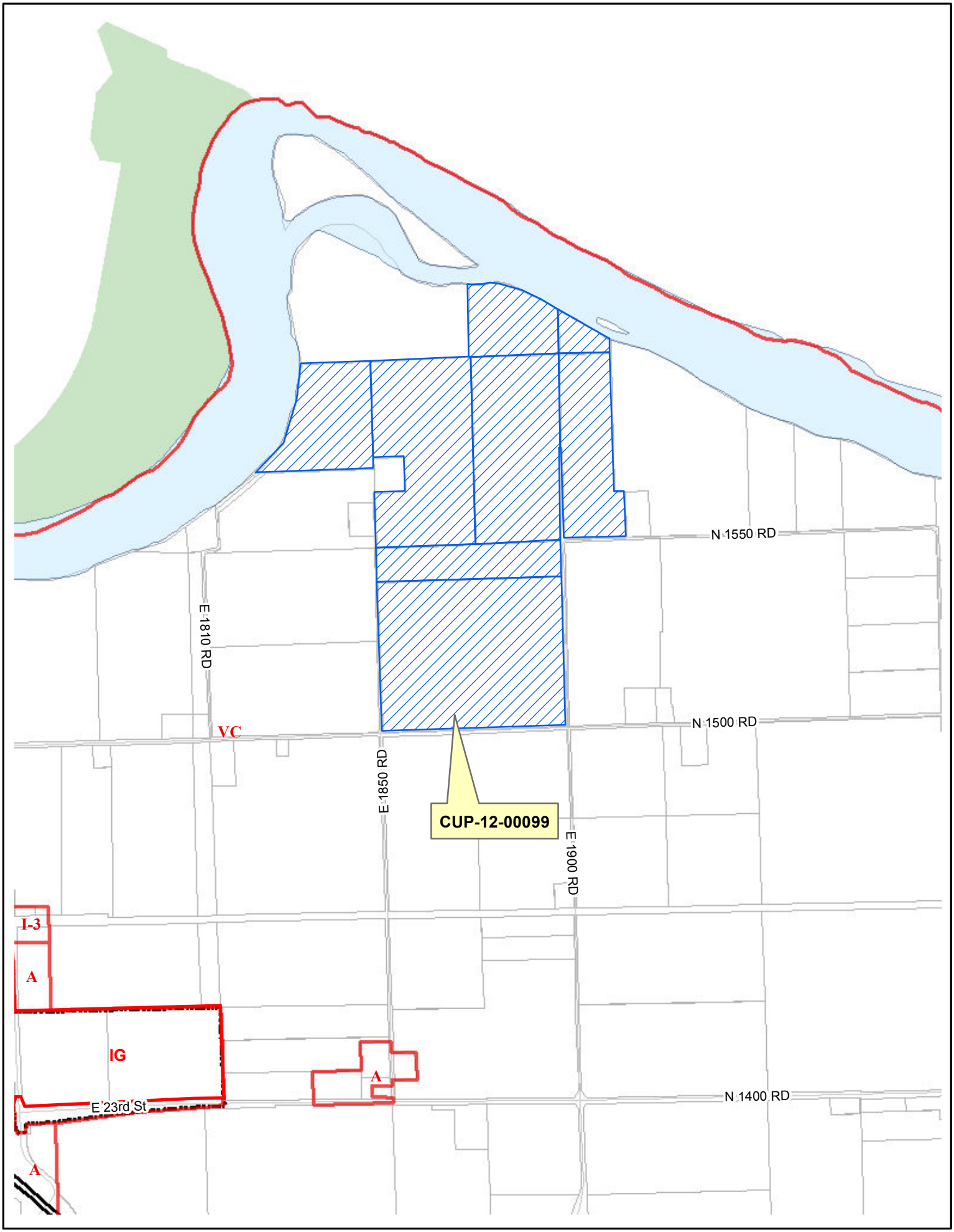
Overburden Placement: During the initial stage of the operation, overburden removed from the excavation area will be used in raising the grade of the processing plant and scalehouse areas and for berms as required. As the excavated lake pond expands into future stages, overburden will be stockpiled at locations deemed beneficial to the reclamation effort, sold, or used to restore the banks of the body of water established by the previous stages.

Operation Life Expectancy: Based upon current economic conditions, the expected life of this project would be 30+ years.

Plan of Response to a Major Flooding Event: Penny's will prepare a plan of action, which would be implemented immediately upon notification that a flood event may occur . The plan will include the removal of all equipment, materials and bulk fuel that is not stationary. The scalehouse, scales and processing plant will remain. Non-stationary items that will be removed will include, but are not limited to, loaders, vehicles, fuel supplies, generators, and any electronic equipment or office materials in the scalehouse.

Power and Fuel Supply: The scalehouse and processing plant will be electrically powered by the Westar Energy lines. The dredge will be diesel-powered. The site fuel supply for the loader and/or generators will be limited to 1,000 gallons. The fuel will be stored in an aboveground storage tank with secondary containment. The fuel pump will be controlled with a power switch located within the scalehouse. The pump will be turned off during non-business hours. Dredge fueling will be performed by fuel from offsite.

Stormwater Runoff: All stormwater falling around the scalehouse, processing plant or stockpiles will be kept on site. The site will be completely non-discharging, with no stormwater leaving the site. Stormwater from offsite shall be conveyed to the existing wetland areas, as occurs in the existing condition, and will only be allowed to enter the excavated lake during flooding events. Any increases in stormwater runoff due the increased impervious surfaces will be substantially offset by the storage capabilities of the excavated lake.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Recess LDCMPC

Convene Joint Meeting with Eudora Planning Commission

ITEM NO. 2 CONDITIONAL USE PERMIT FOR PENNY SAND PIT; N 1500 RD & E 1850 RD (MKM)

CUP-12-00099: Consider a Conditional Use Permit for sand excavation and extraction for Penny Sand Pit, approximately 434 acres located on the NE Corner of N 1500 Road & E 1850 Road. Submitted by Landplan Engineering, for William Penny & Van LLC, property owners of record. *Joint meeting with Eudora Planning Commission. Deferred by Planning Commission on 9/24/12.*

STAFF PRESENTATION

Ms. Mary Miller presented the item.

Eudora Planning Commissioners present were Kurt von Achen, Jason Hoover, Johnny Stewart, Glenn Bartlett, and Richard Campbell.

Mr. McCullough said the by-laws state the applicant has 10 minutes to present. Staff recommended the applicant have 40 minutes to present with a 5 minute rebuttal after the public hearing. He also suggested granting 5 minutes for each individual audience member instead of 3 minutes.

APPLICANT PRESENTATION

Mr. Dan Watkins, attorney representing property owner, said the staff report did a good job of covering the golden factors and the applicant agreed with the conditions. He said he would discuss one other possible condition to address concerns about monitoring of ground water in the area. He said the application was to move sand dredging from on-river to off-river. He said the Corps of Engineer was restricting on-river dredging over time. He stated in this particular area sand dredging on-river would be restricted as of December 31st. He said there were many off-river sand pit areas in Kansas. He said usually they were right next to the river and many times right next to towns, even in close proximity to ground water supplies and wells. He stated the Conditional Use Permit would utilize the existing Conditional Use Permit so the stockpiling, processing, scale house, and truck loading would all take place where it currently takes place now, with no change. He said the access and truck traffic would stay the same. He said the staff report did a good job of setting out why this particular site was recommended for approval. He said the use of sand dredging was permitted in the valley channel area and had been allowed for the past 30 years. He said the site had excellent access to major transportation networks, was 7,000' from the Eudora wellhead protection area, and outside the FAA 10,000' restrictive area. He said the impacts listed by staff regarding stockpiling, groundwater, river channel, visual, and activity would be the same impacts that have been going on in the area for 30 years. He stated the groundwater issue was already present from the current river dredging. He said the river channel had the potential to change because it changes sometimes, over hundreds of years. He said in 1993 when it flooded, because the banks were fortified by the Penny's operations it didn't cut through. He said visually it would change slightly because there would be dredging in the area as it proceeded south. He said there were few sites that met all the things this site does. He said regarding preservation of the river channel, they would be moving dredging off-river. Regarding preservation of quality soil, this area was currently farmed and most would continue to be farmed for many years as the dredging moved south. He said they had a few neighborhood meetings to talk with the neighbors about the impacts and concerns they have. He said they tried to address some of the concerns with adequate buffers. He said that dredging was highly regulated, by state and federal agencies, with many protections built into this.

Mr. C.L. Maurer, Landplan Engineering, discussed the phasing plan. He said they would strip off areas approximately 10 acres in size and build a berm as they go around. He showed pictures of the dredging machine. He said the noise would be contained by the pit and would bounce upward, not out. He said there would be three observation wells on the western side. He said there would be one control well. He showed slides of the area on the overhead. He also showed slides of active and inactive sand pits in other communities.

Mr. Mehrdad Givechi, traffic engineer, said it would not increase the number of truck traffic in and out of the site because it would not generate additional sand distribution. He stated on average there would be 4-5 trucks in and 4-5 trucks out during the peak hour of operation. He said a few minor items needed to be looked at, none of which would be required, but desired for improved safety. He said they were proposing to realign the driveway on the north side of 1500 Road to make a four-legged intersection so there would be no offset in the driveway and Noria Road to the south. He said they would pave about 100' of the proposed driveway to the north in order to prevent gravel from being tracked to 1500 Road. He said the pavement on 1500 Road was not capable of handling truck traffic. He said the traffic would not use 1500 Road so the intersection would be improved to handle the truck traffic in and out of the site. He stated if the distribution increased there would be a need for an east bound dedicated right turn lane at old K-10 and 1057 Road. He said the pavement was already there but needed to be improved to a full dedicated right turn lane. He said he received comments from KDOT regarding the interchange. He said that the count was higher than usual due to road/bridge improvements in the area and that when traffic was normalized they could look at the intersection functioning with the South Lawrence Trafficway. He said as the South Lawrence Trafficway was built in the area KDOT would close the Noria Road intersection and Noria Road would go over existing K-10. He stated it would only effect background traffic and not traffic in and out of the site. He said the applicant agreed to all of the improvements.

Mr. Phil Struble, Landplan Engineering, discussed groundwater issues and said he would cover six pertinent issues. He said Penny's had a permit through the end of the year and has had one for the last 30 years for dredging sand. He said they had been penetrating the aquifer for 30 years with permission from the EPA and Corps of Engineers. He said the permits were not being suspended due to ground water quality. He said the groundwater was there safely today and that the aquifer had already been fully penetrated. He said dredging was 7,000' from Eudora's wells. He said microorganisms would not survive several hundred feet of ground water conditions and that pollutants in the river water would not last long before they would become ground water and no longer river water. He said if Eudora decided to treat water for surface water they would need a trickling sand filter. The sand pit was 7,000' of sand filter, which was better than what Eudora's sand filter could do by itself. He said a concept had been brought up called nick point, which was the fear that when the river flooded the area it would create a vertical cut in the riverbank all the way up the Kansas River to Bowersock Dam. He said even with flooding in the past 25 years the riverbank had not moved at all because it had been maintained. Mr. Struble showed a table on the overhead from the KDHE design guidelines as it relates to private wells, which showed the minimum required setback was 50' and the recommended was 400'. He stated the nearest private water well to Penny's was 1,200'. He said a sand pit was nothing more than a water well that was measured in acres, not inches. He said there was very little difference between the sand pit and a water well. He said just because there was more water impounded in a pit did not make it draw more water into the pit, away from neighboring uses, than what a water well would. He said it would not make what goes into the pit go out of the pit faster or further than anything else. He said the sand around it did not know it was a pit or a water well. He said there were some differences, such as no water consumption out of the pit. He said the water pulled out of the sand pit was put right back into the pit. He said the State Statutes governed how water evaporation was dealt with and that they would have to go to the State of Kansas if they were in an area that evaporates greater than 18" net evaporation per year. He said 5-6" evaporation, such as Douglas County receives, does not have to be accounted for to the State. He said Penny's was regulated and had to protect groundwater supply from pollution. He showed a map of Kansas corridor sand pits and water wells. He said there had not been a single instance where a sand pit polluted a private or public well.

PUBLIC HEARING

Mr. Carl McElwee (via prerecorded video that was shown on the overhead) did not want to see industrial activity encroach on three sides of his property. He said there was a petition from 23 local property owners that opposed the sand pit. He expressed concern that historical houses in the area would not be protected and that good agriculture land would be lost. He said once the overburden was stripped off there was the potential for pollution of the very productive underlying aquifer. He said neighboring wells could be affected adversely by lowered water levels and quality problems caused by mixing pit surface water with aquifer water. He felt

the Eudora well 'capture curve' would include the sand pit. He said a large flow-thru lake would be created by the pit, which would mix pit surface water with aquifer ground water and send it further down the river, possibly leading to quality issues. He expressed concern about a nick point being created in the river. He felt the aquifer should be safeguarded and agricultural land protected. He asked Planning Commission to deny the Conditional Use Permit.

Mr. Scott Michie, Eudora Consultant Staff Planner, said the City of Eudora finding was that it does conform with land use and planning policies from a development standpoint. He said Eudora's recommendation was based on Mr. Ned Marks study.

Mr. Ned Marks, geologist hired by the City of Eudora, reviewed the report he wrote that was included in the packet. He said if a contaminant entered through the pit it would have access to the deeper portion of the aquifer that the Eudora wells were completed in. He said any contamination that made it to the bottom of the aquifer would move faster than if it had entered through the soil profile. He said no recent data to evaluate the potential negative or positive impact of the proposed pit was available at this time. He said there was some concern that the water level in the pit would be the same as the water level in the river. He felt the options were to either not approve the Conditional Use Permit or to approve with limitations.

Mr. Doug Helmke, geologist with the Kansas Rural Water Association, said he provides technical assistance to public water systems on water rights and source water protection. He said he advised the City of Eudora to oppose the proposed Conditional Use Permit for a sand dredging operation in the vicinity of their well field, as there had been no reliable information presented that would guarantee that the sand pit would not introduce biological or chemical contaminates into the aquifer. He said surface water used for drinking water required much more treatment than ground water, with much higher infrastructure treatment testing and labor expenses. If the water quality was changed to resemble surface water in any way KDHE would likely require a surface water treatment facility to be constructed if Eudora wanted to continue the use of their existing water rights.

Mr. Scott Jackson, lives east of the proposed sand pit, felt it was wasteful to reduce 400 acres of good agricultural land into something that could not be used. He said a 30" berm was a good idea but felt fertilizer, pesticides, and herbicides would blow into the lake and part of the aquifer. He said even if it took 7-12 years to reach the Eudora wells it would still be there and what would they do then.

Ms. K.T. Walsh agreed with what Mr. Jackson said regarding reclaiming the land back to farmland. She said she was a member of Friends of the Kaw and was surprised they were in favor of the Conditional Use Permit. She wanted to see alternatives proposed.

Mr. Kerry Altenbernd said it was prime agricultural land. He stated there were studies that show one thing and other studies that show something different. He said there would be future floods of the area. He asked Planning Commission to be careful with their decision.

COMMISSION DISCUSSION

Eudora Commissioner Johnny Stewart asked who would pull the samples from the monitoring wells.

Mr. Marks said he oversees drilling on a lot of different operations and has been involved with installing monitoring and observation wells so if he was involved with the project he would be onsite when that was done.

Eudora Commissioner Stewart asked who would control the proposed monitoring wells to the west.

Mr. Marks said that would probably be a determination between the applicant and City of Eudora.

Eudora Commissioner Stewart asked if there would be a condition that the City of Eudora would have access to take samples from the wells.

Mr. Marks said one of his recommendations was that the City of Eudora would have access to collect samples and collect water level data at different times of the year.

Eudora Commissioner Richard Campbell inquired about accumulation of data.

Mr. Marks said if he was involved with the project the first thing he would do was pull all the available information he could find and compile it. He said they would look at the historical information and compare it to the present day information. He said the City of Eudora would have to do a well field analysis, an aquifer test, and collect site specific aquifer characteristic data that could be put back into the models to calibrate and verify.

Eudora Commissioner Campbell inquired about the time period.

Mr. Marks said it could easily take 6-8 months.

Eudora Commissioner Stewart asked Mr. Helmke how he became aware of this situation.

Mr. Helmke said the City of Eudora asked for his opinion on the facts presented.

Eudora Commissioner Stewart asked if it was a paid opinion.

Mr. Helmke said no.

Eudora Commissioner Stewart asked what his role was with the Kansas Rural Water Association.

Mr. Helmke said half his time was spent giving advice on water rights, perfecting water rights, and offering opinions on whether other existing water rights should be purchased. He said the other half of his job was development of source water protection plans.

Eudora Commissioner Stewart asked what his key concern was.

Mr. Helmke said there appeared to be beds of gravel in the aquifer and it was his understanding that there may be a minimal amount of filtration in those beds of gravel. He said if the beds of gravel were exposed in the sides of the pit there was a good chance it would create a preferential flow path of water to the wells, which may contain common contaminates such as bacteria and viruses.

Eudora Commissioner Campbell asked if this was his area of expertise.

Mr. Helmke said it was his job to look at the worst case scenarios and try to protect the water supply from those things. He said he was not saying it would happen but that nobody could probably say there was no risk with the sand pit.

Eudora Commissioner Campbell asked if the studies Mr. Marks discussed could be completed in a year or less.

Mr. Helmke said he would have to defer to Mr. Marks because he had more experience with those kind of aquifer studies and well tests.

Eudora Commissioner Campbell inquired about the gravel data.

Mr. Helmke said he had not seen what was at the pit and away from the pit in the direction of Eudora's well field.

Eudora Commissioner Campbell asked if it was a different kind of study.

Mr. Helmke said no, it was what Mr. Marks talked about with understanding how well the wells operate, what drawdown cones they create, and probably an evaluation of what happens in a dry time of year when there would be large demands of the ground water aquifer and also if the water in the river was high.

Eudora Commissioner Stewart asked why the ground water was hard to clean once contaminated.

Mr. Helmke said if the presence of contamination shows up 12 years away from where it was introduced there would still be current contamination coming through the system to the water wells.

APPLICANT CLOSING COMMENTS

Mr. Watkins said there had been no evidence presented that river water would navigate to Eudora wells. He said there were many sand pits and were highly regulated and not contaminating wells in much closer proximity than the Eudora wells. He said there would be no light or oxygen for the ground water and that would limit the possible contaminants to nitrates and salt, primarily. He said KDHE recommends a 100' setback for this particular use and that Penny's would have a 300' setback from Mr. McElwee's house, which was upstream from the sand pit. He said they would be 1200' from any other well in the area and 7,000' from the Eudora wells. He stated the aquifer was already exposed to river water today and had been for 30 years. He said there was no evidence that there was migration or contamination. He said there was a need for sand and that valley channels were the place to get it. He stated the impacts listed by staff were the same that had existed for 30 years. He felt this was as close to an ideal site as any.

Eudora Commissioner Stewart asked Mr. Watkins if samples could be collected from the monitoring wells.

Mr. Watkins said yes, as often as they wanted to.

COMMISSION DISCUSSION

Commissioner Britton asked why the Corps of Engineers was ending the current permit.

Ms. Miller said she believed it was because of damage to the habitat on the river caused by on-river dredging.

Mr. Struble said in 1990 the Corps of Engineers got together with the Kansas River Dredgers and created an operating program that would monitor what happens in the Kansas River and it was a 20 year program that technically started in 1992 and expires at the end of this year. Part of that program was that they shoot cross sections of the entire Kansas River to monitor degradation of the riverbed as it exists on an every other year basis. He said the operating permit says that if any section degradation was more than 2' they would suspend those permits until that section aggregates back up and then permits can be reissued. He said it had nothing to do with environmental issues.

Commissioner Britton asked why it was important for the river to come back up 2'.

Mr. Struble said to maintain the hydraulic grading of the Kansas River through the whole section. He said if one section goes down then there is bank degradation and other negative impacts.

Commissioner Britton said those sounded like environmental factors.

Mr. Struble said the rule was only that if the riverbed degradation was more than 2' than the permit would be suspended.

Commissioner Josserand asked if that was degradation away from the actual dredging site.

Mr. Struble said that was correct.

Commissioner Josserand asked if it would be correct to say that in recent years there had been a concern about in-river dredging and the urging of non-river sand extracting methods.

Mr. Struble said yes but that it was not just limited to Kansas.

Commissioner Josserand asked if there was a shortage of sand that was driving up development costs in Douglas County.

Mr. Struble said yes. He said it had not been unusual in the last 3 years for the majority of sand used in Lawrence to be trucked in from other places. He said the trucking cost becomes part of the cost of sand.

Commissioner Josserand inquired about the potential risks of rechanneling of the river.

Mr. Struble said that was a difficult question to answer. He said rivers move and it was hard to control rivers. He said the approach was that they were trying to do the best they could. He said Penny's rock armored the banks and received compliments from the Corps of Engineers for doing that. He said there was only one access road to the site and Penny's wanted to protect their investment. He said they had had a number of meetings with the Corps of Engineers to discuss these types of issues. He stated they would be willing to a condition to provide rock armor on the back side.

Commissioner Josserand asked if they should we be worried about an evulsion event.

Mr. Struble said the Corps of Engineers responsibility ends at the top of the bank. He said the Corps of Engineers encouraged the dredging to relocate off-river.

Commissioner Josserand asked if the Corps of Engineers had announced any policy in Kansas that they would refuse all river dredging.

Mr. Struble said no. He said they were in the process of negotiating a new 20 year river dredging permit. He said that did not mean that they would get to dredge for 20 years.

Commissioner Culver asked Mr. Struble how many current sand pit operations were in Douglas County.

Mr. Struble said the number extracting sand was zero.

Commissioner Belt inquired about increased demand for sand.

Mr. Struble said there was no change for the demand of sand.

Commissioner Belt wondered if hydraulic fracturing pulled the market in that direction.

Mr. Struble said he was not involved in that and said he would suspect the sand not involved in that.

Commissioner Liese said he was sensitive to times when one city, such as Eudora, draws a conclusion that was different from what Lawrence decides. He asked staff to comment.

Mr. McCullough said staff had some experience with these types of applications. He said they were looking county wide and have an active exercise to try and find out where in the county staff could support these types of uses, taking into account several different elements. He said there was a second application much closer to Eudora where staff supported Eudora's opposition. He said there was a lot of discussion at the time regarding proximity, and if it moved to the west between Lawrence and Eudora would staff support it. He stated when staff weighed all the issues, such as demand, location, prime agricultural soil, traffic, and with this being an existing location for the use of dredging of sand, staff felt obligated to support this. He said regarding the issue of wells, there was an argument that the data was unknown, which could become known through

monitoring. He said they did not hear the same type of testimony that they did when it was adjacent and much closer to the wells of Eudora. He said the testimony to date on this site was that there was potential and much farther away. He felt there should be some exercise in determining how steps could be taken to mitigate the impact.

Commissioner Liese asked how the number of years for the 30 year Conditional Use Permit was determined.

Ms. Miller said that was a standard number of years for a quarry because of the time it takes.

Commissioner Liese asked if there were any other conditions regarding testing that could reassure the citizens of Eudora.

Mr. McCullough said he thought they would need to develop a condition that spoke to that very issue. He said if it came out as a recommendation to the County Commission staff would need to take the time to meet with the City of Eudora and applicant to negotiate the condition out.

Commissioner Liese asked if a condition could be that one year of testing take place before further development.

Mr. McCullough said it could be a condition.

Commissioner Liese asked if Bismarck Lake was a sand pit.

Mr. Watkins said it was.

Commissioner Liese asked if there was a sand pit being developed just north of Lecompton on the other side of the river.

Mr. Watkins said yes. He said he thought it was being developed by MPM from Manhattan, who applied for the one that was too close to the airport, so they developed in Jefferson County.

Commissioner Liese asked how big the Penny's sand pit would be compared to the one being built near Lecompton.

Mr. Struble said it would be a third bigger than the one in Lecompton.

Eudora Commissioner von Achen said once a Conditional Use Permit was approved with the intention that testing would be done the horse was already out of the barn. He felt that the item should be deferred until testing could be done. He wondered who would pay for the error if the applicant was wrong. He felt they should negotiate something such as a surety bond, insurance policy, or surcharge on sand sold out of the pit that would establish a fund to take care of any problems that could develop. He said it was a difficult issue because they needed sand but water was a vital resource and they should not be gambling with it.

Commissioner Liese said he was pretty adamant about voting against the last sand pit proposal. He inquired again about conditioning it.

Mr. McCullough said it could be a condition but it would need to be framed very carefully. He said there were different ways to get at the issue.

Commissioner Burger asked if Eudora had a water development plan that was 30 years long.

Eudora Commissioner Stewart said he could not answer that. He stated half the people in the country get their water from ground source. He suggested the option that if contamination was found in the monitoring wells

then the Conditional Use Permit would have a clause that would shut down the plant until the cause and effect were known.

Commissioner Liese asked the applicant to respond to that option.

Mr. Struble said it was not unusual for operations like this to have a plan to what would be done. He said the monitoring well plan included a control well. He said they were concerned that if something was found in the monitoring wells they would want to know it was from Penny's or coming through from somewhere else. He stated even if more research was done in 6-8 months, a lot of that water would not even get to the monitoring wells in that time period. He said depending on whatever pollutant was discovered in the wells there would be a little different progression of plan. He said they were willing to have conversations about it.

Commissioner Burger inquired about monitoring wells in the 10 year area.

Mr. Struble showed possible locations for monitoring wells on the overhead.

Commissioner Burger said the observation wells made sense in 30 years but she wondered what made sense to the engineers and scientists as the process proceeded.

Mr. Struble said his geologist was not present this evening to speak about that.

Commissioner Britton asked why monitoring wells were part of the plan if the whole idea was 1,200'-7,000' of soil and sand would get rid of contaminants that could be cause by the sand pit.

Mr. Struble said the monitoring wells were part of the first comments from the City of Eudora regarding Penny's application. He said they were not part of the original plan.

Commissioner Britton asked if his position was that the monitoring wells were not necessary because even if something showed up in the monitoring wells there was no way it was actually getting to the well being used.

Mr. Struble said that was correct.

Mr. Watkins said there were certain things that do not break down, such as salt and nitrates. He said they would want to know if those were coming through so that was the idea for the observation wells. He said if those were detected then it would need to be determined where they were coming from. He said the existing operation had access to the aquifer. He said there was no evidence that there were nitrates or salt in any well in the valley. He said the monitoring wells provided an answer to the 'what if' questions and would show if it was happening and allow time to do something about it.

Eudora Commissioner von Achen said another theory was that the aquifer had not been penetrated because the river receives its water from the aquifer. He stated only when there is a huge flood is there minimal charging of the aquifer from the river and that was not very much. He said it was contradictory to what they were saying. He said the river had been polluted his whole life and has not polluted the aquifer because the water flowing down the river does not get into the aquifer, but rather the river was charged by the aquifer.

Commissioner Britton asked Mr. Helmke to comment about the filtering process through 1,200'-7000'.

Mr. Helmke said it was not known.

Eudora Commissioner Campbell said both sides had hired experts and consultants but there was one unpaid expert from the State of Kansas that clearly states there was not enough information.

Mr. Helmke said he did not work for the State of Kansas and that the Kansas Rural Water Association was a private non-profit association.

Eudora Commissioner Campbell felt the only prudent way to proceed was to defer for a year.

Commissioner Liese asked if Mr. Helmke could draw conclusions in a year.

Mr. Helmke said there were other experts more qualified to do those analysis.

Commissioner Liese asked if it could be a condition of the Conditional Use Permit.

Mr. McCullough said it would be a complicated framework for the Conditional Use Permit. He said it would be more beneficial to collect additional data and further analysis, if they felt it was needed. He said it may be prudent to allow that to unfold, be collected, and analyzed. He said it depended on where they were at with the data issue and the potential harm to City of Eudora's wells.

Commissioner Liese asked the applicant to respond to the comment of deferral for 1 year

Mr. Watkins said he did not like it. He said there was no evidence presented that this type of operation caused the kind of problem they were talking about. He said they were willing to do safeguards and if there was any evidence of some pollutant migrating then it would be stopped. He said it was a hypothetical situation that hasn't occurred. He asked Planning Commission to act on the Conditional Use Permit and put conditions on it.

Commissioner Burger asked if there was a reason why 400+ acres was needed for the sand pit operation.

Mr. Watkins said it wasn't needed right away, but over a 30 year time period it would be.

Commissioner Britton inquired about class I and II soils being lost.

Mr. Watkins said some of it could be used in the vicinity and they expected 25% of it to be reclaimed. He said they would gradually lose that area as a farming area as some areas would come back as a farming area but there would be a net loss of farming area.

Commissioner Britton asked if it would still be the same class of soil afterward.

Mr. Watkins said it should be because the topsoil would be put back.

Eudora Commissioner von Achen said Eudora Planning Commission did not participate in the Eudora City Commission Council meeting as was stated earlier. He said he recognized the recommendation would go to County Commission.

Eudora Commissioner Stewart felt the applicant had done a good job of stating their case and felt it had much less potential impact to Eudora water than the last sand pit application. He said with the addition of the monitoring wells if pollution was found it would give Eudora 8-12 years to determine how to handle the contamination headed their way. He said with the appropriate conditions of monitoring well, he was leaning in favor of the Conditional Use Permit.

Eudora Commissioner Campbell said the consultant's, Mr. Helmke, opinion was that there was not enough information to do this and he was not paid by either side, which he felt carried great weight.

ACTION TAKEN by Eudora
Motioned by Eudora Commissioner Campbell, seconded by Eudora Commissioner Bartlett, to defer the Conditional Use Permit until the appropriate data was accumulated to let the experts give an opinion.

Eudora Commissioner Kurt von Achen said they needed sand but that water resources were important. He said he would support the motion.

Motion carried 4-1, with Eudora Commissioner Stewart voting in opposition.

Additional COMMISSION DISCUSSION

Mr. McCullough said the resolution that established the joint meeting did not spell out the process. He said even a motion to defer would be a recommendation to County Commission for their decision.

Commissioner Britton asked if they would send separate recommendations to County Commission.

Mr. McCullough said that was correct.

Commissioner Liese asked the applicant to respond to who would take care of Eudora if the water was polluted.

Mr. Watkins said the condition of the monitoring wells would detect if there was an issue and stop any subsequent pollution and require the owner to fix it if the problem was coming from the pit. He said in terms of investment, the operator was willing to install the wells and place the wells so that monitoring could take place. He said they were willing to have that sort of condition as protection for the City of Eudora. He said maybe they could work out an agreement that Eudora could monitor the wells anytime. He stated the condition could say that if a problem was detected the operator would have to address it and not operate until it was fixed.

Mr. McCullough said if Planning Commission chose that condition staff could craft some language and send it to County Commission.

Eudora Commissioner von Achen said if pollution was found neighbors and Eudora should not have to pay for any damage.

Mr. Watkins said they have a damage claim if water was affected.

Eudora Commissioner von Achen said the damage claim goes far past the 30 year Conditional Use Permit. He suggested a surcharge of so many cents a ton on the sand to build a fund to give real dollar protection to people downstream. He said if it will never happen then the applicant should make sure it doesn't cost any money. He felt someone else should take the risk, not the City of Eudora.

Commissioner Liese asked if he was talking about escrow.

Eudora Commissioner Kurt von Achen said some sort of surety bond, insurance policy, or some other way to significantly protect people downstream.

Mr. Watkins said there were liabilities as an operator that were insured. He said you can't contaminate water without people having a claim, so there were certain protections, such as early detection. He said this hypothetical situation had not been borne out anywhere. He said putting the kind of conditions they were talking about was what protected the public interest. He said he sympathized with the City of Eudora wanting to protect their water supply. He said Eudora suggested the monitoring wells and then decided the risk was too great.

Eudora Commissioner Kurt von Achen said they should assume the risk.

Mr. Watkins said they would be assuming the risk.

Eudora Commissioner Kurt von Achen said they should accept the ongoing risk.

Mr. Watkins said there was no evidence there was significant risk.

Commissioner Pennie von Achen inquired about the USDA rating the sand in the area as poor quality.

Mr. Watkins said he disagreed with that. He said it was more the level at Mr. McElwee's property that you would have to go down to get the sand. He did not think the operator would be trying to get sand out of the area that was not usable.

Commissioner Culver said he believed it was rated as poor because of the depth they would have to go down to extract, not necessarily the quality of the sand.

Commissioner Pennie von Achen asked about the cost to go down so far for sand.

Mr. Watkins said it affects the return on investment. He said there were not many sites in Douglas County to extract sand.

Commissioner Pennie von Achen asked if the overburden would go back into the pit.

Mr. Watkins said yes, it would be recycled back in.

Commissioner Pennie von Achen inquired about contaminates.

Mr. Watkins said the topsoil would be stockpiled and then the overburden would be recycled. He said if contaminates were found they would need to be addressed.

Commissioner Pennie von Achen asked if the overburden was tested for contaminates.

Mr. Watkins said the observation wells would be for detection. He said the overburden was not currently tested.

Commissioner Belt inquired about additional conditions.

Mr. McCullough said Planning Commission would have to have direct staff on what conditions they wanted to grasp on to. He said they discussed monitoring wells as a way to mitigate potential impacts and pollutants to the aquifer and accepted an argument about protecting the financial position of the City Eudora. He said they also discussed process. He stated typically when an item was deferred it was a short time frame to direct the applicant to go get additional information so Planning Commission could make an analysis and decision. He said Eudora's recommendation was a long term deferral to get that information and negotiate with the City of Eudora regarding some of the issues, and let County Commission make the final decision.

Commissioner Belt asked if deferring was reasonable.

Mr. McCullough said they should be specific as possible and provide proactive language in the motion that they want to move it to County Commission, if that was their desire. He said if they wanted to keep it at the Planning Commission level it would typically be a deferral for one or two months to get specific information. He said Eudora's motion was to have a year's worth of data collected to make decisions about the impact to the wells.

Commissioner Britton felt County Commission should be given the opportunity to make that decision now instead of Planning Commission bottling it up for a year with Penny's left not knowing what to do since their permit expires on December 31, 2012. He felt that was a bad position to put Penny's in. He said he would support passing this along to County Commission with a recommendation of deferral, pending any results of a study to be completed by a consultant selected jointly by the City of Eudora and developer. He felt the deferral should be designed to give the developer the opportunity to explore avenues of giving some financial security to the City of Eudora. He said he would not be supportive of an approval at this point.

Commissioner Belt said the applicant did a nice job of covering as many bases they could reasonably be expected to cover that were factually based. He felt they had a fiduciary responsibility to this municipality as well as a responsibility to Eudora. He did not feel comfortable placing specific conditions that were not reasonable with so many unknowns.

Commissioner Burger expressed concern about the size of the Conditional Use Permit and asked about the size of other operations.

Mr. Watkins said this would probably be the largest sand pit operation on the Kansas River. He said many of them were 70-100 acres in size. He said anything smaller than that would not allow room to dredge.

Commissioner Liese said he was uncomfortable with Lawrence Planning Commission deferring it. He said one of their primary roles was making recommendations. He said he would not vote to defer unless it was for specific information over a short period of time.

Commissioner Culver said it was their responsibility to make a recommendation and a shorter term deferral would not give them the information they would need or would be helpful in making this decision. He felt they had an onus to the applicant, City of Eudora, and Douglas County to give it due process and make a recommendation to the governing body. He said he would not support a deferral at this time.

Commissioner Pennie von Achen said she would support a deferral. She felt the proposal put class I and II soils and water at risk. She said she would not vote in favor of it at this point. She said she could vote for denial but would like more information.

Commissioner Britton said he would support a deferral but felt it didn't matter if they called it deferral or denial because it would be because of the same concerns. He said the important thing was that it went to County Commission one way or the other.

Commissioner Josserand said one of the overlying policy considerations, by a number of people, was to move in-river sand dredging to non-river sand dredging. He said he was concerned about the evulsion risk but said the river would change some day. He said he would prefer the Corps of Engineer be involved to speak to the risks but he understood they were only concerned about the river. He said he was not nearly as concerned for the potential health or water quality risks if there was an appropriate set of monitoring wells. He felt the applicant had tried to explore that issue but it seemed it may not be good enough. He said the only condition he would like to defer to was trying to figure out a better condition regarding testing modification without sending to County Commission but felt they could work with staff on that. He said he would prefer not to defer.

Commissioner Britton said he was sensitive to the issue but not too worried about the impact on neighbors from industrial activity and traffic since that's what's been going on there for several decades. He said it was a valid concern but didn't rise to the level of denial of this request. He said the water issue was a much closer call and was hard to figure out what study to believe or what logical argument to give more weight to. He stated it would make sense to at least explore some sort of method by which the developer could give financial security where they would be on the hook for the cost of addressing a contamination issue. He felt agricultural land and class I and II soils were a much more valuable and rare resource than the sand being extracted. He felt there were ways this could be worked out given more time and opportunity.

Commissioner Liese said Planning Commission was not the deciding body, County Commission was. He said the applicant had done a terrific job of thinking about the community and about the implications of what they were doing. He said he would not vote for denial but would support the proposal with conditions.

Commissioner Culver said he would not support the recommendation for denial. He said Chapter 16 of the Comprehensive Plan, Horizon 2020, says *…encourages the responsible use of marketable natural resources*

within Douglas County through proper extraction and reclamation methods. They are essential to sustainable development activity, primarily in the form of low cost raw materials, such as sand, gravel, timber, oil, gas, and stone, etc. He felt there were competing values and that's what makes this difficult. He was concerned about the previous sand pit operation that tried to locate in Douglas County but moved to Jefferson County and now Douglas County has no control or say over that operation. He said if they kick the ball far enough ahead and don't make a decision they would miss the boat to where they could come to a good solution that protects the citizens and allows for natural resources in Douglas County to be utilized in a responsible way. As the applicant mentioned, this was a highly regulated industry with securities, precautions, measurements, and regulations in place for any kind of dredging or sand pit operation and were in place for a reason. He said those would take care of a lot of the issues discussed and continue to evolve to address some of those concerns. He said he supported the application because it was an active site so a lot of the impacts listed in the staff report would remain fairly consistent with the current activity and proposed activity. He said there was a need for sand. He said the applicant was willing to provide an abundance of caution by investing in observation wells and the possibility of discussing the opportunity for the City of Eudora and others to sample the wells on an ongoing basis. He said the unknowns made this difficult. He said they could do years and years of research and still may not know some of the possible effects. He said there was no way to minimize the risk completely. He liked the discussions about ways to protect the City of Eudora and felt the governing body could address some of those. He said he was concerned about the class I and II soils and did not think there was necessarily a full mitigation for that but the applicant was willing to reclaim part of the sand pit area to farmland. He said regarding the pollution concerns there was no evidence of that happening in other sand pit locations. He said it was a tough position because there was a movement to take dredges out of rivers but they hadn't adequately planned for how to replace that. He felt there needed to be alternatives because there was still a need for sand. He was not comfortable supporting a denial but would support recommending approval to County Commission.

Commissioner Liese said Friends of the Kaw were supportive of this proposal but encouraged Planning Commission to carefully consider and address neighbor concerns.

Commissioner Josserand agreed with Commissioner Culver's comments.

Commissioner Burger said she was not comfortable with over 400 acres but the conditions in the staff report were so thorough. She said Horizon 2020 supported this type of resource extraction and Eudora land use documents supported it. She said she would not vote to deny but would be much more comfortable with a similar scale of other sand pits along the river.

ACTION TAKEN BY Lawrence

Motioned by Commissioner Britton, seconded by Commissioner von Achen, to deny the Conditional Use Permit.

> Motion failed 3-4-1, with Commissioners Belt, Britton, and von Achen voting in favor of the motion. Commissioners Burger, Culver, Josserand, and Liese voted in opposition. Commissioner Lamer abstained.

Motioned by Commissioner Culver, seconded by Commissioner Josserand, to approve the Conditional Use Permit for Penny Sand Pit and forwarding it to the Board of County Commissioners with a recommendation for approval based on the findings of fact found in the body of the staff report subject to the following conditions:

1.) The approval is contingent upon the issuance of all State and/or Federal permits which are required for this operation.
1.) An agreement designating responsibility for the ongoing maintenance of the berms to the property owner shall be executed and recorded with the Register of Deeds prior to the release of the CUP plans to the Zoning and Codes Office. A copy of the agreement shall be provided to the Planning Office for the file.
2.) A copy of the easement for the off-site access drive shall be provided to the Planning Office for the file prior to the release of the CUP plans to the Zoning and Codes Office.

3.) The applicant shall obtain a Flood Plain Development Permit from the Director of Zoning and Codes prior to the release of the CUP plans.

4.) The reclamation plan shall be revised with the following changes prior to release of the CUP plans:
   a. The plan shall note the requirement that the lake that is being created will have a varied shoreline and will appear natural in appearance.
   b. The plan shall note that the intended use of the lake, when mining and reclamation is complete, is to be a recreational feature.
   c. The plan shall note the maximum slope of the lake shoreline for a specified depth to insure that the slopes are of a grade that it would be possible for a person or animal that accidentally entered the lake to exit.
   d. The plan shall explain the sequential nature of the reclamation process; that overburden produced in one phase will be used to reclaim previously excavated areas.
   e. The reclamation plan shall note that topsoil will be placed over the overburden in areas that are to be reclaimed as farmland, shoreline, or berms. If topsoil is to be stockpiled and stored it must be vegetated to prevent erosion.

5.) The applicant shall submit a revised CUP plan with the following changes:
   a) A detailed landscaping plan for the buffer area surrounding the McElwee house will be submitted.
   b) The Book and Page number of the recorded easement for the off-site access road shall be noted on the CUP plan.
   c) The ownership shall be noted as Van, LLC as well as Penny's Concrete Inc. on the CUP plan.
   d) The on-site residential structure on the east side of the property will be shown on the CUP plan as on the reclamation plan.
   e) If stockpiling of overburden is to occur on the subject property, the CUP or operation plan should note the maximum height and approximate location. The stockpiles should be placed as far from the existing residences as possible.
   f) List the following CUP conditions on the plan:
      i. Hours of operation are 6:30 AM to 6:30 PM, Monday through Friday. No removal, transfer, or placement of overburden is permitted outside these operating hours; however dredging and extraction of sand may exceed these hours when necessary.
      ii. The approval for this Conditional Use is valid for 30 years. An extension request for the CUP must be submitted prior to the expiration date or a new CUP application must be submitted. The Zoning and Codes office shall conduct 5 year administrative reviews to insure compliance with the CUP, operation, and reclamation plans.
      iii. The only exterior lighting in the areas to be excavated will be the dredge lighting as required by the U.S. Coast Guard.
      iv. The scale house, processing plant, sediment pond, and stockpile area, approved with CUP-2-2-79, will be used to serve the subject property.
      v. Sales of overburden, topsoil, sand or aggregate products will occur only on the portion of the property that contains the scale house on the CUP plan.
      vi. Truck traffic will utilize Noria Road (E 1750 Road), and is restricted from using N 1500 Road or E 1850 Road.
      vii. The applicant shall work with the Army Corps of Engineers to determine how the existing wetlands on the property will be treated. Prior to any excavation in Phase 21, the applicant will provide documentation to the Planning Office on the wetlands indicating whether the wetlands will be maintained on site or if they will be mitigated elsewhere. If the wetlands will be maintained on site, the operation plan will be revised to include the protection measures and the property owner shall submit a revised CUP plan for administrative review/approval of the wetland setbacks. If the wetlands are to be mitigated, a revised CUP plan shall be submitted to note the removal of the wetlands.

6.) The following improvements to nearby roads and intersections shall be completed per the County Engineer's approval before issuance of a permit for the Conditional Use :
   a. Realignment of the entrance to the sand facility so that it opposes the Noria Road intersection at N 1500 Road.

b. Pavement of a 100 ft long section of the site access drive just north of N 1500 Road, as recommended in the TIS.
c. Reconstruction of pavement in the Noria Road (E 1750 Road)/N 1500 Road intersection. The existing surfacing is likely a crushed rock base that has been chip sealed. This will not stand up to the increased truck traffic crossing N 1500 Road.
d. Construction of an eastbound right turn lane on Route 442 (N 1400 Road) at Route 1057 (E 1900 Road). This is mentioned as a desirable improvement in the TIS. Pavement on the existing shoulder at this location is not adequate for the projected amount of truck traffic.

7.) The applicant shall install three observation wells and one control well and that the City of Eudora be allowed to monitor those wells on an ongoing basis.

Commissioner Josserand said he would like the County Commission to examine the scope and size and also examine the possibility of what Eudora Planning Commission made reference to regarding risk.

Commissioner Burger said she was uncomfortable with the acreage but would vote in favor. She expressed concern about the flow and movement of the river.

Commissioner Liese asked if the body of water would be useable for recreation.

Mr. Watkins said it could be.

Motion carried 4-3-1, with Commissioners Burger, Culver, Josserand, and Liese voting in favor of the motion. Commissioners Belt, Britton, and von Achen voted in opposition. Commissioner Lamer abstained.

Adjourn Joint Meeting
Reconvene LDCMPC

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SEP 14 2012
City County Planning Office
Lawrence, Kansas

Memorandum

Date: September 13th, 2012

To: C.L. Maurer, RLA, ASLA
Senior Landscape Architect
Landplan Engineering, P.A.

From: Mehrdad Givechi, PE, PTOE, *Mehrdad Givechi*
Managing Principal
MGineering Solutions

Re: Penny Sand Plant Expansion, Addendum No. 1
Between Lawrence and Eudora, Douglas County, KS

This memo is prepared as an Addendum No. 1 to *Traffic Impact Study for "Penny Sand Plant Expansion"* dated 7/23/12 to re-evaluate impact of the traffic generated by this development, using the new information provided by the applicant as summarized in the following paragraphs:

1. The original TIS report dated 7/23/12 was prepared based on the "worst case scenario" when the proposed sand facility would potentially distribute approximately 5,000 tons of sand on a highly productive day (a very rare event). Based on the new information provided by the applicant, the primary reason for the proposed expansion of the plant (from 114 acres to 465 acres) is to switch over the sand excavation area from the river-side to the in-land side, maintaining its current rate of sand distribution at approximately 1,000(+/-) tons on an average day (based on most recent 7-year average) for foreseeable future. It is, however, to be noted that as the economy improves, a higher distribution rate will be likely as demand goes up with the absolute maximum rate of 5,000 tons a day (a very rare event) as described and studied in the original TIS dated 7/23/12.
2. As mentioned in the original TIS, N. 1500 Road has posted weight limit signs of 5 tons on both sides of Noria Road and is not a designated truck route. Currently, all

site-generated trucks use Noria Road to access the site. Under the proposed development plan, all site-generated trucks will maintain the same route to access the site and will not be using N. 1500 Road.

3. The original TIS dated 7/23/12 states that, currently, the facility is staffed by 4 employees and no increase in the number of employees is anticipated. Based on the new information provided by the applicant, the number of current employees is 8 and expected to increase to 10.

Traffic Impact Reassessment

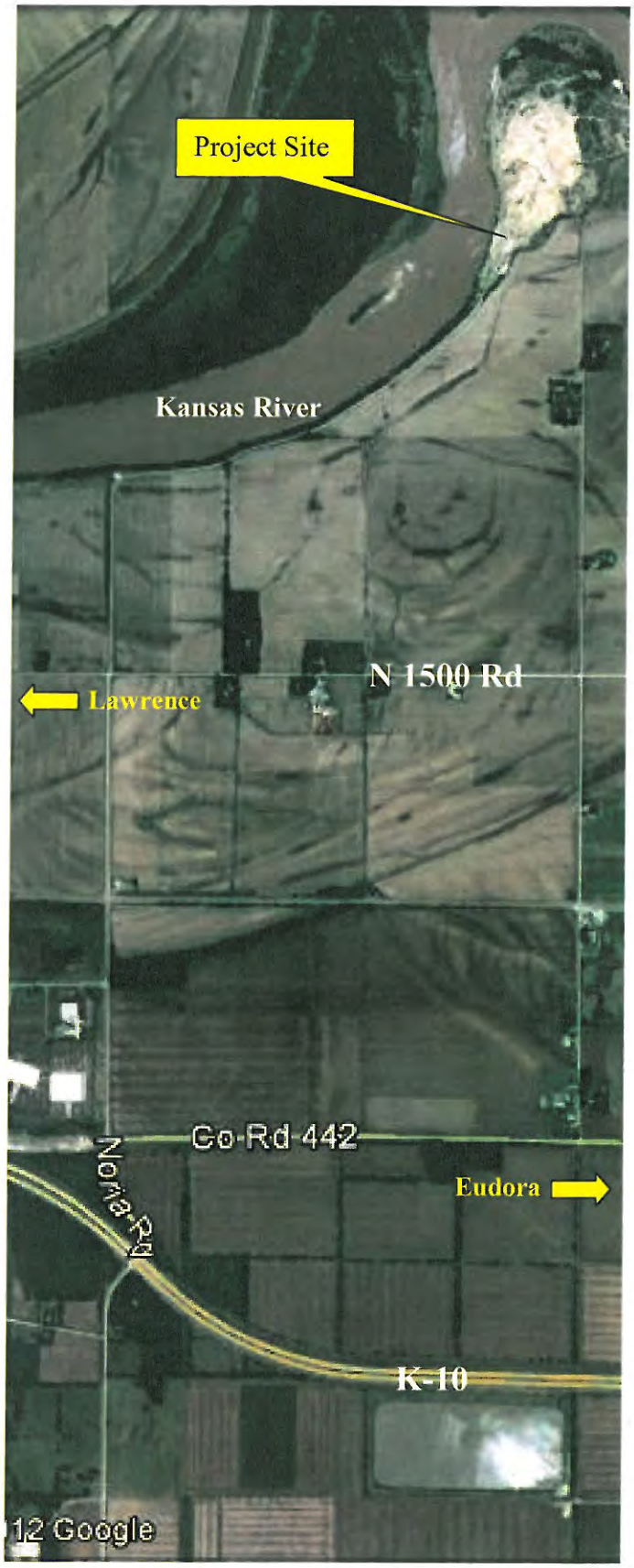
Using the average distribution rate of 1,000 tons/day following the same analogy mentioned in the original TIS, the estimated number of trucks serving the site will be around 40 trucks/day with 5 trucks/peak-hour - equivalent to 10 truck trip-ends/peak-hour (5 inbound and 5 outbound). Comparing this number to that generated by the existing sand plant (8 truck trip-ends, 4 inbound and 4 outbound) results in an increase of 2 truck trip-ends/peak-hour (1 inbound and 1 outbound) – a nominal increase in truck traffic, none of which will be impacting N. 1500 Road except at the access point to the site.

Using the ITE trip generation rates for the office component of the site (ITE Land Use Code 715) indicates that the increase in the number of employees (2 new people) will likely result in 2 new trip-ends (all passenger cars) during the peak-hour of a typical weekday – a nominal increase in passenger car traffic with insignificant impact on the roadway network.

Re-evaluation of the operating conditions of traffic in the study area, given the new information, indicates that, during the critical peak-hour of a typical weekday when the plant is operating under average conditions, the increase in the number of trucks and passenger cars is insignificant with nominal impact on the roadway network.

In light of the new information provided by the applicant and the traffic impact reassessment:

1. It is still desirable that 100' long section of the site access, just north of N. 1500 Road be paved as listed in the original TIS under improvement #1.
2. The need for a dedicated eastbound right-turn lane on Route 442 (Old K-10) at its intersection with Route 1057 (as listed under improvement #2 in the original TIS) becomes less relevant because the increase in truck traffic will be nominal for a foreseeable future. As time goes by and economy improves with higher demand for sand distribution, the increase in site-generated truck traffic should be studies to re-assess the need for this turn lane.
3. As stated in the original TIS, under improvement #3, pavement conditions along certain segments of the roadway network should be evaluated to determine if they can withstand heavy truck loads. This was merely suggested based on a cursory visual field observation and is not the result of a formal pavement analysis and/or evaluation. It should be noted that pavement analysis and/or evaluation is beyond the scope of a typical traffic impact study.



Traffic Impact Study

for

Penny Sand Plant Expansion

1-1/2 mile Northeast of the Intersection of Noria Road and N 1500 Road

Douglas County, Kansas

Prepared
for
Landplan Engineering, PA

Prepared
By

MGineering Solutions
Serving Communities Through Excellence
Kansas - Missouri - Michigan - California

MEHRDAD GIVECHI
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PROFESSIONAL ENGINEER

Mehrdad Givechi, PE, PTOE

July 2012

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Introduction

Proposed Development

The existing "Penny Sand Extraction" facility - located next to Kansas River approximately 1-1/2 miles northeast of the intersection of Noria Road (E 1750 Rd.) and N 1500 Road in Douglas County, Kansas – comprises approximately 114 acres. Under the proposed plan, the site will be expanded to include an additional sand excavation area of approximately 351 acres for a total site area of approximately 465 acres (See Location Map, Figure 1 of Appendix I). Access to the site, as shown on the Site Plan (Figure 2 of Appendix I), will remain unchanged at its current location at the intersection of Noria Road and N 1500 Road (i.e. north leg of the intersection).

The facility will be open for operation on weekdays and some Saturdays (approximately 250 days a year) between the hours of 6:30 a.m. and 6:30 p.m., staffed by as many as four (4) employees.

According to the Horizon 2020 (Map 4-2), the site is FEMA designated "Floodway" and "Floodway Fringe".

Existing Nearby Developments

Currently, the vast majority of the land in the proximity of the site is undeveloped with the exception of

- "East Hills Business Park" located on the west side of Noria Road approximately 2/3 miles south of N 1500 Road; and
- A few scattered residential dwelling units in the study area.

Purpose

The purpose of this study is to:

1. Evaluate the existing operating conditions of traffic along the anticipated route that site-generated trucks will utilize to access the site including the intersections of
    a. Noria Road and N 1500 Road;
    b. Noria Road and DG CO 442 (Old K-10);
    c. DG CO 442 (Old K-10) and DG CO 1057 (E 1900 Rd); and

d. The interchange of K-10 and DG CO 1057 (E 1900 Rd).

2. Assess impact of the trips generated by the proposed expansion of the sand facility on the above mentioned intersections and roadway network; and
3. Recommend off-site improvements needed (if any) as the result of this expansion.

Data Collection and Summary

In order to assess the impact of traffic generated by the expansion of the existing sand facility in the study area, field observations and traffic counts (including truck traffic) were conducted. The following paragraphs summarize the results of data collection efforts for this project.

Roadway Network Geometric & Operating Characteristics

In the vicinity of the development site, as illustrated in Figure 3 of Appendix I,

- N. 1500 Road is a two-way, two lane roadway that runs east/west approximately 1.4 miles south of the development site. This roadway extends west and becomes 15th Street at approximately 1-3/4 miles west of Noria Road as it enters the city limits of Lawrence. Some of the other roadway characteristics for N 1500 Road include:
    - Asphalt pavement with uneven surface west of E 1810 Road turning into gravel road east of there.
    - No shoulders.
    - An active railroad crossing (with gate and signal) approximately 1.3 miles west of Noria Road (just west of E 1625 Road).
    - Posted speed limit of 40 mph, changing to 30 mph west of E 1625 Road where railroad crossing is located.
    - Posted weight limit sign of “5 Tons” for commercial vehicles for both directions of travel.
    - East of Noria Road, it is designated as “Rural Minor Collector” on the County’s T2030 Major Thoroughfare Map. This designation changes to “Minor Arterial” for the segment west of Noria Road.
    - West of Noria Road, it serves as a commuter route between Lawrence and both, Eudora and “East Hills Business Park”.

- Noria Road (E. 1750 Road) is a two-way, two lane roadway that runs north/south along east side of “East Hills Business Park” connecting N 1500 Road to DG CO 442 (Old K-10) and K-10 Highway. Some of the other characteristics of this roadway include:
    - An active railroad crossing (with gate and signal) approximately 1/2 mile south of Noria Road.
    - Concrete pavement with 6’ paved shoulders north of the railroad track. Asphalt pavement with 4’ shoulders south of the railroad track.
    - Posted speed limit of 45 mph between Noria Road and DG CO 442 (old K-10), with an advisory speed limit sign of 35 mph along the curve south of DG CO 442.
    - Designated as “Minor Arterial” on the County’s T2030 Major Thoroughfare Map.
    - It serves as a commuter route between Lawrence and both Eudora and “east Hills Business Park”.
- DG CO 442 (Old K-10) is a two-way, two lane roadway that runs east/west approximately 1 mile south of Noria Road and goes through city of Eudora to the east. Other roadway characteristics include:
    - Asphalt pavement with uneven surface and unpaved 4’-6’ shoulders.
    - Posted speed limit of 45 mph within the city limits (near Noria Road), changing to 55 mph in the county (west of Eudora).
    - Between Noria Road and Eudora, it is designated as “Minor Arterial” on the County’s T2030 Major Thoroughfare Map.
    - West of Eudora, this roadway serves as a commuter route between Eudora and both, Lawrence and “East Hills Business Park”.
- DG CO 1057 is a two-way, two lane roadway running north/south crossing DG CO 442 at approximately 1.5 miles east of Noria Road providing a main connection to K-10 Highway. Other roadway characteristics include:
    - Asphalt pavement with unpaved 2’-4’ shoulders.
    - Posted speed limit of 45 mph.
    - Designated as “Minor Arterial” on the County’s T2030 Major Thoroughfare Map.

- All intersections in the study area have one lane on each approach except for the:
    - Intersection of DG CO 1057 and DG CO 442, which has a dedicated northbound right-turn lane with approximately 175' of storage and a dedicated westbound left-turn lane with approximately 110' of storage; and
    - Intersection of Noria Road and DG CO 442, which has a dedicated westbound right-turn lane with 175' of storage; and a channelized northbound right turnout.

Manual Traffic Counts

Currently, the "East Hills Business Park" is the main trip generator in the study area and will most likely dictate the time periods during which traffic on the adjacent roadway network reaches its peak. As part of this study, therefore, vehicular turning movement counts (including truck traffic) were conducted at the intersections under study during the time periods when shift changes for the "East Hills Business Park" occur.

Currently the shifts change at 6:30, 7:00 and 7:30 in the morning and 2:30, 3:00 and 3:30 in the afternoon. Therefore, for the purpose of this analysis, turning movement counts were conducted from 6:00 to 9:00 a.m. and 2:00 to 5:00 p.m. on typical weekdays (July 11th, 12th and 17th, 2012). The results, as summarized in Appendix III and illustrated in Figures 4 and 5 of Appendix I, indicate that

- Morning peak occurs between 7:30 and 8:30 a.m. for all vehicles including truck traffic; and
- Afternoon peak occurs between 4:00 and 5:00 p.m. for all vehicles, and between 3:00 and 4:00 p.m. for truck traffic.
- At the intersection of Noria Road and N 1500 Road, the predominant movements are eastbound right-turn and northbound left-turn with no truck traffic on N 1500 Road.
- At the intersection of Noria Road and DG CO 442, the predominant movements are southbound left-turn and westbound right-turn. The predominant truck movements,

however, are northbound through (31% to 46%) and southbound left-turn (7% to 16%).

- At the intersection of DG CO 442 and DG CO 1057, the predominant movements are eastbound and westbound through. The predominant truck movements, however, are eastbound right-turn (19% to 31%) and northbound right-turn (unusually high at 27% to 60%).
- At the interchange of K-10 and DG CO 1057, the predominant movements are southbound right-turn (at the north ramps) and eastbound left-turn (at the south ramps). The predominant truck movements, however, are southbound left-turn (20% to 32%) and eastbound left-turn (unusually high at 25% to 34%), both at the south ramps.
- Field observations indicate that loaded trucks, leaving the existing sand plant, take Noria Road south to DG CO 442 (Old K-10), then east to DG CO 1057, then south to K-10 interchange, then east to their destinations. After their delivery, the trucks head back to the sand plant using K-10 Highway, then north on Noria Road straight to the plant entrance off of N 1500 Road.

NOTES:

1. *During the time period traffic counts were being conducted for this study, there was a paving project near Eudora that generated a large number of truck traffic. Loaded trucks, carrying asphalt material, got to the job site from west using K-10 Highway to access DG CO 1057 at the interchange, then head north to DG CO 442 (Old K-10), then east to Eudora. Empty trucks left the job site using Church Street south to K-10 Highway, then west to the asphalt plant. This construction activity resulted in an skew in the normal truck traffic pattern in the study area, which caused the heavy truck movement for the eastbound left-turn movement at the interchange and northbound right-turn movement at the intersection of DG Co 1057 and DG CO 442.*
2. *DG CO 1057, approximately ½ mile south of the K-10 interchange, has been closed to traffic for a bridge replacement project. This also affected the through traffic on DG CO 1057 south of the interchange.*

Evaluation of the Existing Operating Conditions

A volume/capacity analysis (using methodologies outlined in the *2000 Highway Capacity Manual (HCM) published by the Transportation Research Board*) was conducted to determine the level-of-service (LOS) for all movements at the intersections under study during the afternoon peak-hour of a typical weekday.

Level-of-service, as defined in the HCM, describes the quality of traffic operating condition and ranges from "A" to "F", with LOS "A" representing the best (most desirable with minimum delay) conditions and LOS "F" the worst (severely congested with excessive delays). The following chart outlines the level-of-service criteria for unsignalized and signalized intersections.

Level-Of-Service	Control Delay for Unsignalized Intersections (seconds/vehicle)	Control Delay for Signalized Intersections (seconds/vehicle)
A	0 – 10	0 – 10
B	> 10 – 15	> 10 – 20
C	> 15 – 25	> 20 – 35
D	> 25 – 35	> 35 – 55
E	> 35 – 50	> 55 – 80
F	> 50	> 80

The results of analysis, as shown in Appendix II and summarized in Figure 6 of Appendix I, indicate that, under the existing conditions, all movements at all intersections in the study area operate at LOS "B" or higher during both morning and afternoon peak-hours of a typical weekday.

Trip Generation Analysis

Typically, trips generated by a proposed development are estimated using trip generation rates suggested by the *Institute of Transportation Engineers, Trip Generation Manual, 8th Edition*. Since the Manual does not have information for land use type "Sand Plant", the following procedure was used for analysis:

- For the sand processing component of this development, the number of trucks generated by this site was estimated based on the following assumptions:
    - With the proposed new expansion, the plant is anticipated to distribute as much as 5,000 tons of sand on a most productive day.
    - 80% of trucks serving the site will be Tractor Trailers each with a maximum load capacity of 25-30 tons. The remaining 20% will be tandem trucks each hauling between 15 and 18 tons. This is equivalent to an average truck load of approximately 25 tons.
    - Assuming a high productive day (5,000 tons of distribution), the estimated number of trucks serving the site will be around 200 trucks/day, which equates to a total of 400 trip-ends (two-way trips) per day.
    - Hauling time varies for different plants. Truckers going to the same plant have different lap times. The only time that trucks tend to arrive somewhat simultaneously is first thing in the morning when a plant opens. Their departure from the plant, however, is not simultaneous due to individual loading times. Other times throughout the day, truck traffic to/from the plant is spread out randomly over the 12-hours of operation (6:30 a.m. to 6:30 p.m.). For analysis purposes, it is assumed that peak-hour truck traffic will be approximately 12% of the daily truck traffic, which is approximately 48 trip-ends (24 inbound and 24 outbound) during the morning peak-hour of operation.
    - To account for the existing traffic in/out of the site (i.e. current operation of the sand plant), a truck count survey was conducted during the time period when turning movement counts were being conducted. The results, as summarized in Figure 5 of Appendix I, indicate that the existing sand processing facility generates 8 trip-ends (4 inbound and 4 outbound)

during the morning peak-hour, and 9 trip-ends (5 inbound and 4 outbound) during the afternoon peak-hour.

- For the office component of this development, no increase in number of employees are anticipated, hence no additional trips will be generated by the office component.

Using above mentioned assumptions, the ***net increase*** in number of trips resulted by the proposed sand plant expansion will be approximately 40 trip-ends (20 inbound and 20 outbound) during both morning and afternoon peak-hours of a typical weekday - all truck traffic.

Analysis Time Period

An overview of the existing traffic volumes in the study area and their peak characteristics, in conjunction with estimated trips generated from the proposed development, indicate that the most critical peak period will likely occur during *morning peak-hour* of a typical weekday. Therefore, the morning peak-hour is selected as the analysis time period for this study. In addition, afternoon peak-hour is also analyzed.

Trip Distribution and Assignment Analysis

As mentioned earlier, field observations indicate that all truck traffic generated by the existing sand operation head south on Noria Road, thence east on DG CO 442, thence south on DG CO 1057 to access K-10 Highway and head east. Based on the information provided by the applicant, the vast majority of the new trips generated by the site expansion will also follow the same patterns. Figures 7 and 8 of Appendix I illustrate trip distribution patterns and assignment for the site-generated trips, respectively. Note that a small portion of the trips (~ 5%) are assigned to go west on K-10 (at the interchange) to represent occasional trips to the west.

Impact Assessment

Volume/Capacity Analysis

An evaluation of the "Existing + Proposed Development" traffic conditions (using HCS2000 methodology mentioned earlier) indicates that LOS for all movements at all intersections under study remain unchanged at "B" or higher during both morning and afternoon peak-hours of a typical weekday. The results, as shown in Appendix II and illustrated in Figures 9 and 10 of Appendix I, indicate that traffic generated from the proposed facility expansion will not have a negative impact on the capacity of the roadway networks in the study area.

Dedicated Turn-Lane Analysis

Using the guidelines for both right-turn and left-turn treatments at unsignalized intersections (as listed in Appendix IV) indicate that, from traffic volume stand point, no new dedicated turn lanes are required at any intersections in the study area.

Under the existing conditions, during the critical analysis period (morning peak-hour of a typical weekday), approximately 17% of the eastbound traffic at the intersection of DG CO 442 and DG CO 1057 consists of heavy trucks - all of which negotiate right turn at this location. The proposed expansion for the sand plant will significantly increase the heavy truck traffic for this movement to as high as ~42% of the total eastbound movement. Because of their low power/acceleration ratio, not having a dedicated eastbound right-turn lane may interfere with the through traffic creating a safety concern. It is, therefore, desirable (as a safety measure) that a dedicated eastbound right-turn lane be provided at this location to keep the large number of heavy trucks out of the main traffic flow on DG CO 442.

Summary & Recommendations

The results of this impact analysis indicate that the proposed “Penny Sand Plant Expansion” will have minimal impact on the capacity of the roadway network in the study area with no degradation of level-of-service at any locations under study (LOS of “B” or higher).

From safety stand point, however, the following improvements are desirable:

1. Pave a 100’ long section of the site access, just north of N 1500 Road, to keep gravel from being tracked, by site-generated trucks, onto the intersection.
2. Provide a dedicated eastbound right-turn lane on DG CO 442 (Old K-10) at its intersection with DG CO 1057 (E 1900 Rd). The minimum storage length for this turn lane should be 150’ in order to accommodate two (2) tractor trailer and two passenger cars. This is a desirable safety measure to keep loaded heavy trucks (having low power/acceleration ratio) out of the main traffic flow. Under the existing conditions, there is a 12’ wide paved area for a length of approximately 140’ that is not marked as a traffic lane rather has white crosshatch pavement marking along its entire length. This area can potentially be utilized to create the subject right-turn lane.
3. Pavement condition along certain segments of the roadway network in the study area should be evaluated to determine if it can withstand the increase in heavy truck traffic resulted by the proposed sand plant expansion.

APPENDIX I

Results of Trip Distribution and Assignment Analysis



Intersections under study

Figure 1

Location Map

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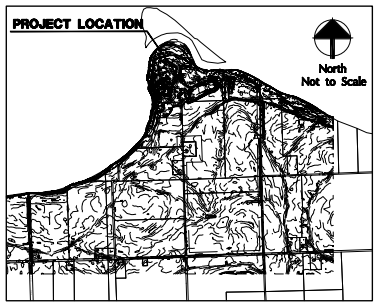
Location Map



Legal Description

General Notes

OWNER: PENNY'S CONCRETE, INC.
ATTN: BILL PENNY
800 EAST 8TH STREET,
LAWRENCE, KS 66044

1. LAND PLANNER/ ENGINEER: LANDPLAN ENGINEERING, P.A.
1310 WAKARUSA DRIVE
LAWRENCE, KS 66049
2. TOPOGRAPHIC INFORMATION OBTAINED FROM 2006 CITY OF LAWRENCE LIDAR AERIAL DATA.
3. EXISTING LAND USE: AGRICULTURAL& SAND EXTRACTION
4. PROPOSED LAND USE: SAND EXCAVATION, EXTRACTION & PROCESSING; AGRICULTURAL
5. EXISTING ZONING: A – VC
6. PROPOSED ZONING: A – VC
7. THIS SITE IS LOCATED WITHIN THE FLOODPLAIN PER FEMA MAP #20045C0203D, DATED AUGUST 5, 2010.
8. THIS SITE HAS BEEN DESIGNED TO COMPLY WITH THE PROVISIONS OF THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG) FOR BUILDINGS AND FACILITIES, APPENDIX A TO 28 CFR PART 36.
9. PHASE BOUNDARIES ARE ONLY AN APPROXIMATION DUE TO VARIABILITY OF UNDERGROUND DEPOSITS. SEQUENCES OF EXCAVATION MAY VARY.

Site Summary

GROSS CUP/SITE AREA:	20261272 SF / 465.13 AC
PUBLIC RIGHTS-OF-WAY:	0 SF / 0.00 AC
NET CUP/SITE AREA:	XX SF / XX AC
SAND EXCAVATION & AGRI AREA:	XX / XX AC
SAND/GRAVEL PROCESSING AREA:	XX / XX AC
SCALE HOUSE & MATERIALS LAB:	XX SF
SAND/GRAVEL PROCESSING PLANT:	XX SF

Parking Summary

REQUIRED = 1 SPACE/2 EMPLOYEES; 4 TOTAL EMPLOYEES = 2 SPACES
PROVIDED = 8 SPACES

SCALE: 1" = 400'

400 200 0 400 800

Access Road

Penny Sand Lawrence Facility

Douglas County, Kansas

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Landscape Architecture
Community Planning
Surveying

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Blue Springs, MO • The Woodlands, TX

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Web: www.landplan-pa.com

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PENNY SAND FACILITY
CONDITIONAL USE PERMIT
CUP SITE PLAN

REV	DATE	DESCRIPTION

DATE:	7.2.12
PROJECT NO.:	20121146
DESIGNED BY:	CLM
DRAWN BY:	CLM
CHECKED BY:	CLM

ISSUE A

SHEET NO. C-001

OF 2 SHEETS

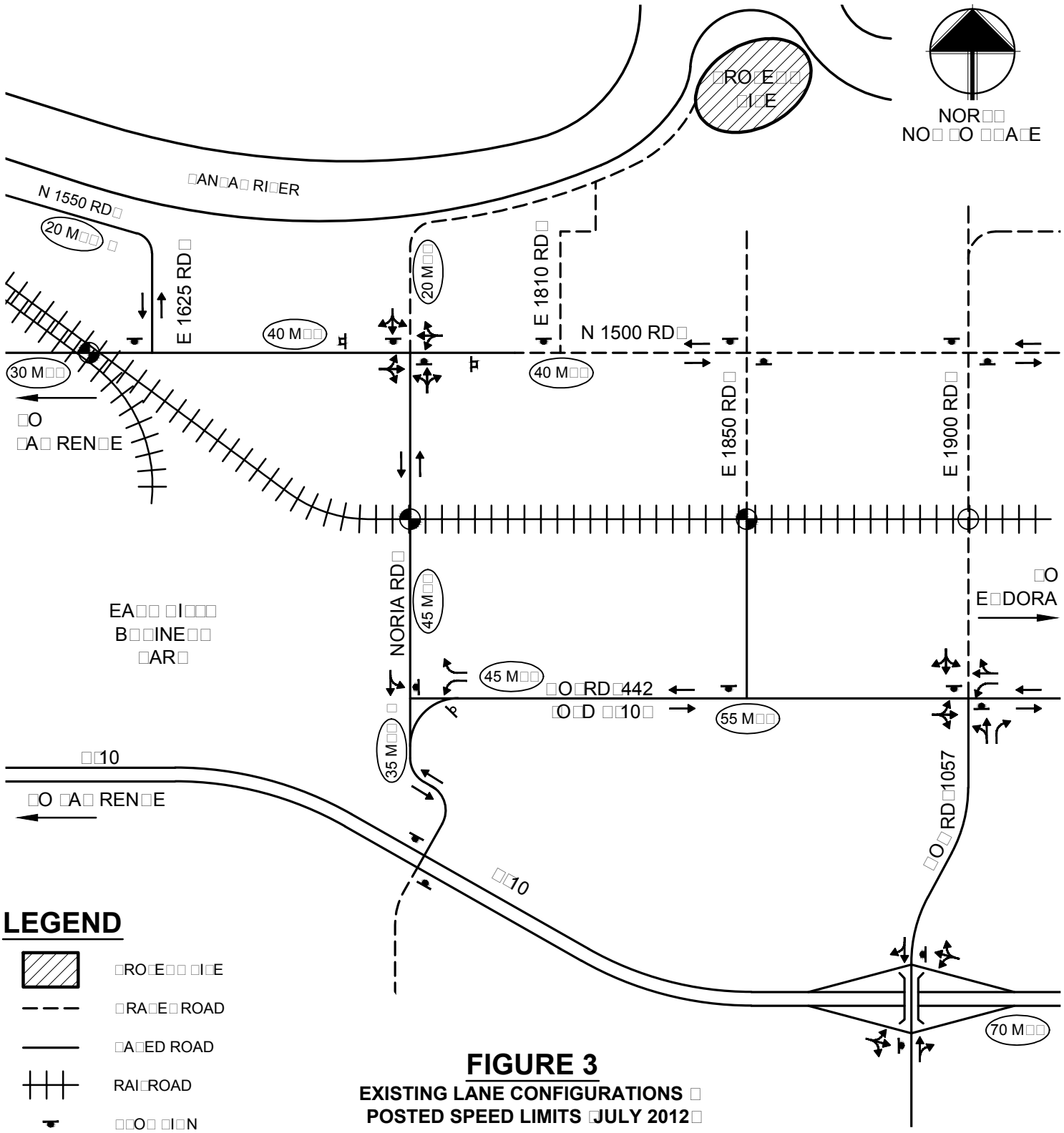

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FIGURE 3

EXISTING LANE CONFIGURATIONS □
POSTED SPEED LIMITS □JULY 2012□

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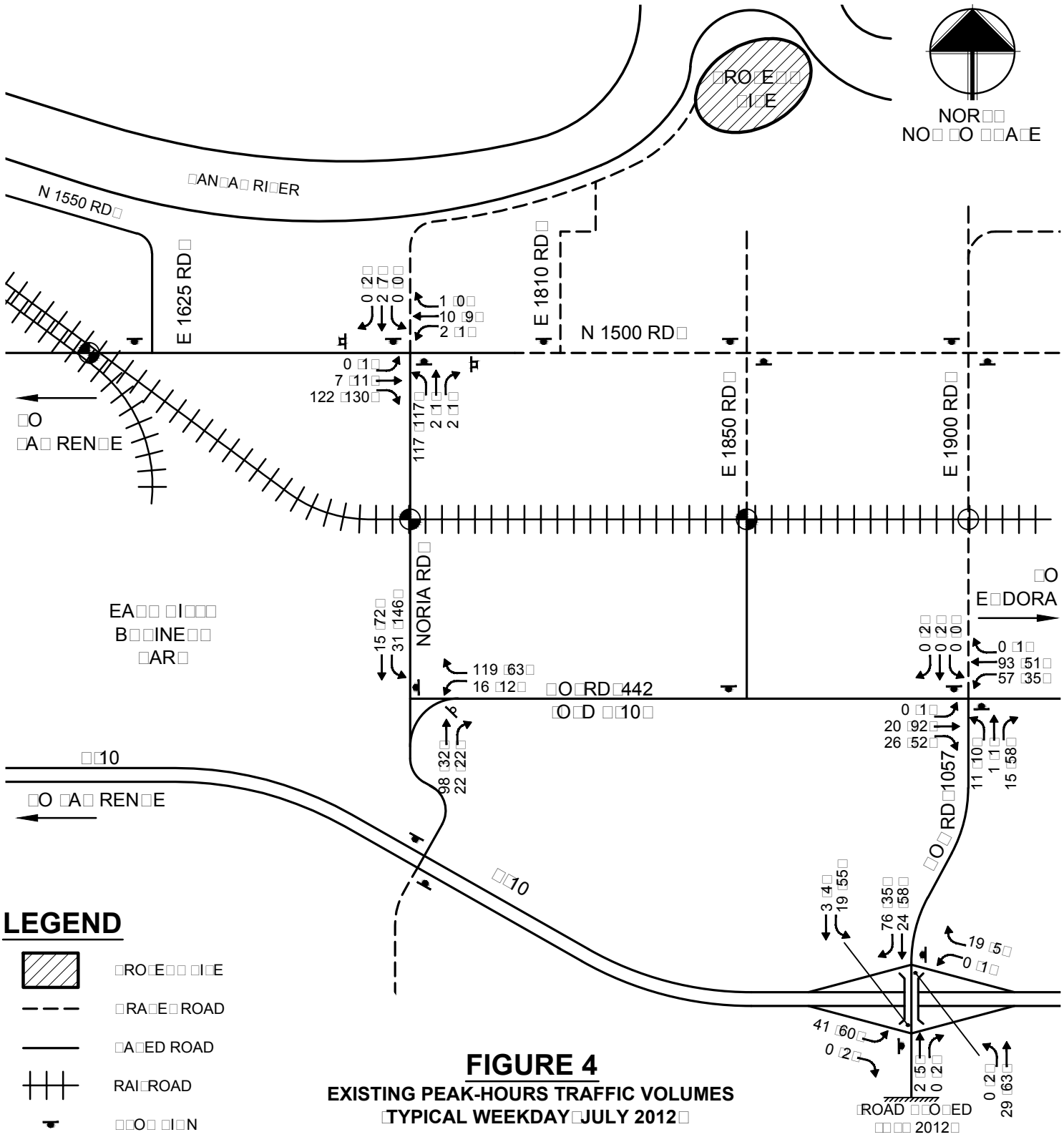

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FIGURE 4

EXISTING PEAK-HOURS TRAFFIC VOLUMES

TYPICAL WEEKDAY JULY 2012

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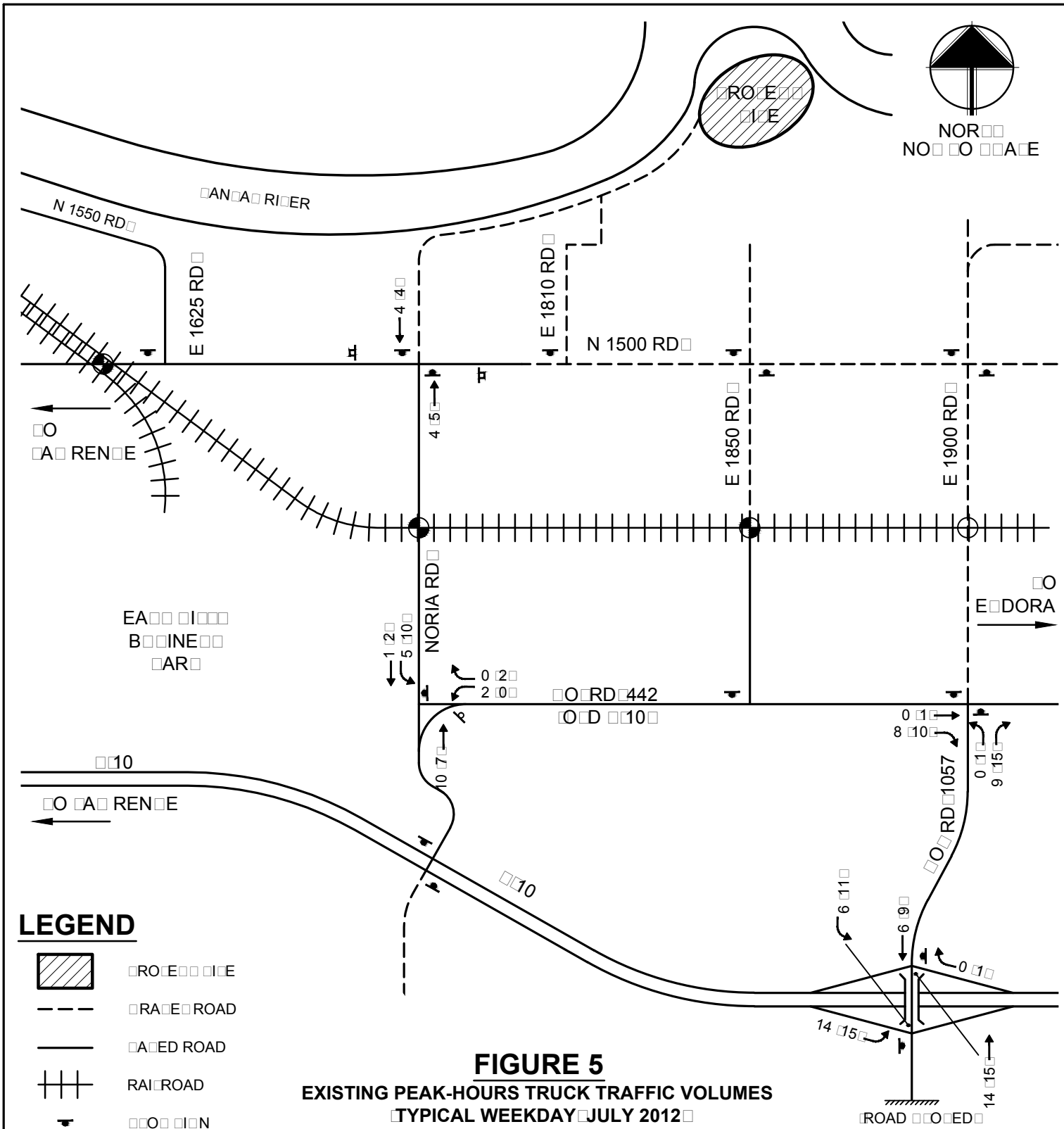

FIGURE 5

EXISTING PEAK-HOURS TRUCK TRAFFIC VOLUMES

TYPICAL WEEKDAY JULY 2012

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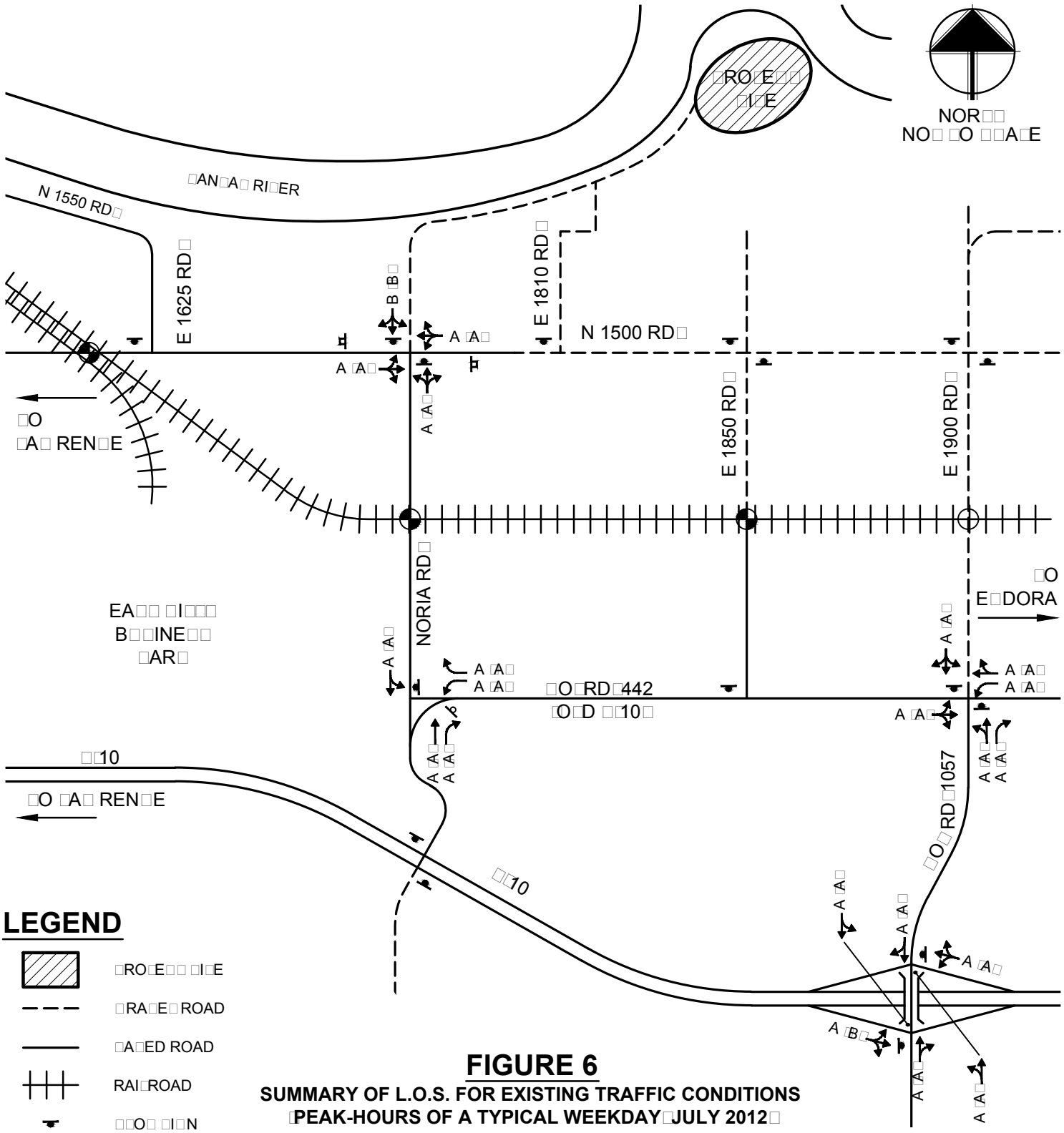

FIGURE 6

SUMMARY OF L.O.S. FOR EXISTING TRAFFIC CONDITIONS
PEAK-HOURS OF A TYPICAL WEEKDAY JULY 2012

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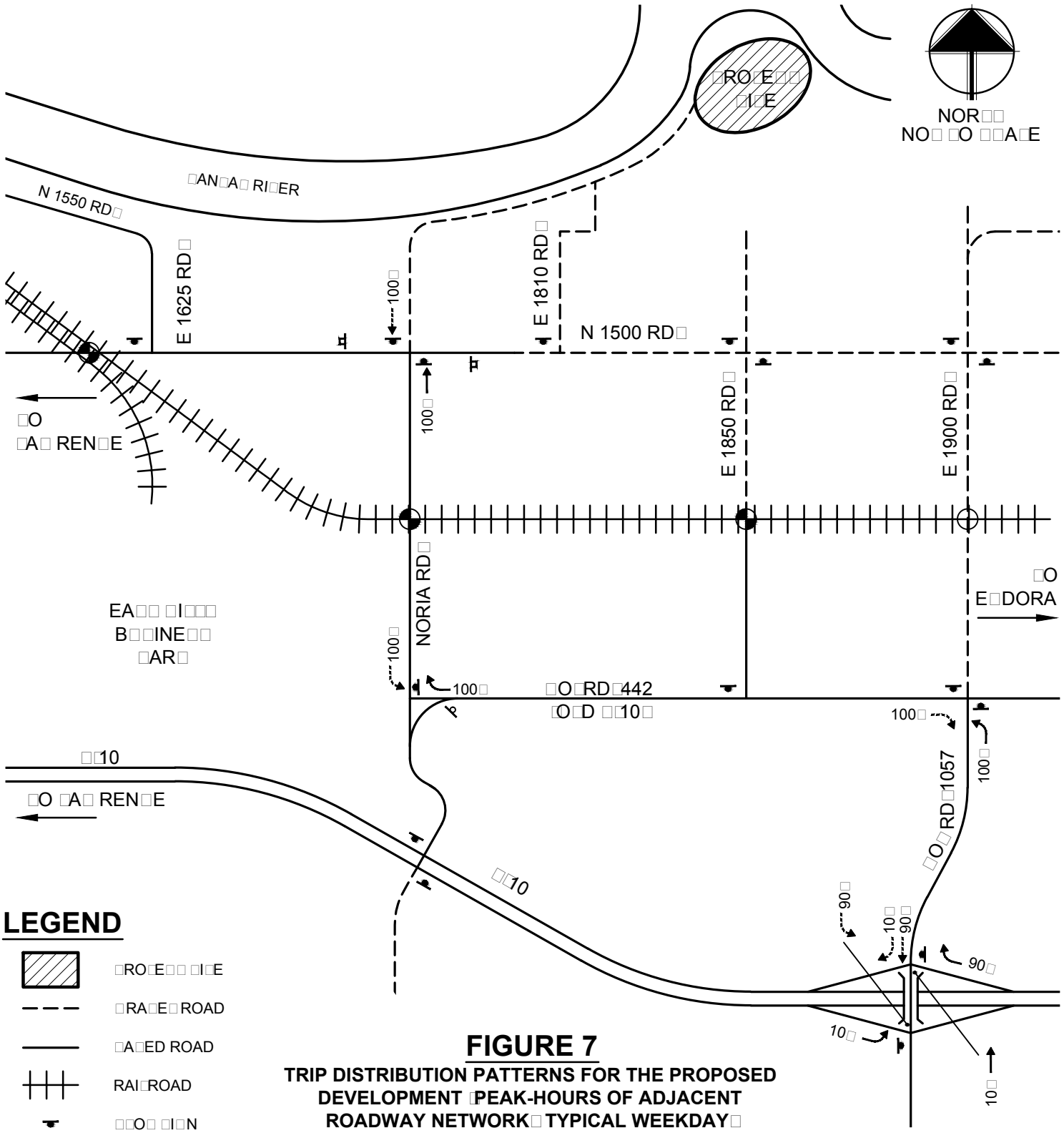

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FIGURE 7

TRIP DISTRIBUTION PATTERNS FOR THE PROPOSED DEVELOPMENT PEAK-HOURS OF ADJACENT ROADWAY NETWORK TYPICAL WEEKDAY

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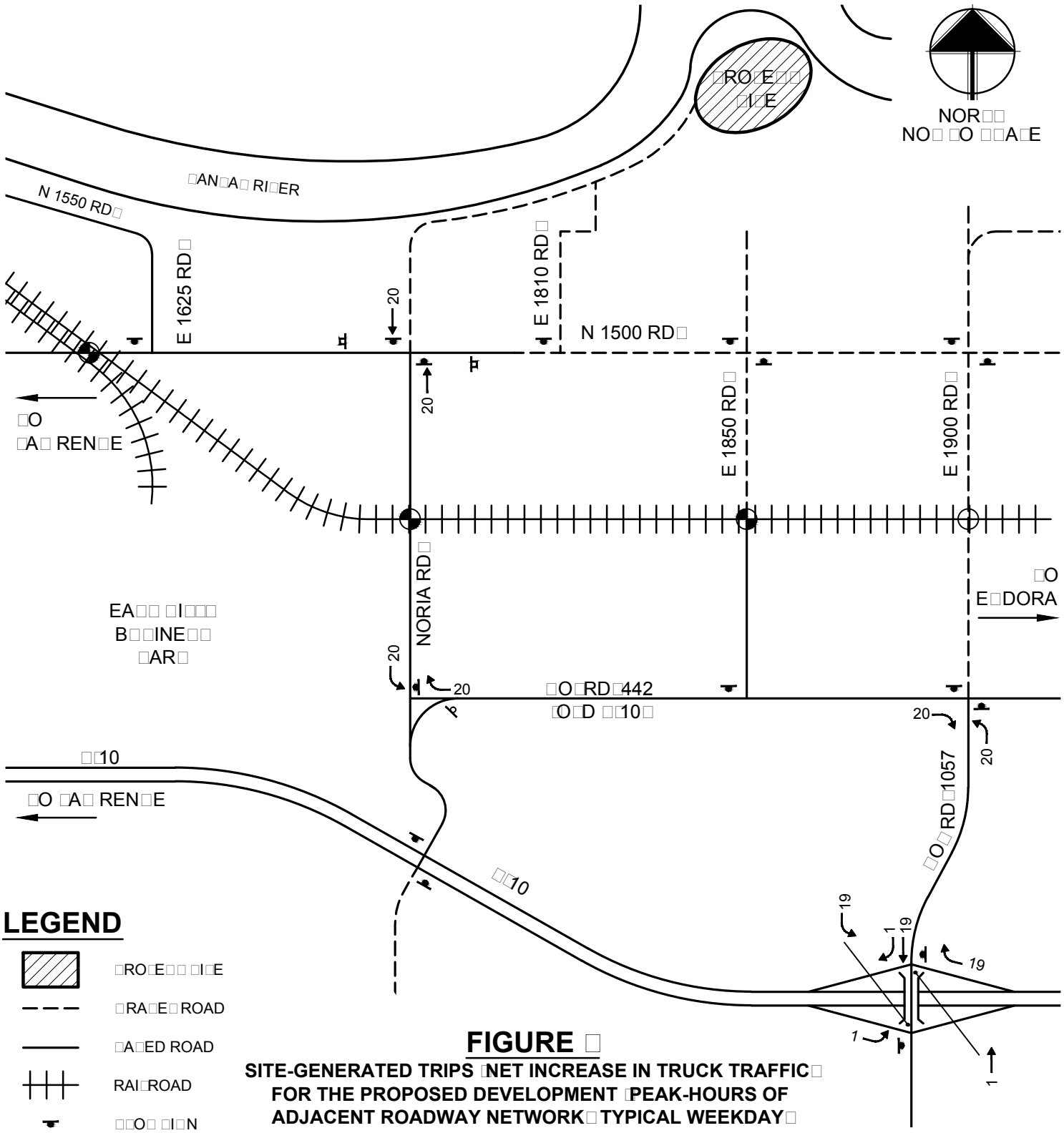

FIGURE

SITE-GENERATED TRIPS NET INCREASE IN TRUCK TRAFFIC FOR THE PROPOSED DEVELOPMENT PEAK-HOURS OF ADJACENT ROADWAY NETWORK TYPICAL WEEKDAY

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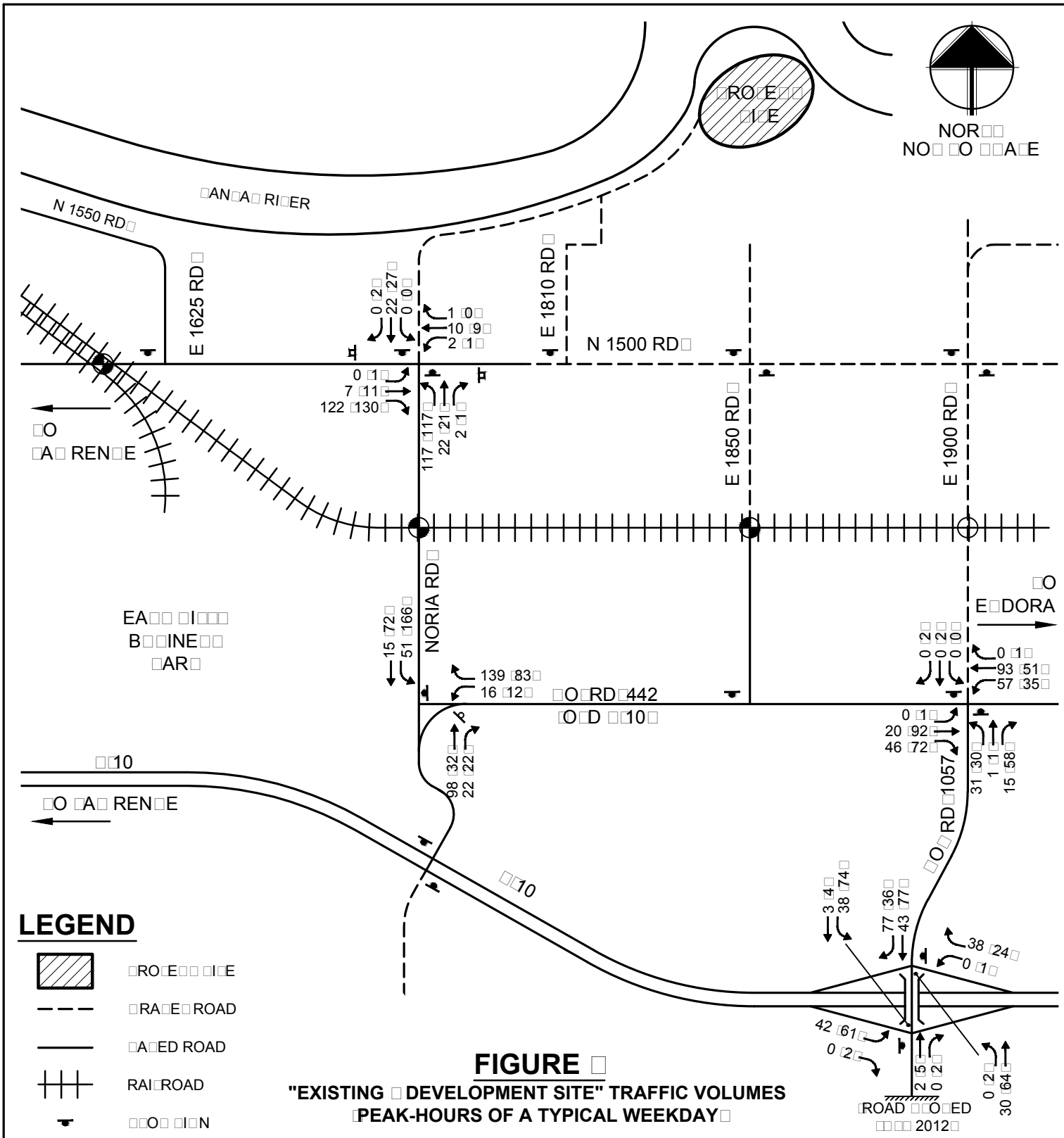

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FIGURE

"EXISTING DEVELOPMENT SITE" TRAFFIC VOLUMES
PEAK-HOURS OF A TYPICAL WEEKDAY

ROAD O ED
2012

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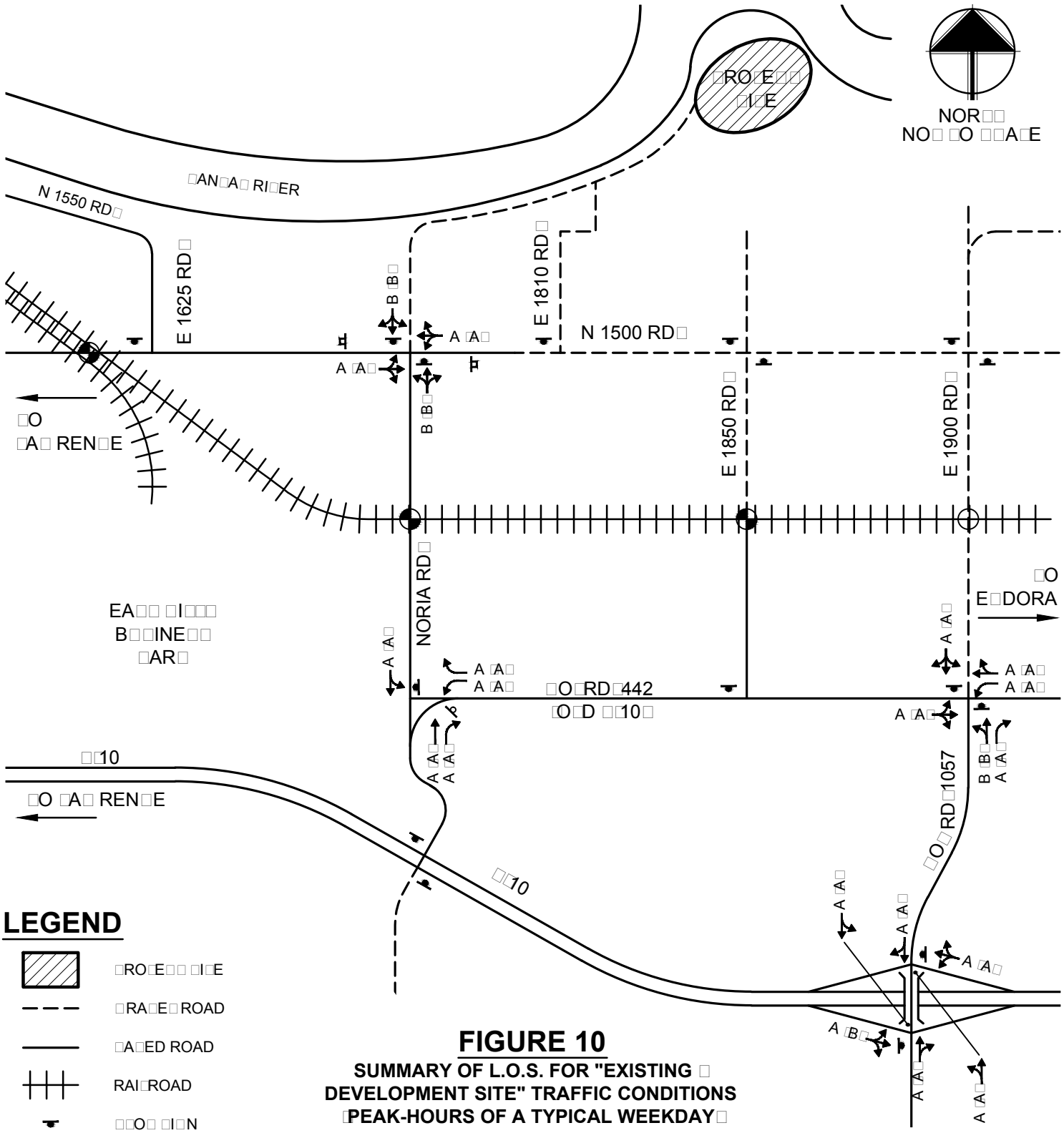

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FIGURE 10

SUMMARY OF L.O.S. FOR "EXISTING DEVELOPMENT SITE" TRAFFIC CONDITIONS PEAK-HOURS OF A TYPICAL WEEKDAY

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APPENDIX II

Results of Highway Capacity Analysis

Using

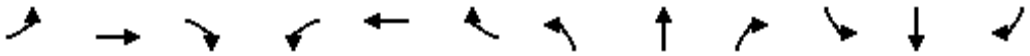
Synchro 7 Software

EXISTING CONDITIONS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	7	122	2	10	1	117	2	2	0	2	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	8	133	2	11	1	127	2	2	0	2	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	12			140			91	90	74	93	156	11
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	12			140			91	90	74	93	156	11
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	7.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.9	3.3
p0 queue free %	100			100			86	100	100	100	100	100
cM capacity (veh/h)	1607			1443			890	799	988	886	588	1069

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	140	14	132	2
Volume Left	0	2	127	0
Volume Right	133	1	2	0
cSH	1607	1443	890	588
Volume to Capacity	0.00	0.00	0.15	0.00
Queue Length 95th (ft)	0	0	13	0
Control Delay (s)	0.0	1.2	9.7	11.1
Lane LOS		A	A	B
Approach Delay (s)	0.0	1.2	9.7	11.1
Approach LOS			A	B

Intersection Summary				
Average Delay	4.6			
Intersection Capacity Utilization	28.0%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	11	130	1	9	0	117	1	1	0	7	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.876						0.999			0.973	
Flt Protected					0.995			0.953				
Satd. Flow (prot)	0	1632	0	0	1853	0	0	1760	0	0	1025	0
Flt Permitted					0.995			0.953				
Satd. Flow (perm)	0	1632	0	0	1853	0	0	1760	0	0	1025	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		742			793			5163			445	
Travel Time (s)		16.9			18.0			117.3			10.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	100%	2%	2%	100%	2%
Adj. Flow (vph)	1	12	141	1	10	0	127	1	1	0	8	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	154	0	0	11	0	0	129	0	0	10	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.8%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	16	119	98	22	31	15
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	17	129	107	24	34	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		7				
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	190	107			107	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	190	107			107	
tC, single (s)	6.5	6.2			4.3	
tC, 2 stage (s)						
tF (s)	3.6	3.3			2.3	
p0 queue free %	98	86			98	
cM capacity (veh/h)	758	948			1401	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	147	107	24	50
Volume Left	17	0	0	34
Volume Right	129	0	24	0
cSH	1075	1700	1700	1401
Volume to Capacity	0.14	0.06	0.01	0.02
Queue Length 95th (ft)	12	0	0	2
Control Delay (s)	9.5	0.0	0.0	5.2
Lane LOS	A			A
Approach Delay (s)	9.5	0.0		5.2
Approach LOS	A			

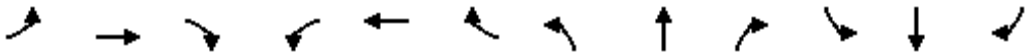
Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	19.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	12	63	32	22	146	72
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	68	35	24	159	78
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		7				
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	430	35			35	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	430	35			35	
tC, single (s)	6.4	6.5			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.6			2.3	
p0 queue free %	98	93			90	
cM capacity (veh/h)	522	959			1545	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	82	35	24	237
Volume Left	13	0	0	159
Volume Right	68	0	24	0
cSH	1141	1700	1700	1545
Volume to Capacity	0.07	0.02	0.01	0.10
Queue Length 95th (ft)	6	0	0	9
Control Delay (s)	9.5	0.0	0.0	5.4
Lane LOS	A			A
Approach Delay (s)	9.5	0.0		5.4
Approach LOS	A			

Intersection Summary			
Average Delay	5.4		
Intersection Capacity Utilization	28.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	20	26	57	93	0	11	1	15	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	22	28	62	101	0	12	1	16	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									7			
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	101			50			261	261	36	270	275	101
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	101			50			261	261	36	270	275	101
tC, single (s)	4.1			4.1			7.1	6.5	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.4	3.5	4.0	3.3
p0 queue free %	100			96			98	100	98	100	100	100
cM capacity (veh/h)	1491			1557			671	618	1025	651	607	954

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	50	62	101	29	0
Volume Left	0	62	0	12	0
Volume Right	28	0	0	16	0
cSH	1491	1557	1700	1500	1700
Volume to Capacity	0.00	0.04	0.06	0.02	0.00
Queue Length 95th (ft)	0	3	0	1	0
Control Delay (s)	0.0	7.4	0.0	9.4	0.0
Lane LOS		A		A	A
Approach Delay (s)	0.0	2.8		9.4	0.0
Approach LOS				A	A

Intersection Summary				
Average Delay	3.0			
Intersection Capacity Utilization	19.8%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	92	52	35	51	1	10	1	58	0	2	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	100	57	38	55	1	11	1	63	0	2	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									7			
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	57			157			265	263	128	295	291	56
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	57			157			265	263	128	295	291	56
tC, single (s)	4.1			4.1			7.2	6.5	6.5	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.0	3.5	3.5	4.0	3.3
p0 queue free %	100			97			98	100	93	100	100	100
cM capacity (veh/h)	1548			1423			654	624	861	596	603	1011

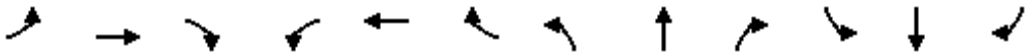
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	158	38	57	75	4
Volume Left	1	38	0	11	0
Volume Right	57	0	1	63	2
cSH	1548	1423	1700	1025	755
Volume to Capacity	0.00	0.03	0.03	0.07	0.01
Queue Length 95th (ft)	0	2	0	6	0
Control Delay (s)	0.1	7.6	0.0	9.7	9.8
Lane LOS	A	A		A	A
Approach Delay (s)	0.1	3.1		9.7	9.8
Approach LOS				A	A

Intersection Summary				
Average Delay	3.2			
Intersection Capacity Utilization	28.7%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	0	19	0	29	0	0	24	76
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	21	0	32	0	0	26	83
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	120	99	67	99	140	32	109			32		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	120	99	67	99	140	32	109			32		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	98	100			100		
cM capacity (veh/h)	839	791	996	883	751	1042	1482			1581		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	21	32	109
Volume Left	0	0	0
Volume Right	21	0	83
cSH	1042	1482	1700
Volume to Capacity	0.02	0.00	0.06
Queue Length 95th (ft)	2	0	0
Control Delay (s)	8.5	0.0	0.0
Lane LOS	A		
Approach Delay (s)	8.5	0.0	0.0
Approach LOS	A		

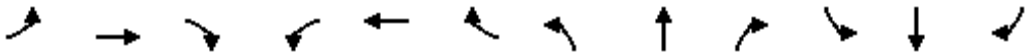
Intersection Summary				
Average Delay	1.1			
Intersection Capacity Utilization	15.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	1	0	5	2	63	0	0	58	35
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	1	0	5	2	68	0	0	63	38
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	160	155	82	155	174	68	101			68		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	160	155	82	155	174	68	101			68		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.4	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.5	2.2			2.2		
p0 queue free %	100	100	100	100	100	99	100			100		
cM capacity (veh/h)	800	736	978	811	718	947	1491			1533		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	7	71	101
Volume Left	1	2	0
Volume Right	5	0	38
cSH	921	1491	1700
Volume to Capacity	0.01	0.00	0.06
Queue Length 95th (ft)	1	0	0
Control Delay (s)	8.9	0.2	0.0
Lane LOS	A	A	
Approach Delay (s)	8.9	0.2	0.0
Approach LOS	A		

Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	15.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	41	0	0	0	0	0	0	2	0	19	3	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	45	0	0	0	0	0	0	2	0	21	3	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	47	47	3	47	47	2	3			2		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	47	47	3	47	47	2	3			2		
tC, single (s)	7.4	6.5	6.2	7.1	6.5	6.2	4.1			4.4		
tC, 2 stage (s)												
tF (s)	3.8	4.0	3.3	3.5	4.0	3.3	2.2			2.5		
p0 queue free %	95	100	100	100	100	100	100			99		
cM capacity (veh/h)	871	833	1081	944	833	1082	1619			1444		

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	45	2	24
Volume Left	45	0	21
Volume Right	0	0	0
cSH	871	1700	1444
Volume to Capacity	0.05	0.00	0.01
Queue Length 95th (ft)	4	0	1
Control Delay (s)	9.4	0.0	6.5
Lane LOS	A		A
Approach Delay (s)	9.4	0.0	6.5
Approach LOS	A		

Intersection Summary			
Average Delay	8.1		
Intersection Capacity Utilization	17.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	60	0	2	0	0	0	0	5	2	55	4	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	65	0	2	0	0	0	0	5	2	60	4	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	130	132	4	133	130	7	4			8		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	130	132	4	133	130	7	4			8		
tC, single (s)	7.3	6.5	6.2	7.1	6.5	6.2	4.1			4.3		
tC, 2 stage (s)												
tF (s)	3.7	4.0	3.3	3.5	4.0	3.3	2.2			2.4		
p0 queue free %	92	100	100	100	100	100	100			96		
cM capacity (veh/h)	768	729	1079	812	730	1076	1617			1503		

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	67	8	64
Volume Left	65	0	60
Volume Right	2	2	0
cSH	775	1700	1503
Volume to Capacity	0.09	0.00	0.04
Queue Length 95th (ft)	7	0	3
Control Delay (s)	10.1	0.0	7.0
Lane LOS	B		A
Approach Delay (s)	10.1	0.0	7.0
Approach LOS	B		

Intersection Summary				
Average Delay	8.1			
Intersection Capacity Utilization	20.0%	ICU Level of Service	A	
Analysis Period (min)	15			

EXISTING + DEVELOPMENT TRAFFIC CONDITIONS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	7	122	2	10	1	117	22	2	0	22	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	8	133	2	11	1	127	24	2	0	24	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	12			140			102	90	74	104	156	11
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	12			140			102	90	74	104	156	11
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	7.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.9	3.3
p0 queue free %	100			100			85	97	100	100	96	100
cM capacity (veh/h)	1607			1443			851	799	988	853	588	1069

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	140	14	153	24
Volume Left	0	2	127	0
Volume Right	133	1	2	0
cSH	1607	1443	844	588
Volume to Capacity	0.00	0.00	0.18	0.04
Queue Length 95th (ft)	0	0	17	3
Control Delay (s)	0.0	1.2	10.2	11.4
Lane LOS		A	B	B
Approach Delay (s)	0.0	1.2	10.2	11.4
Approach LOS			B	B

Intersection Summary				
Average Delay	5.6			
Intersection Capacity Utilization	29.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	11	130	1	9	0	117	21	1	0	27	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	12	141	1	10	0	127	23	1	0	29	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	10			153			114	97	83	109	167	10
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	10			153			114	97	83	109	167	10
tC, single (s)	4.1			4.1			7.1	7.5	6.2	7.1	7.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.9	3.3	3.5	4.9	3.3
p0 queue free %	100			100			85	96	100	100	95	100
cM capacity (veh/h)	1610			1427			828	640	977	844	579	1072

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	154	11	151	32
Volume Left	1	1	127	0
Volume Right	141	0	1	2
cSH	1610	1427	793	598
Volume to Capacity	0.00	0.00	0.19	0.05
Queue Length 95th (ft)	0	0	17	4
Control Delay (s)	0.1	0.8	10.6	11.4
Lane LOS	A	A	B	B
Approach Delay (s)	0.1	0.8	10.6	11.4
Approach LOS			B	B

Intersection Summary				
Average Delay	5.7			
Intersection Capacity Utilization	29.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	16	139	98	22	51	15
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	17	151	107	24	55	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		7				
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	234	107			107	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	234	107			107	
tC, single (s)	6.5	6.2			4.3	
tC, 2 stage (s)						
tF (s)	3.6	3.3			2.3	
p0 queue free %	98	84			96	
cM capacity (veh/h)	704	948			1401	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	168	107	24	72
Volume Left	17	0	0	55
Volume Right	151	0	24	0
cSH	1057	1700	1700	1401
Volume to Capacity	0.16	0.06	0.01	0.04
Queue Length 95th (ft)	14	0	0	3
Control Delay (s)	9.6	0.0	0.0	6.0
Lane LOS	A			A
Approach Delay (s)	9.6	0.0		6.0
Approach LOS	A			

Intersection Summary			
Average Delay	5.5		
Intersection Capacity Utilization	20.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	12	83	32	22	166	72
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	90	35	24	180	78
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		7				
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	474	35			35	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	474	35			35	
tC, single (s)	6.4	6.5			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.6			2.3	
p0 queue free %	97	91			88	
cM capacity (veh/h)	485	959			1545	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	103	35	24	259
Volume Left	13	0	0	180
Volume Right	90	0	24	0
cSH	1097	1700	1700	1545
Volume to Capacity	0.09	0.02	0.01	0.12
Queue Length 95th (ft)	8	0	0	10
Control Delay (s)	9.6	0.0	0.0	5.6
Lane LOS	A			A
Approach Delay (s)	9.6	0.0		5.6
Approach LOS	A			

Intersection Summary			
Average Delay	5.8		
Intersection Capacity Utilization	29.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	20	46	57	93	0	31	1	15	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	22	50	62	101	0	34	1	16	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									7			
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	101			72			272	272	47	280	297	101
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	101			72			272	272	47	280	297	101
tC, single (s)	4.1			4.1			7.1	6.5	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.4	3.5	4.0	3.3
p0 queue free %	100			96			95	100	98	100	100	100
cM capacity (veh/h)	1491			1528			660	609	1011	640	590	954

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	72	62	101	51	0
Volume Left	0	62	0	34	0
Volume Right	50	0	0	16	0
cSH	1491	1528	1700	967	1700
Volume to Capacity	0.00	0.04	0.06	0.05	0.00
Queue Length 95th (ft)	0	3	0	4	0
Control Delay (s)	0.0	7.5	0.0	10.1	0.0
Lane LOS		A		B	A
Approach Delay (s)	0.0	2.8		10.1	0.0
Approach LOS				B	A

Intersection Summary				
Average Delay	3.4			
Intersection Capacity Utilization	19.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	92	72	35	51	1	30	1	58	0	2	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	100	78	38	55	1	33	1	63	0	2	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									7			
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	57			178			276	274	139	305	312	56
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	57			178			276	274	139	305	312	56
tC, single (s)	4.1			4.1			7.2	6.5	6.5	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.0	3.5	3.5	4.0	3.3
p0 queue free %	100			97			95	100	93	100	100	100
cM capacity (veh/h)	1548			1398			643	616	849	585	586	1011

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	179	38	57	97	4
Volume Left	1	38	0	33	0
Volume Right	78	0	1	63	2
cSH	1548	1398	1700	1303	742
Volume to Capacity	0.00	0.03	0.03	0.07	0.01
Queue Length 95th (ft)	0	2	0	6	0
Control Delay (s)	0.1	7.6	0.0	10.0	9.9
Lane LOS	A	A		B	A
Approach Delay (s)	0.1	3.1		10.0	9.9
Approach LOS				B	A

Intersection Summary				
Average Delay	3.5			
Intersection Capacity Utilization	31.0%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	0	38	0	30	0	0	43	77
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	41	0	33	0	0	47	84
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	162	121	89	121	163	33	130			33		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	162	121	89	121	163	33	130			33		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	96	100			100		
cM capacity (veh/h)	771	769	970	854	729	1041	1455			1579		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	41	33	130
Volume Left	0	0	0
Volume Right	41	0	84
cSH	1041	1455	1700
Volume to Capacity	0.04	0.00	0.08
Queue Length 95th (ft)	3	0	0
Control Delay (s)	8.6	0.0	0.0
Lane LOS	A		
Approach Delay (s)	8.6	0.0	0.0
Approach LOS	A		

Intersection Summary				
Average Delay	1.7			
Intersection Capacity Utilization	17.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	1	0	24	2	64	0	0	77	36
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	1	0	26	2	70	0	0	84	39
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	203	177	103	177	197	70	123			70		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	203	177	103	177	197	70	123			70		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.4	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.5	2.2			2.2		
p0 queue free %	100	100	100	100	100	97	100			100		
cM capacity (veh/h)	733	715	952	784	698	945	1464			1531		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	27	72	123
Volume Left	1	2	0
Volume Right	26	0	39
cSH	938	1464	1700
Volume to Capacity	0.03	0.00	0.07
Queue Length 95th (ft)	2	0	0
Control Delay (s)	9.0	0.2	0.0
Lane LOS	A	A	
Approach Delay (s)	9.0	0.2	0.0
Approach LOS	A		

Intersection Summary				
Average Delay	1.2			
Intersection Capacity Utilization	16.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	42	0	0	0	0	0	0	2	0	38	3	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	46	0	0	0	0	0	0	2	0	41	3	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	88	88	3	88	88	2	3			2		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	88	88	3	88	88	2	3			2		
tC, single (s)	7.4	6.5	6.2	7.1	6.5	6.2	4.1			4.4		
tC, 2 stage (s)												
tF (s)	3.8	4.0	3.3	3.5	4.0	3.3	2.2			2.5		
p0 queue free %	94	100	100	100	100	100	100			97		
cM capacity (veh/h)	808	779	1081	878	779	1082	1619			1444		

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	46	2	45
Volume Left	46	0	41
Volume Right	0	0	0
cSH	808	1700	1444
Volume to Capacity	0.06	0.00	0.03
Queue Length 95th (ft)	4	0	2
Control Delay (s)	9.7	0.0	7.0
Lane LOS	A		A
Approach Delay (s)	9.7	0.0	7.0
Approach LOS	A		

Intersection Summary				
Average Delay	8.2			
Intersection Capacity Utilization	18.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	61	0	2	0	0	0	0	5	2	74	4	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	66	0	2	0	0	0	0	5	2	80	4	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	172	173	4	174	172	7	4			8		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	172	173	4	174	172	7	4			8		
tC, single (s)	7.3	6.5	6.2	7.1	6.5	6.2	4.1			4.3		
tC, 2 stage (s)												
tF (s)	3.7	4.0	3.3	3.5	4.0	3.3	2.2			2.4		
p0 queue free %	91	100	100	100	100	100	100			95		
cM capacity (veh/h)	712	682	1079	755	683	1076	1617			1503		

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	68	8	85
Volume Left	66	0	80
Volume Right	2	2	0
cSH	720	1700	1503
Volume to Capacity	0.10	0.00	0.05
Queue Length 95th (ft)	8	0	4
Control Delay (s)	10.5	0.0	7.2
Lane LOS	B		A
Approach Delay (s)	10.5	0.0	7.2
Approach LOS	B		

Intersection Summary				
Average Delay	8.3			
Intersection Capacity Utilization	21.1%	ICU Level of Service	A	
Analysis Period (min)	15			

APPENDIX III

Summary of Peak-Hours Traffic Counts

- All Vehicles
- Trucks Only

Turning Movement Counts
(All Vehicles)

Intersection of Noria Rd & N 1500 Rd
Morning Peak-Hours
Sunny, Hot

File Name : Noria & N 1500 -eam
Site Code : 1
Start Date : 7/11/2012
Page No : 1

Groups Printed- Unshifted

	Sand Plant Driveway From North					N 1500 Rd From East					Noria Rd From South					N 1500 Rd From West					
Start Time	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Int. Total
06:00 AM	1	0	0	0	1	0	0	0	0	0	0	0	6	0	6	11	0	0	0	11	18
06:15 AM	0	0	0	0	0	0	1	0	0	1	0	1	10	0	11	21	2	0	0	23	35
06:30 AM	0	0	0	0	0	0	1	1	0	2	0	1	21	0	22	19	1	1	0	21	45
06:45 AM	0	1	0	0	1	0	1	0	0	1	1	0	20	0	21	32	3	0	0	35	58
Total	1	1	0	0	2	0	3	1	0	4	1	2	57	0	60	83	6	1	0	90	156
07:00 AM	0	0	0	0	0	0	1	0	0	1	0	0	18	0	18	11	0	0	0	11	30
07:15 AM	0	0	0	0	0	1	1	0	0	2	0	0	32	0	32	20	1	0	0	21	55
07:30 AM	0	0	0	0	0	0	4	0	0	4	0	1	26	0	27	26	0	0	0	26	57
07:45 AM	0	1	0	0	1	0	1	1	0	2	0	0	40	0	40	49	3	0	0	52	95
Total	0	1	0	0	1	1	7	1	0	9	0	1	116	0	117	106	4	0	0	110	237
08:00 AM	0	0	0	0	0	0	3	0	0	3	1	1	27	0	29	19	2	0	0	21	53
08:15 AM	0	1	0	0	1	1	2	1	0	4	1	0	24	0	25	28	2	0	0	30	60
08:30 AM	0	1	0	0	1	0	1	0	0	1	1	3	18	0	22	18	2	0	0	20	44
08:45 AM	0	3	0	0	3	0	1	0	0	1	0	0	20	0	20	19	0	0	0	19	43
Total	0	5	0	0	5	1	7	1	0	9	3	4	89	0	96	84	6	0	0	90	200
Grand Total	1	7	0	0	8	2	17	3	0	22	4	7	262	0	273	273	16	1	0	290	593
Apprch %	12.5	87.5	0	0		9.1	77.3	13.6	0		1.5	2.6	96	0		94.1	5.5	0.3	0		
Total %	0.2	1.2	0	0	1.3	0.3	2.9	0.5	0	3.7	0.7	1.2	44.2	0	46	46	2.7	0.2	0	48.9	

Turning Movement Counts
(All Vehicles)

Intersection of Noria Rd & N 1500 Rd
Morning Peak-Hours
Sunny, Hot

File Name : Noria & N 1500 -eam
Site Code : 1
Start Date : 7/11/2012

	Sand Plant Driveway From North					N 1500 Rd From East					Noria Rd From South					N 1500 Rd From West					
Start Time	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	0	0	0	4	0	0	4	0	1	26	0	27	26	0	0	0	26	57
07:45 AM	0	1	0	0	1	0	1	1	0	2	0	0	40	0	40	49	3	0	0	52	95
08:00 AM	0	0	0	0	0	0	3	0	0	3	1	1	27	0	29	19	2	0	0	21	53
08:15 AM	0	1	0	0	1	1	2	1	0	4	1	0	24	0	25	28	2	0	0	30	60
Total Volume	0	2	0	0	2	1	10	2	0	13	2	2	117	0	121	122	7	0	0	129	265
% App. Total	0	100	0	0		7.7	76.9	15.4	0		1.7	1.7	96.7	0		94.6	5.4	0	0		
PHF	.000	.500	.000	.000	.500	.250	.625	.500	.000	.813	.500	.500	.731	.000	.756	.622	.583	.000	.000	.620	.697

Turning Movement Counts
(All Vehicles)

Intersection of Noria Rd & N 1500 Rd
Afternoon Peak-Hours
Sunny, Hot

File Name : Noria & N 1500 -epm
Site Code : 1
Start Date : 7/11/2012
Page No : 1

Groups Printed- Unshifted

	Sand Plant Driveway From North					N 1500 Rd From East					Noria Rd From South					N 1500 Rd From West					
Start Time	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Int. Total
02:00 PM	1	2	0	0	3	0	2	0	0	2	0	0	19	0	19	13	3	1	0	17	41
02:15 PM	0	1	0	0	1	0	0	0	0	0	1	1	9	0	11	19	2	0	0	21	33
02:30 PM	0	0	0	0	0	0	2	1	0	3	1	1	15	0	17	24	3	0	0	27	47
02:45 PM	0	1	0	0	1	0	1	0	0	1	1	0	16	0	17	16	3	0	0	19	38
Total	1	4	0	0	5	0	5	1	0	6	3	2	59	0	64	72	11	1	0	84	159
03:00 PM	0	1	0	0	1	0	0	0	0	0	0	1	29	0	30	19	0	0	0	19	50
03:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	28	0	28	17	2	0	0	19	49
03:30 PM	0	1	0	0	1	0	3	1	0	4	0	3	52	0	55	26	4	0	0	30	90
03:45 PM	0	1	0	0	1	0	2	0	0	2	0	2	20	0	22	25	2	0	0	27	52
Total	0	3	0	0	3	0	7	1	0	8	0	6	129	0	135	87	8	0	0	95	241
04:00 PM	0	5	0	0	5	0	0	0	0	0	0	0	27	0	27	23	4	1	0	28	60
04:15 PM	1	0	0	0	1	0	4	0	0	4	0	0	14	0	14	35	4	0	0	39	58
04:30 PM	0	2	0	0	2	0	2	0	0	2	1	1	53	0	55	25	1	0	0	26	85
04:45 PM	1	0	0	0	1	0	3	1	0	4	0	0	23	0	23	47	2	0	0	49	77
Total	2	7	0	0	9	0	9	1	0	10	1	1	117	0	119	130	11	1	0	142	280
Grand Total	3	14	0	0	17	0	21	3	0	24	4	9	305	0	318	289	30	2	0	321	680
Apprch %	17.6	82.4	0	0		0	87.5	12.5	0		1.3	2.8	95.9	0		90	9.3	0.6	0		
Total %	0.4	2.1	0	0	2.5	0	3.1	0.4	0	3.5	0.6	1.3	44.9	0	46.8	42.5	4.4	0.3	0	47.2	

Turning Movement Counts
(All Vehicles)

Intersection of Noria Rd & N 1500 Rd
Afternoon Peak-Hours
Sunny, Hot

File Name : Noria & N 1500 -epm
Site Code : 1
Start Date : 7/11/2012

	Sand Plant Driveway From North					N 1500 Rd From East					Noria Rd From South					N 1500 Rd From West					
Start Time	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 04:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	5	0	0	5	0	0	0	0	0	0	0	27	0	27	23	4	1	0	28	60
04:15 PM	1	0	0	0	1	0	4	0	0	4	0	0	14	0	14	35	4	0	0	39	58
04:30 PM	0	2	0	0	2	0	2	0	0	2	1	1	53	0	55	25	1	0	0	26	85
04:45 PM	1	0	0	0	1	0	3	1	0	4	0	0	23	0	23	47	2	0	0	49	77
Total Volume	2	7	0	0	9	0	9	1	0	10	1	1	117	0	119	130	11	1	0	142	280
% App. Total	22.2	77.8	0	0		0	90	10	0		0.8	0.8	98.3	0		91.5	7.7	0.7	0		
PHF	.500	.350	.000	.000	.450	.000	.563	.250	.000	.625	.250	.250	.552	.000	.541	.691	.688	.250	.000	.724	.824

Turning Movement Counts
(All Vehicles)

Intersection of Noria Rd & DG CO 442
Morning Peak-Hours
Sunny, Hot

File Name : CR 442 & Noria-eam
Site Code : 2
Start Date : 7/12/2012
Page No : 1

Groups Printed- Unshifted

	Noria Rd From North					DG CO 442 From East					Noria Rd From South					From West					
Start Time		Thru	Left		App. Total	Right		Left		App. Total	Right	Thru			App. Total					App. Total	Int. Total
06:00 AM	0	4	2	0	6	13	0	1	0	14	1	6	0	0	7	0	0	0	0	0	27
06:15 AM	0	3	3	0	6	11	0	0	0	11	1	9	0	0	10	0	0	0	0	0	27
06:30 AM	0	3	5	0	8	22	0	2	0	24	5	16	0	0	21	0	0	0	0	0	53
06:45 AM	0	0	8	0	8	27	0	2	0	29	8	28	0	0	36	0	0	0	0	0	73
Total	0	10	18	0	28	73	0	5	0	78	15	59	0	0	74	0	0	0	0	0	180
07:00 AM	0	5	8	0	13	23	0	4	0	27	4	17	0	0	21	0	0	0	0	0	61
07:15 AM	0	0	11	0	11	29	0	2	0	31	5	17	0	0	22	0	0	0	0	0	64
07:30 AM	0	3	4	0	7	42	0	5	0	47	2	16	0	0	18	0	0	0	0	0	72
07:45 AM	0	4	6	0	10	25	0	7	0	32	8	37	0	0	45	0	0	0	0	0	87
Total	0	12	29	0	41	119	0	18	0	137	19	87	0	0	106	0	0	0	0	0	284
08:00 AM	0	2	10	0	12	26	0	3	0	29	7	25	0	0	32	0	0	0	0	0	73
08:15 AM	0	6	11	0	17	26	0	1	0	27	5	20	0	0	25	0	0	0	0	0	69
08:30 AM	0	10	4	0	14	18	0	6	0	24	2	14	0	0	16	0	0	0	0	0	54
08:45 AM	0	6	6	0	12	5	0	8	0	13	1	17	0	0	18	0	0	0	0	0	43
Total	0	24	31	0	55	75	0	18	0	93	15	76	0	0	91	0	0	0	0	0	239
Grand Total	0	46	78	0	124	267	0	41	0	308	49	222	0	0	271	0	0	0	0	0	703
Apprch %	0	37.1	62.9	0		86.7	0	13.3	0		18.1	81.9	0	0		0	0	0	0		
Total %	0	6.5	11.1	0	17.6	38	0	5.8	0	43.8	7	31.6	0	0	38.5	0	0	0	0	0	

Turning Movement Counts
(All Vehicles)

Intersection of Noria Rd & DG CO 442
Morning Peak-Hours
Sunny, Hot

File Name : CR 442 & Noria-eam
Site Code : 2
Start Date : 7/12/2012

	Noria Rd From North					DG CO 442 From East					Noria Rd From South					From West					
Start Time		Thru	Left		App. Total	Right		Left		App. Total	Right	Thru			App. Total					App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	3	4	0	7	42	0	5	0	47	2	16	0	0	18	0	0	0	0	0	72
07:45 AM	0	4	6	0	10	25	0	7	0	32	8	37	0	0	45	0	0	0	0	0	87
08:00 AM	0	2	10	0	12	26	0	3	0	29	7	25	0	0	32	0	0	0	0	0	73
08:15 AM	0	6	11	0	17	26	0	1	0	27	5	20	0	0	25	0	0	0	0	0	69
Total Volume	0	15	31	0	46	119	0	16	0	135	22	98	0	0	120	0	0	0	0	0	301
% App. Total	0	32.6	67.4	0		88.1	0	11.9	0		18.3	81.7	0	0		0	0	0	0		
PHF	.000	.625	.705	.000	.676	.708	.000	.571	.000	.718	.688	.662	.000	.000	.667	.000	.000	.000	.000	.000	.865

Turning Movement Counts
(All Vehicles)

Intersection of DG CO 442 & Noria Rd
Afternoon Peak-Hours
Sunny, Hot

File Name : CR 442 & Noria-epm
Site Code : 2
Start Date : 7/12/2012
Page No : 1

Groups Printed- Unshifted

	Noria Road From North					DG CO 442 From East					Noria Road From South					From West					
Start Time		Thru	Left		App. Total	Right		Left		App. Total	Right	Thru			App. Total					App. Total	Int. Total
02:00 PM	0	9	9	0	18	16	0	7	0	23	7	2	0	0	9	0	0	0	0	0	50
02:15 PM	0	6	14	0	20	14	0	3	0	17	7	10	0	0	17	0	0	0	0	0	54
02:30 PM	0	12	18	0	30	14	0	6	0	20	6	4	0	0	10	0	0	0	0	0	60
02:45 PM	0	5	19	0	24	8	0	8	0	16	5	7	0	0	12	0	0	0	0	0	52
Total	0	32	60	0	92	52	0	24	0	76	25	23	0	0	48	0	0	0	0	0	216
03:00 PM	0	5	32	0	37	9	0	4	0	13	5	3	0	0	8	0	0	0	0	0	58
03:15 PM	0	3	16	0	19	19	0	6	0	25	2	12	0	0	14	0	0	0	0	0	58
03:30 PM	0	24	30	0	54	11	0	3	0	14	5	7	0	0	12	0	0	0	0	0	80
03:45 PM	0	7	23	0	30	7	0	5	0	12	5	8	0	0	13	0	0	0	0	0	55
Total	0	39	101	0	140	46	0	18	0	64	17	30	0	0	47	0	0	0	0	0	251
04:00 PM	0	24	34	0	58	20	0	4	0	24	5	4	0	0	9	0	0	0	0	0	91
04:15 PM	0	13	33	0	46	19	0	4	0	23	5	11	0	0	16	0	0	0	0	0	85
04:30 PM	0	23	36	0	59	13	0	2	0	15	8	9	0	0	17	0	0	0	0	0	91
04:45 PM	0	12	43	0	55	11	0	2	0	13	4	8	0	0	12	0	0	0	0	0	80
Total	0	72	146	0	218	63	0	12	0	75	22	32	0	0	54	0	0	0	0	0	347
Grand Total	0	143	307	0	450	161	0	54	0	215	64	85	0	0	149	0	0	0	0	0	814
Apprch %	0	31.8	68.2	0		74.9	0	25.1	0		43	57	0	0		0	0	0	0		
Total %	0	17.6	37.7	0	55.3	19.8	0	6.6	0	26.4	7.9	10.4	0	0	18.3	0	0	0	0	0	

Turning Movement Counts
(All Vehicles)

Intersection of DG CO 442 & Noria Rd
Afternoon Peak-Hours
Sunny, Hot

File Name : CR 442 & Noria-epm
Site Code : 2
Start Date : 7/12/2012

	Noria Road From North					DG CO 442 From East					Noria Road From South					From West					
Start Time		Thru	Left		App. Total	Right		Left		App. Total	Right	Thru			App. Total					App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 04:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	24	34	0	58	20	0	4	0	24	5	4	0	0	9	0	0	0	0	0	91
04:15 PM	0	13	33	0	46	19	0	4	0	23	5	11	0	0	16	0	0	0	0	0	85
04:30 PM	0	23	36	0	59	13	0	2	0	15	8	9	0	0	17	0	0	0	0	0	91
04:45 PM	0	12	43	0	55	11	0	2	0	13	4	8	0	0	12	0	0	0	0	0	80
Total Volume	0	72	146	0	218	63	0	12	0	75	22	32	0	0	54	0	0	0	0	0	347
% App. Total	0	33	67	0		84	0	16	0		40.7	59.3	0	0		0	0	0	0		
PHF	.000	.750	.849	.000	.924	.788	.000	.750	.000	.781	.688	.727	.000	.000	.794	.000	.000	.000	.000	.000	.953

Turning Movement Counts
(All Vehicles)

Intersection of CO Rd 442 & CO Rd 1057
Morning Peak-Hours
Sunny, Hot
Other:

File Name : CR 442 & CR 1057-eam
Site Code : 3
Start Date : 7/17/2012
Page No : 1

Groups Printed- Unshifted

	E 1900 Rd From North					DG CO 442 From East					DG CO 1057 From South					DG CO 442 From West					
Start Time	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Int. Total
06:00 AM	1	0	0	0	1	0	15	6	0	21	2	0	2	0	4	5	2	0	0	7	33
06:15 AM	0	0	0	0	0	0	14	8	0	22	2	0	0	0	2	1	3	0	0	4	28
06:30 AM	0	0	0	0	0	0	37	15	0	52	2	0	1	0	3	10	3	0	0	13	68
06:45 AM	0	0	0	0	0	0	15	15	0	30	5	1	2	0	8	5	4	0	0	9	47
Total	1	0	0	0	1	0	81	44	0	125	11	1	5	0	17	21	12	0	0	33	176
07:00 AM	0	0	0	0	0	0	18	11	0	29	3	0	3	0	6	8	11	0	0	19	54
07:15 AM	0	0	0	0	0	0	23	16	0	39	5	0	5	0	10	3	2	0	0	5	54
07:30 AM	0	0	0	0	0	0	16	8	0	24	5	1	10	0	16	6	3	0	0	9	49
07:45 AM	0	0	0	0	0	0	20	18	0	38	4	0	7	0	11	4	2	0	0	6	55
Total	0	0	0	0	0	0	77	53	0	130	17	1	25	0	43	21	18	0	0	39	212
08:00 AM	0	3	0	0	3	0	16	6	0	22	5	0	6	0	11	8	3	0	0	11	47
08:15 AM	0	1	0	0	1	1	12	5	0	18	8	1	5	0	14	1	11	0	0	12	45
08:30 AM	0	0	0	0	0	1	7	2	0	10	8	0	2	0	10	2	6	0	0	8	28
08:45 AM	0	1	1	0	2	0	4	9	0	13	4	0	1	0	5	3	6	0	0	9	29
Total	0	5	1	0	6	2	39	22	0	63	25	1	14	0	40	14	26	0	0	40	149
Grand Total	1	5	1	0	7	2	197	119	0	318	53	3	44	0	100	56	56	0	0	112	537
Apprch %	14.3	71.4	14.3	0		0.6	61.9	37.4	0		53	3	44	0		50	50	0	0		
Total %	0.2	0.9	0.2	0	1.3	0.4	36.7	22.2	0	59.2	9.9	0.6	8.2	0	18.6	10.4	10.4	0	0	20.9	

Turning Movement Counts
(All Vehicles)

Intersection of CO Rd 442 & CO Rd 1057
Morning Peak-Hours
Sunny, Hot
Other:

File Name : CR 442 & CR 1057-eam
Site Code : 3
Start Date : 7/17/2012
Page No : 2

	E 1900 Rd From North					DG CO 442 From East					DG CO 1057 From South					DG CO 442 From West					
Start Time	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 06:30 AM																					
06:30 AM	0	0	0	0	0	0	37	15	0	52	2	0	1	0	3	10	3	0	0	13	68
06:45 AM	0	0	0	0	0	0	15	15	0	30	5	1	2	0	8	5	4	0	0	9	47
07:00 AM	0	0	0	0	0	0	18	11	0	29	3	0	3	0	6	8	11	0	0	19	54
07:15 AM	0	0	0	0	0	0	23	16	0	39	5	0	5	0	10	3	2	0	0	5	54
Total Volume	0	0	0	0	0	0	93	57	0	150	15	1	11	0	27	26	20	0	0	46	223
% App. Total	0	0	0	0		0	62	38	0		55.6	3.7	40.7	0		56.5	43.5	0	0		
PHF	.000	.000	.000	.000	.000	.000	.628	.891	.000	.721	.750	.250	.550	.000	.675	.650	.455	.000	.000	.605	.820

Turning Movement Counts
(All Vehicles)

Intersection of CO Rd 442 & CO Rd 1057
Afternoon Peak-Hours
Sunny, Hot

File Name : CR 442 & CR 1057-epm
Site Code : 3
Start Date : 7/17/2012
Page No : 1

Groups Printed- Unshifted

	E 1900 Rd. From North					DG CO 442 From East					DG CO 1057 From South					DG CO 442 From West					
Start Time	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Int. Total
02:00 PM	0	0	0	0	0	0	11	6	0	17	14	1	2	0	17	5	9	0	0	14	48
02:15 PM	1	1	2	0	4	0	7	6	0	13	14	0	1	0	15	4	12	0	0	16	48
02:30 PM	0	0	0	0	0	0	20	6	0	26	15	0	0	0	15	2	15	1	0	18	59
02:45 PM	0	0	0	0	0	0	11	5	0	16	11	0	3	0	14	0	10	0	0	10	40
Total	1	1	2	0	4	0	49	23	0	72	54	1	6	0	61	11	46	1	0	58	195
03:00 PM	0	0	0	0	0	0	9	8	0	17	14	0	2	0	16	10	22	0	0	32	65
03:15 PM	0	0	0	0	0	0	15	8	0	23	9	0	3	0	12	1	11	0	0	12	47
03:30 PM	0	0	0	0	0	0	11	9	0	20	13	1	0	0	14	10	22	0	0	32	66
03:45 PM	0	0	0	0	0	0	12	3	0	15	10	3	2	0	15	6	18	0	0	24	54
Total	0	0	0	0	0	0	47	28	0	75	46	4	7	0	57	27	73	0	0	100	232
04:00 PM	0	1	0	0	1	0	14	8	0	22	15	0	2	0	17	16	18	0	0	34	74
04:15 PM	0	0	0	0	0	0	9	7	0	16	15	0	5	0	20	11	21	0	0	32	68
04:30 PM	1	0	0	0	1	1	16	11	0	28	15	1	1	0	17	18	32	0	0	50	96
04:45 PM	1	1	0	0	2	0	12	9	0	21	13	0	2	0	15	7	21	1	0	29	67
Total	2	2	0	0	4	1	51	35	0	87	58	1	10	0	69	52	92	1	0	145	305
Grand Total	3	3	2	0	8	1	147	86	0	234	158	6	23	0	187	90	211	2	0	303	732
Apprch %	37.5	37.5	25	0		0.4	62.8	36.8	0		84.5	3.2	12.3	0		29.7	69.6	0.7	0		
Total %	0.4	0.4	0.3	0	1.1	0.1	20.1	11.7	0	32	21.6	0.8	3.1	0	25.5	12.3	28.8	0.3	0	41.4	

Turning Movement Counts
(All Vehicles)

Intersection of CO Rd 442 & CO Rd 1057
Afternoon Peak-Hours
Sunny, Hot

File Name : CR 442 & CR 1057-epm
Site Code : 3
Start Date : 7/17/2012

	E 1900 Rd. From North					DG CO 442 From East					DG CO 1057 From South					DG CO 442 From West					
Start Time	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 04:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	1	0	0	1	0	14	8	0	22	15	0	2	0	17	16	18	0	0	34	74
04:15 PM	0	0	0	0	0	0	9	7	0	16	15	0	5	0	20	11	21	0	0	32	68
04:30 PM	1	0	0	0	1	1	16	11	0	28	15	1	1	0	17	18	32	0	0	50	96
04:45 PM	1	1	0	0	2	0	12	9	0	21	13	0	2	0	15	7	21	1	0	29	67
Total Volume	2	2	0	0	4	1	51	35	0	87	58	1	10	0	69	52	92	1	0	145	305
% App. Total	50	50	0	0		1.1	58.6	40.2	0		84.1	1.4	14.5	0		35.9	63.4	0.7	0		
PHF	.500	.500	.000	.000	.500	.250	.797	.795	.000	.777	.967	.250	.500	.000	.863	.722	.719	.250	.000	.725	.794

Turning Movement Counts
(All Vehicles)

Interchange of K-10 & E 1900 Rd (North Ramps)
Morning Peak-Hours
Sunny, warm

File Name : K10-N Ramps-eam
Site Code : 4
Start Date : 7/12/2012
Page No : 1

Groups Printed- Unshifted

	E 1900 Rd / DG CO 1057 From North					K-10 (WB Off Ramp) From East					E 1900 Rd / DG CO 1057 From South					K-10 (WB On Ramp) From West					
Start Time	Right	Thru			App. Total	Right	Thru	Left		App. Total		Thru	Left		App. Total					App. Total	Int. Total
06:00 AM	9	5	0	0	14	0	0	1	0	1	0	3	0	0	3	0	0	0	0	0	18
06:15 AM	2	2	0	0	4	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	7
06:30 AM	3	2	0	0	5	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	8
06:45 AM	10	3	0	0	13	1	0	0	0	1	0	8	0	0	8	0	0	0	0	0	22
Total	24	12	0	0	36	2	0	1	0	3	0	16	0	0	16	0	0	0	0	0	55
07:00 AM	16	6	0	0	22	2	0	0	0	2	0	5	0	0	5	0	0	0	0	0	29
07:15 AM	20	8	0	0	28	6	0	0	0	6	0	3	0	0	3	0	0	0	0	0	37
07:30 AM	20	6	0	0	26	5	0	0	0	5	0	11	0	0	11	0	0	0	0	0	42
07:45 AM	20	4	0	0	24	6	0	0	0	6	0	10	0	0	10	0	0	0	0	0	40
Total	76	24	0	0	100	19	0	0	0	19	0	29	0	0	29	0	0	0	0	0	148
08:00 AM	13	5	0	0	18	1	0	1	0	2	0	9	0	0	9	0	0	0	0	0	29
08:15 AM	14	6	0	0	20	1	0	0	0	1	0	12	1	0	13	0	0	0	0	0	34
08:30 AM	12	2	0	0	14	0	0	0	0	0	0	3	1	0	4	0	0	0	0	0	18
08:45 AM	16	0	0	0	16	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	23
Total	55	13	0	0	68	2	0	1	0	3	0	31	2	0	33	0	0	0	0	0	104
Grand Total	155	49	0	0	204	23	0	2	0	25	0	76	2	0	78	0	0	0	0	0	307
Apprch %	76	24	0	0		92	0	8	0		0	97.4	2.6	0		0	0	0	0		
Total %	50.5	16	0	0	66.4	7.5	0	0.7	0	8.1	0	24.8	0.7	0	25.4	0	0	0	0	0	

Turning Movement Counts
(All Vehicles)

Interchange of K-10 & E 1900 Rd (North Ramps)
Morning Peak-Hours
Sunny, warm

File Name : K10-N Ramps-eam
Site Code : 4
Start Date : 7/12/2012
Page No : 2

	E 1900 Rd / DG CO 1057 From North					K-10 (WB Off Ramp) From East					E 1900 Rd / DG CO 1057 From South					K-10 (WB On Ramp) From West					
Start Time	Right	Thru			App. Total	Right	Thru	Left		App. Total		Thru	Left		App. Total					App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	16	6	0	0	22	2	0	0	0	2	0	5	0	0	5	0	0	0	0	0	29
07:15 AM	20	8	0	0	28	6	0	0	0	6	0	3	0	0	3	0	0	0	0	0	37
07:30 AM	20	6	0	0	26	5	0	0	0	5	0	11	0	0	11	0	0	0	0	0	42
07:45 AM	20	4	0	0	24	6	0	0	0	6	0	10	0	0	10	0	0	0	0	0	40
Total Volume	76	24	0	0	100	19	0	0	0	19	0	29	0	0	29	0	0	0	0	0	148
% App. Total	76	24	0	0		100	0	0	0		0	100	0	0		0	0	0	0		
PHF	.950	.750	.000	.000	.893	.792	.000	.000	.000	.792	.000	.659	.000	.000	.659	.000	.000	.000	.000	.000	.881

Turning Movement Counts
(All Vehicles)

Interchange of K-10 & E 1900 Rd (N Ramps)
Afternoon Peak-Hours
Sunny, Hot

File Name : K10-N Ramps-epm
Site Code : 4
Start Date : 7/17/2012
Page No : 1

Groups Printed- Unshifted

	E 1900 Rd / DG CO 1057 From North					K-10 (WB Off Ramp) From East					E 1900 Rd / DG CO 1057 From South					K-10 (WB On Ramp) From West					
Start Time	Right	Thru			App. Total	Right	Thru	Left		App. Total		Thru	Left		App. Total					App. Total	Int. Total
02:00 PM	7	7	0	0	14	2	0	1	0	3	0	18	0	0	18	0	0	0	0	0	35
02:15 PM	5	5	0	0	10	1	0	0	0	1	0	12	2	0	14	0	0	0	0	0	25
02:30 PM	6	3	0	0	9	0	0	3	0	3	0	14	0	0	14	0	0	0	0	0	26
02:45 PM	5	0	0	0	5	2	0	1	0	3	0	11	0	0	11	0	0	0	0	0	19
Total	23	15	0	0	38	5	0	5	0	10	0	55	2	0	57	0	0	0	0	0	105
03:00 PM	9	11	0	0	20	2	0	0	0	2	0	14	1	0	15	0	0	0	0	0	37
03:15 PM	8	1	0	0	9	3	0	0	0	3	0	9	1	0	10	0	0	0	0	0	22
03:30 PM	6	10	0	0	16	1	0	1	0	2	0	17	0	0	17	0	0	0	0	0	35
03:45 PM	8	7	0	0	15	3	0	0	0	3	0	11	0	0	11	0	0	0	0	0	29
Total	31	29	0	0	60	9	0	1	0	10	0	51	2	0	53	0	0	0	0	0	123
04:00 PM	7	15	0	0	22	0	0	0	0	0	0	19	0	0	19	0	0	0	0	0	41
04:15 PM	9	10	0	0	19	2	0	0	0	2	0	15	0	0	15	0	0	0	0	0	36
04:30 PM	11	23	0	0	34	0	0	0	0	0	0	16	1	0	17	0	0	0	0	0	51
04:45 PM	8	10	0	0	18	3	0	1	0	4	0	13	1	0	14	0	0	0	0	0	36
Total	35	58	0	0	93	5	0	1	0	6	0	63	2	0	65	0	0	0	0	0	164
Grand Total	89	102	0	0	191	19	0	7	0	26	0	169	6	0	175	0	0	0	0	0	392
Apprch %	46.6	53.4	0	0		73.1	0	26.9	0		0	96.6	3.4	0		0	0	0	0		
Total %	22.7	26	0	0	48.7	4.8	0	1.8	0	6.6	0	43.1	1.5	0	44.6	0	0	0	0	0	

Turning Movement Counts
(All Vehicles)

Interchange of K-10 & E 1900 Rd (N Ramps)
Afternoon Peak-Hours
Sunny, Hot

File Name : K10-N Ramps-epm
Site Code : 4
Start Date : 7/17/2012
Page No : 2

	E 1900 Rd / DG CO 1057 From North					K-10 (WB Off Ramp) From East					E 1900 Rd / DG CO 1057 From South					K-10 (WB On Ramp) From West					
Start Time	Right	Thru			App. Total	Right	Thru	Left		App. Total		Thru	Left		App. Total					App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 04:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	7	15	0	0	22	0	0	0	0	0	0	19	0	0	19	0	0	0	0	0	41
04:15 PM	9	10	0	0	19	2	0	0	0	2	0	15	0	0	15	0	0	0	0	0	36
04:30 PM	11	23	0	0	34	0	0	0	0	0	0	16	1	0	17	0	0	0	0	0	51
04:45 PM	8	10	0	0	18	3	0	1	0	4	0	13	1	0	14	0	0	0	0	0	36
Total Volume	35	58	0	0	93	5	0	1	0	6	0	63	2	0	65	0	0	0	0	0	164
% App. Total	37.6	62.4	0	0		83.3	0	16.7	0		0	96.9	3.1	0		0	0	0	0		
PHF	.795	.630	.000	.000	.684	.417	.000	.250	.000	.375	.000	.829	.500	.000	.855	.000	.000	.000	.000	.000	.804

Turning Movement Counts
(All Vehicles)

Interchange of K-10 & E 1900 Rd (South Ramps)
Morning Peak-Hours
Sunny, Warm

File Name : K10-S Ramps-eam
Site Code : 4
Start Date : 7/12/2012
Page No : 1

Groups Printed- Unshifted

	E 1900 Rd / DG CO 1057 From North					K-10 (EB On Ramp) From East					E 1900 Rd / DG CO 1057 From South					K-10 (EB Off Ramp) From West					
Start Time		Thru	Left		App. Total					App. Total	Right	Thru			App. Total	Right	Thru	Left		App. Total	Int. Total
06:00 AM	0	3	3	0	6	0	0	0	0	0	1	0	0	0	1	0	0	3	0	3	10
06:15 AM	0	0	2	0	2	0	0	0	0	0	2	0	0	0	2	0	0	3	0	3	7
06:30 AM	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	4
06:45 AM	0	1	2	0	3	0	0	0	0	0	0	1	0	0	1	0	0	7	0	7	11
Total	0	4	9	0	13	0	0	0	0	0	3	1	0	0	4	0	0	15	0	15	32
07:00 AM	0	0	6	0	6	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5	11
07:15 AM	0	0	8	0	8	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	11
07:30 AM	0	1	5	0	6	0	0	0	0	0	0	1	0	0	1	0	0	10	0	10	17
07:45 AM	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10	14
Total	0	1	23	0	24	0	0	0	0	0	0	1	0	0	1	0	0	28	0	28	53
08:00 AM	0	1	5	0	6	0	0	0	0	0	0	0	0	0	0	0	0	9	0	9	15
08:15 AM	0	1	5	0	6	0	0	0	0	0	0	1	0	0	1	0	0	12	0	12	19
08:30 AM	0	1	1	0	2	0	0	0	0	0	1	0	0	0	1	0	0	4	0	4	7
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	7	0	8	8
Total	0	3	11	0	14	0	0	0	0	0	1	1	0	0	2	1	0	32	0	33	49
Grand Total	0	8	43	0	51	0	0	0	0	0	4	3	0	0	7	1	0	75	0	76	134
Apprch %	0	15.7	84.3	0		0	0	0	0		57.1	42.9	0	0		1.3	0	98.7	0		
Total %	0	6	32.1	0	38.1	0	0	0	0	0	3	2.2	0	0	5.2	0.7	0	56	0	56.7	

Turning Movement Counts
(All Vehicles)

Interchange of K-10 & E 1900 Rd (South Ramps)
Morning Peak-Hours
Sunny, Warm

File Name : K10-S Ramps-eam
Site Code : 4
Start Date : 7/12/2012

	E 1900 Rd / DG CO 1057 From North					K-10 (EB On Ramp) From East					E 1900 Rd / DG CO 1057 From South					K-10 (EB Off Ramp) From West					
Start Time		Thru	Left		App. Total					App. Total	Right	Thru			App. Total	Right	Thru	Left		App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	1	5	0	6	0	0	0	0	0	0	1	0	0	1	0	0	10	0	10	17
07:45 AM	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10	14
08:00 AM	0	1	5	0	6	0	0	0	0	0	0	0	0	0	0	0	0	9	0	9	15
08:15 AM	0	1	5	0	6	0	0	0	0	0	0	1	0	0	1	0	0	12	0	12	19
Total Volume	0	3	19	0	22	0	0	0	0	0	0	2	0	0	2	0	0	41	0	41	65
% App. Total	0	13.6	86.4	0		0	0	0	0		0	100	0	0		0	0	100	0		
PHF	.000	.750	.950	.000	.917	.000	.000	.000	.000	.000	.000	.500	.000	.000	.500	.000	.000	.854	.000	.854	.855

Turning Movement Counts
(All Vehicles)

Interchange of K-10 & E 1900 Rd (S Ramps)
Afternoon Peak-Hours
Sunny, Hot

File Name : K10-S Ramps-epm
Site Code : 4
Start Date : 7/17/2012
Page No : 1

Groups Printed- Unshifted

	E 1900 / DG CO 1057 From North					K-10 (EB On Ramp) From East					E 1900 / DG CO 1057 From South					K-10 (EB Off Ramp) From West					
Start Time		Thru	Left		App. Total					App. Total	Right	Thru			App. Total	Right	Thru	Left		App. Total	Int. Total
02:00 PM	0	2	6	0	8	0	0	0	0	0	0	1	0	0	1	0	0	17	0	17	26
02:15 PM	0	0	5	0	5	0	0	0	0	0	2	2	0	0	4	1	0	12	0	13	22
02:30 PM	0	2	4	0	6	0	0	0	0	0	1	0	0	0	1	0	0	14	0	14	21
02:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	11	0	11	12
Total	0	5	15	0	20	0	0	0	0	0	3	3	0	0	6	1	0	54	0	55	81
03:00 PM	0	0	11	0	11	0	0	0	0	0	0	1	0	0	1	0	0	15	0	15	27
03:15 PM	0	0	1	0	1	0	0	0	0	0	2	2	0	0	4	0	0	8	0	8	13
03:30 PM	0	0	11	0	11	0	0	0	0	0	0	0	0	0	0	0	0	17	0	17	28
03:45 PM	0	1	6	0	7	0	0	0	0	0	0	0	0	0	0	2	0	11	0	13	20
Total	0	1	29	0	30	0	0	0	0	0	2	3	0	0	5	2	0	51	0	53	88
04:00 PM	0	0	15	0	15	0	0	0	0	0	0	0	0	0	0	0	0	19	0	19	34
04:15 PM	0	0	10	0	10	0	0	0	0	0	1	2	0	0	3	1	0	13	0	14	27
04:30 PM	0	0	23	0	23	0	0	0	0	0	1	1	0	0	2	0	0	16	0	16	41
04:45 PM	0	4	7	0	11	0	0	0	0	0	0	2	0	0	2	1	0	12	0	13	26
Total	0	4	55	0	59	0	0	0	0	0	2	5	0	0	7	2	0	60	0	62	128
Grand Total	0	10	99	0	109	0	0	0	0	0	7	11	0	0	18	5	0	165	0	170	297
Apprch %	0	9.2	90.8	0		0	0	0	0		38.9	61.1	0	0		2.9	0	97.1	0		
Total %	0	3.4	33.3	0	36.7	0	0	0	0	0	2.4	3.7	0	0	6.1	1.7	0	55.6	0	57.2	

Turning Movement Counts
(All Vehicles)

Interchange of K-10 & E 1900 Rd (S Ramps)
Afternoon Peak-Hours
Sunny, Hot

File Name : K10-S Ramps-epm
Site Code : 4
Start Date : 7/17/2012
Page No : 2

	E 1900 / DG CO 1057 From North					K-10 (EB On Ramp) From East					E 1900 / DG CO 1057 From South					K-10 (EB Off Ramp) From West					
Start Time		Thru	Left		App. Total					App. Total	Right	Thru			App. Total	Right	Thru	Left		App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 04:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	0	15	0	15	0	0	0	0	0	0	0	0	0	0	0	0	19	0	19	34
04:15 PM	0	0	10	0	10	0	0	0	0	0	1	2	0	0	3	1	0	13	0	14	27
04:30 PM	0	0	23	0	23	0	0	0	0	0	1	1	0	0	2	0	0	16	0	16	41
04:45 PM	0	4	7	0	11	0	0	0	0	0	0	2	0	0	2	1	0	12	0	13	26
Total Volume	0	4	55	0	59	0	0	0	0	0	2	5	0	0	7	2	0	60	0	62	128
% App. Total	0	6.8	93.2	0		0	0	0	0		28.6	71.4	0	0		3.2	0	96.8	0		
PHF	.000	.250	.598	.000	.641	.000	.000	.000	.000	.000	.500	.625	.000	.000	.583	.500	.000	.789	.000	.816	.780

Turning Movement Counts
(Trucks Only)

Intersection of Noria Rd & N 1500 Rd
Morning Peak-Hours
Sunny, Hot

File Name : Noria & N 1500 -eam-truck
Site Code : 1
Start Date : 7/11/2012
Page No : 1

Groups Printed- Unshifted

	Sand Plant Driveway From North					N 1500 Rd From East					Noria Rd From South					N 1500 Rd From West					
Start Time	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Int. Total
*** BREAK ***																					
06:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	2
*** BREAK ***																					
06:45 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	3
*** BREAK ***																					
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
07:45 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
08:15 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	3
08:45 AM	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Total	0	4	0	0	4	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	8
Grand Total	0	6	0	0	6	0	0	0	0	0	0	6	0	0	6	0	1	0	0	1	13
Apprch %	0	100	0	0		0	0	0	0		0	100	0	0		0	100	0	0		
Total %	0	46.2	0	0	46.2	0	0	0	0	0	0	46.2	0	0	46.2	0	7.7	0	0	7.7	

Turning Movement Counts
(Trucks Only)

Intersection of Noria Rd & N 1500 Rd
Morning Peak-Hours
Sunny, Hot

File Name : Noria & N 1500 -eam-truck
Site Code : 1
Start Date : 7/11/2012

	Sand Plant Driveway From North					N 1500 Rd From East					Noria Rd From South					N 1500 Rd From West					
Start Time	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
08:15 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	3
08:45 AM	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Total Volume	0	4	0	0	4	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	8
% App. Total	0	100	0	0		0	0	0	0		0	100	0	0		0	0	0	0		
PHF	.000	.333	.000	.000	.333	.000	.000	.000	.000	.000	.000	.333	.000	.000	.333	.000	.000	.000	.000	.000	.667

Turning Movement Counts
(Trucks Only)

Intersection of Noria Rd & N 1500 Rd
Afternoon Peak-Hours
Sunny, Hot

File Name : Noria & N 1500 -epm-truck
Site Code : 1
Start Date : 7/11/2012
Page No : 1

Groups Printed- Unshifted

	Sand Plant Driveway From North					N 1500 Rd From East					Noria Rd From South					N 1500 Rd From West					
Start Time	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Int. Total
02:00 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
*** BREAK ***																					
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
*** BREAK ***																					
Total	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
03:00 PM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
*** BREAK ***																					
03:30 PM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
03:45 PM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
Total	0	4	0	0	4	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	9
04:00 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
*** BREAK ***																					
04:30 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Total	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	5
Grand Total	0	9	0	0	9	0	0	0	0	0	0	7	0	0	7	1	0	0	0	1	17
Apprch %	0	100	0	0		0	0	0	0		0	100	0	0		100	0	0	0		
Total %	0	52.9	0	0	52.9	0	0	0	0	0	0	41.2	0	0	41.2	5.9	0	0	0	5.9	

Turning Movement Counts
(Trucks Only)

Intersection of Noria Rd & N 1500 Rd
Afternoon Peak-Hours
Sunny, Hot

File Name : Noria & N 1500 -epm-truck
Site Code : 1
Start Date : 7/11/2012

	Sand Plant Driveway From North					N 1500 Rd From East					Noria Rd From South					N 1500 Rd From West					
Start Time	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 04:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30 PM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
03:45 PM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
Total Volume	0	4	0	0	4	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	9
% App. Total	0	100	0	0		0	0	0	0		0	100	0	0		0	0	0	0		
PHF	.000	.500	.000	.000	.500	.000	.000	.000	.000	.000	.000	.625	.000	.000	.625	.000	.000	.000	.000	.000	.750

Turning Movement Counts
(Trucks Only)

Intersection of Noria Rd & DG CO 442
Morning Peak-Hours
Sunny, Hot

File Name : CR 442 & Noria-eam-truck
Site Code : 2
Start Date : 7/12/2012
Page No : 1

Groups Printed- Unshifted

	Noria Rd From North					DG CO 442 From East					Noria Rd From South					From West					
Start Time		Thru	Left		App. Total	Right		Left		App. Total	Right	Thru			App. Total					App. Total	Int. Total
06:00 AM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	3
*** BREAK ***																					
06:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
06:45 AM	0	0	1	0	1	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	4
Total	0	0	1	0	1	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	8
07:00 AM	0	0	3	0	3	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	4
07:15 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	2
07:30 AM	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	2
07:45 AM	0	0	1	0	1	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	4
Total	0	0	4	0	4	0	0	2	0	2	1	5	0	0	6	0	0	0	0	0	12
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	3
08:15 AM	0	1	4	0	5	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	9
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2
Total	0	1	4	0	5	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	15
Grand Total	0	1	9	0	10	0	0	2	0	2	1	22	0	0	23	0	0	0	0	0	35
Apprch %	0	10	90	0		0	0	100	0		4.3	95.7	0	0		0	0	0	0		
Total %	0	2.9	25.7	0	28.6	0	0	5.7	0	5.7	2.9	62.9	0	0	65.7	0	0	0	0	0	

Turning Movement Counts
(Trucks Only)

Intersection of Noria Rd & DG CO 442
Morning Peak-Hours
Sunny, Hot

File Name : CR 442 & Noria-eam-truck
Site Code : 2
Start Date : 7/12/2012
Page No : 2

	Noria Rd From North					DG CO 442 From East					Noria Rd From South					From West					
Start Time		Thru	Left		App. Total	Right		Left		App. Total	Right	Thru			App. Total					App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	2
07:45 AM	0	0	1	0	1	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	4
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	3
08:15 AM	0	1	4	0	5	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	9
Total Volume	0	1	5	0	6	0	0	2	0	2	0	10	0	0	10	0	0	0	0	0	18
% App. Total	0	16.7	83.3	0		0	0	100	0		0	100	0	0		0	0	0	0		
PHF	.000	.250	.313	.000	.300	.000	.000	.500	.000	.500	.000	.625	.000	.000	.625	.000	.000	.000	.000	.000	.500

Turning Movement Counts
(Trucks Only)

Intersection of DG CO 442 & Noria Rd
Afternoon Peak-Hours
Sunny, Hot

File Name : CR 442 & Noria-epm-truck
Site Code : 2
Start Date : 7/12/2012
Page No : 1

Groups Printed- Unshifted

	Noria Road From North					DG CO 442 From East					Noria Road From South					From West					
Start Time		Thru	Left		App. Total	Right		Left		App. Total	Right	Thru			App. Total					App. Total	Int. Total
02:00 PM	0	0	4	0	4	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	5
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	4
02:30 PM	0	1	1	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
02:45 PM	0	1	3	0	4	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	5
Total	0	2	8	0	10	0	0	1	0	1	0	6	0	0	6	0	0	0	0	0	17
03:00 PM	0	1	2	0	3	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	4
03:15 PM	0	0	1	0	1	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	4
03:30 PM	0	0	3	0	3	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	6
03:45 PM	0	1	4	0	5	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	7
Total	0	2	10	0	12	2	0	0	0	2	0	7	0	0	7	0	0	0	0	0	21
04:00 PM	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
04:15 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	1	1	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
04:45 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	5	0	6	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	7
Grand Total	0	5	23	0	28	2	0	1	0	3	0	14	0	0	14	0	0	0	0	0	45
Apprch %	0	17.9	82.1	0		66.7	0	33.3	0		0	100	0	0		0	0	0	0		
Total %	0	11.1	51.1	0	62.2	4.4	0	2.2	0	6.7	0	31.1	0	0	31.1	0	0	0	0	0	

Turning Movement Counts
(Trucks Only)

Intersection of DG CO 442 & Noria Rd
Afternoon Peak-Hours
Sunny, Hot

File Name : CR 442 & Noria-epm-truck
Site Code : 2
Start Date : 7/12/2012
Page No : 2

	Noria Road From North					DG CO 442 From East					Noria Road From South					From West					
Start Time		Thru	Left		App. Total	Right		Left		App. Total	Right	Thru			App. Total					App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 04:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	0	1	2	0	3	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	4
03:15 PM	0	0	1	0	1	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	4
03:30 PM	0	0	3	0	3	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	6
03:45 PM	0	1	4	0	5	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	7
Total Volume	0	2	10	0	12	2	0	0	0	2	0	7	0	0	7	0	0	0	0	0	21
% App. Total	0	16.7	83.3	0		100	0	0	0		0	100	0	0		0	0	0	0		
PHF	.000	.500	.625	.000	.600	.500	.000	.000	.000	.500	.000	.583	.000	.000	.583	.000	.000	.000	.000	.000	.750

Turning Movement Counts
(Trucks Only)

Intersection of CO Rd 442 & CO Rd 1057
Morning Peak-Hours
Sunny, Hot
Other:

File Name : CR 442 & CR 1057-eam-truck
Site Code : 3
Start Date : 7/17/2012
Page No : 1

Groups Printed- Unshifted

	E 1900 Rd From North					DG CO 442 From East					DG CO 1057 From South					DG CO 442 From West					
Start Time	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Int. Total
06:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3
06:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
06:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	4
06:45 AM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	3	0	0	0	3	4
Total	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	11	0	0	0	11	12
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3
*** BREAK ***																					
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6	6
08:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	4	0	0	0	4	5
08:15 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	4
08:30 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	2	0	0	0	2	6
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
Total	0	0	0	0	0	0	0	0	0	0	9	0	0	0	9	8	0	0	0	8	17
Grand Total	0	0	0	0	0	0	0	1	0	1	9	0	0	0	9	25	0	0	0	25	35
Apprch %	0	0	0	0		0	0	100	0		100	0	0	0		100	0	0	0		
Total %	0	0	0	0	0	0	0	2.9	0	2.9	25.7	0	0	0	25.7	71.4	0	0	0	71.4	

Turning Movement Counts
(Trucks Only)

Intersection of CO Rd 442 & CO Rd 1057
Morning Peak-Hours
Sunny, Hot
Other:

File Name : CR 442 & CR 1057-eam-truck
Site Code : 3
Start Date : 7/17/2012
Page No : 2

	E 1900 Rd From North					DG CO 442 From East					DG CO 1057 From South					DG CO 442 From West					
Start Time	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
08:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	4	0	0	0	4	5
08:15 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	4
08:30 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	2	0	0	0	2	6
Total Volume	0	0	0	0	0	0	0	0	0	0	9	0	0	0	9	8	0	0	0	8	17
% App. Total	0	0	0	0		0	0	0	0		100	0	0	0		100	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.563	.000	.000	.000	.563	.500	.000	.000	.000	.500	.708

Turning Movement Counts
(Trucks Only)

Intersection of CO Rd 442 & CO Rd 1057
Afternoon Peak-Hours
Sunny, Hot

File Name : CR 442 & CR 1057-epm-truck
Site Code : 3
Start Date : 7/17/2012
Page No : 1

Groups Printed- Unshifted

	E 1900 Rd. From North					DG CO 442 From East					DG CO 1057 From South					DG CO 442 From West					
Start Time	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Int. Total
02:00 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	1	0	0	0	1	3
02:15 PM	0	0	0	0	0	0	0	0	0	0	4	0	1	0	5	3	0	0	0	3	8
02:30 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	4
02:45 PM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0	5
Total	0	0	0	0	0	0	0	0	0	0	15	0	1	0	16	4	0	0	0	4	20
03:00 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	4	0	0	0	4	7
03:15 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	1	0	0	0	1	5
03:30 PM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0	5
03:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	3	0	0	0	3	5
Total	0	0	0	0	0	0	0	0	0	0	14	0	0	0	14	8	0	0	0	8	22
04:00 PM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6	4	0	0	0	4	10
04:15 PM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	1	0	0	0	1	6
04:30 PM	0	0	0	0	0	0	0	0	0	0	2	0	1	0	3	2	1	0	0	3	6
04:45 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	3
Total	0	0	0	0	0	0	0	0	0	0	16	0	1	0	17	7	1	0	0	8	25
Grand Total	0	0	0	0	0	0	0	0	0	0	45	0	2	0	47	19	1	0	0	20	67
Apprch %	0	0	0	0		0	0	0	0		95.7	0	4.3	0		95	5	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	67.2	0	3	0	70.1	28.4	1.5	0	0	29.9	

Turning Movement Counts
(Trucks Only)

Intersection of CO Rd 442 & CO Rd 1057
Afternoon Peak-Hours
Sunny, Hot

File Name : CR 442 & CR 1057-epm-truck
Site Code : 3
Start Date : 7/17/2012
Page No : 2

	E 1900 Rd. From North					DG CO 442 From East					DG CO 1057 From South					DG CO 442 From West					
Start Time	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 04:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:45 PM																					
03:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	3	0	0	0	3	5
04:00 PM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6	4	0	0	0	4	10
04:15 PM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	1	0	0	0	1	6
04:30 PM	0	0	0	0	0	0	0	0	0	0	2	0	1	0	3	2	1	0	0	3	6
Total Volume	0	0	0	0	0	0	0	0	0	0	15	0	1	0	16	10	1	0	0	11	27
% App. Total	0	0	0	0		0	0	0	0		93.8	0	6.2	0		90.9	9.1	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.625	.000	.250	.000	.667	.625	.250	.000	.000	.688	.675

Turning Movement Counts
(Trucks Only)

Interchange of K-10 & E 1900 Rd (North Ramps)
Morning Peak-Hours
Sunny, warm

File Name : K10-N Ramps-eam-truck
Site Code : 4
Start Date : 7/12/2012
Page No : 1

Groups Printed- Unshifted

	E 1900 Rd / DG CO 1057 From North					K-10 (WB Off Ramp) From East					E 1900 Rd / DG CO 1057 From South					K-10 (WB On Ramp) From West					
Start Time	Right	Thru		trucks	App. Total	Right	Thru	Left	trucks	App. Total		Thru	Left	trucks	App. Total					App. Total	Int. Total
06:00 AM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1
*** BREAK ***																					
Total	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1
07:00 AM	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
*** BREAK ***																					
07:30 AM	0	0	0	2	2	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	4
07:45 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	4
Total	0	0	0	7	7	0	0	0	0	0	0	0	0	5	5	0	0	0	0	0	12
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	4
08:15 AM	0	0	0	3	3	0	0	0	0	0	0	0	0	5	5	0	0	0	0	0	8
08:30 AM	0	0	0	2	2	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	4
08:45 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
Total	0	0	0	6	6	0	0	0	0	0	0	0	0	12	12	0	0	0	0	0	18
Grand Total	0	0	0	13	13	0	0	0	1	1	0	0	0	17	17	0	0	0	0	0	31
Apprch %	0	0	0	100		0	0	0	100		0	0	0	100		0	0	0	0		
Total %	0	0	0	41.9	41.9	0	0	0	3.2	3.2	0	0	0	54.8	54.8	0	0	0	0	0	

Turning Movement Counts
(Trucks Only)

Interchange of K-10 & E 1900 Rd (North Ramps)
Morning Peak-Hours
Sunny, warm

File Name : K10-N Ramps-eam-truck
Site Code : 4
Start Date : 7/12/2012

	E 1900 Rd / DG CO 1057 From North					K-10 (WB Off Ramp) From East					E 1900 Rd / DG CO 1057 From South					K-10 (WB On Ramp) From West					
Start Time	Right	Thru		trucks	App. Total	Right	Thru	Left	trucks	App. Total		Thru	Left	trucks	App. Total					App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	2	2	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	4
07:45 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	4
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	4
08:15 AM	0	0	0	3	3	0	0	0	0	0	0	0	0	5	5	0	0	0	0	0	8
Total Volume	0	0	0	6	6	0	0	0	0	0	0	0	0	14	14	0	0	0	0	0	20
% App. Total	0	0	0	100		0	0	0	0		0	0	0	100		0	0	0	0		
PHF	.000	.000	.000	.500	.500	.000	.000	.000	.000	.000	.000	.000	.000	.700	.700	.000	.000	.000	.000	.000	.625

Turning Movement Counts
(Trucks Only)

Interchange of K-10 & E 1900 Rd (N Ramps)
Afternoon Peak-Hours
Sunny, Hot

File Name : K10-N Ramps-epm-truck
Site Code : 4
Start Date : 7/17/2012
Page No : 1

Groups Printed- Unshifted

	E 1900 Rd / DG CO 1057 From North					K-10 (WB Off Ramp) From East					E 1900 Rd / DG CO 1057 From South					K-10 (WB On Ramp) From West					
Start Time	Right	Thru		trucks	App. Total	Right	Thru	Left	trucks	App. Total		Thru	Left	trucks	App. Total					App. Total	Int. Total
02:00 PM	0	0	0	2	2	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	5
02:15 PM	0	0	0	3	3	0	0	0	1	1	0	0	0	3	3	0	0	0	0	0	7
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	0	0	0	0	0	5
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	4
Total	0	0	0	5	5	0	0	0	1	1	0	0	0	15	15	0	0	0	0	0	21
03:00 PM	0	0	0	4	4	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	8
03:15 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	4
03:30 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	5	5	0	0	0	0	0	6
03:45 PM	0	0	0	3	3	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	5
Total	0	0	0	8	8	0	0	0	1	1	0	0	0	14	14	0	0	0	0	0	23
04:00 PM	0	0	0	5	5	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	9
04:15 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	5	5	0	0	0	0	0	6
04:30 PM	0	0	0	2	2	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	6
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	2
Total	0	0	0	8	8	0	0	0	0	0	0	0	0	15	15	0	0	0	0	0	23
Grand Total	0	0	0	21	21	0	0	0	2	2	0	0	0	44	44	0	0	0	0	0	67
Apprch %	0	0	0	100		0	0	0	100		0	0	0	100		0	0	0	0		
Total %	0	0	0	31.3	31.3	0	0	0	3	3	0	0	0	65.7	65.7	0	0	0	0	0	

Turning Movement Counts
(Trucks Only)

Interchange of K-10 & E 1900 Rd (N Ramps)
Afternoon Peak-Hours
Sunny, Hot

File Name : K10-N Ramps-epm-truck
Site Code : 4
Start Date : 7/17/2012

	E 1900 Rd / DG CO 1057 From North					K-10 (WB Off Ramp) From East					E 1900 Rd / DG CO 1057 From South					K-10 (WB On Ramp) From West					
Start Time	Right	Thru		trucks	App. Total	Right	Thru	Left	trucks	App. Total		Thru	Left	trucks	App. Total					App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 04:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:30 PM																					
03:30 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	5	5	0	0	0	0	0	6
03:45 PM	0	0	0	3	3	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	5
04:00 PM	0	0	0	5	5	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	9
04:15 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	5	5	0	0	0	0	0	6
Total Volume	0	0	0	9	9	0	0	0	1	1	0	0	0	16	16	0	0	0	0	0	26
% App. Total	0	0	0	100		0	0	0	100		0	0	0	100		0	0	0	0		
PHF	.000	.000	.000	.450	.450	.000	.000	.000	.250	.250	.000	.000	.000	.800	.800	.000	.000	.000	.000	.000	.722

Turning Movement Counts
(Trucks Only)

Interchange of K-10 & E 1900 Rd (South Ramps)
Morning Peak-Hours
Sunny, Warm

File Name : K10-S Ramps-eam-truck
Site Code : 4
Start Date : 7/12/2012
Page No : 1

Groups Printed- Unshifted

	E 1900 Rd / DG CO 1057 From North					K-10 (EB On Ramp) From East					E 1900 Rd / DG CO 1057 From South					K-10 (EB Off Ramp) From West					
Start Time		Thru	Left	trucks	App. Total					App. Total	Right	Thru		trucks	App. Total	Right	Thru	Left	trucks	App. Total	Int. Total
*** BREAK ***																					
07:00 AM	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
*** BREAK ***																					
07:30 AM	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	4
07:45 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	4
Total	0	0	0	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	12
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4
08:15 AM	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	8
08:30 AM	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	4
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Total	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12	17
Grand Total	0	0	0	12	12	0	0	0	0	0	0	0	0	0	0	0	0	0	17	17	29
Apprch %	0	0	0	100		0	0	0	0		0	0	0	0		0	0	0	100		
Total %	0	0	0	41.4	41.4	0	0	0	0	0	0	0	0	0	0	0	0	0	58.6	58.6	

Turning Movement Counts
(Trucks Only)

Interchange of K-10 & E 1900 Rd (South Ramps)
Morning Peak-Hours
Sunny, Warm

File Name : K10-S Ramps-eam-truck
Site Code : 4
Start Date : 7/12/2012

	E 1900 Rd / DG CO 1057 From North					K-10 (EB On Ramp) From East					E 1900 Rd / DG CO 1057 From South					K-10 (EB Off Ramp) From West					
Start Time		Thru	Left	trucks	App. Total					App. Total	Right	Thru		trucks	App. Total	Right	Thru	Left	trucks	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	4
07:45 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	4
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4
08:15 AM	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	8
Total Volume	0	0	0	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	14	14	20
% App. Total	0	0	0	100		0	0	0	0		0	0	0	0		0	0	0	100		
PHF	.000	.000	.000	.500	.500	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.700	.700	.625

Turning Movement Counts
(Trucks Only)

Interchange of K-10 & E 1900 Rd (S Ramps)
Afternoon Peak-Hours
Sunny, Hot

File Name : K10-S Ramps-epm-truck
Site Code : 4
Start Date : 7/17/2012
Page No : 1

Groups Printed- Unshifted

	E 1900 / DG CO 1057 From North					K-10 (EB On Ramp) From East					E 1900 / DG CO 1057 From South					K-10 (EB Off Ramp) From West					
Start Time		Thru	Left	trucks	App. Total					App. Total	Right	Thru		trucks	App. Total	Right	Thru	Left	trucks	App. Total	Int. Total
02:00 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	4
02:15 PM	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	6
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	5
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4
Total	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	15	15	19
03:00 PM	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	8
03:15 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	4
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	5
03:45 PM	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	5
Total	0	0	0	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	14	14	22
04:00 PM	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	9
04:15 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	6
04:30 PM	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	6
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
Total	0	0	0	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	15	15	23
Grand Total	0	0	0	20	20	0	0	0	0	0	0	0	0	0	0	0	0	0	44	44	64
Apprch %	0	0	0	100		0	0	0	0		0	0	0	0		0	0	0	100		
Total %	0	0	0	31.2	31.2	0	0	0	0	0	0	0	0	0	0	0	0	0	68.8	68.8	

Turning Movement Counts
(Trucks Only)

Interchange of K-10 & E 1900 Rd (S Ramps)
Afternoon Peak-Hours
Sunny, Hot

File Name : K10-S Ramps-epm-truck
Site Code : 4
Start Date : 7/17/2012

	E 1900 / DG CO 1057 From North					K-10 (EB On Ramp) From East					E 1900 / DG CO 1057 From South					K-10 (EB Off Ramp) From West					
Start Time		Thru	Left	trucks	App. Total					App. Total	Right	Thru		trucks	App. Total	Right	Thru	Left	trucks	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 04:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:45 PM																					
03:45 PM	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	5
04:00 PM	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	9
04:15 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	6
04:30 PM	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	6
Total Volume	0	0	0	11	11	0	0	0	0	0	0	0	0	0	0	0	0	0	15	15	26
% App. Total	0	0	0	100		0	0	0	0		0	0	0	0		0	0	0	100		
PHF	.000	.000	.000	.550	.550	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.750	.750	.722

APPENDIX IV

Crash History

(Source: Douglas County)

APPENDIX V

Guidelines for Right-Turn & Left-Turn Treatments

at

Unsignalized Intersections

Report No. K-TRAN:KSU-95-5
Final Report

GUIDELINES FOR RIGHT-TURN TREATMENTS AT UNSIGNALIZED INTERSECTIONS AND DRIVEWAYS

Tanweer Hasan
Robert W. Stokes
Kansas State University
Manhattan, Kansas

May 1996

K-TRAN

A COOPERATIVE TRANSPORTATION RESEARCH PROGRAM BETWEEN:
KANSAS DEPARTMENT OF TRANSPORTATION
THE KANSAS STATE UNIVERSITY
THE UNIVERSITY OF KANSAS

Table 7.1 **Right-turn treatment guidelines for two-lane highways.**[a]

(*Turning speed = 15 mph*)

Roadway DDHV (vph)	Roadway Operating Speed (mph)											
	40		45		50		55		60		65	
	Lane	Taper	Lane	Taper	Lane	Taper	Lane	Taper	Lane	Taper	Lane	Taper
200				83	73	30	35	14	20	8	15	7
300			120	40	41	19	24	9	15	7	12	6
400	200	85	52	27	30	14	19	8	12	6	11	5
600	50	27	26	13	20	9	14	6	10	5	9	4
800	25	12	16	8	15	7	11	5	9	4	8	3
1000	14	8	12	5	11	5	9	4	8	3	7	3
1200	10	6	9	4	9	4	8	4	7	3	7	3

[a] Minimum right-turn design hour volumes (vph) required to warrant right-turn treatments.

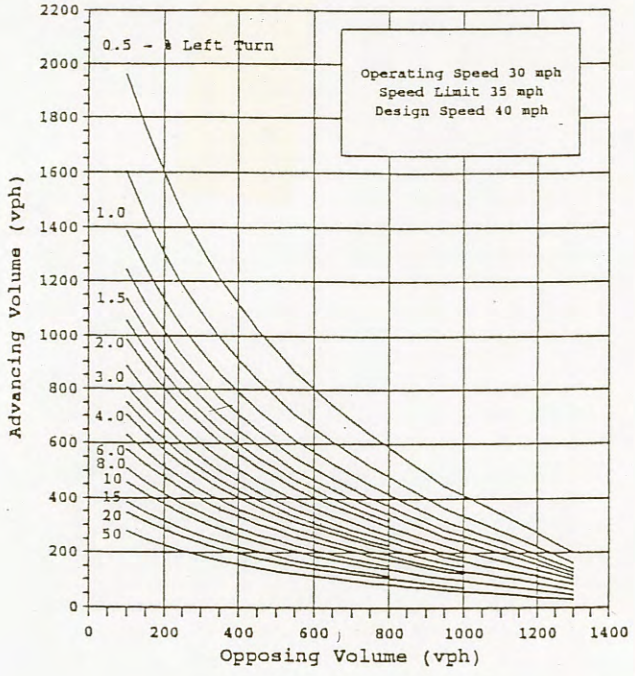
National Cooperative Highway Research Program

NCHRP Synthesis 225

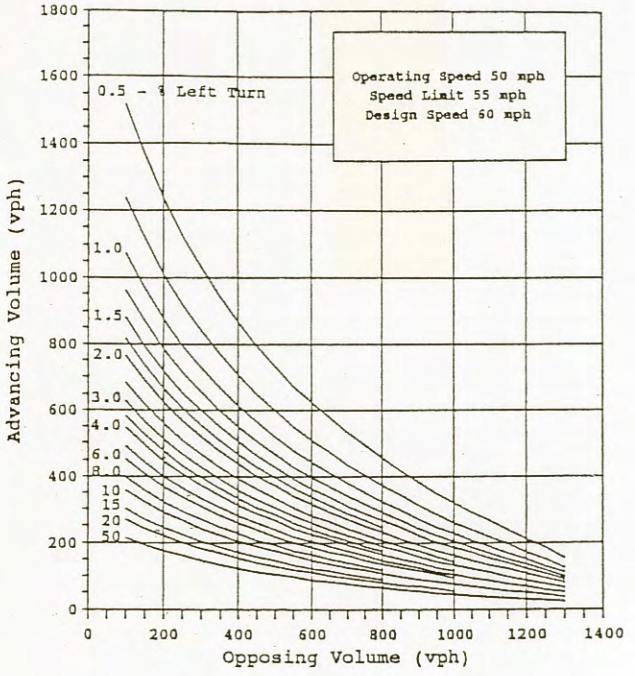
Left-Turn Treatments at Intersections

A Synthesis of Highway Practice

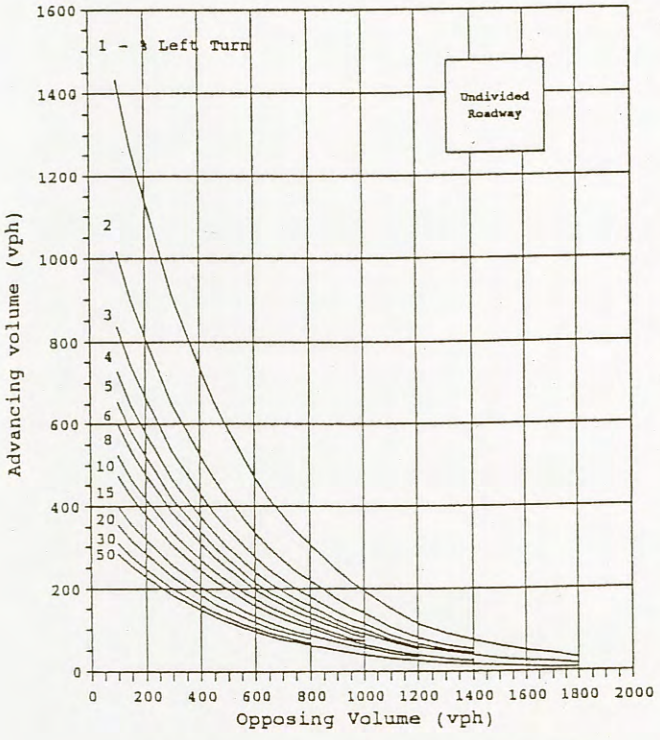
Transportation Research Board
National Research Council



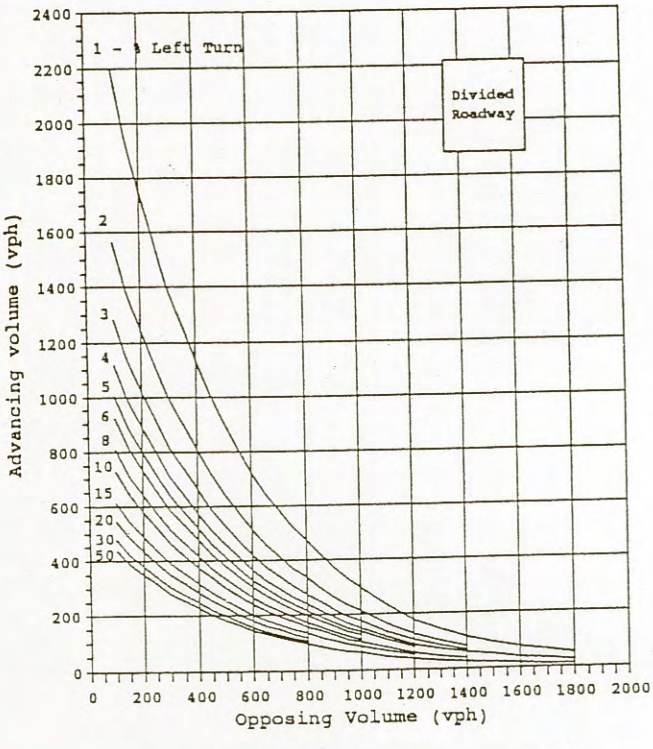
Guidelines for Left-turn Lane at Unsignalized Intersection - Two-lane Roadway



Guidelines for Left-turn Lane at Unsignalized Intersection - Two-lane Roadway



Guidelines for Left-turn Lane at Unsignalized Intersection - Four-lane, Undivided Roadway



Guidelines for Left-turn Lane at Unsignalized Intersection - Four-lane, Divided Roadway

FIGURE 5 ITE guidelines for left-turn lanes. *(18)*

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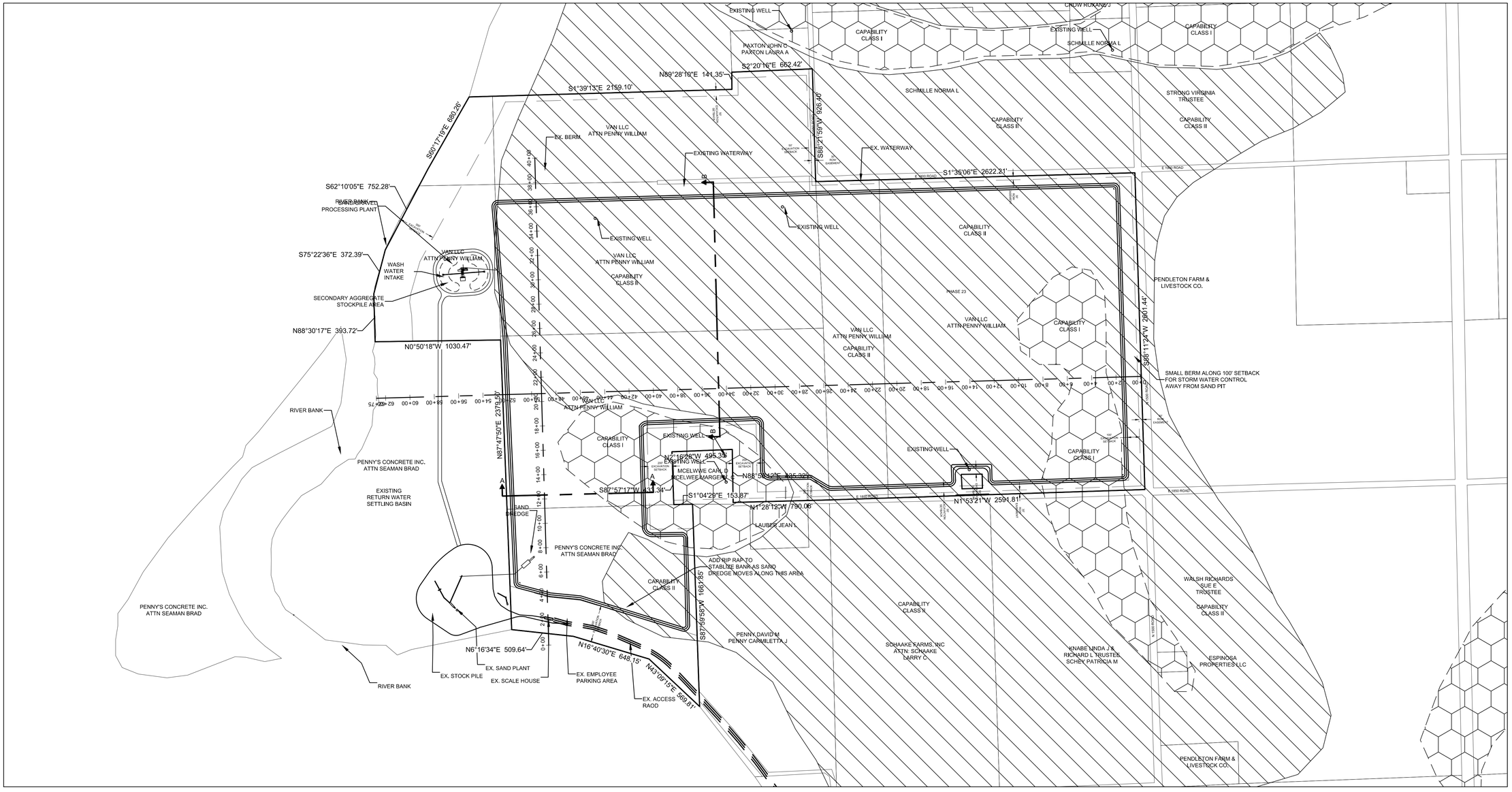
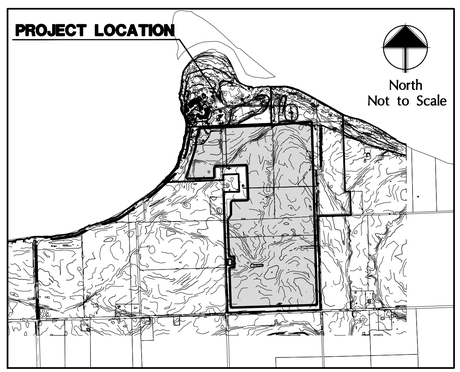


Location Map



Legal Description

A TRACT OF LAND LOCATED IN PORTIONS OF SECTIONS 25, 26, 35 AND 36 IN TOWNSHIP 12 SOUTH, RANGE 20 EAST OF THE 6TH PRINCIPAL MERIDIAN, IN DOUGLAS COUNTY, KANSAS, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF THE SOUTHEAST QUARTER OF SECTION 35, TOWNSHIP 12 SOUTH, RANGE 20 EAST; THENCE NORTH, ALONG THE WEST LINE OF SAID QUARTER SECTION TO THE CENTER OF SAID SECTION 35, THENCE NORTH ALONG THE WEST LINE OF THE NORTHEAST QUARTER OF SAID SECTION 35, 765.00 FEET TO THE SOUTHWEST CORNER OF A TRACT RECORDED IN BOOK 307, PAGE 487; THENCE EAST 442.00 FEET ALONG THE SOUTH LINE OF SAID TRACT; THENCE NORTH 492.00 FEET ALONG THE EAST LINE OF SAID TRACT; THENCE WEST 442.00 FEET ALONG THE NORTH LINE OF SAID TRACT TO THE WEST LINE OF THE NORTHEAST QUARTER OF SECTION 35, TOWNSHIP 12 SOUTH, RANGE 20 EAST; THENCE SOUTH ALONG SAID WEST LINE, 126.40 FEET TO THE SOUTH LINE OF THE NORTH 77 ACRES OF THE EAST 134 ACRES OF THE NORTHWEST QUARTER OF SAID SECTION 35, TOWNSHIP 12 SOUTH, RANGE 20 EAST; THENCE WEST ALONG THE SOUTH LINE OF THE NORTH 77 ACRES TO THE EAST BANK OF THE KANSAS RIVER; THENCE NORTHEASTERLY, ALONG SAID EAST BANK, TO THE NORTH LINE OF SECTION 35, TOWNSHIP 12 SOUTH, RANGE 20 EAST; THENCE EAST, ALONG THE NORTH LINE OF SAID SECTION 35, TO THE SOUTHWEST CORNER OF THE EAST 11.53 ACRES OF GOVERNMENT LOT 1 IN SECTION 26, TOWNSHIP 12 SOUTH, RANGE 20 EAST; THENCE NORTH, ALONG THE WEST LINE OF SAID EAST 11.53 ACRES, TO THE SOUTH BANK OF THE KANSAS RIVER; THENCE EASTERLY, ALONG THE SOUTH BANK OF THE KANSAS RIVER, TO THE WEST LINE OF SECTION 25, TOWNSHIP 12 SOUTH, RANGE 20 EAST; THENCE CONTINUING SOUTHEASTERLY, ALONG THE SOUTH BANK OF THE KANSAS RIVER, TO THE NORTHWEST CORNER OF A TRACT RECORDED IN BOOK 1056, PAGE 5024, SAID POINT LYING 739.2 FEET EAST OF THE WEST LINE OF THE NORTHWEST QUARTER SECTION 36, TOWNSHIP 12 SOUTH, RANGE 20 EAST; THENCE SOUTH, ALONG THE WEST LINE OF SAID TRACT, AND PARALLEL TO THE WEST LINE OF THE NORTHWEST QUARTER OF SECTION 36, TOWNSHIP 12 SOUTH, RANGE 20 EAST TO A POINT 151.78 FEET WEST OF THE NORTHWEST CORNER OF THE TRACT RECORDED IN BOOK 1000, PAGE 3430; THENCE EAST 151.78 FEET TO THE NORTHWEST CORNER OF SAID TRACT; THENCE SOUTH 660 FEET, ALONG THE WEST LINE OF SAID TRACT, TO THE SOUTH LINE OF THE NORTHWEST QUARTER OF SECTION 36, TOWNSHIP 12 SOUTH, RANGE 20 EAST; THENCE WEST ALONG SAID SOUTH LINE, 890.98 FEET TO THE SOUTHWEST CORNER OF THE NORTHWEST QUARTER OF SECTION 36, TOWNSHIP 12 SOUTH, RANGE 20 EAST, ALSO KNOWN AS THE NORTHEAST CORNER OF THE SOUTHEAST QUARTER OF SECTION 35, TOWNSHIP 12 SOUTH, RANGE 20 EAST; THENCE SOUTH, ALONG THE EAST LINE OF SAID SOUTHEAST QUARTER TO THE SOUTHEAST CORNER OF SAID SECTION 35, TOWNSHIP 12 SOUTH, RANGE 20 EAST; THENCE WEST, ALONG THE SOUTH LINE OF SAID QUARTER, TO THE POINT OF BEGINNING. CONTAINS 465 ACRES, MORE OR LESS.

SCALE: 1" = 400'

400 200 0 400 800

HIGH QUALITY AGRICULTURAL LAND EXHIBIT

Penny Sand Lawrence Facility

Douglas County, Kansas

Civil Engineering
Landscape Architecture
Community Planning
Surveying

1310 Wakarusa Drive
Lawrence, Kansas 66049
tele (785)843-7530
fax (785)843-7555
email: info@landplan-pa.com
Web: www.landplan-pa.com

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Lawrence, KS • Kansas City, MO • Manhattan, KS
Blue Springs, MO • The Woodlands, TX

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PENNY SAND FACILITY
HIGH QUALITY AGRICULTURAL LAND EXHIBIT

REV	DATE	DESCRIPTION

DATE:	7.2.12
PROJECT NO.:	20121146
DESIGNED BY:	CLM
DRAWN BY:	CLM
CHECKED BY:	CLM

ISSUE	SHEET NO.
A	C-002

OF 3 SHEETS

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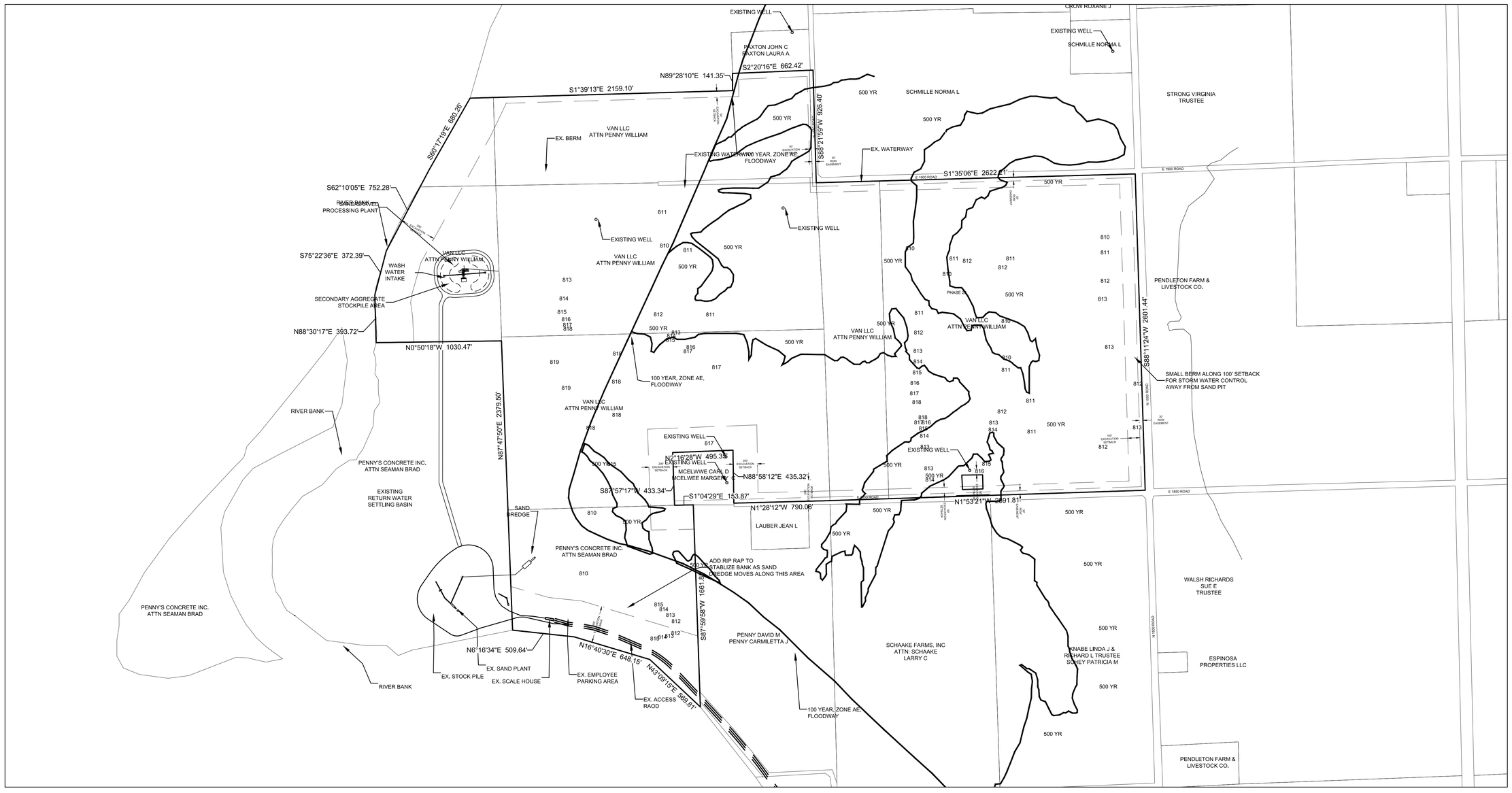
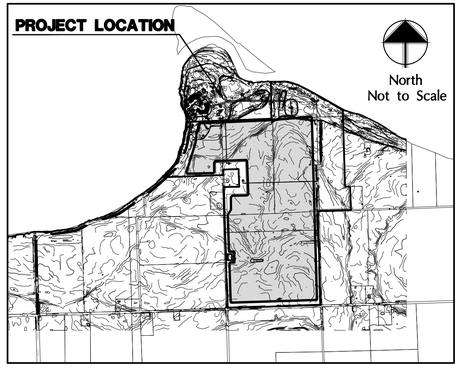


Location Map



Legal Description

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SCALE: 1" = 400'

400 200 0 400 800

FLOODWAY AND 500 YR EXHIBIT

Penny Sand Lawrence Facility

Douglas County, Kansas

Civil Engineering
Landscape Architecture
Community Planning
Surveying

Landplan Engineering, P.A.
Lawrence, KS • Kansas City, MO • Manhattan, KS
Blue Springs, MO • The Woodlands, TX

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PENNY SAND FACILITY
FLOODWAY AND 500 YR
EXHIBIT

REV	DATE	DESCRIPTION

DATE:	7.2.12
PROJECT NO.:	20121146
DESIGNED BY:	CLM
DRAWN BY:	CLM
CHECKED BY:	CLM

ISSUE	SHEET NO.
A	C-003

OF 3 SHEETS

Aug. 30, 2012

Lawrence Douglas County
Metropolitan Planning Office
6 East 6th Street,
P.O. Box 708,
Lawrence, KS 66044

Planning Staff:

My name is Carl McElwee and I live at 1564 E. 1850 Rd. I have lived at this location since 1975 (37 years this November). I am writing this letter to object to the Conditional Use Permit (CUP) that Penny Sand Co. has applied for near my house. This CUP asks permission to surround my house on 3 sides with a pit mining operation for sand removal. This would completely change my immediate surroundings which I have enjoyed for so long. If allowed this CUP would subject me and my family to dramatically increased industrial activity, including noise, dust, and environment destruction. This will undoubtedly dramatically affect my property values.

The affected area has some interesting Douglas County history associated with it. It was obtained very early by the Altenbernd family. Penny Sand has acquired much of the land as elder Altenbernds have died. On the land currently owned by Penny and covered under this CUP there exist two historic houses. One is an early stone homestead house and one is a classic two story farm stead that dates to approximately 1910. There is no mention of what will become of these structures in the CUP. I hope they will be preserved and that this CUP will not be allowed to detract from their historic value. My house was also built by an Altenbernd. As best we can tell it was built in about 1919 and is a classic Craftsman Bungalow style. My wife and I have lived here 37 years and raised our two children here. We do not want to see this environment affected by an ugly and destructive sand mining operation.

This will create a huge strip mining operation that will severely impact the local environment. Naturally, I am opposed to the CUP because of the impact on my property. However, I would like to lay out some scientific reasons why this CUP should be denied. I am a retired Geology Professor from KU and have spent a 35 year career there studying groundwater. I have worked extensively at a research site in the Kansas River Valley just northeast of the Lawrence Airport. So I am qualified to comment on the scientific aspects of the situation.

My scientific bases for opposing this CUP are as follows:

(1) The river bank in the vicinity of this proposed pit mining operation is unstable and has moved considerably over recent times, as shown by the work of Dr. Dort of the KU Geology Department. I have included copies of pertinent pages of his work. It shows that this area is unstable and the river is trying to make a straighter course, cutting off the existing meander. If pit mining is allowed in this area, in times of flood the chances of a dramatic river channel change is magnified greatly. An open pit with a small buffer

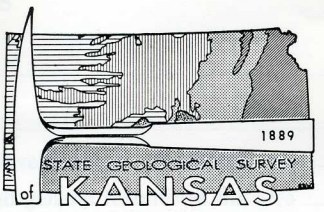
region from the river in the vicinity of this unstable bend would make it easy for the flooding river to make a sudden change in direction.

(2) On this proposed 434 acre pit mining site, the majority of the area is covered by some of the highest quality soils as defined by the US Department of Agriculture. I have included a USDA Soil Report and some pages from the 1977 Douglas County Soils Survey to support this. It seems very short sighted to produce sand for short term gain and lose the potential for significant food and fiber production indefinitely. You will notice that the USDA report shows this area as being rated as poor for sand production. This is probably because of the large amount of overburden (unusable soil, silt and clay) that must be removed. I have included three well drilling logs that show 23-24 feet of soil, silt and clay exist in the vicinity of my property. Removing this much overburden will create a very environmentally difficult situation. The spoil piles must be dealt with, not allowing runoff into the river. At the same time surface runoff must not be allowed into the pit because of possible pollution of the aquifer. There is great potential for operational missteps to create environmental problems. We have all seen the detrimental effects of strip mining elsewhere; I hope we can avoid them here.

(3) Opening this pit operation will expose one of the most prolific aquifers in this region to potential pollution. The very sand that they desire to excavate is the material that forms this prolific aquifer. I have included a few pages from a Kansas Geological Survey Bulletin by Fader that shows the characteristics of this aquifer. In general, groundwater in the aquifer moves down the valley from West to East. This aquifer is a magnificent resource that must be protected and preserved for the future. It is capable of producing vast amounts of water for irrigation and public water supply. In the future water may be one of our most valued resources. The alluvial material (loose material, soil, silt, clay, sand) in the river valley varies in depth, but about 70 feet is a good average number. The better sand is near the bottom, so the mining will proceed to the bedrock (harder material). The better sand near the bottom is also the main aquifer of the river valley. The overlying soil, silt, and clay protect the aquifer from surface pollutants. By removing this overburden the aquifer is exposed to potential pollution from surface runoff and anything that is spilled into the pit. In particular, my well would be very close to the proposed pit mine and could be affected by the operation, as could several other neighboring house wells. Just down the valley about 1 5/8 miles lies the Eudora Public Water Supply Well Field (See enclosed map); it could also be affected by the proposed pit mining operation. I do not believe that Penny Sand Co. can guarantee that no pollution will occur. Penny Sand Co will tell us that they will engineer solutions that will prevent any pollution or problems; however, I do not think the risk of a potential engineering failure is appropriate. After the 30 year CUP has finished the pit will remain, who will continue to maintain the site and guarantee aquifer integrity?

Thank you for your consideration. If I may answer any questions, please contact me.

Carl McElwee
1564 E. 1850 Rd.
Lawrence, KS 66046 785-843-4164 cmcelwee@ku.edu



BULLETIN 206, PART 2

Ground Water in the Kansas River Valley Junction City to Kansas City, Kansas

By

Stuart W. Fader

Prepared by the State Geological Survey of Kansas and the United States Geological Survey, with the cooperation of the Division of Water Resources of the Kansas State Board of Agriculture and the Division of Environmental Health of the Kansas State Department of Health.

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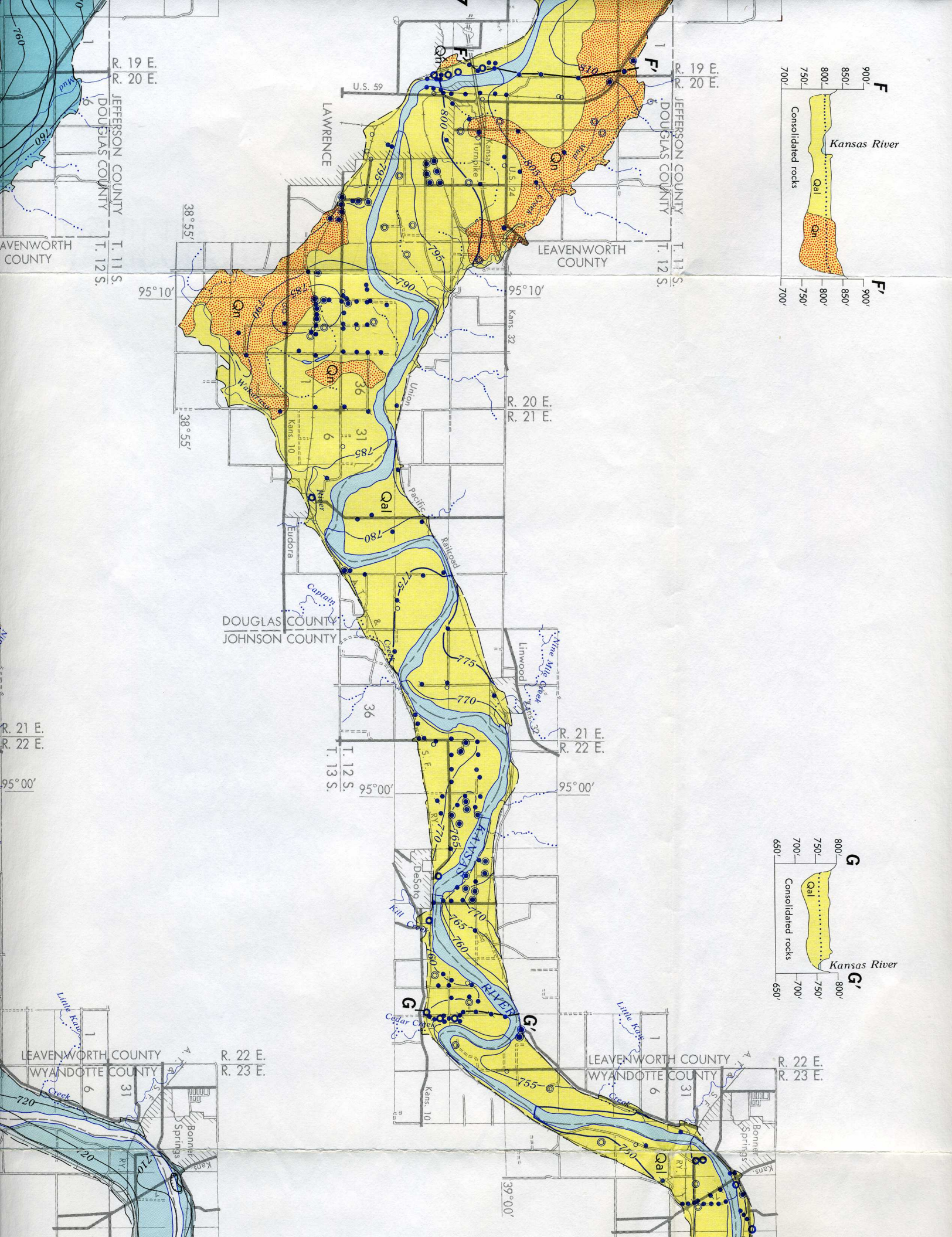

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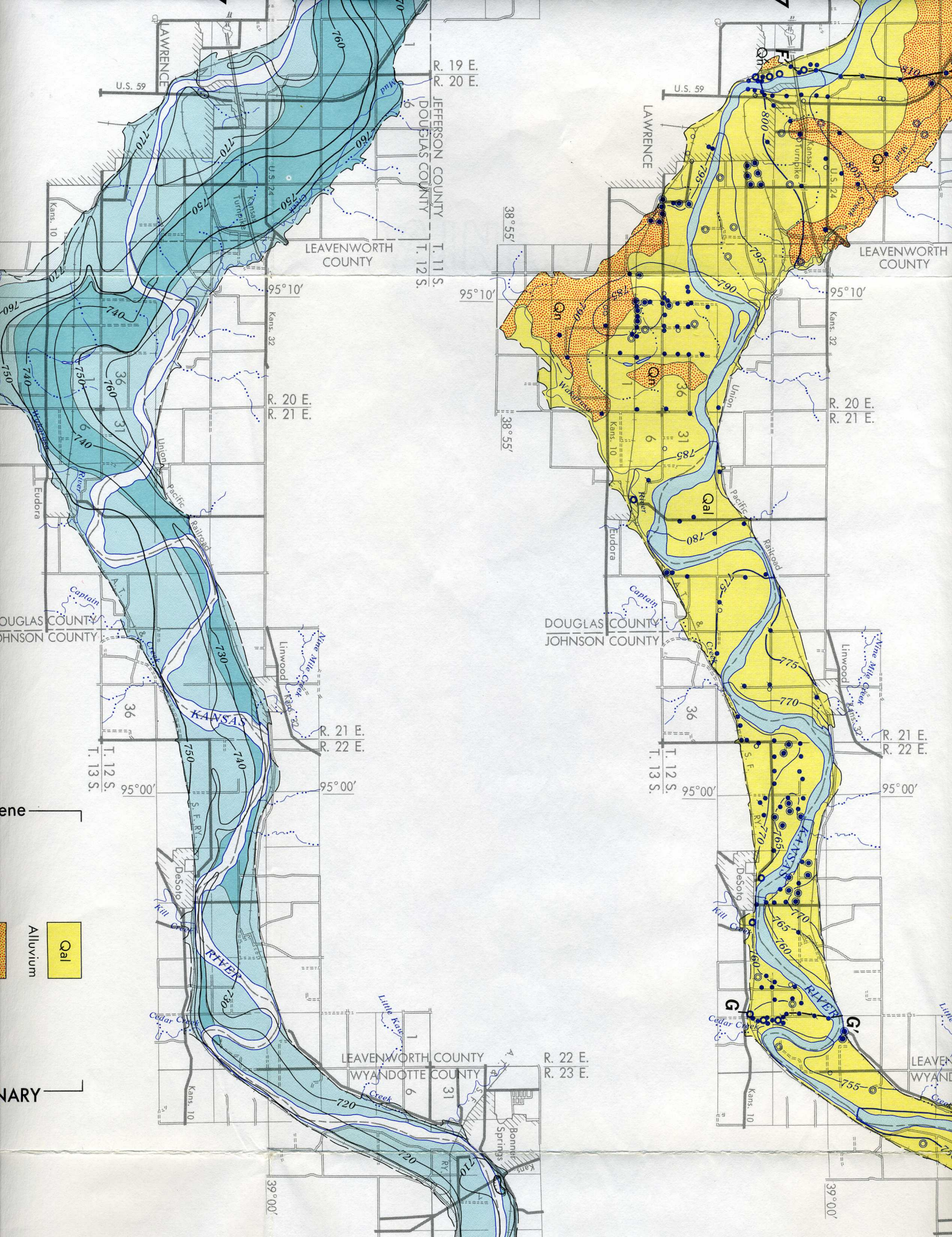
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Union Pacific Railroad
A. T. & S. F. Ry.
Captain Creek
DOUGLAS COUNTY
JOHNSON COUNTY
Nine Mile Creek
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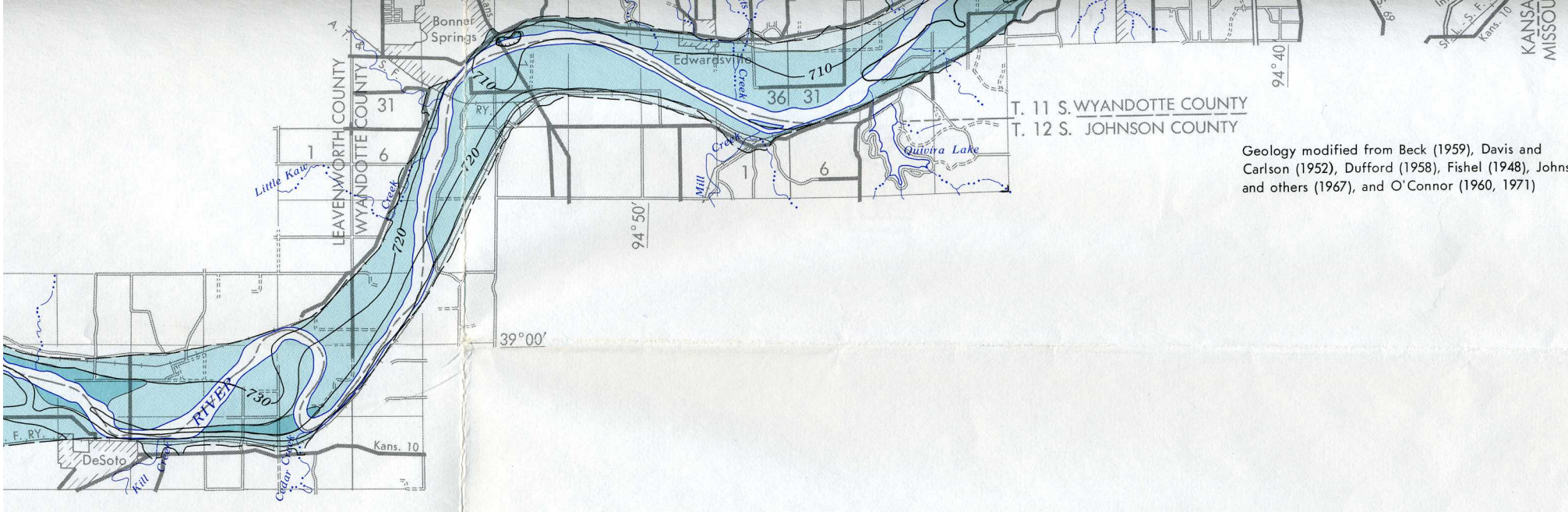


Geology modified from Beck (1959), Davis and Carlson (1952), Dufford (1958), Fishel (1948), Johnson and others (1967), and O'Connor (1960, 1971)

EXPLANATION

QUATERNARY

Pleistocene

Qal — Alluvium

Qn — Newman terrace deposits

Qb — Buck Creek terrace deposits

Contact
Dashed where inferred on geologic sections

E———E′
Trace of geologic section
Datum for geologic sections is mean sea level and vertical exaggeration x 40

Boundary of project area

785
Water-table contour
Shows altitude of water table, March 1967.
Dashed where approximately located.
Interval 5 feet. Datum is mean sea level

Water table
Shown on geologic sections

Irrigation well

Public supply well

Industrial well

Domestic or stock well

Test hole

Observation well

Stream-gaging station

Saturated thickness, in feet

Less than 20

20-40

More than 40

760
Bedrock contour
Shows altitude of bedrock surface.
Dashed where approximately located.
Interval 10 feet. Datum is mean sea level



APPROXIMATE MEAN DECLINATION, 1972

STATEMENT

March 24, 2004

Carl McElwee

1564 E 1850 Rd Lawrence, Ks. 66046

STRADER DRILLING COMPANY, INC.

Phone: 785-364-3011 — 12302 246th Road
HOLTON, KANSAS 66436

NOTICE: We do not make installment or credit sales. All accounts are due upon receipt of billing. A delinquency charge of 1½% per month (18% per year) will be added to accounts not paid within 30 days from invoice date.

3-16-04

1st 40'		1200.00
8' add'l @	13.00	104.00
24 bags hole plug	10.00	240.00
well seal & vent		37.00
tax on 677.00		42.65
	total	1623.65

0-2 top soil
2-11 clay brown/silty
11-24 clay brown
24-34 fine san brown
34-38 fine/course sand med pea bronw
38-42 fine/course sand med pea br/gr/grn
42-42½ clay grey
42½-48 fine sand br/gr/grn/boulders

48' 12" drilling
50' 5" casing
15' screen 33'-48' — .025 slot
37 GPM - SWL 29'
HP 3'-30'

Drill Logs

1 April 76

Carl McElwee's 5 acres

SE Corner

0-5	black soil
5-23	gray brown clay
23-28	med coarse sand
28-38	coarse sand
38-42	green sand
42	gray clay stringer?
42-50	green sand
50	hard - (boulders?)
50-66	green sand
66	light brown limestone

300' N of SE corner

0-4	black soil
4-23	brown clay
23-38	pink-brown sand
38-54	greens sand
54	crunchy (boulders?)
54-65	green sand
65	light brown limestone

SOIL SURVEY OF

Douglas County, Kansas



United States Department of Agriculture
Soil Conservation Service
In cooperation with
Kansas Agricultural Experiment Station

TABLE 2.—*Yields per acre of crops and pasture*

[All yields were estimated for a high level of management in 1974. Only arable soils are listed]

Soil name and map symbol	Corn	Grain sorghum	Soybeans	Wheat	Alfalfa hay	Smooth bromegrass
	Bu	*Bu*	*Bu*	*Bu*	*Ton*	*AUM* [1]
Eudora:						
Et	110	112	45	50	5.6	6.5
Ev[2]	100	100	40	43	5.0	6.2
Ew[2]	105	106	42	47	5.5	6.3
Gymer:						
Gm	90	94	38	42	4.3	5.5
Gy	83	90	35	40	4.0	6.1
Judson: Ju	109	111	44	52	5.6	7.0
Kennebec: Kb	103	98	40	42	5.5	6.5
Kimo: Km	85	90	38	40	4.5	5.5
Leanna: Le	80	85	32	36	4.0	7.0
Martin:						
Mb	80	85	35	40	3.9	5.5
Mc	75	80	31	38	3.6	5.5
Mh[2]	50	59	24	26	2.9	4.5
Mo[2]	68	78	30	37	3.4	5.0
Morrill:						
Mr	80	85	32	40	4.0	6.5
Ms	68	75	28	37	3.5	6.0
Oska: Oe	67	79	32	38	3.4	5.4
Pawnee:						
Pb	73	80	34	38	3.8	6.0
Pc	68	75	30	35	3.6	5.5
Ph	44	55	23	26	2.7	4.5
Reading: Re	103	106	44	50	5.6	6.5
Sarpy: Sb[2]	70	80	30	35	5.0	3.9
Sharpsburg:						
Sc	95	95	38	42	4.7	6.8
Sd	90	90	36	41	4.5	6.5
Sibleyville:						
Sh	62	73	25	34	3.6	6.0
So	52	57	21	28	3.0	5.0
Ss[2]	54	60	22	29	3.2	4.5
St[2], Sv[2]						5.2
Thurman: Tc	60	60	22	32	3.0	5.0
Vinland: Vc[2]	48	55	23	27	2.2	4.0
Wabash:						
Wc	82	88	37	38	4.0	6.0
Wh	65	65	31	32	3.0	5.5
Woodson:						
Wo	65	75	28	34	3.5	5.0
Ws	65	75	24	32	3.5	5.0
Wx	50	55	20	25	2.3	4.5

[1] Animal-unit-month (AUM) is a term used to express the carrying capacity of pasture. It is the amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for a period of 30 days.

[2] This mapping unit is made up of two or more dominant kinds of soil. See mapping unit description for the composition and behavior of the whole mapping unit.


R. 20 E.
R. 21 E.
N
1 Mile
5000 Feet
Scale 1:20000
(Joins sheet 9)
(Joins sheet 1)
(Joins sheet 3)
(Joins sheet 16)
240 000 FEET
270 000 FEET
2 810 000 FEET
KANSAS RIVER
LEAVENWORTH COUNTY
ATCHISON
TOPEKA
25
26
28
33
35
36
Sb
Ro
Ew
Ev
Et
Sv
Gy
Sw
Pc
Ws
Mo
Km

United States Department of Agriculture

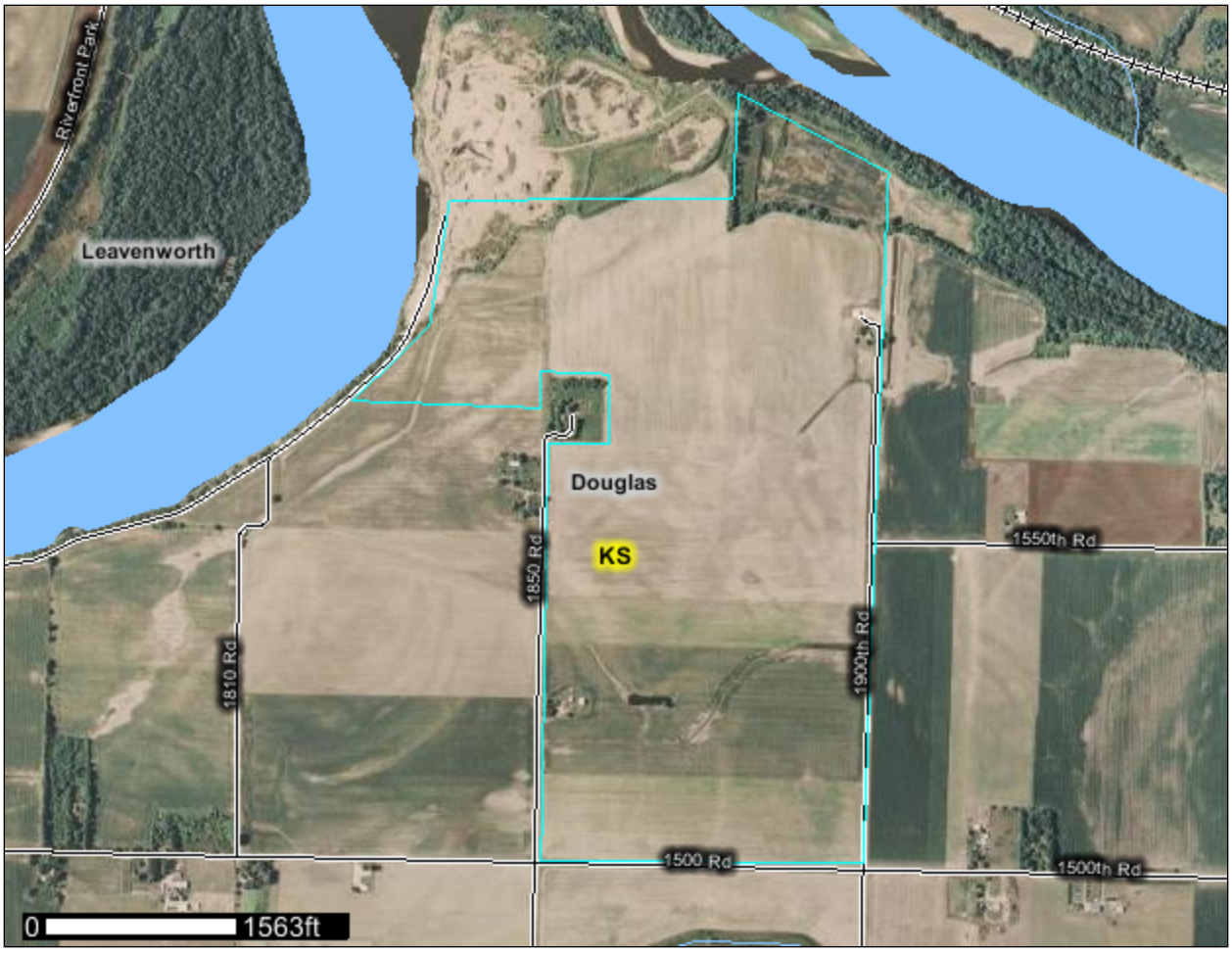
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Douglas County, Kansas

Sand Pit Site



August 22, 2012

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://soils.usda.gov/sqi/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://soils.usda.gov/contact/state_offices/).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Soil Data Mart Web site or the NRCS Web Soil Survey. The Soil Data Mart is the data storage site for the official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map (Sand Pit Site)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features
- Gully
- Short Steep Slope
- Other

Political Features
- Cities

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:10,100 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 15N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Douglas County, Kansas
Survey Area Data: Version 8, Nov 30, 2010

Date(s) aerial images were photographed: 6/15/2006

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend (Sand Pit Site)

Douglas County, Kansas (KS045)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
7035	Eudora-Bismarckgrove fine sandy loams, overwash, occasionally flooded	61.6	16.5%
7089	Stonehouse-Eudora fine sandy loams, overwash, occasionally flooded	12.1	3.2%
7123	Eudora silt loam, rarely flooded	48.9	13.1%
7127	Eudora-Kimo complex, overwash, rarely flooded	240.6	64.5%
9995	Sand Pits	10.0	2.7%
Totals for Area of Interest		**373.1**	**100.0%**

Map Unit Descriptions (Sand Pit Site)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic

classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Douglas County, Kansas

7035—Eudora-Bismarckgrove fine sandy loams, overwash, occasionally flooded

Map Unit Setting

Elevation: 750 to 980 feet
Mean annual precipitation: 31 to 47 inches
Mean annual air temperature: 52 to 55 degrees F
Frost-free period: 175 to 215 days

Map Unit Composition

Eudora and similar soils: 55 percent
Bismarckgrove and similar soils: 25 percent
Minor components: 0 percent

Description of Eudora

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Coarse-silty alluvium

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Available water capacity: High (about 11.1 inches)

Interpretive groups

Land capability (nonirrigated): 2w
Ecological site: Loamy Lowland (PE 30-37) (R106XY013KS)

Typical profile

0 to 7 inches: Fine sandy loam
7 to 14 inches: Silt loam
14 to 40 inches: Silt loam
40 to 48 inches: Silt loam
48 to 80 inches: Very fine sandy loam

Description of Bismarckgrove

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Silty alluvium

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Available water capacity: High (about 10.6 inches)

Interpretive groups

Land capability (nonirrigated): 2w
Ecological site: Loamy Lowland (PE 30-37) (R106XY013KS)

Typical profile

0 to 6 inches: Fine sandy loam
6 to 14 inches: Silty clay loam
14 to 19 inches: Silty clay loam
19 to 29 inches: Silt loam
29 to 44 inches: Silt loam
44 to 80 inches: Stratified loamy fine sand to fine sandy loam

Minor Components

Aquolls

Percent of map unit: 0 percent
Landform: Depressions, drainageways, hillslopes
Down-slope shape: Concave
Across-slope shape: Concave

7089—Stonehouse-Eudora fine sandy loams, overwash, occasionally flooded

Map Unit Setting

Elevation: 750 to 980 feet
Mean annual precipitation: 31 to 47 inches
Mean annual air temperature: 52 to 55 degrees F
Frost-free period: 175 to 215 days

Map Unit Composition

Stonehouse and similar soils: 50 percent
Eudora and similar soils: 30 percent
Minor components: 0 percent

Description of Stonehouse

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy alluvium

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Available water capacity: Low (about 5.4 inches)

Interpretive groups

Land capability (nonirrigated): 4s
Ecological site: Sandy Lowland (PE 30-37) (R106XY023KS)

Typical profile

0 to 9 inches: Fine sandy loam
9 to 23 inches: Loamy fine sand
23 to 31 inches: Stratified loamy sand
31 to 45 inches: Stratified fine sand
45 to 71 inches: Stratified sandy loam
71 to 80 inches: Stratified loamy fine sand

Description of Eudora

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Coarse-silty alluvium

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Available water capacity: High (about 11.1 inches)

Interpretive groups

Land capability (nonirrigated): 2w
Ecological site: Loamy Lowland (PE 30-37) (R106XY013KS)

Typical profile

0 to 7 inches: Fine sandy loam
7 to 14 inches: Silt loam
14 to 40 inches: Silt loam
40 to 48 inches: Silt loam
48 to 80 inches: Very fine sandy loam

Minor Components

Aquolls

Percent of map unit: 0 percent
Landform: Depressions, drainageways
Down-slope shape: Concave
Across-slope shape: Concave

7123—Eudora silt loam, rarely flooded

Map Unit Setting

Elevation: 800 to 1,050 feet
Mean annual precipitation: 31 to 47 inches
Mean annual air temperature: 52 to 55 degrees F
Frost-free period: 175 to 215 days

Map Unit Composition

Eudora and similar soils: 85 percent
Minor components: 0 percent

Description of Eudora

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Coarse-silty alluvium

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Available water capacity: High (about 11.8 inches)

Interpretive groups

Land capability (nonirrigated): 1
Ecological site: Loamy Lowland (PE 30-37) (R106XY013KS)

Typical profile

0 to 7 inches: Silt loam
7 to 14 inches: Silt loam
14 to 40 inches: Silt loam
40 to 48 inches: Silt loam
48 to 80 inches: Very fine sandy loam

Minor Components

Aquolls, ponded

Percent of map unit: 0 percent
Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Concave

Aquolls

Percent of map unit: 0 percent
Landform: Depressions, drainageways, hillslopes
Down-slope shape: Concave
Across-slope shape: Concave

7127—Eudora-Kimo complex, overwash, rarely flooded

Map Unit Setting

Elevation: 400 to 1,200 feet
Mean annual precipitation: 31 to 47 inches
Mean annual air temperature: 52 to 59 degrees F
Frost-free period: 175 to 215 days

Map Unit Composition

Eudora and similar soils: 60 percent
Kimo and similar soils: 30 percent
Minor components: 5 percent

Description of Eudora

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Coarse-silty alluvium

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Available water capacity: Very high (about 12.2 inches)

Interpretive groups

Land capability (nonirrigated): 2w
Ecological site: Loamy Lowland (PE 30-37) (R106XY013KS)

Typical profile

0 to 12 inches: Silt loam
12 to 72 inches: Silt loam

Description of Kimo

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Clayey over loamy alluvium

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 22 to 26 inches
Frequency of flooding: Rare
Frequency of ponding: Occasional
Available water capacity: High (about 11.4 inches)

Interpretive groups

Land capability (nonirrigated): 2w
Ecological site: Loamy Lowland (PE 30-37) (R106XY013KS)

Typical profile

0 to 6 inches: Silty clay loam
6 to 28 inches: Silty clay
28 to 60 inches: Silt loam

Minor Components

Wabash

Percent of map unit: 5 percent
Landform: Flood plains
Landform position (three-dimensional): Tread
Other vegetative classification: CLAY LOWLAND (PE30-37) (106XY004KS_1)

9995—Sand Pits

Map Unit Setting

Mean annual precipitation: 31 to 47 inches
Frost-free period: 175 to 215 days

Map Unit Composition

Pits, sand: 100 percent

Soil Information for All Uses

Soil Reports

The Soil Reports section includes various formatted tabular and narrative reports (tables) containing data for each selected soil map unit and each component of each unit. No aggregation of data has occurred as is done in reports in the Soil Properties and Qualities and Suitabilities and Limitations sections.

The reports contain soil interpretive information as well as basic soil properties and qualities. A description of each report (table) is included.

Construction Materials

This folder contains a collection of tabular reports that present soil interpretations related to sources of construction materials. The reports (tables) include all selected map units and components for each map unit, limiting features and interpretive ratings. Construction materials interpretations are tools designed to provide guidance to users in selecting a site for potential source of various materials. Individual soils or groups of soils may be selected as a potential source because they are close at hand, are the only source available, or they meets some or all of the physical or chemical properties required for the intended application. Example interpretations include roadfill, sand and gravel, topsoil and reclamation material.

Source of Sand and Gravel (Sand Pit Site)

This table gives information about the soils as potential sources of gravel and sand. Normal compaction, minor processing, and other standard construction practices are assumed.

Sand and gravel are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. Only the likelihood of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the bottom layer of the soil contains sand or gravel, the soil is considered a likely source regardless of thickness. The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness. The ratings are for the whole soil, from the surface to a depth of about 6 feet.

The soils are rated *good*, *fair*, or *poor* as potential sources of sand and gravel. A rating of *good* or *fair* means that the source material is likely to be in or below the soil. The bottom layer and the thickest layer of the soils are assigned numerical ratings. These ratings indicate the likelihood that the layer is a source of sand or gravel. The number 0.00 indicates that the layer is a poor source. The number 1.00 indicates that the layer is a good source. A number between 0.00 and 1.00 indicates the degree to which the layer is a likely source.

Information in this table is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this table. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Report—Source of Sand and Gravel (Sand Pit Site)

[Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.00 to 0.99. The larger the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel]

Source of Sand and Gravel– Douglas County, Kansas					
Map symbol and soil name	**Pct. of map unit**	**Potential as a source of gravel**		**Potential as a source of sand**	
		Rating class and limiting features	**Value**	**Rating class and limiting features**	**Value**
7035—Eudora-Bismarckgrove fine sandy loams, overwash, occasionally flooded					
Eudora	55	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Bismarckgrove	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Source of Sand and Gravel– Douglas County, Kansas					
Map symbol and soil name	Pct. of map unit	Potential as a source of gravel		Potential as a source of sand	
		Rating class and limiting features	Value	Rating class and limiting features	Value
7089—Stonehouse-Eudora fine sandy loams, overwash, occasionally flooded					
Stonehouse	50	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.03
		Thickest layer	0.00	Bottom layer	0.13
Eudora	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
7123—Eudora silt loam, rarely flooded					
Eudora	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
7127—Eudora-Kimo complex, overwash, rarely flooded					
Eudora	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Kimo	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
9995—Sand Pits					
Pits, sand	100	Not rated		Not rated	

Source of Sand and Gravel (Sand Pit Site)

This table gives information about the soils as potential sources of gravel and sand. Normal compaction, minor processing, and other standard construction practices are assumed.

Sand and gravel are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. Only the likelihood of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the bottom layer of the soil contains sand or gravel, the soil is considered a likely source regardless of thickness. The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness. The ratings are for the whole soil, from the surface to a depth of about 6 feet.

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1564 E 1850 Rd, Lawrence, KS
1-5/8mi
Eudora Well Field
© 2012 Google
Google earth
Imagery Date: 5/30/2011
1991
38°57'39.00" N 95°07'50.91" W elev 811 ft
Eye alt 17376 ft

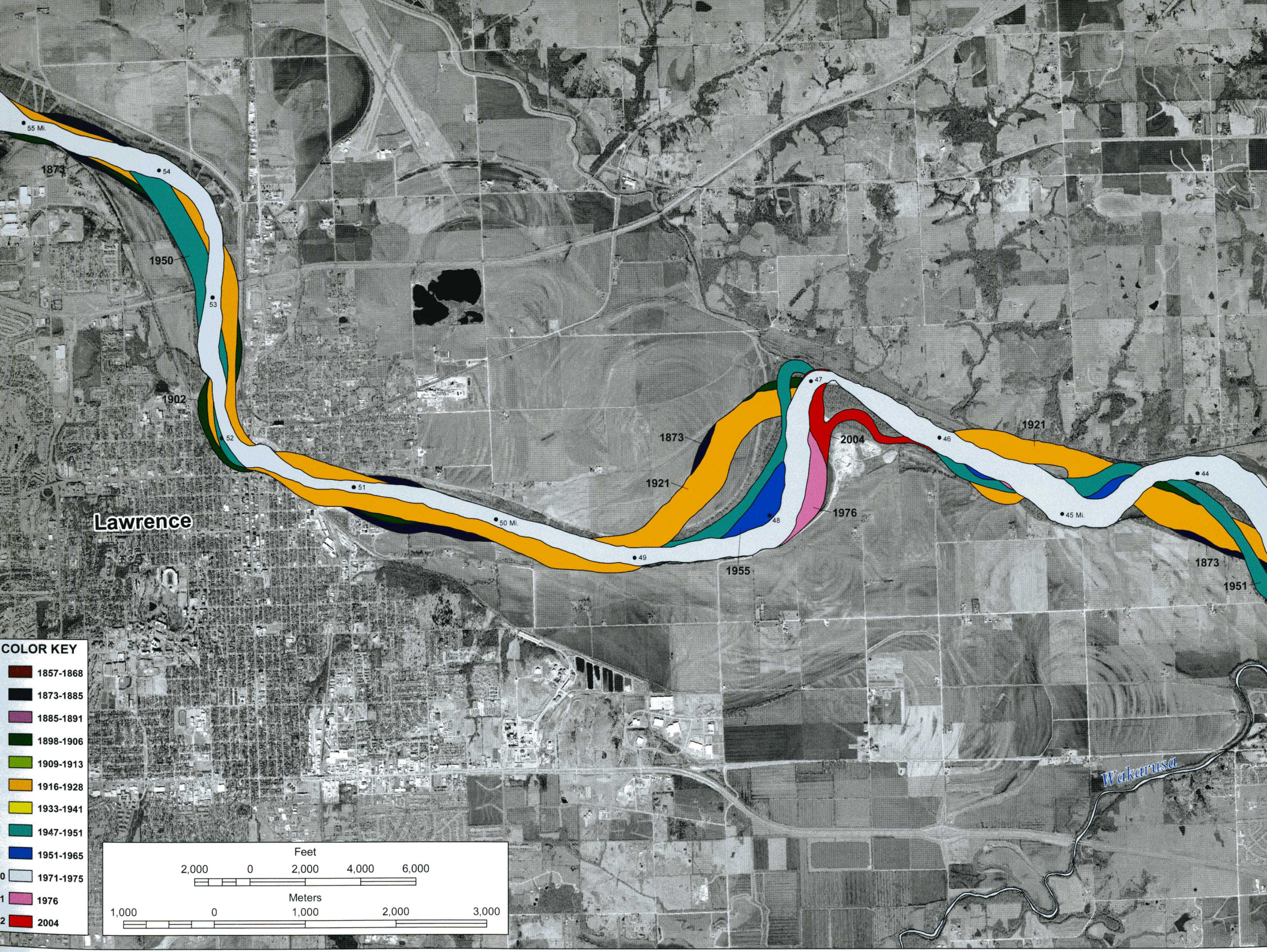
HISTORICAL
CHANNEL CHANGES
OF THE
KANSAS RIVER
AND ITS MAJOR TRIBUTARIES

WAKEFIELD DORT, JR.



SPECIAL PUBLICATION NUMBER 42

AMERICAN GEOGRAPHICAL SOCIETY



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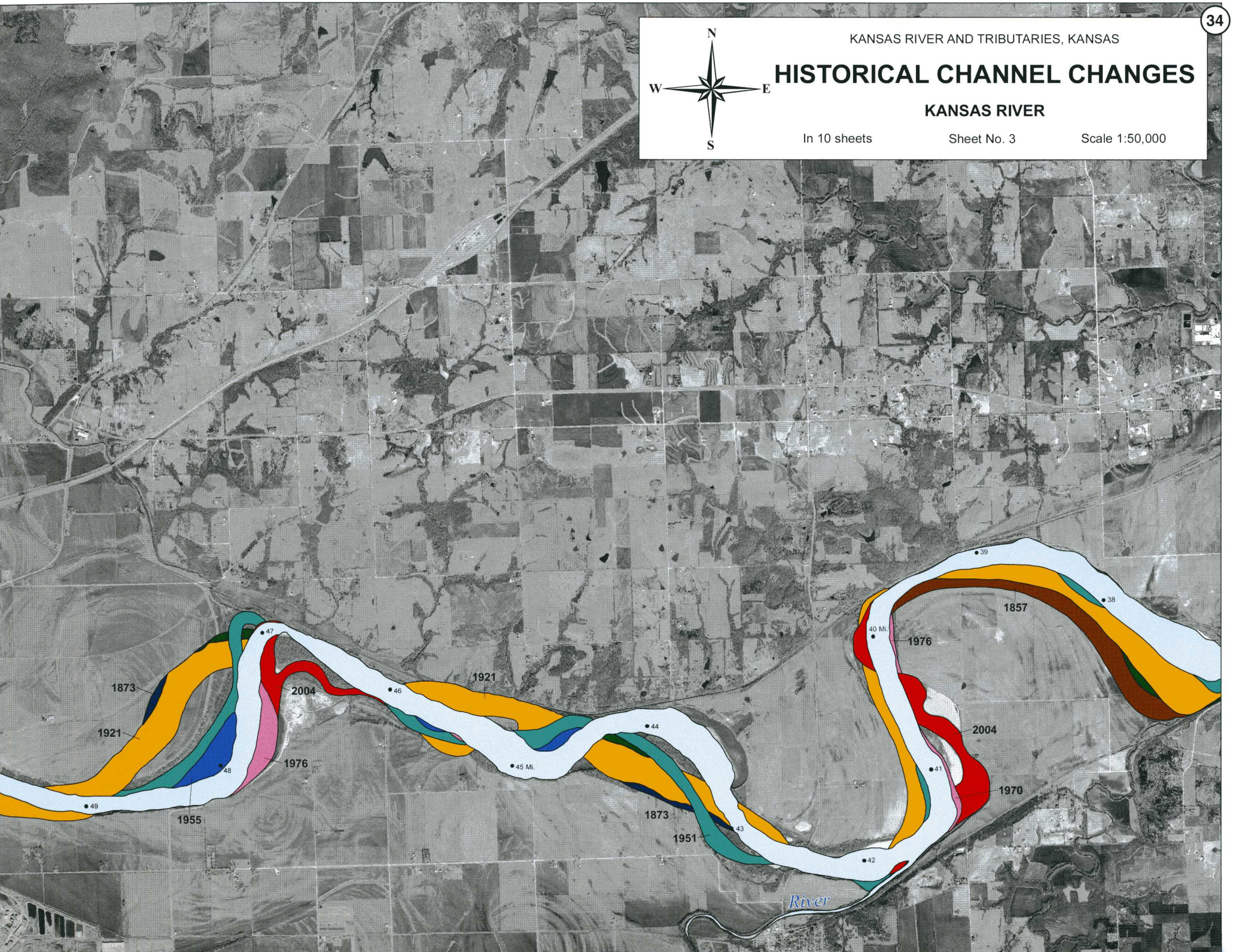
34
KANSAS RIVER AND TRIBUTARIES, KANSAS
HISTORICAL CHANNEL CHANGES
KANSAS RIVER
In 10 sheets
Sheet No. 3
Scale 1:50,000
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40 Mi.
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38

Sept. 9, 2012

Lawrence Douglas County
Metropolitan Planning Office
6 East 6th Street,
P.O. Box 708,
Lawrence, KS 66044

Planning Staff:

As interested property owners, we are writing this letter to object to the Conditional Use Permit (CUP) that Penny Sand Co. has applied for near 1500N and 1850E. This CUP asks permission for a pit mining operation for sand removal. This would completely change the agricultural setting of the area. If allowed, this CUP would subject the area to dramatically increased industrial activity, including noise, dust, and environment destruction. We ask that you deny the CUP for the following reasons:

(1)The affected area has some interesting Douglas County history associated with it and contains some historic houses.

(2) The river bank in the vicinity of this proposed pit mining operation is unstable and has moved considerably over recent times. If pit mining is allowed in this area, in times of flood the chances of a dramatic river channel change is magnified greatly.

(3) On this proposed 434 acre pit mining site, the majority of the area is covered by some of the highest quality soils as defined by the US Department of Agriculture. It seems very short sighted to produce sand for short term gain and lose the potential for significant food and fiber production indefinitely.

(4)There is a large amount of overburden (unusable soil, silt and clay) that must be removed (typically 23-24 feet). Removing this much overburden will create an environmental nightmare

(5) Opening this pit operation will expose one of the most prolific aquifers in this region to potential pollution. This aquifer is a magnificent resource that must be protected and preserved for the future.

(6)Several neighboring house wells could be affected by this pit. Just down the valley about 1 5/8 miles lies the Eudora Public Water Supply Well Field; it could also be affected by the proposed pit mining operation.

Thank you for your consideration of our concerns.

Penny Sand Pit Petition

Name	Address	Phone Number	email
Print: Carl McElwee	1564 E. 1850 Rd.	785	cmcelwee@ku.edu
Signature: Carl McElwee	Lawrence, KS 66046	843-4164	
Print: MARGERY McELWEE	1564 E 1850 Rd	785	
Signature: Margery McElwee	Lawrence KS 66046	843-4164	
Print: Rick Gaebler	1555 E 1850 Rd	785-393-	
Signature: Rick Gaebler	Lawrence KS	9028	
Print: Esther McCabria	1455 E 1900 Rd	542	BMccabria@aol.com
Signature: E. McCabria	Eudora, KS 66025	2492	
Print: Robert McCabria	1455 E 1900 Rd	542	"
Signature: Robert E McCabria	Eudora, KS 66025	2492	
Print: Scott	1964 N 1550 Rd	785	Scothjackson
Signature: Scott Jackson	Eudora 66025	331 6561	1964@yahoo.com
Print: Bruce Perkins	Eudor 66025	785	BrucePerkins55@
Signature: Bruce Perkins		764 6295	Gmail.com
Print: Philip R Ernst	826 Mass, Lawrence	843-2313	
Signature: Ernst			
Print: NORMA L. SCHMILZ	1610 E. GLENN DR.		
Signature: Norma L. Schmilz	LAWRENCE, KS 66044	843-0943	
Print: AL W DEATHE	1918 N 1500 RD		AWDVKD@
Signature: Al W Deathe	EUDORA KS	542-2352	SUNFLOWER.COM
Print: ViAnn K. Deathe	1918 N 1500 Rd		
Signature: ViAnn K Deathe	Eudora, KS 66025	542-2352	

Penny Sand Pit Petition

Name	Address	Phone Number	email
Print: Gregory Shype Signature: Gregory Shype	1394 E 1900 Rd Eudora, Ks 66025	785-542-227[illegible]	KSwikes@hotmail.com
Print: Virginia S. Strong Signature: Virginia S. Strong	3712 Trail Rd. Lawrence, Ks 66049	785 843-2293	
Print: DAVID VERTAČNIK Signature: David Vertačnik	1403E 1850 Road Lawrence, KS	785 842-4428	davidve ku.edu
Print: Wendy Leet Vertacnik Signature: Wendy Leet Vertacnik	1403 E. 1850 Rd Lawrence. KS 66046	785-842.4428	vertacnike sunflower.com
Print: Dr Karen Johnston Signature: K Johnston	1928 N 1500 Rd Eudora KS 66025	785 393 2933	drkarenjohnston@gmail.com
Print: Linda Knabe Signature: Linda Knabe	39460 W 145th ST Eudora, Ks 66025	785 542 2228	knabefarms@wildblue.net
Print: Richard Knabe Signature: Richard Knabe	Same		
Print: PETER SHENOUDA Signature: Peter Shenouda	1411 E. 1850 Road lawrence, KS 66046	785-856-3999	pshenouda@hotmail.com
Print: Building Blocks Daycare Signature: ~~Steve Boyer~~	1411 E. 1850 Road lawrence, KS 66046	785-856-3999	buildingblocks@sunflower.com
Print: Steve BOYER Signature: Steve Boyer	Eudora K.S. 2027 N 1500 RD	785-218-2491	
Print: Nancy Jackson Signature: Nancy Jackson	1964 N 1550th Rd Eudora, KS 66025	785-331-8743	nancyjackson66@gmail.com



The Master's Dredging Company, Inc.

Dredging Contractors
P.O. Box 9, Lawrence, KS 66044
(913) 583-3335

September 12, 2012

RECEIVED
SEP 13 2012
City County Planning Office
Lawrence, Kansas

Mr. Bruce Liese
Chairman, Lawrence-Douglas County Planning Commission
6 East 6th Street
Lawrence, Kansas 66044

Dear Mr. Liese,

We have a CUP for a sand plant operation approved in 1991 on land about 1.5 miles northeast of the intersection of Noria Road and North 1500 Road. At the time of the 1991 approval of our CUP we had applied for both a Kansas River operation and a sand pit operation on the land where our sand plant was located. At the time, the zoning board did not feel that there was a need for both operations and gave me a choice between the two. I choose the river operation. Under a sand plant lease arrangement, Pennys Concrete has been producing sand from our river permit for over 17 years.

With a pending Corps of Engineer decision to halt both ours and Pennys' river permits, Pennys Concrete (1) terminated their lease agreement with us and (2) applied for zoning of an off-river sand pit operation. In light of this we are renewing our CUP zoning application for an off-river sand pit on land immediately adjacent to the Pennys Concrete's application for a CUP permit for off river sand pit operation. We are presently applying for a CUP for an off-river sand pit operation.

In light of the fact that Pennys Concrete and we have nearly identical CUP applications on adjacent lands, I would like to request that the zoning board defer consideration of Pennys Concrete's application and that the zoning board would consider both Pennys' and our CUP applications concurrently. I would appreciate your passing on this request to the rest of your zoning board, the planning staff, and county commissioners. If you have any questions, feel free to email me at (davidpenny@theaquaticgroup.com) or call me: 913-583-3335 (office, but please do not leave a message) or 785-218-8800 (cell, leave a message if you do not get me).

Sincerely,

David Penny
President

Sept. 18, 2012

Lawrence Douglas County
Metropolitan Planning Office
6 East 6th Street,
P.O. Box 708,
Lawrence, KS 66044

Planning Commission:

I would like to object to the request in David Penny's letter from The Masters Dredging Company, Inc. to defer consideration of the Penny Sand CUP from the Sept. 24 meeting. I and other land owners have worked to prepare for that meeting and would like to see our concerns addressed in a timely manner.

I have a long scheduled previous commitment Oct 15-25 and will be out of town. I ask the Planning Commission to please not schedule any meetings on this issue during my absence.

Thank you for your consideration. If I may answer any questions, please contact me.

Sincerely,

Carl McElwee
1564 E. 1850 Rd.
Lawrence, KS 66046 785-843-4164 cmcelwee@ku.edu

Evaluation of Penny's Concrete and Sand LLC,

Proposed Sand Pit Operation on Ground Water

For the Lawrence Facility

For

Penny's Concrete and Sand LLC

23400 West 82nd Street

Shawnee, Kansas

By

Carl E. Nuzman, P.E., P.Hg.

Consulting Engineer/Hydrogeologist

3314 NW Huxman Road

Silver Lake, KS 66539

Phone 785 224 9929

September 12, 2012

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B. West to East Geologic Cross-Section along N 1500 Road
C. Distance-Drawdown Semi-Log Plot of Eudora's Wells No's 6, 7, & 8
D. Generalized Static Water Table in Area (From KGS Bull. 130, Part 1)
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I. Selected WWC-5 Water Well Logs in Study Area
II. KDA, Division of Water Resources, Safe Yield Analysis Data
III. Potential Pollution Sources in the Area
IV. Carl E. Nuzman, Resume' and Personal Information

Evaluation of Penny's Concrete and Sand LLC,

Proposed Sand Pit Operation on Ground Water for the Lawrence Facility

1. INTRODUCTION

A study and evaluation was made of the aquifer characteristics of the Kansas River Valley alluvial sediments in the vicinity between Lawrence, KS and Eudora to determine if any detrimental effects will occur to the existing wells in the vicinity of the proposed sand mining operation. Penny Concrete and Sand proposes to establish a pit to mine sand located in the East ½, and the NE¼ of the NW ¼ of Section 35 excluding two outparcels, the West 60 acres of the West ½ of the NW ¼ of Section 36, and a portion of the SE¼ of the SE¼ of Section 26, all in Township 11 South, Range 20 East in Douglas County, Kansas. Shown on Exhibit A is the conditional use permit (CUP) area where the proposed sand pit is located and wells registered with the Division of Water Resources Kansas Department of Agriculture.

2. GEOLOGIC SETTING

A study was made by Alvin E. Dufford of the Quaternary Geology and Ground-Water Resources of the Kansas River Valley between Bonner Springs and Lawrence. The results of his work were published by the University of Kansas for the Kansas Geological Survey in Bulletin 130, Part 1, in 1958. The Wakarusa River hugs the south edge of the valley while the Kansas River stays close to the north edge of the valley, narrowing as the valley approaches Eudora from the west.

The Kansas River valley has a general eastward slope of about 3 feet per mile with low dissected hills bounding the flood plain on both sides. The Kansas River valley alluvium merges with the Wakarusa River valley alluvium near the center of Section 10, Twp 13 South, Range 20 East in Douglas County, Ks. The valley alluvium that comprises the aquifer consists principally of sand but contains lenses of both coarser and finer material. Generally, the saturated thickness of the aquifer is about 40 to 50 feet thick in the deepest part of the valley but thins to about 20 feet in the vicinity in the saturated thickness, in the proposed sand mining operation. Bed roc elevation in the area was defined by Stuart W. Fader in Ground Water in the Kansas River Valley, Junction City to Kansas City, Kansas in Bulletin No. 206, Part 2.

Well logs of selected wells in the area are given in Appendix I from the WWC-5 forms filed with the Kansas Geological Survey water well log file in Lawrence, KS. Exhibit B, is a geologic west to east cross-section along North 1500 Road showing the geology profile in that area. Static

water levels given on the well log reports do not reflect average conditions of the aquifer. Static water levels can vary several feet with changes in precipitation in the area. The static water levels will be higher during periods of normal or above normal precipitation and will decline during periods of drought. Static water levels given in the WWC-5 reports may not have been allowed to completely stabilize after pumping.

3. HYDROLOCIC SITUATION

The Eudora area has a humid continental climate. Normally, more than 70% of the annual precipitation falls during the growing season from April through September. Precipitation during this period is usually from thunderstorms (high intensity rainfall of brief duration) in the evening and early morning hours. The mean hourly wind speed is about 10 miles per hour usually from the south or southwest, and the sun usually shines more than 60% of the daylight hours.

The Kansas River which flows in an easterly direction is the principal stream in the area. The Army Corps of Engineers normally maintains a minimum desirable stream flow of 1,000 cubic feet per second at the DeSoto gaging station on the Kansas /river. The Wakarusa River is hydrologically an important tributary stream because it is a major source of recharge to the alluvial aquifer, especially in the vicinity of major well fields.

4. SAFE YIELD ANALYSIS

The safe yield available for appropriation from an unconfined aquifer at a specific location is determined by the amount of average annual precipitation that becomes recharge to the aquifer occurring within the area of consideration by the Chief Engineer of the Division of Water Resources, Kansas Department of Agriculture. The area of consideration means the portion of the aquifer area that lies within a 2-mile radius from the proposed point of interest, which is the geo-center of the proposed sand pit.

Although a safe yield analysis is not required for a sand pit operation in the Kansas River Basin by the Division of Water Resources, Kansas Department of Agriculture, such an appraisal was made to identify all registered ground water appropriators within a two (2) mile radius of the proposed sand pit operation. There were 15 identified ground water users some of which have multiple water rights on file. All wells registered are given in Appendix II with the well information followed by the owner and their address.

Based on established recharge rate of 9.2 inches per year by the Division of Water Resources, the safe yield for the 2-mile circle comprising and effective area of 6,350 acres is 4,868.33 acre-feet.

The prior appropriations certified in the circle are 4,305.78 acre-feet, with the added permitted appropriated water totaling 5,429.45 acre feet. Only wells 7 and 9 of the City of Eudora are at the edge of 2-mile circle from the geo-centroid of the proposed Penny sand pit.

The City of Eudora's total appropriation of 699 ac-ft or 227.77 MGY for municipal appropriation including future water use for population growth was used in the model given in Exhibits E and F. The maximum authorized diversion rate or pumping in one day is 1.4 million gallons per day. Exhibits E and F show the proposed Penny sand pit will not affect the City of Eudora wells in any way. The over appropriation of water in the area is up-gradient from the City wells and serves to intercept any ground water contamination that may exist in the capture zone of the City of Eudora wells identified in Exhibit F.

5. AQUIFER PROPERTIES

You do not get water from a well. A well is a stabilized hole in the ground to gain access to water bearing material called an ***aquifer***. The yield of an aquifer is controlled by the permeability of the geologic formation and the saturated thickness of that permeable formation. The yield of a well can never be greater than that of the aquifer and usually less depending upon the efficiency of well construction and development. A well can decrease in yield due to biological fouling and lack of proper maintenance but unless the static water level has a substantial decline reducing the saturated thickness, the yield available from the aquifer remains constant.

Data from the WWC-5 report for City Well No 8, shown in Appendix I was used to estimate the properties of the aquifer. The reported drawdown was 4 feet after 11 hours of pumping at 521 gallons per minute (gpm). These values give a well specific capacity of 130 gpm/foot of drawdown when constructed. This value is used to estimate the transmissivity of the aquifer which is estimated to be 220,000 gpd/ft. Utilizing the 25 feet of well screen installed which is less than the formation thickness; the calculated formation permeability is 8,800 gpd/ft^2, a very good formation value. Typical average value of formation permeability for the Kansas River valley alluvium is about 5,000 gpd/ft^2, with a maximum value observed of 10,000 gpd/ft^2. Additional data was found for City wells No. 6 and No. 7. The original specific capacity for well No. 6 was 101.7 gpm/foot of drawdown. The estimated formation transmissivity of the aquifer at well No. 6 location is 172,900 gpd/ft. The original well specific capacity for well No. 7 was 126.8 gpm/ft which gives an estimated formation transmissivity of 215,600 gpd/ft. An average transmissivity value of 210,000 gpd/ft was used to model the aquifer in Exhibits 6 and 7. This value under estimates the transmissivity in the deeper portions of the aquifer and over estimates the transmissivity near the boundaries of the aquifer. The 210,000 gpd/ft is in the same range that was determined by S. W. Fader in Bulletin No. 206, part 2, figure 7.

When a well is pumped, the pump energy creates a partial vacuum that causes a cone of depression to develop around the bore hole. The bore hole for the construction of Well No. 8 was reported to be 42 inches which gives a well radius of 1.75 feet. Using the formation transmissivity value of 220,000 gpd/ft, the drawdown per log cycle was calculated to be 1.0 foot for a pumping rate of 325 gpm, which is the maximum authorized pumping rate established for well No. 6. This information was then plotted on a semi-log plot to obtain the radius of influence for well 6, well 7 and well 8, Reference Exhibit C. The zero (0) drawdown for wells 6 & 7 was 2,400 feet and 2,100 feet for well 8. Drawdown values of less than 1 foot are considered insignificant since annual variations of static water level may vary more than 2 feet in a year due to weather conditions. The 1-foot drawdown occurs at a radius from about 130 to 260 feet for each of the wells shown in Exhibit C. The basic assumptions in the calculations for Exhibit C assume the world is flat and the aquifer properties are ideal. The approximate 1,000 feet distance between City wells minimizes the mutual interference effects from simultaneous pumping of these wells.

6. AQUIFER WATER YIELD AND AREA OF WATER CAPTURE

Simple model system was developed using the analytical-element method often used in modeling well-head protection. The State Geological Survey of Kansas had experienced geologists investigate the Kansas River valley geology and ground water resources from Bonner Springs to the vicinity of Manhattan. The reach of special interest is contained in Bulletin 130, Part 1, Quaternary Geology and Ground-Water Resources of Kansas River Valley between Bonner Springs and Lawrence, Kansas. At that time, the Kansas Geological Survey had their own small drilling rig in which to drill test holes. Many of the data points used in the model were from this work dated back to the 1940's and 1950's.

Figure 3 in Bulletin 130, Part 1 is the basis for the development of Exhibit D, a generalized static water table of the area of interest. In the 1950's there was little or no large pumpage in this area of interest which gives a good representation of pre-development conditions for the aquifer. Since the measurements upon which Figure 3 was based occurred over a period of years, exact replication of the water level elevations was not possible. Using statistical analysis, a very reasonable simulation of the water table gradient was obtained.

The model was then used to simulate the probable maximum pumping rate of 1.4 million gallons per day to obtain the area of direct influence of the City of Eudora well field. You will note that the area of 1 foot drawdown for the City of Eudora's peak pumpage is not circular but somewhat egg shaped extending more up-gradient to the west than to the east. Average annual pumping rate is estimated at 60% of peak day rate. Thus the development of the drawdown simulated in Exhibit E is a representation of the maximum drawdown expected in the future.

A feature of the model called particle tracking was then used to plot the movement of water in the aquifer to each of the four wells shown in Exhibit F. Based on the maximum allowable pumpage of 227.77 MGY authorized by the City's water rights on file with the Division of Water Resources, the travel time of water in the aquifer was calculated. The time period selected was 25 years. Each little collar around the straw like flow path lines represents one (1) year of flow. Due to the hydraulic gradient of the valley aquifer system and recharge to the aquifer from rainfall, **the aquifer flow to the City wells is from the west-southwest.** The Penny sand pit will be a half mile north of the capture zone of the City wells and will have no influence on the Eudora public water supply wells.

7. WELL-HEAD PROTECTION STUDY

The City's concern in regard to protecting the future quality of water from their well field must focus on the area in the immediate vicinity of the wells and to the west of the wells.

In so far as contaminants in the aquifer, the water movement is from west to east in a down-gradient direction. The estimated travel time of water in the Kansas River alluvium aquifer, based on the general formation transmissivity and land surface gradient is about 0.7 feet/day or 8.4 inches per day, a very slow migration rate.

Several potential contamination sources, given in Appendix III, have been identified that could potentially threaten the water quality of the Eudora well field:

a. Septic tanks at the several domestic residences in the vicinity are each a potential threat to the water quality of the City wells.

b. To the east of Well No. 6 near the point of stagnation is or was a cattle feeding operation with livestock present as shown in Appendix III.

c. Chemical fertilizer and herbicides applied to corn planted next to the wells as shown next to Well No. 6 in Appendix III, are a potential threat of contamination to the City wells. This threat of contamination is increased with irrigation, especially on sandy soils. Major portions of Hall and Merrick Counties in Nebraska have nitrates nearly double that of the KDHE and EPA regulations for Nitrates in public water supply due to irrigation and chemigation of corn on sandy loam soils similar to the alluvial soils shown in Bulletin 206, Part 2, Ground Water in the Kansas River Valley Junction City to Kansas City, Kansas by Stuart W. Fader. The Newman Terrace clay loam soils offer more protection of the aquifer from fertilizers.

d. Abandoned wells or old domestic wells that were drilled long ago with thin wall casing that have corroded through the years and were not grout sealed, can allow

storm water runoff to flow directly into the aquifer resulting in direct contamination to the City wells. Such a well may exist west of Eudora Well No. 7 as shown in Appendix III, under the old windmill tower.

The C. McElwee domestic well is up gradient from the sand pit and down-gradient from the Kansas River. Although the property is about 5 acres in area, it is recommended that the set back of the pit mining be 300 feet from his property line. The radius of influence of the domestic well is less than 300 feet and will not be adversely affected by the sandpit.

8. SAND PIT OPERATION

The static water level elevation in the sand pit will be about the same as the water surface elevation in the Kansas River. Sand pit lakes that are within the effective radius of influence of a water well support the water production from a well during drought conditions due to the increase of lake water storage which is 5 times greater than the water storage yield capacity of the aquifer itself. This storage yield effect is applicable to any unconsolidated aquifer. Sand pits beneficially support the yield of wells that are down-gradient from a pit that is within the area of influence of a well.

Water pumped by the sand dredge is piped to the sand separator, and then water is diverted to a sediment pond, and returned to the sand pit. Storm water runoff from local precipitation is diverted around the pit. Berms and a grass swale will be provided on the west and south sides of the sand pit for the diversion of local storm water runoff.

9. CONCLUSION

The City of Olathe was concerned about their well field more than 20 years ago when Penny Concrete and Sand proposed to open a pit next to their well field. This consultant was contacted by the City of Olathe and reviewed the situation. It was recommended to the City of Olathe at that time to maintain at least 500 feet of aquifer intact between the sand pit and any well. The sand pit shown in Appendix III, directly up-gradient from the Olathe wells has <u>never</u> caused any contamination to their wells. Since that time, more studies have been made both in Kansas and other states and no significant contamination of an aquifer has been attributed to a sand pit in unconsolidated alluvial aquifers.

Present regulations require 200 feet separation between a surface water source and a well to allow normal biological activity of surface water to be filtered before entering the well. It is recommended that a 300 foot set-back be maintained between the property boundary of any

residence out parcel and the active dredging of sand from the pit. The recommended set back from all road right-of way is 100 feet.

It was found in this study that the proposed Penny sand pit lake that will eventually be developed in this study area will have ***absolutely no*** effect on the McElwee wells, Public Wholesale Water Supply District No. 25 or City of Eudora's wells or water supply. The threat of contamination does exist to Public Water Supply wells, but not from the proposed Penny sand mining operation, but from adjacent property to their wells.

EXHIBITS

A. Penny Sand Lawrence Facility – Area Plan

B. West to East Geologic Cross-Section along N 1500 Road

C. Distance-Drawdown Semi-Log Plot of Eudora's Wells No's 6, 7, & 8

D. Generalized Static Water Table in Area (From KGS Bull. 130, Part 1)

E. Eudora Wells Drawdown at Peak Day Pumpage of 1.4 MGD

F. Groundwater Flow Paths to Eudora Wells at 227.77 MGY Pumpage

Evaluation of Penny's Concrete and Sand LLC,

Proposed Sand Pit Operation on Ground Water

For the Lawrence Facility

RECEIVED
SEP 14 2012
City County Planning Office
Lawrence, Kansas

For

Penny's Concrete and Sand LLC

23400 West 82nd Street

Shawnee, Kansas

By

Carl E. Nuzman, P.E., P.Hg.

Consulting Engineer/Hydrogeologist

3314 NW Huxman Road

Silver Lake, KS 66539

Phone 785 224 9929

September 12, 2012


KANSAS RIVER
R 20 E
R 21 E
EXISTING PLANT
ACCESS ROAD
APPROXIMATE LIMITS OF RECLAIMED POND
APPROXIMATE LIMITS OF RECLAIMED POND
EXISTING WELL
EXISTING WELL
EXISTING WELL

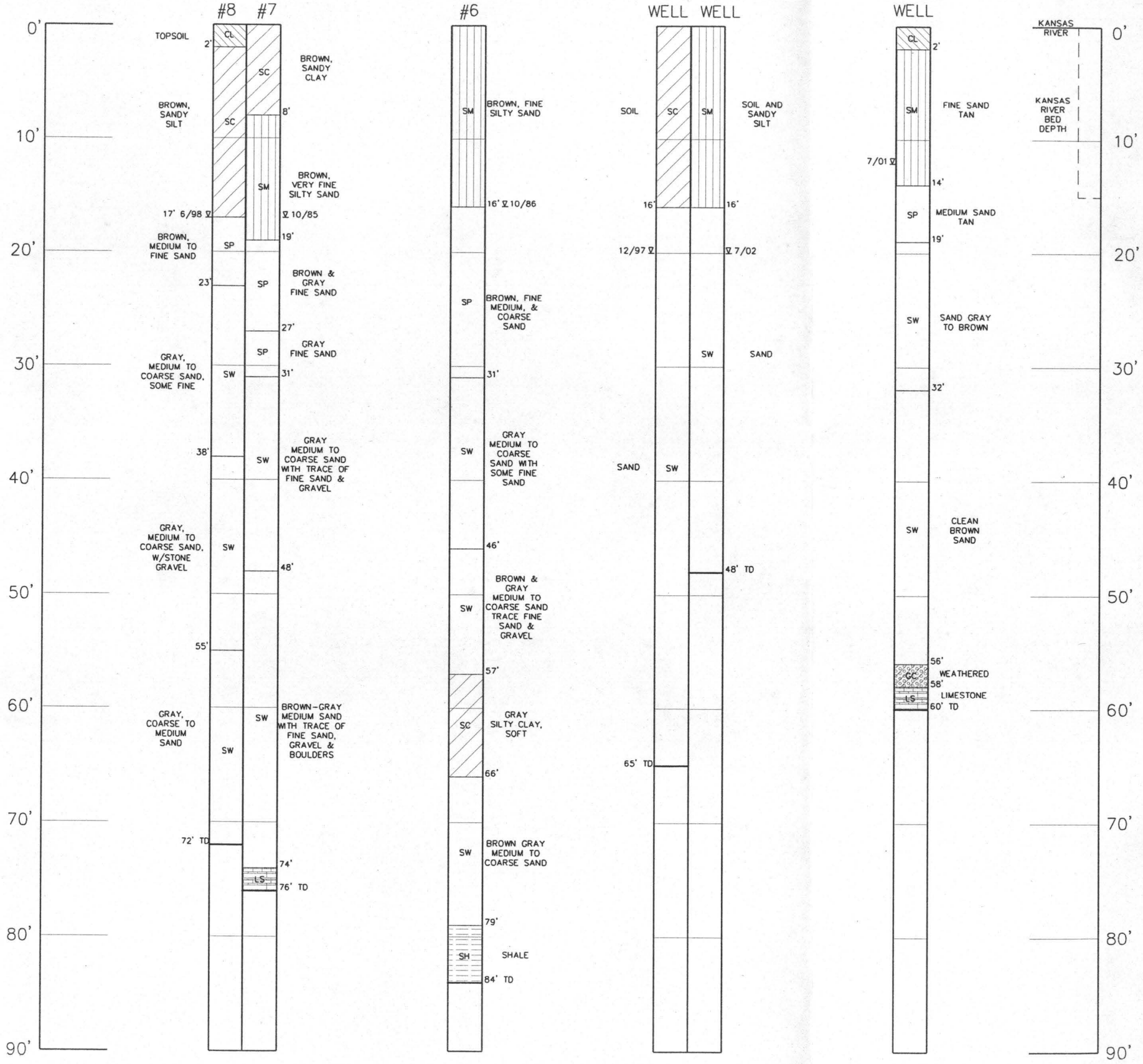


EXHIBIT B
WEST TO EAST CROSS SECTION ALONG N 1500 ROAD

PREPARED 9/13/12

SCALE: 1" = 10'

10 5 0 10 20

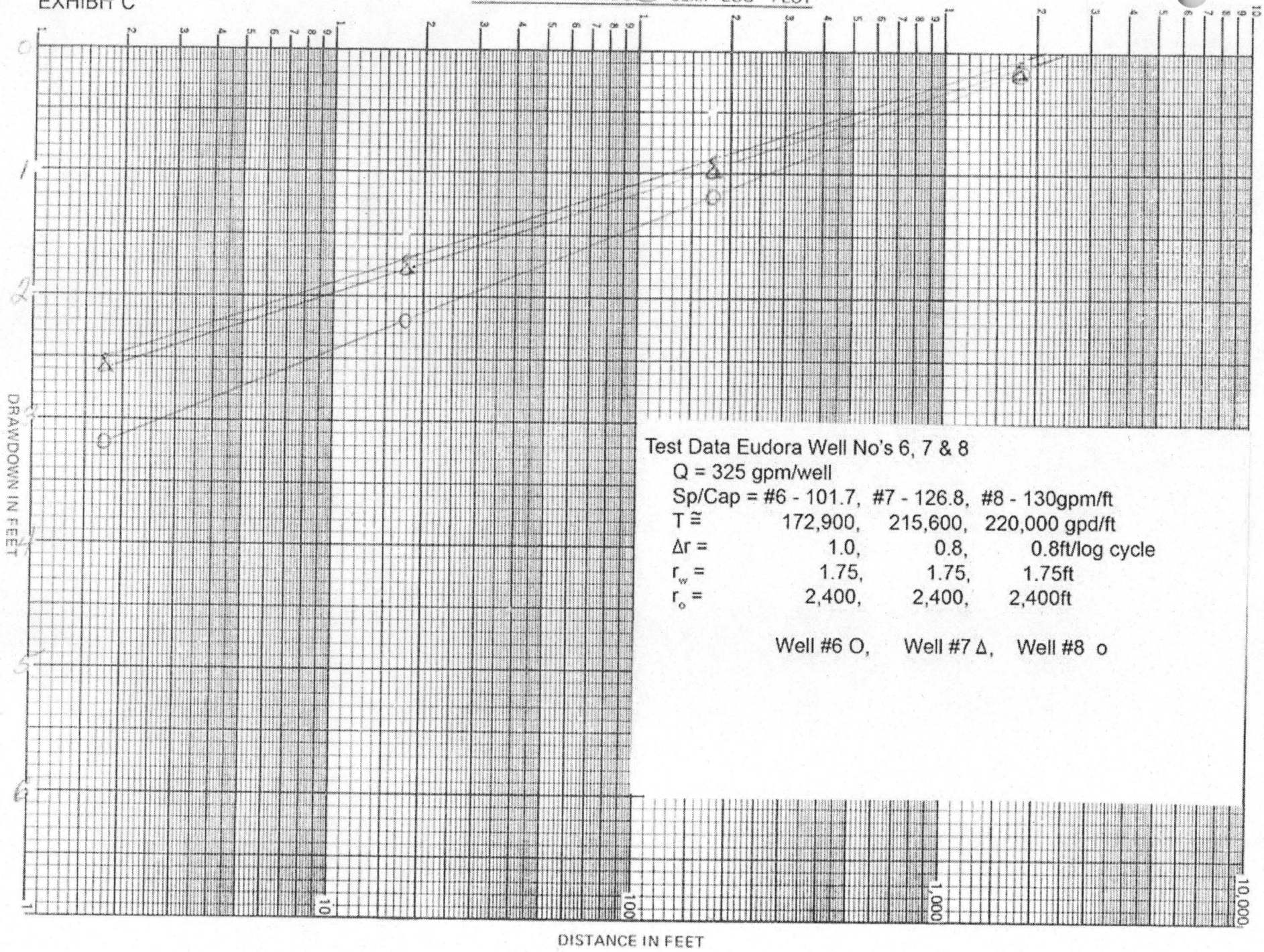
Civil Engineering
Landscape Architecture
Community Planning
Surveying

Landplan Engineering, P.A.
Lawrence, KS • Kansas City, MO • Columbus, OH
The Woodlands, TX • Farmington Hills, MI

1310 Wakarusa Drive
Lawrence, Kansas 66049
tele (785)843-7530
fax (785)843-2410
email: info@landplan-pa.com
Web www.landplan-pa.com

EXHIBIT C

DISTANCE–DRAWDOWN SEMI–LOG PLOT



Test Data Eudora Well No's 6, 7 & 8

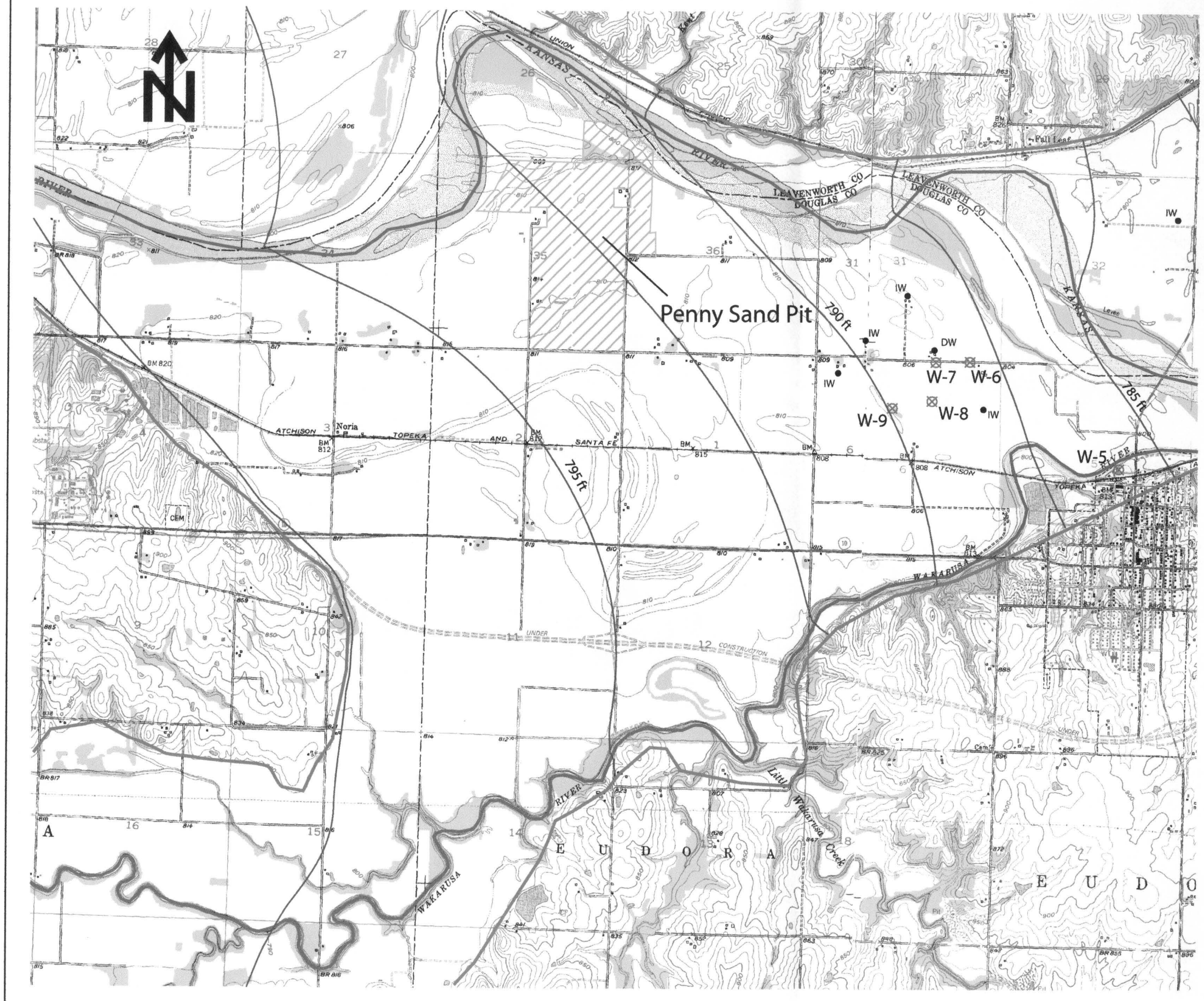
Q = 325 gpm/well

Sp/Cap =	#6 - 101.7,	#7 - 126.8,	#8 - 130gpm/ft
T ≅	172,900,	215,600,	220,000 gpd/ft
Δr =	1.0,	0.8,	0.8ft/log cycle
r_w =	1.75,	1.75,	1.75ft
r_o =	2,400,	2,400,	2,400ft

Well #6 O, Well #7 Δ, Well #8 o

Exhibit D:

Generalized Static Water Table
(Based on data from KGS Bul. 130, Part 1)



Legend

- River
- Aquifer Boundary
- Water Table Elevation (Contour Interval 2.5 feet)
- W-7 — City of Eudora Water Supply Well
- IW / DW — Registered Irrigation or Domestic Well

Approximate Scale

0 — 0.5 — 1.0 miles

0 — 2,640 — 5,280 feet



Exhibit E:

Eudora Wells - Drawdown at Peak Day Pumpage of 1.4 MGD

Legend

- River
- Aquifer Boundary
- Water Table Drawdown (Contour Interval 0.5 feet)
- W-7 — City of Eudora Water Supply Well
- IW, DW — Registered Irrigation or Domestic Well

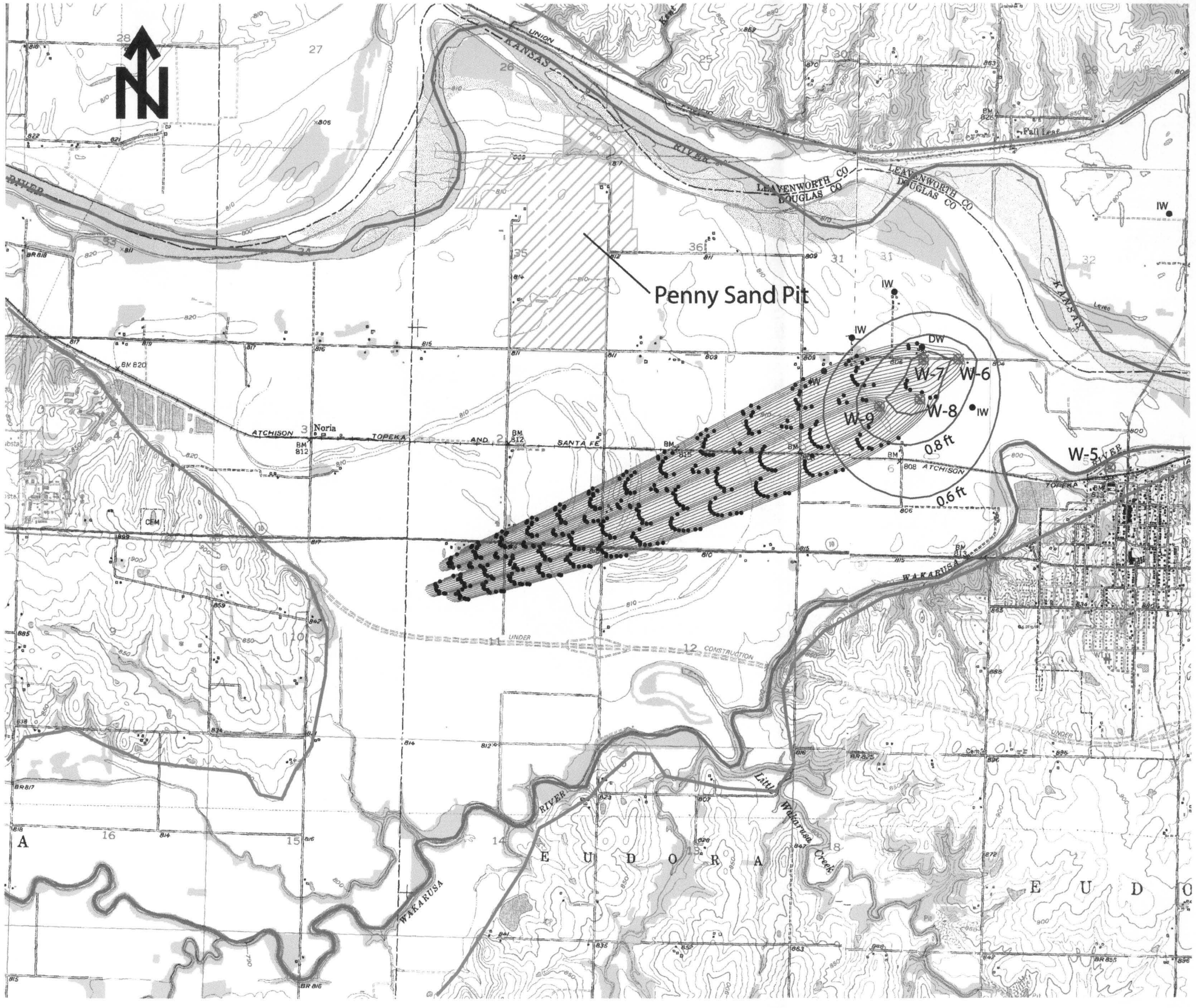
Approximate Scale

0 0.5 1.0 miles

0 2,640 5,280 feet

Exhibit F:

Groundwater Flow Paths to Eudora Wells at 227.77 MGY Pumpage



Legend

- River
- Aquifer Boundary
- Water Table Drawdown (Contour Interval 0.2 feet)
- Flowpaths to Pumping Wells (Tick Marks = 2 years travel time)
- W-7 — City of Eudora Water Supply Well
- IW DW — Registered Irrigation or Domestic Well

Approximate Scale

0 0.5 1.0 miles

0 2,640 5,280 feet

APPENDICES

I. **Selected WWC-5 Water Well Logs in Study Area**

II. **KDA, Division of Water Resources, Safe Yield Analysis Data**

III. **Potential Pollution Sources in the Area**

IV. **Carl E. Nuzman, Resume' and Personal Information**

APPENDIX I.

Selected Water Well Logs from the Kansas Geological Survey Well Log Library for Sections 34, 35, and 36 in Twp 12 South Rng 20 East, Sections 1, 2, 3, 11, and 12 in Twp 13 South Rng 20 East, Section 31 in Twp 12 South, Rng 21 East, and Sections 5 and 6 in Twp 13 South, Rng 21 East, all in Douglas County Kansas.

14 9883 TW9-09

WATER WELL RECORD Form WWC-5

Division of Water Resources App. No.

1 LOCATION OF WATER WELL: County: Douglas | Fraction: 1/4 SE 1/4 NW 1/4 SE 1/4 | Section Number: 34 | Township No.: T 12 S | Range Number: R 20 ☒ E ☐ W

Street/Rural Address of Well Location; if unknown, distance & direction from nearest town or intersection: If at owner's address, check here ☐

Approximately 2 1/4 miles east of Lawrence

Global Positioning System (GPS) information:

Latitude: 38-961011 (in decimal degrees)

Longitude: -95.172574 (in decimal degrees)

Elevation: Unknown

Datum: ☐ WGS 84, ☐ NAD 83, ☒ NAD 27

Collection Method:

☒ GPS unit (Make/Model: WAAS)

☐ Digital Map/Photo, ☐ Topographic Map, ☐ Land Survey

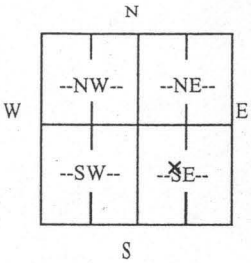
Est. Accuracy: ☐ <3 m, ☒ 3-5 m, ☐ 5-15 m, ☐ >15 m

2 WATER WELL OWNER:

RR#, Street Address, Box #: Public Wholesale Water Supply District No. 25, 946 E 650 Rd.

City, State, ZIP Code : Lawrence, KS 66047

3 LOCATE WELL WITH AN "X" IN SECTION BOX:



4 DEPTH OF COMPLETED WELL 56 ft.

Depth(s) Groundwater Encountered (1) _____ ft. (2) _____ ft. (3) _____ ft.

WELL'S STATIC WATER LEVEL 24.33 ft. below land surface measured on mo/day/yr 10/01/10

Pump test data: Well water was Not checked ft. after _____ hours pumping _____ gpm

EST. YIELD Unknown gpm. Well water was _____ ft. after _____ hours pumping _____ gpm

Bore Hole Diameter _____ in. to _____ ft., and _____ in. to _____ ft.

WELL WATER TO BE USED AS: ☐ Public water supply ☐ Geothermal ☐ Injection well

☐ Domestic ☐ Feedlot ☐ Oil field water supply ☐ Dewatering ☒ Other (Specify below)

☐ Irrigation ☐ Industrial ☐ Domestic-lawn & garden ☐ Monitoring well Test Well

Was a chemical/bacteriological sample submitted to Department? ☐ Yes ☒ No

If yes, mo/day/yr sample was submitted _____

Water well disinfected? ☒ Yes ☐ No

5 TYPE OF CASING USED: ☐ Steel ☒ PVC ☐ Other _____

CASING JOINTS: ☒ Glued ☐ Clamped ☐ Welded ☐ Threaded

Casing diameter 5 in. to 34 ft., Diameter _____ in. to _____ ft., Diameter _____ in. to _____ ft.

Casing height above land surface 24 in., Weight 2.36 lbs./ft., Wall thickness or gauge No. .214

TYPE OF SCREEN OR PERFORATION MATERIAL:

☐ Steel ☐ Stainless Steel ☒ PVC ☐ Other (Specify) _____

☐ Brass ☐ Galvanized Steel ☐ None used (open hole)

SCREEN OR PERFORATION OPENINGS ARE:

☐ Continuous slot ☒ Mill slot ☐ Gauze wrapped ☐ Torch cut ☐ Drilled holes ☐ None (open hole)

☐ Louvered shutter ☐ Key punched ☐ Wire wrapped ☐ Saw cut ☐ Other (specify) _____

SCREEN-PERFORATED INTERVALS: From 34 ft. to 54 ft., From _____ ft. to _____ ft.

From _____ ft. to _____ ft., From _____ ft. to _____ ft.

GRAVEL PACK INTERVALS: From 20 ft. to 57 ft., From _____ ft. to _____ ft.

From _____ ft. to _____ ft., From _____ ft. to _____ ft.

6 GROUT MATERIAL: ☐ Neat cement ☐ Cement grout ☒ Bentonite ☐ Other _____

Grout Intervals: From _____ ft. to _____ ft., From 0 ft. to 20 ft., From _____ ft. to _____ ft.

What is the nearest source of possible contamination:

☐ Septic tank ☐ Lateral lines ☐ Pit privy ☐ Livestock pens ☐ Insecticide storage ☒ Other (specify below)

☐ Sewer lines ☐ Cesspool ☐ Sewage lagoon ☐ Fuel storage ☐ Abandoned water well None known

☐ Watertight sewer lines ☐ Seepage pit ☐ Feedyard ☐ Fertilizer storage ☐ Oil well/gas well

Direction from well _____ Distance from well _____

FROM	TO	LITHOLOGIC LOG	FROM	TO	LITHO. LOG (cont.) or PLUGGING INTERVALS
0	3	Topsoil	54	55	Cemented sand, hard
3	14	Clay, light brown, soft, silty	55	57	Shale, gray, hard
14	31	Sand, fine to coarse			
31	38	Sand, fine to coarse, with gravel, fine,			
		with clay streaks, black			
38	41	Clay, light gray, hard			
41	52	Sand, fine to coarse, with gravel, fine to			
		medium, gray color, dirty			
52	54	Sand, fine to coarse, with gravel, fine to			
		medium, and large rock streaks			

7 CONTRACTOR'S OR LANDOWNER'S CERTIFICATION: This water well was ☒ constructed, ☐ reconstructed, or ☐ plugged under my jurisdiction and was completed on (mo/day/year) 10/01/09 and this record is true to the best of my knowledge and belief. Kansas Water Well Contractor's License No. 185 This Water Well Record was completed on (mo/day/year) 10/06/09 under the business name of Clarke Well & Equipment, Inc. by (signature) _____

INSTRUCTIONS: Use typewriter or ball point pen. *PLEASE PRESS FIRMLY* and *PRINT* clearly. Please fill in blanks and check the correct answers. Send three copies (white, blue, pink) to Kansas Department of Health and Environment, Bureau of Water, Geology Section, 1000 SW Jackson St., Suite 420, Topeka, Kansas 66612-1367. Telephone 785-296-5522. Send one copy to WATER WELL OWNER and retain one for your records. Include fee of $5.00 for each constructed well. Visit us at http://www.kdheks.gov/waterwell/index.html.

KSA 82a-1212

Check: ☐ White Copy, ☐ Blue Copy, ☐ Pink Copy

89

USE TYPEWRITER OR BALL POINT PEN-PRESS FIRMLY, PRINT CLEARLY.

WATER WELL RECORD
KSA 82a-1201-1215

Kansas Department of Health and Environment-Division of Environment
(Water well Contractors)
Topeka, Kansas 66620

212

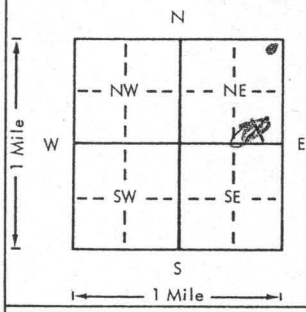
95 20599 38.97063 NE NE NE

1. Location of well:	County	Fraction	Section number	Township number	Range number
	Douglas	S/2 ~~SE NE~~	35	T 12 S	R 20 E/W

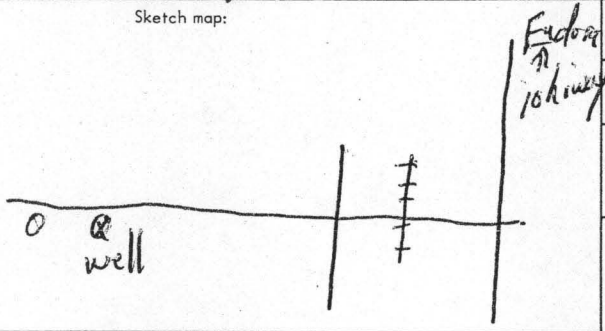
2. Distance and direction from nearest town or city: 2mi West 1¼ North of Eudora
Street address of well location if in city:

3. Owner of well: E.C. ALTENBERND
R.R. or street: R.R. 3
City, state, zip code: EUDORA KS. 66025

4. Locate with "X" in section below:



Sketch map:



6. Bore hole dia. 10 in. Completion date NOV 15-77
Well depth 47 ft.

7. X Cable tool __ Rotary __ Driven __ Dug
__ Hollow rod __ Jetted __ Bored __ Reverse rotary

8. Use: __ Domestic __ Public supply __ Industry
X Irrigation __ Air conditioning __ Stock
__ Lawn __ Oil field water __ Other

9. Casing: Material Steel Height: Above or ~~below~~
Threaded ___ Welded X Surface 12 in.
RMP ___ PVC ___ Weight 26 lbs./ft.
Dia. 0 in. to 32 ft. depth Wall Thickness: inches or
Dia. ___ in. to ___ ft. depth gage No. .250

5. Type and color of material	From	To
Top Soil	0	2
Loamy Clay	2	25
Sand Br Fine	25	27
Sand Grey-Med	27	31
Sand Clay layers	31	34
Sand Gr-Med	34	38
Sand Gr-Med-dirty	38	40
Sand Med-Fair clean	40	47

(Use a second sheet if needed)

10. Screen: Manufacturer's name Johnson
Type Stainless Dia. 10
Slot/gauze 25 Length 15
Set between 32 ft. and 47 ft.
___ ft. and ___ ft.
Gravel pack? NO Size range of material ___

11. Static water level: mo./day/yr.
23-8 ft. below land surface Date NOV 15-77

12. Pumping level below land surfaces:
___ ft. after ___ hrs. pumping ___ g.p.m.
___ ft. after ___ hrs. pumping ___ g.p.m.
Estimated maximum yield 300 + g.p.m.

13. Water sample submitted: mo./day/yr.
___ Yes NO No Date ___

14. Well head completion:
___ Pitless adapter 12+ Inches above grade

15. Well grouted? yes
With: X Neat cement ___ Bentonite ___ Concrete
Depth: From 0 ft. to 10 ft.

16. Nearest source of possible contamination:
ft. 500 Direction North Type Livestock
Well disinfected upon completion? X Yes ___ No

17. Pump: ___ Not installed
Manufacturer's name Jacuzzi
Model number 5S6X1 HP 5 Volts ___
Length of drop pipe 47 ft. capacity 300 g.p.m.
Type:
X Submersible ___ Turbine
___ Jet ___ Reciprocating
___ Centrifugal ___ Other

18. Elevation: 811
Topography:
___ Hill
___ Slope
___ Upland
X Valley

19. Remarks:

20. Water well contractor's certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
JUNGMANN BROS DRILLING CO. 119
Business name License No.
Address CARBONDALE KS.
Signed James B. [signature] Date 1-28-78
Authorized representative

T 12 R 20 E/W Sec 35 S/2 SE NE ~~1/4~~ 1/4 1/4

Forward the white, blue and pink copies to the Department of Health and Environment

Form WWC-5

BR < 764 ▽ = 787

MI-1023

USE TYPEWRITER OR BALL POINT PEN-PRESS FIRMLY, PRINT CLEARLY.

WATER WELL RECORD
KSA 82a-1201-1215

Kansas Department of Health and Environment-Division of Environment
(Water well Contractors)
Topeka, Kansas 66620

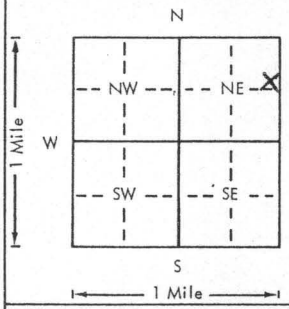
95.20596 38.96860 210

1. Location of well:	County	Fraction	Section number	Township number	Range number
	Douglas	SE 1/4 NE 1/4 NE 1/4	35	T 12 S	R 20 E/W

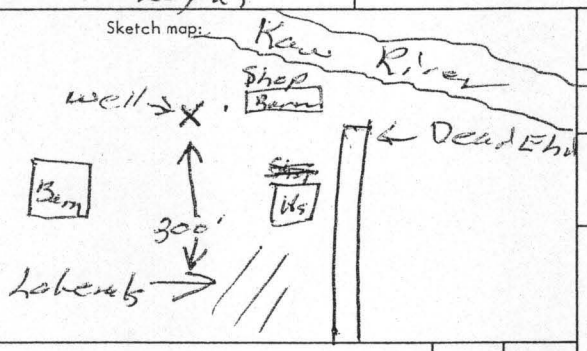
2. Distance and direction from nearest town or city: 3 mi. E.
Street address of well location if in city: Lawrence, Ks

3. Owner of well: E.C. Atterburn R.R.
R.R. or street: Eudora Ks.
City, state, zip code: 66025

4. Locate with "X" in section below:



Sketch map:



6. Bore hole dia 10-8" in. Completion date
Well depth 57 ft. 8-25-77

7. ___ Cable tool X Rotary ___ Driven ___ Dug
___ Hollow rod ___ Jetted ___ Bored ___ Reverse rotary

8. Use: X Domestic ___ Public supply ___ Industry
___ Irrigation ___ Air conditioning ___ Stock
___ Lawn ___ Oil field water ___ Other

9. Casing: Material PVC Height: Above or below
Threaded ___ Welded ___ Surface 24 in.
RMP ___ PVC Glue Weight 2.74 lbs./ft.
Dia. 5 in. to 51 ft. depth Wall Thickness: inches or
Dia. ___ in. to ___ ft. depth gage No. 258

5. Type and color of material	From	To
Top Soil Silt	0	11
Brown Fine Sand	11	15
Brown Coarse Sand	15	33
Gray Med Gravel	33	38
Gray Clay	38	41
Med. Gray Gravel	41	51
Limestone 51		
(Use a second sheet if needed)		

10. Screen: Manufacturer's name Pumpco
Type PVC Dia. 5"
Slot/gauze .080 Length 10
Set between 41 ft. and 51 ft.
ft. and ft.
Gravel pack? Yes Size range of material 1/4 x 1/8

11. Static water level: mo./day/yr.
12 ft. below land surface Date 8-25-77

12. Pumping level below land surfaces: Air test
___ ft. after ___ hrs. pumping ___ g.p.m.
___ ft. after ___ hrs. pumping ___ g.p.m.
Estimated maximum yield 100 g.p.m.

13. Water sample submitted: mo./day/yr.
___ Yes X No Date

14. Well head completion: Top Cap
___ Pitless adapter 24" Inches above grade

15. Well grouted? Yes
With: ✓ Neat cement ___ Bentonite ___ Concrete
Depth: From 5 ft. to 10 ft.

16. Nearest source of possible contamination:
ft. 200 Direction S Type Laterals
Well disinfected upon completion? X Yes ___ No

17. Pump: X Not installed
Manufacturer's name
Model number HP Volts
Length of drop pipe ft. capacity g.p.m.
Type:
___ Submersible ___ Turbine
___ Jet ___ Reciprocating
___ Centrifugal ___ Other

18. Elevation:
Topography:
___ Hill
___ Slope
___ Upland
X Valley

19. Remarks:
Owner will Pour Slab

20. Water well contractor's certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
STRADER Drlg & Inc. 182
Business name License No.
Address Holton, Ks
Signed Dale Atterburn Date 8-26-77
Authorized representative

T 12 R 20 E/W Sec 35 1/4 1/4 1/4

Forward the white, blue and pink copies to the Department of Health and Environment

Form WWC-5

MI-1023

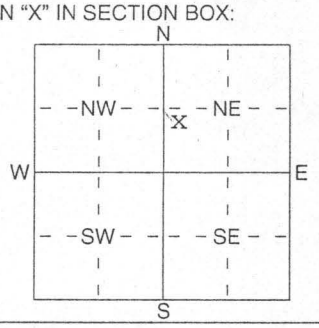
WATER WELL RECORD Form WWC-5 KSA 82a-1212 ID No. _____

1 LOCATION OF WATER WELL:	Fraction	Section Number	Township Number	Range Number
County: Douglas	NW ¼ SW ¼ NE ¼	35	T 12 S	R 20E E/W

Distance and direction from nearest town or city street address of well if located within city?
3½ East of Lawrence

2 WATER WELL OWNER: Carl McElwee
RR#, St. Address, Box # : 1564 E 1850 Rd
City, State, ZIP Code : Lawrence, Ks. 66046
Board of Agriculture, Division of Water Resources Application Number:

3 LOCATE WELL'S LOCATION WITH AN "X" IN SECTION BOX:



4 DEPTH OF COMPLETED WELL 48 ft. ELEVATION:
Depth(s) Groundwater Encountered 1 ..... ft. 2 ..... ft. 3 ..... ft.
WELL'S STATIC WATER LEVEL 29' ft. below land surface measured on mo/day/yr 3-16-04
Pump test data: Well water was ..... ft. after ..... hours pumping ..... gpm
Est. Yield 37 gpm: Well water was ..... ft. after ..... hours pumping ..... gpm
WELL WATER TO BE USED AS: 1 Domestic 2 ~~Irrigation~~ 3 Feedlot 4 Industrial 5 Public water supply 6 Oil field water supply 7 Domestic (lawn & garden) 8 Air conditioning 9 Dewatering 10 Monitoring well 11 Injection well 12 Other (Specify below)

Was a chemical/bacteriological sample submitted to Department? Yes ..... No ..x..; If yes, mo/day/yrs sample was submitted
Water Well Disinfected? Yes x No

5 TYPE OF BLANK CASING USED: 1 Steel 2 PVC 3 RMP (SR) 4 ABS 5 Wrought iron 6 Asbestos-Cement 7 Fiberglass 8 Concrete tile 9 Other (specify below)
CASING JOINTS: Glued x Clamped ..... Welded ..... Threaded .....
Blank casing diameter 5" in. to ..... ft., Dia ..... in. to ..... ft., Dia ..... in. to ..... ft.
Casing height above land surface 24" in., weight 2.82 lbs./ft. Wall thickness or guage No. .258

TYPE OF SCREEN OR PERFORATION MATERIAL: 1 Steel 2 Brass 3 Stainless Steel 4 Galvanized Steel 5 Fiberglass 6 Concrete tile 7 PVC 8 ~~RMP~~(SR) 9 ABS 10 Asbestos-Cement 11 Other (Specify) 12 None used (open hole)

SCREEN OR PERFORATION OPENINGS ARE: 1 Continuous slot 2 Louvered shutter 3 Mill slot 4 Key punched 5 Guazed wrapped 6 Wire wrapped 7 Torch cut 8 Saw cut 9 ~~Drilled~~ holes 10 Other (specify) ..... 11 None (open hole)

SCREEN-PERFORATED INTERVALS: From 33 ft. to 48 ft., From ..... ft. to ..... ft.
From ..... ft. to ..... ft., From ..... ft. to ..... ft.
GRAVEL PACK INTERVALS: From 30 ft. to 48 ft., From ..... ft. to ..... ft.
From ..... ft. to ..... ft., From ..... ft. to ..... ft.

6 GROUT MATERIAL: 1 Neat cement 2 Cement grout 3 Bentonite 4 Other .....
Grout Intervals: From ..... ft. to 3 ft., From 30 ft. to ..... ft., From ..... ft. to ..... ft.

What is the nearest source of possible contamination:
1 Septic tank 2 Sewer lines 3 Watertight sewer lines 4 Lateral lines 5 Cess pool 6 Seepage pit 7 Pit privy 8 Sewage lagoon 9 Feedyard 10 Livestock pens 11 Fuel storage 12 Fertilizer storage 13 Insecticide storage 14 Abandoned water well 15 Oil well/Gas well 16 Other (specify below) .....
Direction from well? North How many feet? 125'

FROM	TO	LITHOLOGIC LOG	FROM	TO	PLUGGING INTERVALS
0	2	top soil			
2	11	clay brown/silty			
11	24	brown clay			
24	34	brown fine sand			
34	38	fine/course sand med pea brown			
38	42	fine/course sand med pea brown/grey/gren			
42	42½	grey clay			
42½	48	fine sand brown/grey/green/boulders			

7 CONTRACTOR'S OR LANDOWNER'S CERTIFICATION: This water well was (1) constructed, (2) reconstructed, or (3) plugged under my jurisdiction and was completed on (mo/day/year) 4-16-04 and this record is true to the best of my knowledge and belief. Kansas Water Well Contractor's Licence No 182 This Water Well Record was completed on (mo/day/yr) 4-16-04 under the business name of Strader Drilling. Co.,Inc. by (signature) Jim Strader

INSTRUCTIONS: Use typewriter or ball point pen. *PLEASE PRESS FIRMLY* and *PRINT* clearly. Please fill in blanks, underline or circle the correct answers. Send top three copies to Kansas Department of Health and Environment, Bureau of Water, Geology Section, 1000 SW Jackson St., Suite 420, Topeka, Kansas 66612-1367. Telephone 785-296-5522. Send one to WATER WELL OWNER and retain one for your records. Fee of $5.00 for each constructed well.

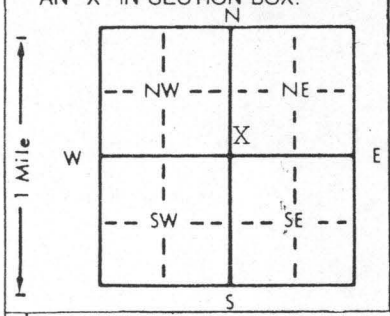
WATER WELL RECORD Form WWC-5 KSA 82a-1212

1 LOCATION OF WATER WELL: County: Douglas | Fraction: SW ¼ SW ¼ NE ¼ | Section Number: 36 | Township Number: T 12 S | Range Number: R 20 E/W

Distance and direction from nearest town or city street address of well if located within city?
1½ west, 1½ north of Eudora

2 WATER WELL OWNER: James Waller
RR#, St. Address, Box # : 1964 N. 1550 Rd.
City, State, ZIP Code : Eudora, KS 66025
Board of Agriculture, Division of Water Resourc
Application Number:

3 LOCATE WELL'S LOCATION WITH AN "X" IN SECTION BOX:



4 DEPTH OF COMPLETED WELL 40' ft. ELEVATION:
Depth(s) Groundwater Encountered 1. ft. 2. ft. 3. ft
WELL'S STATIC WATER LEVEL 24' ft. below land surface measured on mo/day/yr 9/06/96
Pump test data: Well water was ft. after hours pumping gp
Est. Yield 40 gpm: Well water was ft. after hours pumping gp
Bore Hole Diameter 12" in. to ft., and in. to
WELL WATER TO BE USED AS: 1 Domestic 2 Irrigation 3 Feedlot 4 Industrial 5 Public water supply 6 Oil field water supply 7 Lawn and garden only 8 Air conditioning 9 Dewatering 10 Monitoring well 11 Injection well 12 Other (Specify below)
Was a chemical/bacteriological sample submitted to Department? Yes No X; If yes, mo/day/yr sample was submitted
Water Well Disinfected? Yes X No

5 TYPE OF BLANK CASING USED: 1 Steel 2 PVC 3 RMP (SR) 4 ABS 5 Wrought iron 6 Asbestos-Cement 7 Fiberglass 8 Concrete tile 9 Other (specify below)
CASING JOINTS: Glued X Clamped Welded Threaded
Blank casing diameter 5" in. to 0-30 ft., Dia in. to ft., Dia in. to
Casing height above land surface 24" in., weight 2.82 lbs./ft. Wall thickness or gauge No. .258

TYPE OF SCREEN OR PERFORATION MATERIAL: 1 Steel 2 Brass 3 Stainless steel 4 Galvanized steel 5 Fiberglass 6 Concrete tile 7 PVC 8 RMP (SR) 9 ABS 10 Asbestos-cement 11 Other (specify) 12 None used (open hole)

SCREEN OR PERFORATION OPENINGS ARE: 1 Continuous slot 2 Louvered shutter 3 Mill slot 4 Key punched 5 Gauzed wrapped 6 Wire wrapped 7 Torch cut 8 Saw cut 9 Drilled holes 10 Other (specify) 11 None (open hole)

SCREEN-PERFORATED INTERVALS: From 30 ft. to 40 ft., From ft. to
From ft. to ft., From ft. to
GRAVEL PACK INTERVALS: From 24 ft. to 40 ft., From ft. to
From ft. to ft., From ft. to

6 GROUT MATERIAL: 1 Neat cement 2 Cement grout 3 Bentonite 4 Other
Grout Intervals: From 4 ft. to 24 ft., From ft. to ft., From ft. to

What is the nearest source of possible contamination:
1 Septic tank 2 Sewer lines 3 Watertight sewer lines 4 Lateral lines 5 Cess pool 6 Seepage pit 7 Pit privy 8 Sewage lagoon 9 Feedyard 10 Livestock pens 11 Fuel storage 12 Fertilizer storage 13 Insecticide storage 14 Abandoned water well 15 Oil well/Gas well 16 Other (specify below)
Direction from well? north
How many feet? 200'

FROM	TO	LITHOLOGIC LOG	FROM	TO	PLUGGING INTERVALS
0	4	Top Soil			
4	15	Clay-Brown-Silty			
15	33	Fine Sand-Brown			
33	39	FS-CS-Med Gravel-Brown			
39	40	FS-CS-Med Gravel-Blue			

CONTRACTOR'S OR LANDOWNER'S CERTIFICATION: This water well was (1) constructed, (2) reconstructed, or (3) plugged under my jurisdiction and w
completed on (mo/day/year) 9/06/96 and this record is true to the best of my knowledge and belief. Kans
Water Well Contractor's License No. 182 This Water Well Record was completed on (mo/day/yr) 10-9-96
under the business name of STRADER DRILLING CO., INC. by (signature) Dale Askren

INSTRUCTIONS: Use typewriter or ball point pen. *PLEASE PRESS FIRMLY* and *PRINT* clearly. Please fill in blanks, underline or circle the correct answers. Send top three copies to Kansas Department of Health and Environment, Bureau of Water, Topeka, Kansas 66620-0001. Telephone: 913-296-5545. Send one to WATER WELL OWNER and retain one for your records.

95.12994 38.95516

WATER WELL RECORD Form WWC-5 KSA 82a-1212

1 LOCATION OF WATER WELL

County: Douglas | Fraction: NE ¼ NE ¼ NE ¼ | Section Number: 1 | Township Number: T 13 (S) | Range Number: R 20 (E/W)

Distance and direction from nearest town or city? 1 W .5 N of Eudora | Street address of well if located within city?

2 WATER WELL OWNER: Howard whaley

RR#, St. Address, Box # : RR2

City, State, ZIP Code : Eudora, Kansas 66025

Board of Agriculture, Division of Water Resource Application Number:

3 DEPTH OF COMPLETED WELL 50 ft. Bore Hole Diameter 12 in. to ft., and in. to ft

Well Water to be used as: 1 Domestic 2 Irrigation 3 Feedlot 4 Industrial 5 Public water supply 6 Oil field water supply 7 Lawn and garden only 8 Air conditioning 9 Dewatering 10 Observation well 11 Injection well 12 Other (Specify below)

Well's static water level 30 ft. below land surface measured on December month 19 day 1979 year

Pump Test Data : Well water was ft. after hours pumping gpm

Est. Yield 100 gpm: Well water was ft. after hours pumping gpm

4 TYPE OF BLANK CASING USED: 1 Steel 2 PVC 3 RMP (SR) 4 ABS 5 Wrought iron 6 Asbestos-Cement 7 Fiberglass 8 Concrete tile 9 Other (specify below)

Casing Joints: Glued ✓ Clamped Welded Threaded

Blank casing dia 5 in. to 0-40 ft., Dia in. to ft., Dia in. to f

Casing height above land surface 24 in., weight 2.84 lbs./ft. Wall thickness or gauge No .258

TYPE OF SCREEN OR PERFORATION MATERIAL: 1 Steel 2 Brass 3 Stainless steel 4 Galvanized steel 5 Fiberglass 6 Concrete tile 7 PVC 8 RMP (SR) 9 ABS 10 Asbestos-cement 11 Other (specify) 12 None used (open hole)

Screen or Perforation Openings Are: 1 Continuous slot 2 Louvered shutter 3 Mill slot 4 Key punched 5 Gauzed wrapped 6 Wire wrapped 7 Torch cut 8 Saw cut 9 Drilled holes 10 Other (specify) 11 None (open hole)

Screen-Perforation Dia 5 in. to ft., Dia in. to ft., Dia in to f

Screen-Perforated Intervals: From 40 ft. to 50 ft., From ft. to f

From ft. to ft., From ft. to f

Gravel Pack Intervals: From 10 ft. to 50 ft., From ft. to f

From ft. to ft., From ft. to f

5 GROUT MATERIAL: 1 Neat cement 2 Cement grout 3 Bentonite 4 Other

Grouted Intervals: From 0 ft. to 10 ft., From ft. to ft., From ft. to f

What is the nearest source of possible contamination: 1 Septic tank 2 Sewer lines 3 Lateral lines 4 Cess pool 5 Seepage pit 6 Pit privy 7 Sewage lagoon 8 Feed yard 9 Livestock pens 10 Fuel storage 11 Fertilizer storage 12 Insecticide storage 13 Watertight sewer lines 14 Abandoned water well 15 Oil well/Gas well 16 Other (specify below)

Direction from well North How many feet 200 ? Water Well Disinfected? Yes ✓ No

Was a chemical/bacteriological sample submitted to Department? Yes No ✓ : If yes, date sample was submitted month day year: Pump Installed? Yes No ✓

If Yes: Pump Manufacturer's name Model No. HP Volts

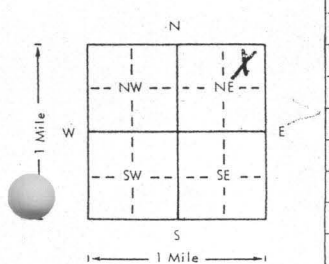
Depth of Pump Intake ft. Pumps Capacity rated at gal./min

Type of pump: 1 Submersible 2 Turbine 3 Jet 4 Centrifugal 5 Reciprocating 6 Other

6 CONTRACTOR'S OR LANDOWNER'S CERTIFICATION: This water well was (1) constructed, (2) reconstructed, or (3) plugged under my jurisdiction and wa completed on December month 19 day 1979 yea and this record is true to the best of my knowledge and belief. Kansas Water Well Contractor's License No. 182

This Water Well Record was completed on December month 26 day 1979 year under the busines name of Strader Drlg Co., Inc. by (signature) Dale Ashren

7 LOCATE WELL'S LOCATION WITH AN "X" IN SECTION BOX:



FROM	TO	LITHOLOGIC LOG	FROM	TO	LITHOLOGIC LOG
0	6	Top Soil			
6	20	Clay			
20	38	Fine Sand			
38	50	course Sand, gravel			

ELEVATION:

Depth(s) Groundwater Encountered 1 30 ft. 2 ft. 3 ft. 4 ft. (Use a second sheet if needed)

INSTRUCTIONS: Use typewriter or ball point pen, *please press firmly* and *PRINT* clearly. Please fill in blanks, underline or circle the correct answers. Send top three copies to Kansas Department of Health and Environment, Division of Environment, Water Well Contractors, Topeka, KS 66620. Send one to WATER WELL OWNER and retain one for your records.

WATER WELL RECORD Form WWC-5 KSA 82a-1212 ID No. _____

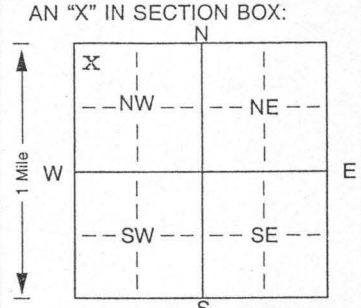
1 LOCATION OF WATER WELL: County: Douglas | Fraction: NW ¼ NW ¼ NW ¼ | Section Number: 1 | Township Number: T 13 S | Range Number: R 20E E/W

Distance and direction from nearest town or city street address of well if located within city?
1 mile north 2½ miles west of Eudora 1919 N. 1500Rd. Eudora 66025

2 WATER WELL OWNER: Virginia Strong
RR#, St. Address, Box # : 3712 Trail Rd.
City, State, ZIP Code : Lawrence, KS. 66049

Board of Agriculture, Division of Water Resources
Application Number:

3 LOCATE WELL'S LOCATION WITH AN "X" IN SECTION BOX:



4 DEPTH OF COMPLETED WELL. 52 ft. ELEVATION:
Depth(s) Groundwater Encountered 1. ft. 2. ft. 3. ft.
WELL'S STATIC WATER LEVEL 27 ft. below land surface measured on mo/day/yr 6-21-2001
Pump test data: Well water was ft. after hours pumping gpm
Est. Yield 50 gpm: Well water was ft. after hours pumping gpm
Bore Hole Diameter 12 in. to ft., and in. to ft.
WELL WATER TO BE USED AS: 1 Domestic 2 Irrigation 3 Feedlot 4 Industrial 5 Public water supply 6 Oil field water supply 7 Domestic (lawn & garden) 8 Air conditioning 9 Dewatering 10 Monitoring well 11 Injection well 12 Other (Specify below)
Was a chemical/bacteriological sample submitted to Department? Yes No X ; If yes, mo/day/yrs sample was submitted
Water Well Disinfected? Yes X No

5 TYPE OF BLANK CASING USED: 1 Steel 2 PVC 3 RMP (SR) 4 ABS 5 Wrought iron 6 Asbestos-Cement 7 Fiberglass 8 Concrete tile 9 Other (specify below)
CASING JOINTS: Glued X Clamped Welded Threaded
Blank casing diameter 5 in. to ft., Dia in. to ft., Dia in. to ft
Casing height above land surface 24 in., weight 2.82 lbs./ft. Wall thickness or gauge No. .258

TYPE OF SCREEN OR PERFORATION MATERIAL: 1 Steel 2 Brass 3 Stainless steel 4 Galvanized steel 5 Fiberglass 6 Concrete tile 7 PVC 8 RMP (SR) 9 ABS 10 Asbestos-cement 11 Other (specify) 12 None used (open hole)

SCREEN OR PERFORATION OPENINGS ARE: 1 Continuous slot 2 Louvered shutter 3 Mill slot 4 Key punched 5 Gauzed wrapped 6 Wire wrapped 7 Torch cut 8 Saw cut 9 Drilled holes 10 Other (specify) 11 None (open hole)

SCREEN-PERFORATED INTERVALS: From 36 ft. to 52 ft., From ft. to ft.
From ft. to ft., From ft. to ft.
GRAVEL PACK INTERVALS: From 27 ft. to 52 ft., From ft. to ft.
From ft. to ft., From ft. to ft.

6 GROUT MATERIAL: 1 Neat cement 2 Cement grout 3 Bentonite 4 Other
Grout Intervals: From 4 ft. to 27 ft., From ft. to ft., From ft. to ft.

What is the nearest source of possible contamination:
1 Septic tank 2 Sewer lines 3 Watertight sewer lines 4 Lateral lines 5 Cess pool 6 Seepage pit 7 Pit privy 8 Sewage lagoon 9 Feedyard 10 Livestock pens 11 Fuel storage 12 Fertilizer storage 13 Insecticide storage 14 Abandoned water well 15 Oil well/Gas well 16 Other (specify below)
Direction from well? West
How many feet? 210

FROM	TO	LITHOLOGIC LOG	FROM	TO	PLUGGING INTERVALS
0	10	brown silt			
10	18	brown clay			
18	28	brown silt			
28	30	brown fine sand course sand			
30	38	brown fine sand			
38	40	brown fine sand course sand med gravel			
40	41	blue clay			
41	52	grey fine sand			

7 CONTRACTOR'S OR LANDOWNER'S CERTIFICATION: This water well was (1) constructed, (2) reconstructed, or (3) plugged under my jurisdiction and was completed on (mo/day/year) 6-21-2001 and this record is true to the best of my knowledge and belief. Kansas Water Well Contractor's Licence No. 182 This Water Well Record was completed on (mo/day/yr) 7-2-2001 under the business name of Strader Drilling Co., Inc. by (signature) Dale Strader

INSTRUCTIONS: Use typewriter or ball point pen. *PLEASE PRESS FIRMLY* and *PRINT* clearly. Please fill in blanks, underline or circle the correct answers. Send top three copies to Kansas Department of Health and Environment, Bureau of Water, Topeka, Kansas 66620-0001. Telephone 785-296-5524. Send one to WATER WELL OWNER and retain one for your records. Fee of $5.00 for each constructed well.

WATER WELL RECORD Form WWC-5 KSA 82a-1212

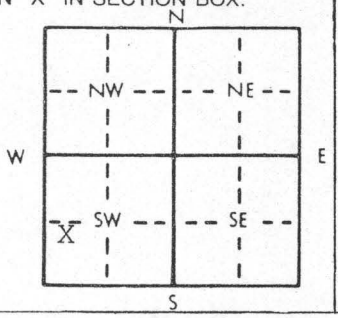
1 LOCATION OF WATER WELL:	Fraction	Section Number	Township Number	Range Number
County: DOUGLAS	NW ¼ SW ¼ SW ¼	1	T 13 S	R 20 E/W

Distance and direction from nearest town or city street address of well if located within city?
2 west of Eudora

2 WATER WELL OWNER: Harold Boehle
R#, St. Address, Box # : 1420 E. 1900 Rd.
City, State, ZIP Code : Eudora, KS 66025

Board of Agriculture, Division of Water Resour
Application Number:

3 LOCATE WELL'S LOCATION WITH AN "X" IN SECTION BOX:



4 DEPTH OF COMPLETED WELL 50' ft. ELEVATION:
Depth(s) Groundwater Encountered 1. ft. 2. ft. 3. ft
WELL'S STATIC WATER LEVEL 22' ft. below land surface measured on mo/day/yr 2-15-93
Pump test data: Well water was ft. after hours pumping gp
Est. Yield 50 gpm: Well water was ft. after hours pumping gp
Bore Hole Diameter 12" in. to ft., and in. to
WELL WATER TO BE USED AS: 5 Public water supply 8 Air conditioning 11 Injection well
1 Domestic 3 Feedlot 6 Oil field water supply 9 Dewatering 12 Other (Specify below)
2 Irrigation 4 Industrial 7 Lawn and garden only 10 Monitoring well
Was a chemical/bacteriological sample submitted to Department? Yes.....No.....X...; If yes, mo/day/yr sample was s
mitted Water Well Disinfected? Yes X No

5 TYPE OF BLANK CASING USED: 5 Wrought iron 8 Concrete tile CASING JOINTS: Glued X Clamped
1 Steel 3 RMP (SR) 6 Asbestos-Cement 9 Other (specify below) Welded
2 PVC 4 ABS 7 Fiberglass Threaded
Blank casing diameter 5" in. to 0-40 ft., Dia in. to ft., Dia in. to
Casing height above land surface 24" in., weight 2.82 lbs./ft. Wall thickness or gauge No. .258

TYPE OF SCREEN OR PERFORATION MATERIAL: 7 PVC 10 Asbestos-cement
1 Steel 3 Stainless steel 5 Fiberglass 8 RMP (SR) 11 Other (specify)
2 Brass 4 Galvanized steel 6 Concrete tile 9 ABS 12 None used (open hole)

SCREEN OR PERFORATION OPENINGS ARE: 5 Gauzed wrapped 8 Saw cut 11 None (open hole)
1 Continuous slot 3 Mill slot 6 Wire wrapped 9 Drilled holes
2 Louvered shutter 4 Key punched 7 Torch cut 10 Other (specify)

SCREEN-PERFORATED INTERVALS: From 40 ft. to 50 ft., From ft. to
From ft. to ft., From ft. to
GRAVEL PACK INTERVALS: From 24 ft. to 50 ft., From ft. to
From ft. to ft., From ft. to

6 GROUT MATERIAL: 1 Neat cement 2 Cement grout 3 Bentonite 4 Other
Grout Intervals: From 4 ft. to 24 ft., From ft. to ft., From ft. to

What is the nearest source of possible contamination:
1 Septic tank 4 Lateral lines 7 Pit privy 10 Livestock pens 14 Abandoned water well
2 Sewer lines 5 Cess pool 8 Sewage lagoon 11 Fuel storage 15 Oil well/Gas well
3 Watertight sewer lines 6 Seepage pit 9 Feedyard 12 Fertilizer storage 16 Other (specify below)
13 Insecticide storage
Direction from well? south How many feet? 100'

FROM	TO	LITHOLOGIC LOG	FROM	TO	PLUGGING INTERVALS
0	6	Top Soil			
6	30	Clay-Brown-Silty			
30	35	Fine SAnd-Coarse Sand-Blue			
35	41	Fine Sand-Blue			
41	47	Fine Sand-Coarse Sand-Brown			
47	48	Clay-Blue			
48	50	Fine Sand-Coarse Sand-Med Gravel-Brown			

7 CONTRACTOR'S OR LANDOWNER'S CERTIFICATION: This water well was (1) constructed, (2) reconstructed, or (3) plugged under my jurisdiction and w
completed on (mo/day/year) 2-15-93 and this record is true to the best of my knowledge and belief. Kans
Water Well Contractor's License No. 182 This Water Well Record was completed on (mo/day/yr) 4-7-93
under the business name of STRADER DRILLING CO., INC. by (signature) Dale Strader

INSTRUCTIONS: Use typewriter or ball point pen. *PLEASE PRESS FIRMLY* and *PRINT* clearly. Please fill in blanks, underline or circle the correct answers. Send top three copies to Kansas Department of Health and Environment, Bureau of Water, Topeka, Kansas 66620-0001. Telephone: 913-296-5545. Send one to WATER WELL OWNER and retain one for your records.

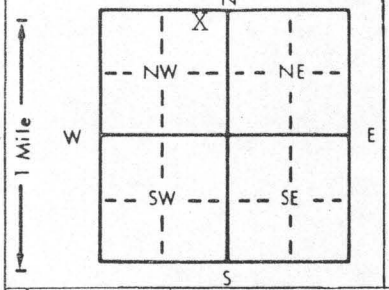
WATER WELL RECORD Form WWC-5 KSA 82a-1212

1 LOCATION OF WATER WELL:	Fraction	Section Number	Township Number	Range Number
County: DOUGLAS	NE ¼ NE ¼ NW ¼	2	T 13 S	R 20 E/W

Distance and direction from nearest town or city street address of well if located within city?
2 miles east of Lawrence @ 1837 N. 1500 Rd.

2 WATER WELL OWNER: Jeff Wallace
RR#, St. Address, Box # : 1201 E. 13th
City, State, ZIP Code : Lawrence, KS 66044
Board of Agriculture, Division of Water Resources
Application Number:

3 LOCATE WELL'S LOCATION WITH AN "X" IN SECTION BOX:



4 DEPTH OF COMPLETED WELL 52' ft. ELEVATION:
Depth(s) Groundwater Encountered 1. ft. 2. ft. 3. ft.
WELL'S STATIC WATER LEVEL 30' ft. below land surface measured on mo/day/yr 2/24/98
Pump test data: Well water was ft. after hours pumping gpm
Est. Yield 50 gpm: Well water was ft. after hours pumping gpm
Bore Hole Diameter 12" in. to ft., and in. to ft.
WELL WATER TO BE USED AS: 1 Domestic 2 Irrigation 3 Feedlot 4 Industrial 5 Public water supply 6 Oil field water supply 7 Lawn and garden only 8 Air conditioning 9 Dewatering 10 Monitoring well 11 Injection well 12 Other (Specify below)
Was a chemical/bacteriological sample submitted to Department? Yes No X; If yes, mo/day/yr sample was submitted
Water Well Disinfected? Yes X No

5 TYPE OF BLANK CASING USED: 1 Steel 2 PVC 3 RMP (SR) 4 ABS 5 Wrought iron 6 Asbestos-Cement 7 Fiberglass 8 Concrete tile 9 Other (specify below)
CASING JOINTS: Glued X Clamped Welded Threaded
Blank casing diameter 5" in. to 0-45 ft., Dia in. to ft., Dia in. to ft.
Casing height above land surface 24" in., weight 2.82 lbs./ft. Wall thickness or gauge No. .258
TYPE OF SCREEN OR PERFORATION MATERIAL: 1 Steel 2 Brass 3 Stainless steel 4 Galvanized steel 5 Fiberglass 6 Concrete tile 7 PVC 8 RMP (SR) 9 ABS 10 Asbestos-cement 11 Other (specify) 12 None used (open hole)
SCREEN OR PERFORATION OPENINGS ARE: 1 Continuous slot 2 Louvered shutter 3 Mill slot 4 Key punched 5 Gauzed wrapped 6 Wire wrapped 7 Torch cut 8 Saw cut 9 Drilled holes 10 Other (specify) 11 None (open hole)
SCREEN-PERFORATED INTERVALS: From 45 ft. to 52 ft., From ft. to ft.
From ft. to ft., From ft. to ft.
GRAVEL PACK INTERVALS: From 30 ft. to 52 ft., From ft. to ft.
From ft. to ft., From ft. to ft.

6 GROUT MATERIAL: 1 Neat cement 2 Cement grout 3 Bentonite 4 Other
Grout Intervals: From 4 ft. to 30 ft., From ft. to ft., From ft. to ft.
What is the nearest source of possible contamination: 1 Septic tank 2 Sewer lines 3 Watertight sewer lines 4 Lateral lines 5 Cess pool 6 Seepage pit 7 Pit privy 8 Sewage lagoon 9 Feedyard 10 Livestock pens 11 Fuel storage 12 Fertilizer storage 13 Insecticide storage 14 Abandoned water well 15 Oil well/Gas well 16 Other (specify below)
Direction from well? south How many feet? 50'

FROM	TO	LITHOLOGIC LOG	FROM	TO	PLUGGING INTERVALS
0	4	Top Soil			
4	15	Clay-Brown-Silty			
15	27	Silt-Brown			
27	31	Fine Sand-Brown			
31	32	Clay-Blue			
32	35	Fine Silt-Brown			
35	39	Clay-Brown			
39	41	Fine Sand-Brown			
41	47	Fine Sand-Coarse Sand-Brown			
47	52	Fine Sand-Coarse Sand-Med-Pea Brown			

7 CONTRACTOR'S OR LANDOWNER'S CERTIFICATION: This water well was (1) constructed, (2) reconstructed, or (3) plugged under my jurisdiction and was completed on (mo/day/year) 2/24/98 and this record is true to the best of my knowledge and belief. Kansas Water Well Contractor's License No. 182 This Water Well Record was completed on (mo/day/yr) 3-4-98
under the business name of STRADER DRILLING CO., INC. by (signature) Dale Askren

INSTRUCTIONS: Use typewriter or ball point pen. *PLEASE PRESS FIRMLY* and *PRINT* clearly. Please fill in blanks, underline or circle the correct answers. Send top three copies to Kansas Department of Health and Environment, Bureau of Water, Topeka, Kansas 66620-0001. Telephone: 913-296-5545. Send one to WATER WELL OWNER and retain one for your records.

WATER WELL RECORD Form WWC-5 KSA 82a-1212

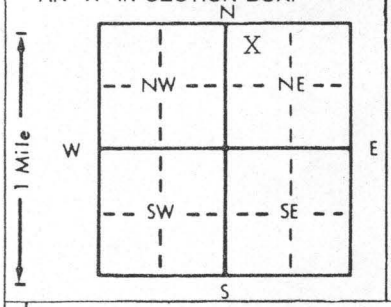
1 LOCATION OF WATER WELL:	Fraction	Section Number	Township Number	Range Number
County: DOUGLAS	NW ¼ NW ¼ NE ¼	11	T 13 S	R 20 E/W

Distance and direction from nearest town or city street address of well if located within city?
2½ miles east of Lawrence

2 WATER WELL OWNER: Daniel E. Lynch
RR#, St. Address, Box # : 642 N. 9th
City, State, ZIP Code : Lawrence, KS 66044

Board of Agriculture, Division of Water Resources
Application Number:

3 LOCATE WELL'S LOCATION WITH AN "X" IN SECTION BOX:



4 DEPTH OF COMPLETED WELL 60' ft. ELEVATION:
Depth(s) Groundwater Encountered 1. ft. 2. ft. 3. ft.
WELL'S STATIC WATER LEVEL 32' ft. below land surface measured on mo/day/yr 04/13/98
Pump test data: Well water was ft. after hours pumping gpm
Est. Yield 50 gpm: Well water was ft. after hours pumping gpm
Bore Hole Diameter 10" in. to ft., and in. to ft.
WELL WATER TO BE USED AS: 1 Domestic 2 Irrigation 3 Feedlot 4 Industrial 5 Public water supply 6 Oil field water supply 7 Lawn and garden only 8 Air conditioning 9 Dewatering 10 Monitoring well 11 Injection well 12 Other (Specify below)
Was a chemical/bacteriological sample submitted to Department? Yes No X; If yes, mo/day/yr sample was submitted
Water Well Disinfected? Yes X No

5 TYPE OF BLANK CASING USED: 1 Steel 2 PVC 3 RMP (SR) 4 ABS 5 Wrought iron 6 Asbestos-Cement 7 Fiberglass 8 Concrete tile 9 Other (specify below)
CASING JOINTS: Glued X Clamped Welded Threaded
Blank casing diameter 5" in. to 0-55 ft., Dia in. to ft., Dia in. to ft.
Casing height above land surface 24" in., weight 2.82 lbs./ft. Wall thickness or gauge No. .258

TYPE OF SCREEN OR PERFORATION MATERIAL: 1 Steel 2 Brass 3 Stainless steel 4 Galvanized steel 5 Fiberglass 6 Concrete tile 7 PVC 8 RMP (SR) 9 ABS 10 Asbestos-cement 11 Other (specify) 12 None used (open hole)
SCREEN OR PERFORATION OPENINGS ARE: 1 Continuous slot 2 Louvered shutter 3 Mill slot 4 Key punched 5 Gauzed wrapped 6 Wire wrapped 7 Torch cut 8 Saw cut 9 Drilled holes 10 Other (specify) 11 None (open hole)
SCREEN-PERFORATED INTERVALS: From XX 55 ft. to XXX 60 ft., From ft. to ft.
From ft. to ft., From ft. to ft.
GRAVEL PACK INTERVALS: From 32 ft. to 60 ft., From ft. to ft.
From ft. to ft., From ft. to ft.

6 GROUT MATERIAL: 1 Neat cement 2 Cement grout 3 Bentonite 4 Other
Grout Intervals: From 4 ft. to 32 ft., From ft. to ft., From ft. to ft.
What is the nearest source of possible contamination: 1 Septic tank 2 Sewer lines 3 Watertight sewer lines 4 Lateral lines 5 Cess pool 6 Seepage pit 7 Pit privy 8 Sewage lagoon 9 Feedyard 10 Livestock pens 11 Fuel storage 12 Fertilizer storage 13 Insecticide storage 14 Abandoned water well 15 Oil well/Gas well 16 Other (specify below)
Direction from well? East How many feet? 100'

FROM	TO	LITHOLOGIC LOG	FROM	TO	PLUGGING INTERVALS
0	3	Top Soil			
3	23	Clay-Brown-Silty			
23	26	Clay-Dark Brown			
26	52	Clay-Grey			
52	60	FS-Cs-Med-Pea Chert 1/4x3/8-Brown			

7 CONTRACTOR'S OR LANDOWNER'S CERTIFICATION: This water well was (1) constructed, (2) reconstructed, or (3) plugged under my jurisdiction and was completed on (mo/day/year) 4/13/98 and this record is true to the best of my knowledge and belief. Kansas Water Well Contractor's License No. 182 This Water Well Record was completed on (mo/day/yr) 4-23-98
under the business name of STRADER DRILLING CO., INC. by (signature) Dale Askren

INSTRUCTIONS: Use typewriter or ball point pen. *PLEASE PRESS FIRMLY* and *PRINT* clearly. Please fill in blanks, underline or circle the correct answers. Send top three copies to Kansas Department of Health and Environment, Bureau of Water, Topeka, Kansas 66620-0001. Telephone: 913-296-5545. Send one to WATER WELL OWNER and retain one for your records.

95.14157 38.93148

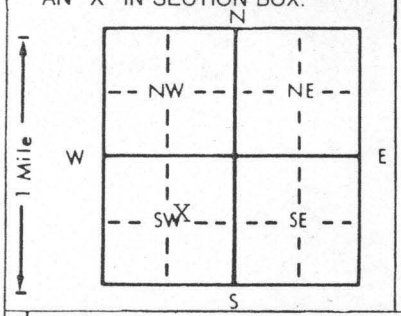
WATER WELL RECORD Form WWC-5 KSA 82a-1212

1 LOCATION OF WATER WELL: County: DOUGLAS | Fraction: SW ¼ NE ¼ SW ¼ | Section Number: 12 | Township Number: T 13 S | Range Number: R 20 E/W

Distance and direction from nearest town or city street address of well if located within city?
1 3/4 west of Eudora

2 WATER WELL OWNER: Jeff Gazaway
RR#, St. Address, Box # : 15007 W. 85th Terrace (File #40333) Board of Agriculture, Division of Water Resource
City, State, ZIP Code : Lenexa, KS 66215 Application Number:

3 LOCATE WELL'S LOCATION WITH AN "X" IN SECTION BOX:



4 DEPTH OF COMPLETED WELL 68 ft. ELEVATION:
Depth(s) Groundwater Encountered 1. ft. 2. ft. 3. ft.
WELL'S STATIC WATER LEVEL 27' ft. below land surface measured on mo/day/yr 8-23-91
Pump test data: Well water was ft. after hours pumping gpm
Est. Yield 300 gpm: Well water was ft. after hours pumping gpm
Bore Hole Diameter 22" in. to ft., and in. to ft
WELL WATER TO BE USED AS: 1 Domestic 2 Irrigation 3 Feedlot 4 Industrial 5 Public water supply 6 Oil field water supply 7 Lawn and garden only 8 Air conditioning 9 Dewatering 10 Monitoring well 11 Injection well 12 Other (Specify below)
Was a chemical/bacteriological sample submitted to Department? Yes No X; If yes, mo/day/yr sample was submitted
Water Well Disinfected? Yes X No

5 TYPE OF BLANK CASING USED: 1 Steel 2 PVC 3 RMP (SR) 4 ABS 5 Wrought iron 6 Asbestos-Cement 7 Fiberglass 8 Concrete tile 9 Other (specify below)
CASING JOINTS: Glued Clamped Welded X Threaded
Blank casing diameter 12" in. to 0-58 ft., Dia in. to ft., Dia in. to ft
Casing height above land surface 28" in., weight 49 lbs./ft. Wall thickness or gauge No. .375
TYPE OF SCREEN OR PERFORATION MATERIAL: 1 Steel 2 Brass 3 Stainless steel 4 Galvanized steel 5 Fiberglass 6 Concrete tile 7 PVC 8 RMP (SR) 9 ABS 10 Asbestos-cement 11 Other (specify) 12 None used (open hole)
SCREEN OR PERFORATION OPENINGS ARE: 1 Continuous slot 2 Louvered shutter 3 Mill slot 4 Key punched 5 Gauzed wrapped 6 Wire wrapped 7 Torch cut 8 Saw cut 9 Drilled holes 10 Other (specify) 11 None (open hole)
Johnson .125
SCREEN-PERFORATED INTERVALS: From 58 ft. to 68 ft., From ft. to ft.
From ft. to ft., From ft. to ft.
GRAVEL PACK INTERVALS: From 25 ft. to 68 ft., From ft. to ft.
From ft. to ft., From ft. to ft.

6 GROUT MATERIAL: 1 Neat cement 2 Cement grout 3 Bentonite 4 Other
Grout Intervals: From 0 ft. to 25 ft., From ft. to ft., From ft. to ft.
What is the nearest source of possible contamination: 1 Septic tank 2 Sewer lines 3 Watertight sewer lines 4 Lateral lines 5 Cess pool 6 Seepage pit 7 Pit privy 8 Sewage lagoon 9 Feedyard 10 Livestock pens 11 Fuel storage 12 Fertilizer storage 13 Insecticide storage 14 Abandoned water well 15 Oil well/Gas well 16 Other (specify below)
Direction from well? west How many feet? 420'

FROM	TO	LITHOLOGIC LOG	FROM	TO	PLUGGING INTERVALS
0	3	Top Soil			
3	29	Clay-Brown			
29	49	Clay-Blue			
49	50	Fine Sand-Blue			
50	51	FS-CS-Med-Gravel-Blue			
51	53	Clay-Blue			
53	56	FS-CS-Med-Pea Gravel ¼"-Blue			
56	68	" " " " " Chert ½x1-Blue-Grey			
68	72	Limestone-Grey			

7 CONTRACTOR'S OR LANDOWNER'S CERTIFICATION: This water well was (1) constructed, (2) reconstructed, or (3) plugged under my jurisdiction and was completed on (mo/day/year) 8-23-91 and this record is true to the best of my knowledge and belief. Kansas Water Well Contractor's License No. 182 This Water Well Record was completed on (mo/day/yr) 9-5-91 under the business name of STRADER DRILLING CO., INC. by (signature) Darle Hickerson

INSTRUCTIONS: Use typewriter or ball point pen. *PLEASE PRESS FIRMLY* and *PRINT* clearly. Please fill in blanks, underline or circle the correct answers. Send top three copies to Kansas Department of Health and Environment, Bureau of Water, Topeka, Kansas 66620-7320. Telephone: 913-296-5545. Send one to WATER WELL OWNER and retain one for your records.

(739)

WATER WELL RECORD Form WWC-5 KSA 82a-1212 ID No. _____

1 LOCATION OF WATER WELL: Fraction: ¼ S 1/2 SW ¼ | Section Number: 31 | Township Number: T 12 S | Range Number: R 21 E/W

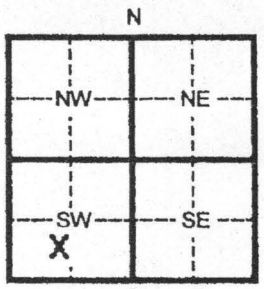
County: Douglas

Distance and direction from nearest town or city street address of well if located within city?
REF: Don Westheffer

2 WATER WELL OWNER: Nunemaker-Ross Inc.
RR#, St. Address, Box # : 1616 North 1700 Road
City, State, ZIP Code : Lawrence, Ks 66044

Board of Agriculture, Division of Water Resources
Application Number: 46589

3 LOCATE WELL'S LOCATON WITH AN "X" IN SECTION BOX:



4 DEPTH OF COMPLETED WELL 50 ft. ELEVATION: _____
Depth(s) Groundwater Encountered 1 _____ ft. 2 _____ ft. 3 _____ ft.
WELL'S STATIC WATER LEVEL na ft. below land surface measured on mo/day/yr _____
Pump test data: Well water was _____ ft. after _____ hours pumping _____ gpm
Est. Yield _____ gpm: Well water was _____ ft. after _____ hours pumping _____ gpm
Bore Hole Diameter 28 in. to 51 ft. and _____ in. to _____ ft.
WELL WATER TO BE USED AS: 5 Public water supply 8 Air conditioning 11 Injection well
1 Domestic 3 Feed lot 6 Oil field water supply 9 Dewatering 12 Other (Specify below)
2 Irrigation 4 Industrial 7 Lawn and garden (domestic) 10 Monitoring well _____
Was a chemical/bacteriological sample submitted to Department? Yes ____ No X If yes, mo/day/yr sample was submitted
Water Well Disinfected? Yes X No

5 TYPE OF BLANK CASING USED: 5 Wrought Iron 8 Concrete tile CASING JOINTS: Glued X Clamped ____
1 Steel 3 RMP (SR) 6 Asbestos-Cement 9 Other (specify below) Welded _____
2 PVC 4 ABS 7 Fiberglass _____ Threaded _____
Blank casing diameter 28 in. to 30 ft., Dia _____ in. to _____ ft., Dia _____ in. to _____ ft.
Casing height above land surface 24 in., weight 16.15 lbs./ft. Wall thickness or gauge No. .500

TYPE OF SCREEN OR PERFORATION MATERIAL: 7 PVC 10 Asbestos-cement
1 Steel 3 Stainless steel 5 Fiberglass 8 RMP (SR) 11 Other (specify) _____
2 Brass 4 Galvanized steel 6 Concrete tile 9 ABS 12 None used (open hole)

SCREEN OR PERFORATION OPENINGS ARE: 5 Gauzed wrapped 8 Saw cut 11 None (open hole)
1 Continuous slot 3 Mill slot 6 Wire wrapped 9 Drilled holes
2 Louvered shutter 4 Key punched 7 Torch cut 10 Other (specify) _____

SCREEN-PERFORATED INTERVALS: From 30 ft. to 50 ft. From _____ ft. to _____ ft.
From _____ ft. to _____ ft. From _____ ft. to _____ ft.

GRAVEL PACK INTERVALS: From 20 ft. to 50 ft. From _____ ft. to _____ ft.
From _____ ft. to _____ ft. From _____ ft. to _____ ft.

6 GROUT MATERIAL: 1 Neat cement 2 Cement grout 3 Bentonite 4 Other _____
Grout Intervals From 0 ft. to 20 ft. From _____ ft. to _____ ft. From _____ ft. to _____ ft.

What is the nearest source of possible contamination:
1 Septic tank 4 Lateral lines 7 Pit privy 10 Livestock pens 14 Abandoned water well
2 Sewer lines 5 Cess pool 8 Sewage lagoon 11 Fuel storage 15 Oil well/ Gas well
3 Watertight sewer lines 6 Seepage pit 9 Feedyard 12 Fertilizer storage 16 Other (specify below)
13 Insecticide storage none
Direction from well? How many feet?

FROM	TO	CODE	LITHOLOGIC LOG	FROM	TO	PLUGGING INTERVALS
0	3		Surface			
3	24		Clay			
24	35		Sand & gravel			
35	50		Large gravel			
50	51		shale			

7 CONTRACTOR'S OR LANDOWNER'S CERTIFICATION: This water well was (1) constructed, (2) reconstructed, or (3) plugged under my jurisdiction and was completed on (mo/day/yr) 5-13-07 and this record is true to the best of my knowledge and belief. Kansas Water Well Contractor's License No. 554 This Water Well Record was completed on (mo/day/yr) 3-30-07
under the business name of Woofter Pump & Well Inc. by (signature) Jay C Woofter by MA

INSTRUCTIONS: Please fill in blanks and circle the correct answers. Send three copies to Kansas Department of Health and Environment, Bureau of Water, 1000 S W Jackson St., Ste. 420, Topeka, Kansas 66612-1367. Telephone: 913-296-5545. Send one to WATER WELL OWNER and retain one for your records.

KGS Hydrology | Water Well Database Query

Scan of WWC5 Form

WATER WELL RECORD Form WWC-5 KSA 82a-1212

1 LOCATION OF WATER WELL: County: Douglas | Fraction: NW ¼ SE ¼ SE ¼ | Section Number: 31 | Township Number: T 12 S | Range Number: R 21 E/W

Distance and direction from nearest town or city street address of well if located within city? 3/4 miles N. From NW Eudora

2 WATER WELL OWNER: Eudora Riverview Golf
RR#, St. Address, Box # : 2504 Alabama
City, State, ZIP Code : Lawrence, Ks. 66046
Board of Agriculture, Division of Water Resources Application Number:

3 LOCATE WELL'S LOCATION WITH AN "X" IN SECTION BOX: N / NW / NE / W / E / SW / SE / S; 1 Mile

4 DEPTH OF COMPLETED WELL 53 ft. ELEVATION:
Depth(s) Groundwater Encountered 1. 19-53 ft. 2. ft. 3. ft.
WELL'S STATIC WATER LEVEL 19 ft. below land surface measured on mo/day/yr 3-29-95
Pump test data: Well water was ft. after hours pumping gpm
Est. Yield 2.5.0. gpm: Well water was ft. after hours pumping gpm
Bore Hole Diameter 12¼ in. to 53 ft., and in. to ft.
WELL WATER TO BE USED AS: 1 Domestic 2 Irrigation 3 Feedlot 4 Industrial 5 Public water supply 6 Oil field water supply 7 Lawn and garden only 8 Air conditioning 9 Dewatering 10 Monitoring well 11 Injection well 12 Other (Specify below)
Was a chemical/bacteriological sample submitted to Department? Yes ..... No ....; If yes, mo/day/yr sample was submitted
Water Well Disinfected? Yes X No

5 TYPE OF BLANK CASING USED: 1 Steel 2 PVC 3 RMP (SR) 4 ABS 5 Wrought iron 6 Asbestos-Cement 7 Fiberglass 8 Concrete tile 9 Other (specify below)
CASING JOINTS: Glued X Clamped Welded Threaded
Blank casing diameter 8 in. to 33 ft., Dia in. to ft., Dia in. to ft.
Casing height above land surface 30 in., weight 200# lbs./ft. Wall thickness or gauge No.

TYPE OF SCREEN OR PERFORATION MATERIAL: 7 PVC
1 Steel 3 Stainless steel 5 Fiberglass 8 RMP (SR) 10 Asbestos-cement
2 Brass 4 Galvanized steel 6 Concrete tile 9 ABS 11 Other (specify) 12 None used (open hole)

SCREEN OR PERFORATION OPENINGS ARE: 1 Continuous slot 2 Mill slot 3 Key punched 4 Louvered shutter 5 Gauzed wrapped 6 Wire wrapped 7 Torch cut 8 Saw cut 9 Drilled holes 10 Other (specify) 11 None (open hole)

SCREEN-PERFORATED INTERVALS: From 33 ft. to 53 ft., From ft. to ft.
From ft. to ft., From ft. to ft.
GRAVEL PACK INTERVALS: From 53 ft. to 20 ft., From ft. to ft.
From ft. to ft., From ft. to ft.

6 GROUT MATERIAL: 1 Neat cement 2 Cement grout 3 Bentonite 4 Other
Grout Intervals: From 20 ft. to 0 ft., From ft. to ft., From ft. to ft.
What is the nearest source of possible contamination: NONE At the Time
1 Septic tank 2 Sewer lines 3 Watertight sewer lines 4 Lateral lines 5 Cess pool 6 Seepage pit 7 Pit privy 8 Sewage lagoon 9 Feedyard 10 Livestock pens 11 Fuel storage 12 Fertilizer storage 13 Insecticide storage 14 Abandoned water well 15 Oil well/Gas well 16 Other (specify below)
Direction from well? How many feet?

FROM	TO	LITHOLOGIC LOG	FROM	TO	PLUGGING INTERVALS
0	15	Soil, Clay, Silt			
15	52	Sand			
52	53	Gravel & Limestone			

7 CONTRACTOR'S OR LANDOWNER'S CERTIFICATION: This water well was (1) constructed, (2) reconstructed, or (3) plugged under my jurisdiction and was completed on (mo/day/year) 3-29-95 and this record is true to the best of my knowledge and belief. Kansas Water Well Contractor's License No. 561 This Water Well Record was completed on (mo/day/yr) 4-3-95 under the business name of Evans Energy Dev. Inc. by (signature) Sam E. Evans

INSTRUCTIONS: Use typewriter or ball point pen. PLEASE PRESS FIRMLY and PRINT clearly. Please fill in blanks, underline or circle the correct answers. Send top three copies to Kansas Department of Health and Environment, Bureau of Water, Topeka, Kansas 66620-0001. Telephone: 913-296-5545. Send one to WATER WELL OWNER and retain one for your records.

Kansas Geological Survey
Comments to webadmin@kgs.ku.edu

WATER WELL RECORD Form WWC-5 KSA 82a-1212 ID No. _____

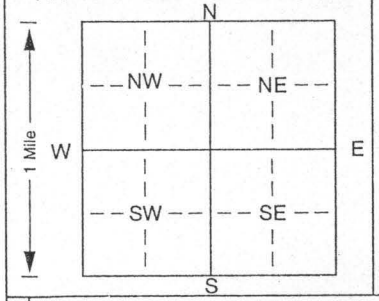
1 LOCATION OF WATER WELL:	Fraction	Section Number	Township Number	Range Number
County: Douglas	near center-E½-NE¼ ¼	6	T 13 S	R 21E E/W

Distance and direction from nearest town or city street address of well if located within city?
mile northwest of Lecompton

2 WATER WELL OWNER: Mark Neis
RR#, St. Address, Box # : 12775 County Line Rd.
City, State, ZIP Code : Eudora, Ks. 66025

Board of Agriculture, Division of Water Resources
Application Number:

3 LOCATE WELL'S LOCATION WITH AN "X" IN SECTION BOX:



4 DEPTH OF COMPLETED WELL....63..... ft. ELEVATION:.....
Depth(s) Groundwater Encountered 1.....ft. 2.....ft. 3.....ft.
WELL'S STATIC WATER LEVEL .19½..... ft. below land surface measured on mo/day/yr .....12-14-2001.....
Pump test data: Well water was .....ft. after ..... hours pumping ..... gpm
Est. Yield ..950...gpm: Well water was .....ft. after ..... hours pumping ..... gpm
Bore Hole Diameter...24..... in. to .....ft., and..... in. to .....ft.

WELL WATER TO BE USED AS: 5 Public water supply 8 Air conditioning 11 Injection well
1 Domestic 3 Feedlot 6 Oil field water supply 9 Dewatering 12 Other (Specify below)
2 Irrigation 4 Industrial 7 Domestic (lawn & garden) 10 Monitoring well .....

Was a chemical/bacteriological sample submitted to Department? Yes..... No. X...; If yes, mo/day/yrs sample was submitted Water Well Disinfected? Yes X No

5 TYPE OF BLANK CASING USED: 5 Wrought iron 8 Concrete tile CASING JOINTS: Glued. X Clamped.....
1 Steel 3 RMP (SR) 6 Asbestos-Cement 9 Other (specify below) Welded .....
2 PVC 4 ABS 7 Fiberglass ..... Threaded.....

Blank casing diameter ....16.....in. to .....ft., Dia .....in. to .....ft., Dia .....in. to .....f
Casing height above land surface....24.....in., weight .....15.54..... lbs./ft. Wall thickness or gauge No. ....500.....

TYPE OF SCREEN OR PERFORATION MATERIAL: 7 PVC 10 Asbestos-cement
1 Steel 3 Stainless steel 5 Fiberglass 8 RMP (SR) 11 Other (specify).....
2 Brass 4 Galvanized steel 6 Concrete tile 9 ABS 12 None used (open hole)

SCREEN OR PERFORATION OPENINGS ARE: 5 Gauzed wrapped 8 Saw cut 11 None (open hole)
1 Continuous slot 3 Mill slot 6 Wire wrapped 9 Drilled holes
2 Louvered shutter 4 Key punched 7 Torch cut 10 Other (specify)..... ft

SCREEN-PERFORATED INTERVALS: From....50..... ft. to .....63..... ft., From ..... ft. to..... ft
From..... ft. to ..... ft., From ..... ft. to..... ft
GRAVEL PACK INTERVALS: From....25..... ft. to .....63..... ft., From ..... ft. to..... ft
From..... ft. to ..... ft., From ..... ft. to..... ft

6 GROUT MATERIAL: 1 Neat cement 2 Cement grout 3 Bentonite 4 Other .....
Grout Intervals: From...0..... ft. to ...25.....ft., From .....ft. to.....ft., From .....ft. to.....ft.

What is the nearest source of possible contamination:
1 Septic tank 4 Lateral lines 7 Pit privy 10 Livestock pens 14 Abandoned water well
2 Sewer lines 5 Cess pool 8 Sewage lagoon 11 Fuel storage 15 Oil well/Gas well
3 Watertight sewer lines 6 Seepage pit 9 Feedyard 12 Fertilizer storage 16 Other (specify below)
13 Insecticide storage Open Field.....
Direction from well? How many feet?

FROM	TO	LITHOLOGIC LOG	FROM	TO	PLUGGING INTERVALS
0	11	brown silty clay			
11	18	brown silt			
18	22	brown fs-cs			
22	27	brown fs-cs-med-pea			
27	33	grey fine sand			
33	35	blue clay			
35	38	grey fs-cs-med gravel			
38	42	blue clay			
42	49	fs-cs-med-some pea			
49	54	fs-cs-med-pea			
54	55	blue clay			
55	58	fs-cs-med-pea			
58	63	fs-cs-med-pea ½x3/4			
3		grey limestone			

7 CONTRACTOR'S OR LANDOWNER'S CERTIFICATION: This water well was (1) constructed, (2) reconstructed, or (3) plugged under my jurisdiction and was completed on (mo/day/year) ..12-14-2001..... and this record is true to the best of my knowledge and belief. Kansas Water Well Contractor's Licence No....182..... This Water Well Record was completed on (mo/day/yr) ....1-2-2002..... under the business name of Strader Drilling co., Inc. by (signature) Dale Askeren

INSTRUCTIONS: Use typewriter or ball point pen. *PLEASE PRESS FIRMLY* and *PRINT* clearly. Please fill in blanks, underline or circle the correct answers. Send top three copies to Kansas Department of Health and Environment, Bureau of Water, Topeka, Kansas 66620-0001. Telephone 785-296-5524. Send one to WATER WELL OWNER and retain one for your records. Fee of $5.00 for each constructed well.

WATER WELL RECORD Form WWC-5 KSA 82a-1212

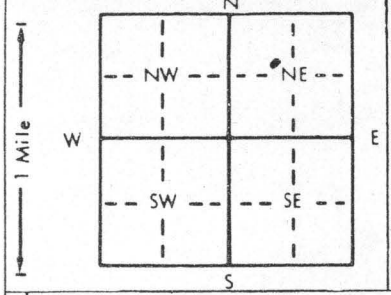
1 LOCATION OF WATER WELL:	Fraction	Section Number	Township Number	Range Number
County: DOUGLAS	SE ¼ NW ¼ NE ¼	6	T 13 S	R 21 (E)/W

Distance and direction from nearest town or city street address of well if located within city?
3 MILES NORTHWEST OF EUDORA

2 WATER WELL OWNER: CITY OF EUDORA
RR#, St. Address, Box # : 4 EAST SEVENTH STREET
City, State, ZIP Code : EUDORA, KS 66026

Board of Agriculture, Division of Water Resources
Application Number:

3 LOCATE WELL'S LOCATION WITH AN "X" IN SECTION BOX:



4 DEPTH OF COMPLETED WELL 72 ft. ELEVATION:
Depth(s) Groundwater Encountered 1. 18 ft. 2. ft. 3. ft.
WELL'S STATIC WATER LEVEL 18 ft. below land surface measured on mo/day/yr 6/16/98
Pump test data: Well water was 20 ft. after 0.5 hours pumping 329 gpm
Est. Yield 325 gpm: Well water was 22 ft. after 11 hours pumping 521 gpm
Bore Hole Diameter 42 in. to 72 ft., and in. to ft.
WELL WATER TO BE USED AS: (5) Public water supply 8 Air conditioning 11 Injection well
1 Domestic 3 Feedlot 6 Oil field water supply 9 Dewatering 12 Other (Specify below)
2 Irrigation 4 Industrial 7 Lawn and garden only 10 Monitoring well
Was a chemical/bacteriological sample submitted to Department? Yes X No; If yes, mo/day/yr sample was submitted 4/21/97
Water Well Disinfected? (Yes) No

5 TYPE OF BLANK CASING USED: (1) Steel 2 PVC 3 RMP (SR) 4 ABS 5 Wrought iron 6 Asbestos-Cement 7 Fiberglass 8 Concrete tile 9 Other (specify below)
CASING JOINTS: Glued Clamped Welded X Threaded
Blank casing diameter 12 in. to 47 ft., Dia in. to ft., Dia in. to ft.
Casing height above land surface 18 in., weight PITLESS UNIT lbs./ft. Wall thickness or gauge No. 0.375"

TYPE OF SCREEN OR PERFORATION MATERIAL: 1 Steel (3) Stainless steel 2 Brass 4 Galvanized steel 5 Fiberglass 6 Concrete tile 7 PVC 8 RMP (SR) 9 ABS 10 Asbestos-cement 11 Other (specify) 12 None used (open hole)

SCREEN OR PERFORATION OPENINGS ARE: 1 Continuous slot 2 Louvered shutter 3 Mill slot 4 Key punched (6) Wire wrapped 5 Gauzed wrapped 7 Torch cut 8 Saw cut 9 Drilled holes 10 Other (specify) 11 None (open hole)

SCREEN-PERFORATED INTERVALS: From 47 ft. to 72 ft., From ft. to ft.
From ft. to ft., From ft. to ft.

GRAVEL PACK INTERVALS: From 22 ft. to 72 ft., From ft. to ft.
From ft. to ft., From ft. to ft.

6 GROUT MATERIAL: (1) Neat cement 2 Cement grout 3 Bentonite 4 Other
Grout Intervals: From 6 ft. to 20 ft., From ft. to ft., From ft. to ft.

What is the nearest source of possible contamination:
1 Septic tank 4 Lateral lines 7 Pit privy 10 Livestock pens 14 Abandoned water well
2 Sewer lines 5 Cess pool 8 Sewage lagoon 11 Fuel storage 15 Oil well/Gas well
3 Watertight sewer lines 6 Seepage pit 9 Feedyard 12 Fertilizer storage 16 Other (specify below)
13 Insecticide storage
Direction from well? How many feet?

FROM	TO	LITHOLOGIC LOG	FROM	TO	PLUGGING INTERVALS
0	2	TOP SOIL			
2	17	BROWN SANDY SILT			
17	23	BROWN MEDIUM TO FINE SAND			
23	38	GRAY MEDIUM TO COARSE, SOME FINE			
38	55	GRAY MEDIUM TO COARSE, SOME GRAVEL			
55	72	GRAY COARSE TO MEDIUM			

CONTRACTOR'S OR LANDOWNER'S CERTIFICATION: This water well was (1) constructed (2) reconstructed, or (3) plugged under my jurisdiction and was completed on (mo/day/year) 6/16/98 and this record is true to the best of my knowledge and belief. Kansas Water Well Contractor's License No. 102 This Water Well Record was completed on (mo/day/yr) 8/5/98 under the business name of LAYNE CHRISTENSEN COMPANY by (signature) [signature]

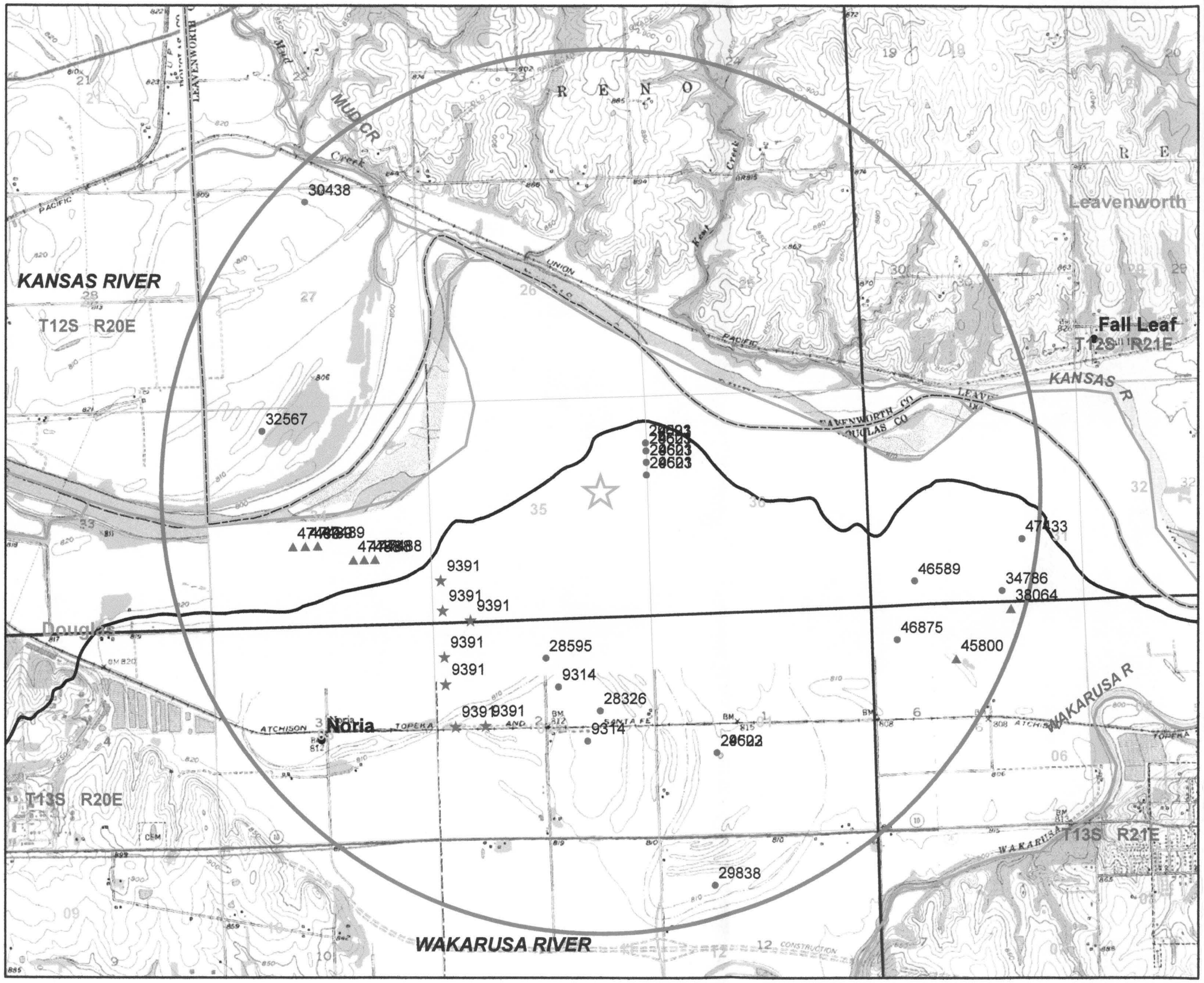
INSTRUCTIONS: Use typewriter or ball point pen. *PLEASE PRESS FIRMLY* and *PRINT* clearly. Please fill in blanks, underline or circle the correct answers. Send top three copies to Kansas Department of Health and Environment, Bureau of Water, Topeka, Kansas 66620-0001. Telephone: 913-296-5545. Send one to WATER WELL OWNER and retain one for your records.

APPENDIX II.

Kansas Department of Agriculture, Division of Water Resources,

Safe Yield Analysis Data

WIMAS Water Right Development - Map Centered on (E½) 35-12S-20E

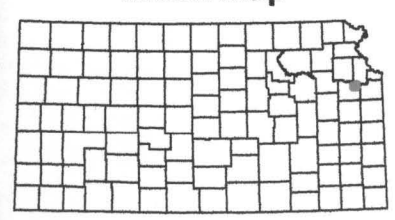


Legend

WIMAS_PDS_UMW

- ★ G_IND
- • G_IRR
- ▲ G_MUN

Index Map



0 0.3 0.6 1.2 1.8 2.4 Miles

This map was created by WIMAS on 9/12/2012 7:49:21 AM

Report Date Wednesday, September 12 2012

Water Rights and Points of Diversion Within 2.00 miles of point defined as:

2940 ft N and 1320 ft W of the SE Corner of Section 35, T 12S, R 20E

Located at: 95.153247 West Longitude and 38.964996 North Latitude

GROUNDWATER ONLY

File	Number	Use	ST	SR	Dist (mi)	Q4	Q3	Q2	Q1	FeetN	FeetW	Sec	Twp	Rng	ID	Batt	Auth_Quan	Add_Quan	Unit
A__	9314	00 IRR	NK	G	1.12	--	NE	NW	SE	-----	-----	2	13	20E	1		102.00	102.00	AF
Same					.89	--	NW	SW	NE	-----	-----	2	13	20E	2				
A__	9391	00 IND	NK	G	.87	--	SW	SW	SW	283	5040	35	12	20E	1		3685.91	3685.91	AF
Same					.80	--	SE	SW	SW	24	4375	35	12	20E	8				
Same					.80	--	NW	SW	SW	1004	5063	35	12	20E	9				
Same					1.23	--	--	--	--	2778	4815	2	13	20E	3				
Same					1.16	--	--	--	--	2771	4092	2	13	20E	4				
Same					1.09	--	--	--	--	3794	5028	2	13	20E	5				
Same					1.00	--	--	--	--	4453	5034	2	13	20E	9				
A__	24621	00 IRR	NK	G	.33	--	SE	NE	NE	4180	50	35	12	20E	4		24.50	24.50	AF
Same					.31	--	SE	NE	NE	3970	50	35	12	20E	5				
Same					.28	--	NE	SE	NE	3680	50	35	12	20E	6				
Same					.25	--	NE	SE	NE	3370	50	35	12	20E	7				
A__	24623	00 IRR	NK	G	1.30	--	CW	NE	SW	1960	3840	1	13	20E	1		4.60	4.60	AF
A__	28326	00 IRR	NK	G	.98	--	SW	SE	NE	3040	1315	2	13	20E	7		36.00	36.00	AF
A__	28595	00 IRR	NK	G	.77	--	SW	NW	NE	4350	2580	2	13	20E	8		23.00	.00	AF
A__	29502	00 IRR	NK	G	1.30	--	CW	NE	SW	1960	3840	1	13	20E	1		49.30	49.30	AF
A__	29503	00 IRR	NK	G	.33	--	SE	NE	NE	4180	50	35	12	20E	4		87.50	87.50	AF
Same					.31	--	SE	NE	NE	3970	50	35	12	20E	5				
Same					.28	--	NE	SE	NE	3680	50	35	12	20E	6				
Same					.25	--	NE	SE	NE	3370	50	35	12	20E	7				
A__	29838	00 IRR	NK	G	1.86	--	SE	NW	NW	4070	4000	12	13	20E	1		26.00	26.00	AF
A__	30438	00 IRR	NK	G	1.87	--	NW	NW	NE	4931	2788	27	12	20E	2		44.00	44.00	AF
A__	32567	00 IRR	NK	G	1.54	--	--	--	--	4750	4000	34	12	20E	2		79.00	79.00	AF
A__	34786	00 IRR	NK	G	1.92	--	SE	SW	SE	300	1950	31	12	21E	1		25.00	25.00	AF
A__	38064	00 MUN	NK	G	1.98	--	NE	NW	NE	5180	1855	6	13	21E	3		190.70	141.97	AF
A__	45800	00 MUN	LO	G	1.85	--	SE	SE	NW	3870	3110	6	13	21E	7		245.51	66.01	AF
A__	46589	00 IRR	LR	G	1.54	--	NC	S2	SW	575	3960	31	12	21E	2		150.00	150.00	AF
A__	46875	00 IRR	KE	G	1.54	--	SE	NW	NW	4613	4547	6	13	21E	9		32.00	32.00	AF
A__	47433	00 IRR	HK	G	1.97	--	SE	NW	SE	1530	1428	31	12	21E	6		91.50	91.50	AF
A__	47488	00 MUN	HK	G	1.09	--	SE	NW	SE	1590	1640	34	12	20E	8	G 2	1290.41	784.16	AF
Same					1.14	--	SE	NW	SE	1590	1902	34	12	20E	6	B 2			
Same					1.04	--	SE	NW	SE	1590	1378	34	12	20E	7	B 2			
A__	47489	00 MUN	HK	G	1.34	--	SE	NE	SW	1953	3046	34	12	20E	5	G 2	1290.41	.00	AF
Same					1.39	--	SW	NE	SW	1953	3346	34	12	20E	3	B 2			
Same					1.28	--	SE	NE	SW	1953	2746	34	12	20E	4	B 2			

Total Net Quantities Authorized:	Direct	Storage
Total Requested Amount (AF) =	.00	.00
Total Permitted Amount (AF) =	907.66	.00
Total Inspected Amount (AF) =	216.01	.00
Total Pro_Cert Amount (AF) =	.00	.00
Total Certified Amount (AF) =	4305.78	.00
Total Vested Amount (AF) =	.00	.00
TOTAL AMOUNT (AF) =	5429.45	.00

An * after the source of supply indicates a pending application for change for the file number

APPENDIX III.

Potential Pollution Sources in the Area

1. Septic tank drain fields and cesspools especially in sandy loam soils can be a potential contamination source of the aquifer. Kansas Department of Health and Environment requires all public water supply ells to have at least 20 feet of grout sealed casing at the top of the well to prevent contamination and entry of flow into the well. However, most older domestic wells do not have grout seals to a safe depth below surface thus becoming a potential sources of contamination of the aquifer. There is supposed to be 100 feet separation between a septic tank drain field and a domestic well on a property.

2. Cattle or other livestock feeding operation can be a source of pollution to an aquifer, depending on the soil type and depth to static water level, especially if located within the effective radius of influence of a well. The effective radius of influence of a well is dependent upon the pumping rate of the well and aquifer characteristics. Domestic wells have a small effective radius of influence usually less than 50 feet. The effective radius of influence can be one thousand feet or more for an irrigation well or other large capacity well.

3. Chemical fertilizer and herbicides applied to corn planted next to the wells as shown next to Eudora Well No. 6 is a potential threat of contamination to the City wells. This threat of contamination is increased with irrigation, especially on sandy soils. Major portions of Hall and Merrick Counties in Nebraska have nitrates nearly double that of the KDHE and EPA regulations for Nitrates in public water supply due to irrigation and chemigation of corn on sandy loam soils similar to the alluvial soils shown in Bulletin 206, Part 2, Ground Water in the Kansas River Valley Junction City to Kansas City, Kansas by Stuart W. Fader. The Newman Terrace clay loam soils offer more protection of the aquifer from fertilizer.

4. Abandoned wells or old domestic wells that were drilled long ago with thin wall casing that have corroded through the years and were not grout sealed, can allow storm water runoff to flow directly into the aquifer resulting in direct contamination to the City wells. Such a well may exist west of Eudora Well No. 7 under the old windmill tower in the picture.

WICHITA SAND PIT STUDY

Sedgwick County Department of Environmental Resources organized and conducted much of the efforts to determine which sand pits to study in more detail. The study group obtained assistance from the U.W. Bureau of Reclamation in drilling and installing three (3) monitoring wells around each of six (6) sites selected for study. Funds were obtained for the U.S. Geological Survey to sample and analyze surface water from the pits, ground water from the monitoring wells, and pit bottom sediment at four (4) sites located at the northwest edge of Wichita. The USGS analyzed the water samples for 18 physical and chemical properties, five (5) bacteriological values, 40 inorganic constituents, 118 pesticides and degradate compounds, and 134 organic compounds other than pesticides. The USGS analyzed the bottom sediments for five (5) physical and chemical properties, 45 inorganic constituents, and 32 organic compounds. The four pits in the Phase I sampling were; Barefoot Bay, Ridge Port, Mooring, and Cropland. Later two south pits were sampled which were; Kingston Cove and Pine Bay Estates.

Maize retention pond/ground-water pit is used for storage of storm water runoff. A special sampling of the storm water flow into the pit was made by others within 30 minutes of when flow commenced and within one to two hours following a storm event. The TDS of the storm water flow was very low at 49 to 111 mg/L when compared to the computed values in the analysis of data of 46 to 83 mg/L by the Kansas Geological Survey. Organic compounds found in the runoff water of concern was Alachlor at 3.8 µg/L in the first June 2007 runoff sample, Alachlor of 3.0 µg/L in the second June 2007 sample. The drinking water MCL for Alachlor is 2 µg/L. However, in the October 2007 pond sample Alachlor was significantly reduced by sunlight and bacterial activity of the pond. The Maize detention pond appears to be an effective means of removing storm water runoff with high bacteria content from the Big Slough waterway.

Storm water runoff into the sand pits does contribute to ground water recharge. The study showed no *significant* evidence of contamination of ground water by storm water runoff into the pits. The key word is *significant* contamination. Trace levels of some organics and mineral constituents such as iron, manganese and the ammonium ion were detected in the down gradient monitoring wells in slightly greater concentrations than the up gradient monitoring wells. On the contrary, most organic contaminants were reduced by the sunlight and bacterial activity existing within the sand pit lakes. Bacterial levels were never greater than the level recommended by KDHE for body contact.

Although some of the pits had piped storm water runoff into the pits from streets, broad width flow ways with grass filtering would capture silt and other contaminants prior to entering the ponds or pits. Road side drainage ditches may have a broad width overflow channels into nearby pits temporarily storing the storm water surge allowing orderly flow through natural water courses. The long term accumulation of silts, sediments and other solids will eventually restrict the recharge to the ground water system as has occurred at the Sedgwick County Zoo pit.

Residential areas have the greater potential for ground water contamination than rural areas. However, the spring runoff from corn fields with atrazine must be bounded by grass filter strips and flows need to be routed in grass waterways to capture sediments with atrazine attached.

Hydraulic Impacts of Quarries and Gravel Pits

Prepared by

J>A. Green, J.A. Pavlish, R.G. Merritt, ans J.L. Leete

Minnesota Department of Natural Resources

Division of Waters

2005

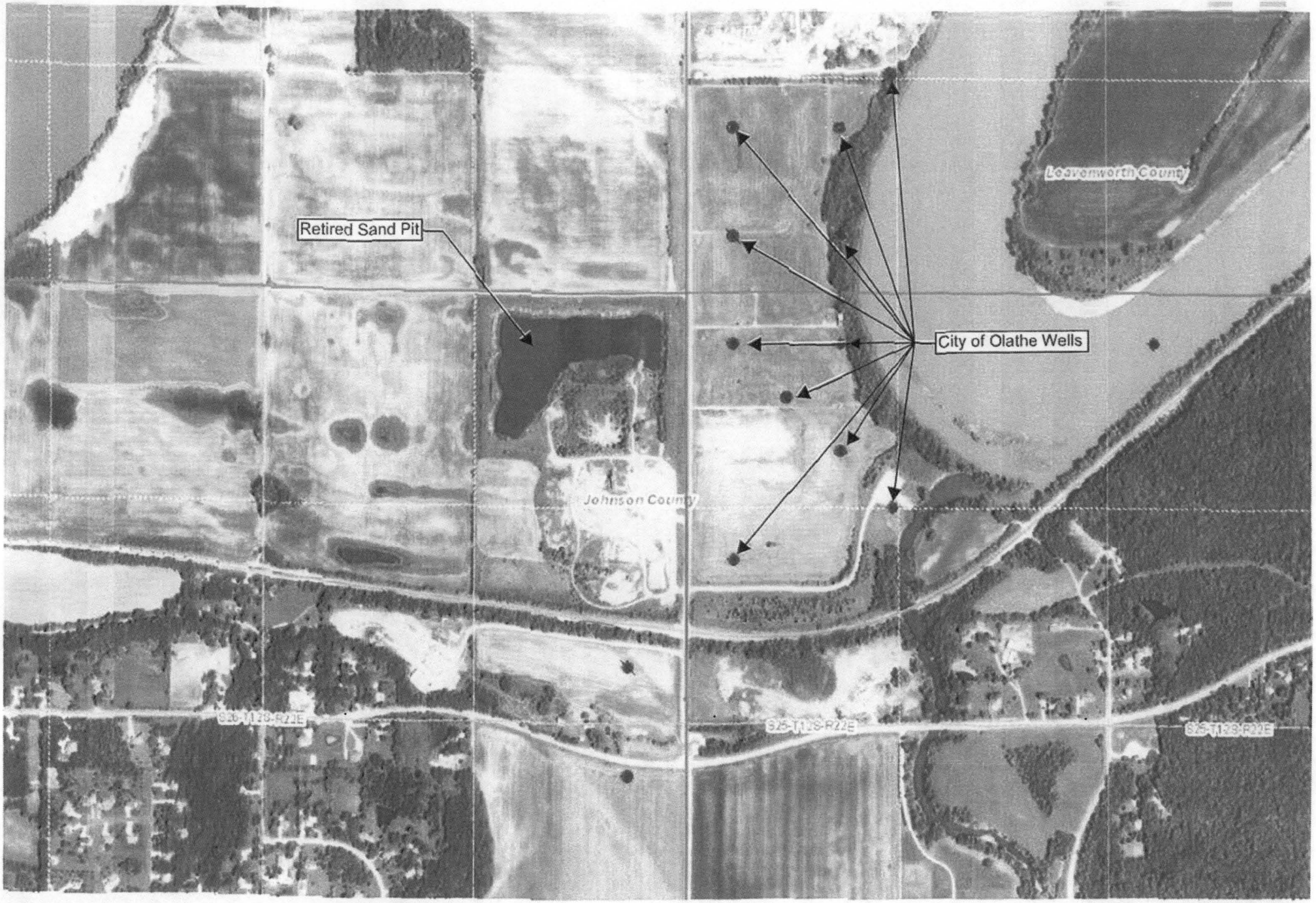
The Division of Waters, MDNR studied three sand pits in the report, two of which were in saturated alluvial sediments and one was above the water table. The conclusion of this study was that sand mining had minimal impact on aquifer water levels. In one sand pit, ground water temperature changes were noted but were not consistent.




2079






Retired Sand Pit
City of Olathe Wells
Leavenworth County
Johnson County
S20-T12S-R22E
S25-T12S-R22E
S29-T12S-R23E

APPENDIX IV.

RESUME' AND PERSONAL INFORMATION

Name: Carl E. Nuzman, P.E., P.Hg.
3314 NW Huxman Road
Silver Lake, KS 66539

Phone: (785) 582 4054
Cell: (785) 224 9929
cnuzman@embarqmail.com

Position: Consulting Engineer / Hydrogeologist

Academic and Professional Certifications:
Master of Science in Water Resources Engineering, Department of civil Engineering, University of Kansas, 1955.
Bachelor of Science in Agricultural Engineering, Kansas State University, 1053.
Professional Engineer, first licensed in Kansas in 1962, KS-4481. Formerly licensed in the following states: MO-E12525, IA-6334, SC-4099, FL-15102, AL-16858, AZ-23209, IL-062-043392, IN-PE-60880547, LA-23209, MS-10041, MI-33050, NE-E-12525, NC-15121, NM-10625, OH-E-51179, OK-15653, TN-018707, VA-0402-018380, and WI-E-25841.
Professional Hydrogeologist, Certified in 1986 by the American Institute of Hydrology, P.,Hg-385.

Professional Positions:

- Consultant – 1997 to Present
- Layne GeoSciences, Inc. Mission Woods, KS, Vice-president and Principal Hydrologist – 1988 to 1997
- Groundwater Management, Inc. Kansas city, KS, Vice President and Chief Hydrologist, 1985 to 1988
- Layne Western Company, Inc. Hydrology Division Manager and Chief Hydrologist 1970 to 1985
- Layne Western Company, Inc. Kansas City, MO, Sales Engineer 1967 to 1970
- Kansas Water Resources Board, Topeka, KS, Hydrologist III 1966
- Kansas State Board of Agriculture, Division of Water Resources, Topeka, KS, Assistant Engineer 1957 to 1965

Specialized Competence:

- Surface and ground water hydrology
- Project management and supervision
- Water well treatment and rehabilitation/ground water quality
- Well and well field design and construction
- Modeling of ground water aquifers
- Water treatment and distribution piping
- Injection well design and operation
- Water pumps and associated equipment including suction flow control devices

Applicable Experience:
Mr. Nuzman has extensive experience in the areas of ground water modeling, water well and well field design and construction, water well treatment and rehabilitation, and soil and ground water remediation. He served at technical advisor to the Attorney General of Kansas in working with the U.S.Geological Survey Analog Model laboratory in Phoenix, AZ in doing the first model work of the Equus Beds aquifer north of Wichita in 1961. He was the first to model the Ogallala aquifer in SW Kansas using the passive element, steady state, electric analog model technique in 1966.

After joining Layne Western in 1967, he has conducted numerous water well pumping tests, aquifer modeling projects and well field design and construction for multiple Cities and Companies throughout the United States and in some foreign countries. He has consulted on deep disposal wells and designed a ground water recharge facility. He has provided the foundation dewatering design for numerous construction projects. He has provided expert testimony on a variety of hydrologic issues. He has prepared specifications and bidding documents for both municipal and industrial well construction, pumps and controls for a variety of projects.

Publications:

- Nuzman, Carl E. (1989) "Well Hydraulic Flow concept", Published in *Recent advances in Ground-Water Hydrology*, by the American Institute of hydrology pgs 72-77.
- Nuzman, Carl E. (1978, revised 1985) "Ground-Water and Well Efficiency" Published by Doerr metal Products, Larned, KS pgs 67.
- Winslow, John D. and C. E. Nuzman, (1966): "Electric Analog Model of the Kansas River alluvium in the vicinity of Topeka, Kansas", Kansas Geological Survey. Lawrence, KS.
- Contributor to the "Handbook of Ground-Water Development", by Roscoe Moss Company, Los Angeles, CA on Well Rehabilitation. 1990.
- Contributing author "Ground-Water Development handbook M-21" and contributed to the revised edition of Manual M-21 by the American Water Works Association, Denver, CO.
- Other technical papers and numerous client reports of study have been made.

Inventions:

- Co-inventor of a filament wound fiber glass water well screen;
- Inventor of an In-situ Ground Water Treatment System, assigned to Layne Western Company, Inc;
- Co-inventor of a patent of a non-vortexing passive pump intake strained for boiling water reactor nuclear power plants and used on other water resource applications.

Professional Societies:

- American Society of Biological and Agricultural Engineers
- American Society of Civil Engineers
- American Geophysical Union
- American Institute of Hydrology
- American Water Works Association
- National Ground Water Association
- National Society of Professional engineers
- Kansas Society of Professional Engineers

City Of Eudora, Kansas

Mayor Scott Hopson

October 17, 2012

Bruce Liese, Chairman
Lawrence – Douglas County Metropolitan Planning Commission
First floor, 6 E. 6th Street
Lawrence, Kansas 66044

Dear Mr. Liese,

The purpose of this letter is to inform the Douglas County Planning Commission of the vote by the Eudora City Council taken October 8, 2012 concerning the Conditional Use Permit (CUP) application by Penny Sand Company for proposed dredging operations near the Kansas River at the corner of North 1500 and East 1850 roads. The City Council voted unanimously to recommend denial of the CUP application.

The City Council heard two hours of testimony from hydrology experts, for and against the Penny Sand CUP application, and from the general public at their October 8th meeting. Eudora's recommendation for denial is based on public concern for protection of the aquifer and water table that serve as the sole source of water for the City's municipal well supply. Our analysis shows there is potential for surface water to negatively impact our water source should the CUP allow the removal of over-burden soil—built up over decades of natural flooding and silting—and the excavation to bedrock at depths of 50- to 70-feet below current grade at the site. We look forward to presenting this letter and a summary of these hydrology findings to your commission at an upcoming public hearing on this matter. Attached to this letter are several documents that were presented at the City Council meeting on October 8th. Thank you for considering the recommendation of our city council and for cooperating with our planning commission in this and other planning and zoning matters inside Eudora's designated "Planning Area."

Sincerely,

Scott Hopson

Scott Hopson
Mayor

Cc: Douglas County Commission (via e-mail)
Craig Weinaug, County Administrator (via e-mail)
Eudora City Council (via e-mail)
Scott McCullough, Director Planning and Development Services (via-e-mail)

(785)542-4111 (785)542-1237 Fax
4 East Seventh Street P.O. Box 650 • Eudora, Kansas 66025-0650

TERRANE RESOURCES CO

P.O. BOX 173 STAFFORD, KS 67578-0173 620-234-5200

17 September, 2012

Mr. John Harrenstein, City Manager
City of Eudora
P.O. Box 650
Eudora, KS 66025-0650

Re: Penny Sand CUP

Mr. Harrenstein,

This letter and enclosed Exhibit is in response to the City of Eudora's request we review and make recommendations regarding the proposed Penny Sand Facility CUP.

We have reviewed the data prepared by Dr. Carl McElwee, data submitted by Penny Sand, KGS publications, data prepared by Mr. Carl Nuzman and well log information.

Exhibit 1 is a copy of a map we modified from the Nuzman report. It shows the following:

The water table contours from the 1930 and 1974 KGS reports.
The 10 year area of influence delineated by Nuzman.
The 6 and 8 year areas of influence delineated by McElwee.
The proposed Penny Sand Facility
The test borings in the NW portion of the proposed sand facility.
Proposed observation well sites

The data indicates there has been a shift in the local ground water flow direction. The 1930 data indicates a WSW to ENE flow direction. Mr. Nuzman's Source Water Protection Area SWPA delineation tracks to the WSW from the City's well field. The 1974 data used by Dr. McElwee indicates the ground water flow has a more west to east orientation. Additionally, the 1974 shows there is less saturated thickness in the aquifer in and up-gradient of the City's well field. The SWPA delineated by McElwee extends more due west from the City's well field and further up-gradient.

It is important to understand both of these delineations are based on 83 and 39

year old water level data respectively. Both delineations used similar pumping scenarios by the City wells but do not include any potential impact local irrigation systems may have on the overall area of influence. Additionally, there is nothing in the data that suggest the existing sand operation is having any affect on the aquifer.

There are some fundamental aspects of aquifer characterization which need to be addressed. If the pumping of the City's wells remain constant (no decrease in pumping rate) and the saturated thickness decreases (lowering of the water table) then the cones of depression increase around each well. The increase in the size of the cone of depression will increase the area contributing water to the well field. If the saturated thickness continues to decrease due to seasonal or long term lowering of the water table then transmissivity and hydraulic conductivity characteristics of the aquifer can be affected. Therefore, any permanent lowering of the water table can have an impact on the area of influence to the well field which can have a deleterious effect on pumping rates.

The delineations prepared by Mr. Nuzman and Dr. McElwee represent the areas which will contribute water to the well field over time. The immediate cones of depression associated with the wells caused by pumping may not extend much more than ½ mile from the wells.

If the proposed sand pit has no affect on the water table, within the pit area, then it will yield water to the aquifer more readily than the surrounding aquifer and become a recharge area to the aquifer. If the water level in the pit is lower than the existing water level in the aquifer then it becomes a drain on that portion of the aquifer and will impact surrounding water levels in the aquifer.

Any changes to the water table can affect ground water flow direction. It appears there has been an apparent shift in the ground water flow direction by about 20 degrees between 1930 and 1974.

We have no data which indicates what affect the proposed sand pit will have on the water table. If there is no change to the water table then the affects should be minimal. However, if the sandpit caused a permanent lowering of the water table then it can have a negative affect on the recharge area to the City's well field. This will be readily apparent during periods of drought.

According to the conversation from the informal meeting held at Eudora it is our understanding the Division of Water Resources (DWR) assumes there will be no net loss of water from the aquifer under normal conditions due to evaporation. During periods of drought and extend periods of heat it would not be

unreasonable for this pit to lose and inch of water in a 24 hour period. That amount of water would equal 27,154 gallons per open acre of water. That value times 300 acres equals 8,146,200 gallons per day. This is the equivalent of 25 acre feet of water per day or a well that pumps 5657 gallons per minute 24/7.

At this time we would tend to agree with DWR's zero net loss on an average year. However, as we are currently seeing there are some years that do not get average rainfall. This is important because when the sandpit will be losing potentially large quantities of water due to evaporation the City will be pumping large quantities of water to meet demands.

Based on the limited data it appears there is the potential for impairment during periods of drought or extreme heat.

It is our understanding the sandpit will be excavated through the entire sand and gravel formation and extend to the bedrock. This process will open the entire saturated thickness to the pit. Should a contaminant enter the pit, whether it is biological or chemical, it will have access to the zone the City wells are completed in. The lower zone of the aquifer in this area is typically more prolific and has better transmissivity characteristics than the upper portions. Therefore, any contamination that makes it to the bottom of the aquifer will move faster than if it entered through the soil profile.

The well logs we rec'd from Penny Sand are informative but of limited use as they are only for a small area in the northwest portion of the sand operation. This area of the operation is remote to the City's well field. The installation of some observation wells around the perimeter of the proposed sand pit would be beneficial. At this time we recommend observation wells near the southwest and the southeast corners and near the middle of the east side of the proposed sand pit.

Additional observation wells between the proposed sand pit and the City's well field should be installed as well. Unless, existing wells can be identified, evaluated and utilized.

We do not have any recent data to evaluate the potential, negative or positive, impact of the proposed sandpit.

In order to evaluate any changes the proposed sand pit will have on the aquifer a comprehensive evaluation of the existing data, the installation of observation wells and collecting current and on going data will be needed.

Quite frankly, the delineations presented indicate the complexity of this area. Without current data, the actual effects on the aquifer are estimates at best.

Using existing wells and adding observation wells to fill in the gaps, data can be collected which will better identify, delineate and evaluate the potential affects to the aquifer.

Below is a brief outline of the proposed process we recommend the City of Eudora consider regarding Source Water Protection Area (SWPA) delineation.

Data Collection and Review
Review City files and select data for copies.
Review KDHE files at Lawrence, Topeka and State Archives as needed.
Compile well database and ground truth existing wells and associated data.
Recommend meeting with KRWA staff and bring them onboard to help with the SWPA plan compilation, implementation, presentation to neighbors and City and County Planning and Zoning Commissions.

Aquifer Testing and Observation Well Installation
Analysis of existing data may provide some of the information needed. We anticipate having to run at least one series of aquifer tests to determine the area of influence and evaluate potential well interference.

The existing data for the City wells and domestic wells can be utilized, additional observation wells may have to be installed. Some of the observation wells should be installed before the aquifer tests are run.

The wells shown in the KGS database will be of limited usage unless their locations are verified.

All wells and surface water access points, utilized in the testing process, will have to be surveyed in by a licensed surveyor.

Aquifer and Testing Data Compilation
Individual well and multiple well data will have to be evaluated.

The projection and plotting of actual areas of influence will be based on actual and current data. Once this is done we can estimate changes to the area of influence based on aquifer variables, changes in pumping rates, additional wells, saturated thickness changes, etc.

Additional Recommendations

We strongly suggest the City ask Penny Sand to postpone their meeting with Planning and Zoning. This would allow the City to obtain clarification of some of the data and present their concerns directly to Penny Sand and their consultants. It has been our experience that direct negotiations will be more beneficial and less expensive than trying to negotiate through the Planning and Zoning Process. If a mutual agreement can be reached between the City and Penny Sand, then the City simply recommends the modified plan be approved by Planning and Zoning.

Historically, it was thought the public should have complete and unrestricted access to a city's data and well field operations. We do not believe going into great detail as to how the City's wells function and the areas which directly impact the viability of the well field need be publicized.

We recommend the City monitor water levels in and around their well field. Either by utilizing existing wells if available or by installing a series of observation wells. From this network a detailed ground water flow regime map can be prepared. Additionally, seasonal variations in ground water flow can be monitored.

Once the City has a detailed Source Water Protection Area (SWPA) delineated then it can be referenced in future planning and zoning determinations.

We suggest requesting Penny Sand install, monitor and analyze samples and data from no less than three observation wells near the southwest and southeast corners and near the center of the east side of the proposed sand pit. If there are existing wells on the property, which can be used, they should be evaluated and used if possible. It would be beneficial if these wells could be installed before excavation begins. Samples should be collected in the spring and late fall to establish a baseline on quality and water levels should be measured monthly.

The main component as to whether this proposed sandpit will be an issue will depend how much impact the City's well field has on the aquifer. It is possible the data to make that determination already exists. Much of the data gathered during the construction of the wells should be available. It is important the wells be evaluated as they are operated, not as a single event or pumping well.

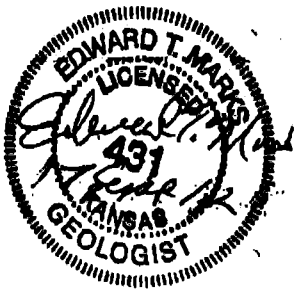
John, this is a complex issue, which may be exactly as Mr. Nuzman and Dr. McElwee have described it. It has been our experience it takes detailed analysis of the data to establish areas of influence and develop a meaningful SWPA delineation.

As Always if you or any of your colleagues have any questions do not hesitate to contact us.

Respectfully submitted

Edward "Ned" T. Marks, Geologist
Terrane Resources Co.
terrane@sbcglobal.net

Encl.



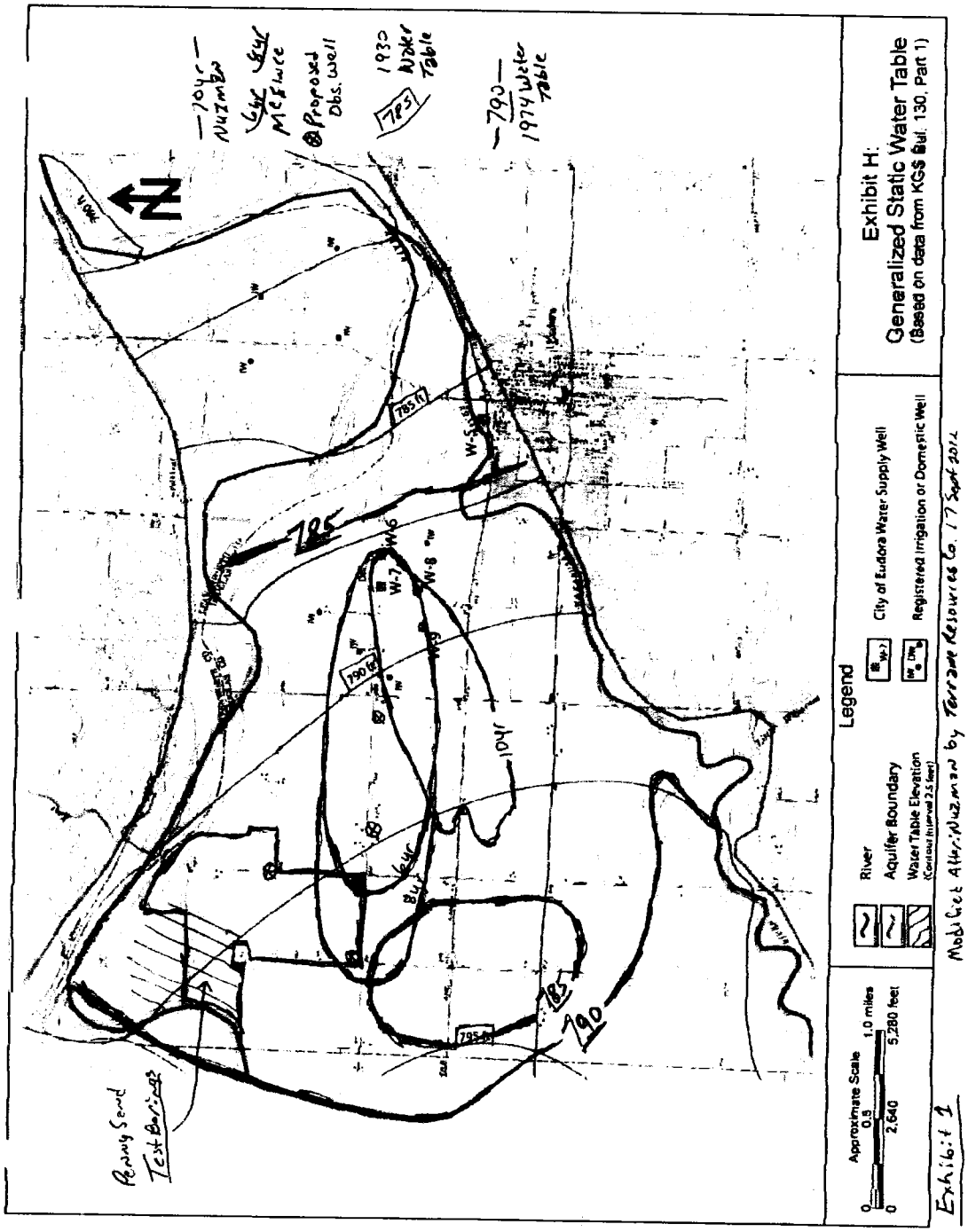


Exhibit H:
Generalized Static Water Table
(Based on data from KGS Bul. 130, Part 1)
Legend
River
Aquifer Boundary
Water Table Elevation
(Contour Interval 2.5 feet)
City of Eudora Water Supply Well
Registered Irrigation or Domestic Well
Approximate Scale
0 0.5 1.0 miles
0 2,640 5,280 feet
Modified After: Nuzman by Terrane Resources Co. 17 Sept 2012
Exhibit 1
Penny Sand Test Borings
Proposed Obs. Well
1930 Water Table
1974 Water Table
785
790
W-5
W-6
W-7
W-8
W-9
785 (1)
790 (1)
795 (1)
104'
64'
84'

KANSAS
RURAL
WATER
association
Quality water, quality life

P.O. Box 226 • Seneca, KS 66538 • 785/336-3760
FAX 785/336-2751 • http://www.krwa.net

October 11, 2012

Mayor Scott Hopson
City of Eudora
P.O. Box 650
Eudora, Kansas 66025-0650

RE: Sand and Gravel
Dredging Proposal

Dear Mr. Hopson:

Thank you for allowing me the opportunity to present written information and to speak before the city council on October 8, 2012. It was obvious that the city council wanted to take the time to understand the issue and by inviting all of the interested parties to speak, they have a very good understanding of the risks and benefits moving a nearby sand and gravel dredging operation off of the Kansas River and onto the floodplain.

It should be clear to most people that removing material from the river bed will cause the river system to react to the disturbance. Sand and gravel doesn't regenerate in the river. This material in the Kansas River and its alluvium is a mixture of the material deposited from the glaciers and material eroded from the Flint Hills, the Dakota Sandstone and the Rocky Mountains. The likelihood of "new" sand and gravel coming downstream is severely limited by the existing large dams on the Kansas River and its tributaries. Initially, this disturbance will affect the bed upstream and downstream as the river attempts to restore the previous slope with sediment in the channel and / or from the banks. As it is believed that the U.S. Army Corps of Engineers will suspend the permits allowing in-stream dredging on much of the Kansas River in 2013 because of these impacts to the river, companies that use or sell sand and gravel will be looking for new sources of this material.

Unfortunately, not much planning has occurred in the counties where the Kansas River and its associated sand and gravel resources are located. This lack of comprehensive planning to identify the best locations for off-stream sand and gravel dredging operations is causing conflicts between the sand and gravel companies hoping to move onto the floodplain and public water systems that depend on the groundwater in the sand and gravel aquifers. Other interested parties affected by this change in dredging policy are transportation departments, power companies, airports, pipelines, railroads, etc. Until this planning is done, public water systems, especially those water systems that do not have treatment facilities that are capable of treating surface water or groundwater under the direct influence of surface water, will need to be vigilant in protecting their source water supplies. They will have to be actively involved in the planning process.

I believe the city council was correct in reaching a decision to recommend denial of the conditional use permit. While it was speculated in one report that the off-stream sand dredging operation would not cause "contamination" of the aquifer, no evidence was presented in written form or verbally that the proposed pit could not introduce constituents common in surface water to the groundwater supply through the beds of gravel (exposed in the sides of the pit) which extend into the aquifer. Water systems such as yours, do not have a surface water treatment plant because of the natural filtration property of the relatively undisturbed aquifer. Creating a condition that could allow bacteria, viruses, protozoa such as *Cryptosporidium* (a parasite that is resistant to chlorine disinfection), or toxins from decaying algae to enter your water supply is unreasonable and unacceptable. A fact sheet on cryptosporidiosis is enclosed.

You can reach me by telephone at 785/640-4701, by e-mail at dhelmke@krwa.net or by writing to 6847 SE 29th Street, Tecumseh, Kansas 66542-9571. You can follow me on Twitter at @KRWA_WaterRghts. Please be reminded that the KRWA website at http://www.krwa.net has news and information for water and wastewater utilities, including water rights, source water protection and training opportunities.

Sincerely,

Douglas S. Helmke

Douglas S. Helmke, L.G.
Water Rights / Source Water Specialist
Kansas Rural Water Association

DSH
Enclosure
c: KRWA
JOHN HARRENSTEIN ✓

Facts About Cryptosporidiosis

What is cryptosporidiosis?

Cryptosporidiosis is a gastrointestinal illness caused by *Cryptosporidium*, a infectious pathogen that lives in the intestines of humans and mammals. Both the disease and the organism itself are commonly referred to as **Crypto**. Crypto is one of the most common causes of waterborne diseases in the United States: outbreaks related to recreational and drinking water increase every year. It is highly contagious and when left untreated, a person can become re-infected and/or infect others. Crypto is commonly transmitted by swallowing organisms from water, food, hands or other surfaces that have been contaminated with the organism. Crypto is most common during the summer and early fall. It occurs most frequently in young children (under the age of 10) and their caregivers. While anyone can be infected with Crypto, people with weakened immune systems (malnourished children, the elderly, patients receiving cancer chemotherapy patients with HIV/AIDS, etc.) can develop serious, life-threatening illnesses from Crypto.

Symptoms

Crypto symptoms usually begin within 2 to 10 days after exposure and generally last one to two weeks in people with healthy immune systems. Common symptoms include watery diarrhea, stomach cramps or pain, dehydration, nausea, vomiting, fever and weight loss.

Diagnosis

Diagnosis of Crypto can be complex and time-consuming because the organisms are very small and difficult to see under a microscope. Confirming a diagnosis of Crypto normally involves examining multiple stool samples over a period of several days.

Other Facts about Crypto

- The word "Crypto" comes from a Greek word meaning "hidden."
- Crypto is resistant to chlorine and other chemicals commonly used in recreational and drinking water.
- Crypto is not killed by alcohol gels and hand sanitizers.
- People can continue to pass Crypto in their stools for several weeks following illness.
- When doctors suspect Crypto, they sometimes treat patients before a definitive diagnosis is secured.
- If you suspect you or a loved one has Crypto you should consult your doctor or primary care clinician.
- Transmission of Crypto is not limited to ingesting contaminated water. Food and person-to-person transmission may be at least as important as drinking water and may be more likely to transmit higher dose exposures.

How Can Crypto be Prevented and Treated?

You can help to break the chain of transmission of Crypto if you:

- Avoid swallowing water while swimming, boating, or engaging in other recreational activities.
- Wash raw fruits and vegetables thoroughly with clean water before eating them.
- Wash you hands carefully before you eat, after using the restroom or changing diapers, after you have cared for anyone with diarrhea, and any time you may have been in contact with contaminated surfaces.
- Stay away from swimming pools and other recreational waters if you or a family member has had diarrhea.

Supportive Care and Treatment

- Doctors recommend drinking plenty of fluids to prevent dehydration during infection with Crypto and other illness causing diarrhea.
- A prescription medicine called nitazoxanide (Alinia®) may be used to treat Crypto in both adults and children 12 months of age and over.
- Nitazoxanide is available as a tablet for adults and as a liquid suspension. A three-day treatment regimen is recommended.
- Side effects of nitazoxanide are similar to those of a placebo (sugar pill).
- Nitazoxanide has not been shown to be effective for the treatment of diarrhea caused by Crypto in HIV-infected or patients or patients with weak immune systems.

National Foundation for Infectious Diseases
4733 Bethesda Avenue, Suite 750, Bethesda, MD 20814
(301) 656-0003 Web site: www.nfid.org August, 2008

Facts About Cryptosporidiosis

FACT: According to the CDC, Crypto has become one of the most common causes of waterborne diseases (recreational and drinking water) in the United States, with outbreaks increasing annually

FACT: Crypto is a chlorine-resistant pathogen that poses a serious public health threat because contamination of drinking or swimming pool water can lead to large community outbreaks

FACT: Crypto is spread by contact with contaminated water, food and surfaces. Swallowing water during recreational water activities is a common way Crypto is spread.

FACT: The tell-tale sign of Crypto infection is ***frequent, watery diarrhea that is not like other cases of diarrhea***. Other symptoms include dehydration, weight loss, stomach cramps or pain, fever, nausea and vomiting. Symptoms generally begin within two to ten days after exposure and last one to two weeks

FACT: Crypto is highly contagious and when left untreated, a person can become re-infected and/or infect others. Crypto can be shed in the stool for many weeks after symptoms clear

FACT: Dehydration is the most common problem people develop after being infected with Crypto

FACT: Persons with weak immune systems may develop prolonged illness with severe dehydration and other life-threatening complications

FACT: Maintenance of adequate fluid intake is vital for persons with Crypto and other types of diarrhea

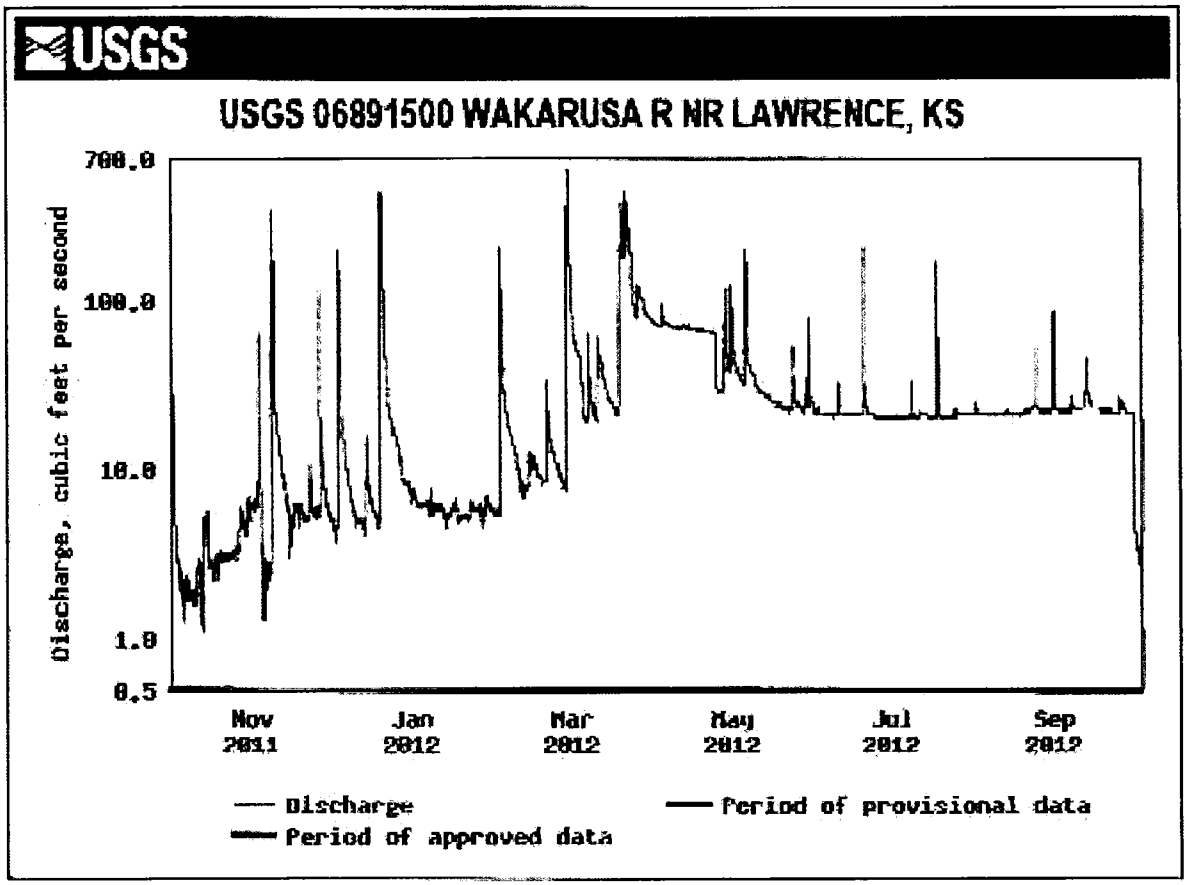
FACT: Persons who suspect diarrhea related to Crypto should consult a health-care provider.

National Foundation for Infectious Diseases
4733 Bethesda Avenue, Suite 750, Bethesda, MD 20814
(301) 656-0003 Web site: www.nfid.org August, 2008

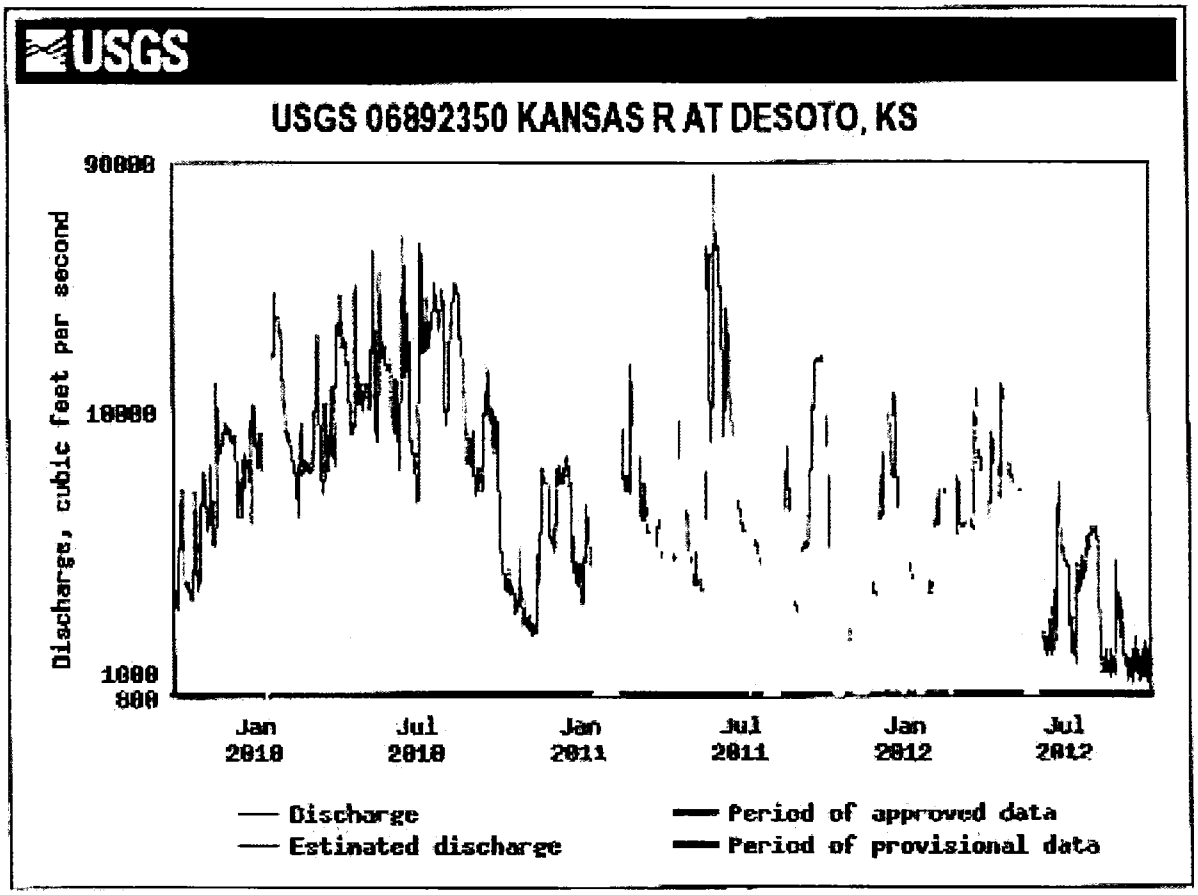
Comments Regarding the *Evaluation of a Sand Pit Operation for Penny's Concrete and Sand LLC* by Carl E. Nuzman

1. In Exhibit B, mentioned on page No. 3 of *Evaluation of Penny's Concrete and Sand LLC's Proposed Sand Pit Operation on Ground Water For the Lawrence Facility* dated September 12, 2012, Mr. Nuzman provides a "cross section" of "selected" wells, three with very detailed geologic information and two with incomplete information which do not fully penetrate the aquifer. The detailed well logs show coarse sand and gravel and one of the well logs shows boulders. This kind of material in an aquifer usually allows for high transmissivity, which is a measurement on how water flows through the aquifer formation. His report then discounts the recorded water levels on these well logs due to precipitation, drought, well test pumping, etc. and are therefore unreliable for water level use. His report then relies on "pre-development conditions", which haven't existed since the 1950's.

2. Mr. Nuzman concludes that the Wakarusa River is important to aquifer recharge, but does not supply any data showing flow in the Wakarusa River. Below is a graph showing recent flow. (From http://waterdata.usgs.gov/ks/nwis/rt)



The above graph shows instantaneous water flow in the Wakarusa River near Lawrence since October 1, 2011. Notice that some events of "high" flow have occurred but most was below 10 c.f.s. until March of this year. Releases from Clinton Reservoir contributed to an average flow of about 20 c.f.s. since June of 2012.



This graph shows the measured flow in the Kansas River near De Soto. Note that the average flow is over 100 times greater than the Wakarusa River and therefore more likely to contribute more recharge to the alluvial aquifer. At some times, flow is more than a 1,000 times greater.

3. On Page 5, Mr. Nuzman concludes that the "overappropriated" condition of the aquifer will serve to intercept any contaminants upgradient from the public water supply wellfields. Of the 4,868 acre-feet appropriated in his "effective" area, 3,686 acre-feet is the authorized total (over 75%) of just one water right. Water Right, File No. 9,391, which was last used in 2002, was recently obtained by the City of Lawrence. The City of Lawrence will not be "drawing" contaminants away from the other public water suppliers by the operation of this water right if it draws contaminants toward their wells.

4 In Section 6, no detailed information is given, including the name of the "particle tracking" analysis software that was used to generate the map identified as Exhibit F. Reference is given to K.G.S. Bulletin No. 130, part 1, which was published in 1958, which does not include a particle tracking model. It is likely (but not determined) that water level data from the 1958 report was used when the un-named software was used to generate the map. His previous comments about overappropriation are ignored when he uses the water level data from the 1950's to explain the normal conditions of today.

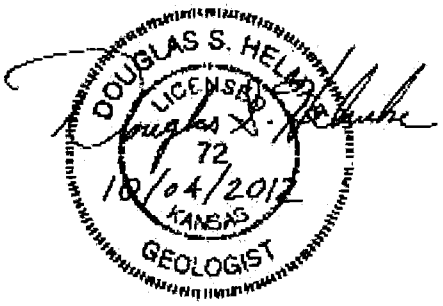
5. In Section 8, the report seems to contradict previous comments regarding the sand pit's lack of influence on water quality. Mr. Nuzman states that sand pits beneficially support the yield of wells that are down-gradient from a pit that is within the area of influence of a well. If this is true, the quality of the water in the pit will be extended into the aquifer some unknown distance.

6. In Section 9, "Conclusions", it is stated that present regulations require 200 feet of separation between a well and a surface water source. This regulation applies to public water supply wells where the screen of a well is less than 50 feet from the surface of the ground unless approved surface water treatment is employed. This regulation is drafted to account for wells in close proximity to rivers. It was not written to account for wells near pits that fully penetrate the aquifer. If the water being pumped by public water supply wells have biological, chemical or turbidity characteristics similar to surface water, it would be surprising that KDHE would not rule that the water is under the direct influence of surface water.

7. Mr. Nuzman does not mention this conclusion taken directly from Bulletin No. 130, part 1: "Wisconsinan and Recent alluvium in this portion of the Kansas River valley has an average thickness of 55 feet. This alluvium is an excellent aquifer, because the lower portion everywhere consists of several feet of permeable sand or gravel. Surficial silts several feet thick generally overlie the coarse-textured deposits and, where sandy, permit recharge from local precipitation. During periods of heavy pumpage the ground-water body, which normally discharges into Kansas River, receives large quantities of recharge from the river, increasing severalfold the amount of ground water available to properly spaced and constructed wells. Adequate quantities of ground water of fair quality are available for future municipal, irrigational, and industrial expansion in this part of the Kansas River valley."

A fully-penetrating pit likely is a greater contributor of recharge to the aquifer with minimal filtration, than a river that does not fully penetrate the aquifer. How much influence the pit has on groundwater quality has not been adequately determined. No analysis has been performed which will evaluate the behavior of the aquifer during periods of high pumpage by multiple wells, minimal precipitation in the immediate area and high flow in the Kansas River due to upstream reservoir releases, either. This worse-case scenario should be evaluated before making a determination that a sand pit will have no impact on groundwater water quality.

Submitted to the City of Eudora
October 4, 2012
Douglas S. Helmke, L.G.
Kansas Rural Water Association



Comments on the Carl Nuzman report:

"Evaluation of Penny's Concrete and Sand LLC,

Proposed Sand Pit Operation on Ground Water"

By

Carl D. McElwee, Ph.D

Emeritus Professor

Geology Department

University of Kansas

Lawrence, KS

September 18, 2012

Introduction

Mr. Nuzman has brought together a considerable amount of data regarding the proposed project. He is a respected member of the scientific community studying groundwater. As is always the case, the data must be interpreted and analyzed to draw conclusions. I would like to point out some places where the data may be interpreted and analyzed in an alternate and reasonable manner to arrive at different conclusions. In addition, I would like to bring out some other points that need to be considered in evaluating the possible impact of this pit mining operation.

Groundwater Gradient direction

The gradient of groundwater is the driving force that causes it to move. Mr.Nuzman mainly uses the water level data of Kansas Geological Survey (KGS) Bulletin 130, Part 1. The generalized static water table map that he uses (Exhibit D) gives too much weight to water moving down the Wakarusa River Valley (which joins the Kansas River Valley just south of the proposed sand pit). This distorts his ground water gradient and leads to the conclusion given in Exhibit F that the capture zone for the Eudora Well Field is south of the proposed pit.

On the other hand, if one considers the newer report KGS Bulletin 206, Part 2, it shows that the Kansas River is the major force and that water moves down the valley generally from west to east more or less parallel to the valley walls. The resulting groundwater gradient and flow direction is shown in Figure 1 below. This data shows that water will move from the proposed sand pit to the Eudora Well Field. I have done calculations of capture curves (area of groundwater capture in a given time by the well) and travel times based on work that I published in *Ground Water* (McElwee, 1991, A copy of that paper has been supplied to the DG CO Planning Office). That work shows that the minimum travel time between the proposed sand pit and the Eudora Well Field could be about 5.5 years. In addition, the 6 and 8 year capture curves significantly overlie the proposed sand pit, as shown in Figure 2 below. Details of this work are given in Appendix I.

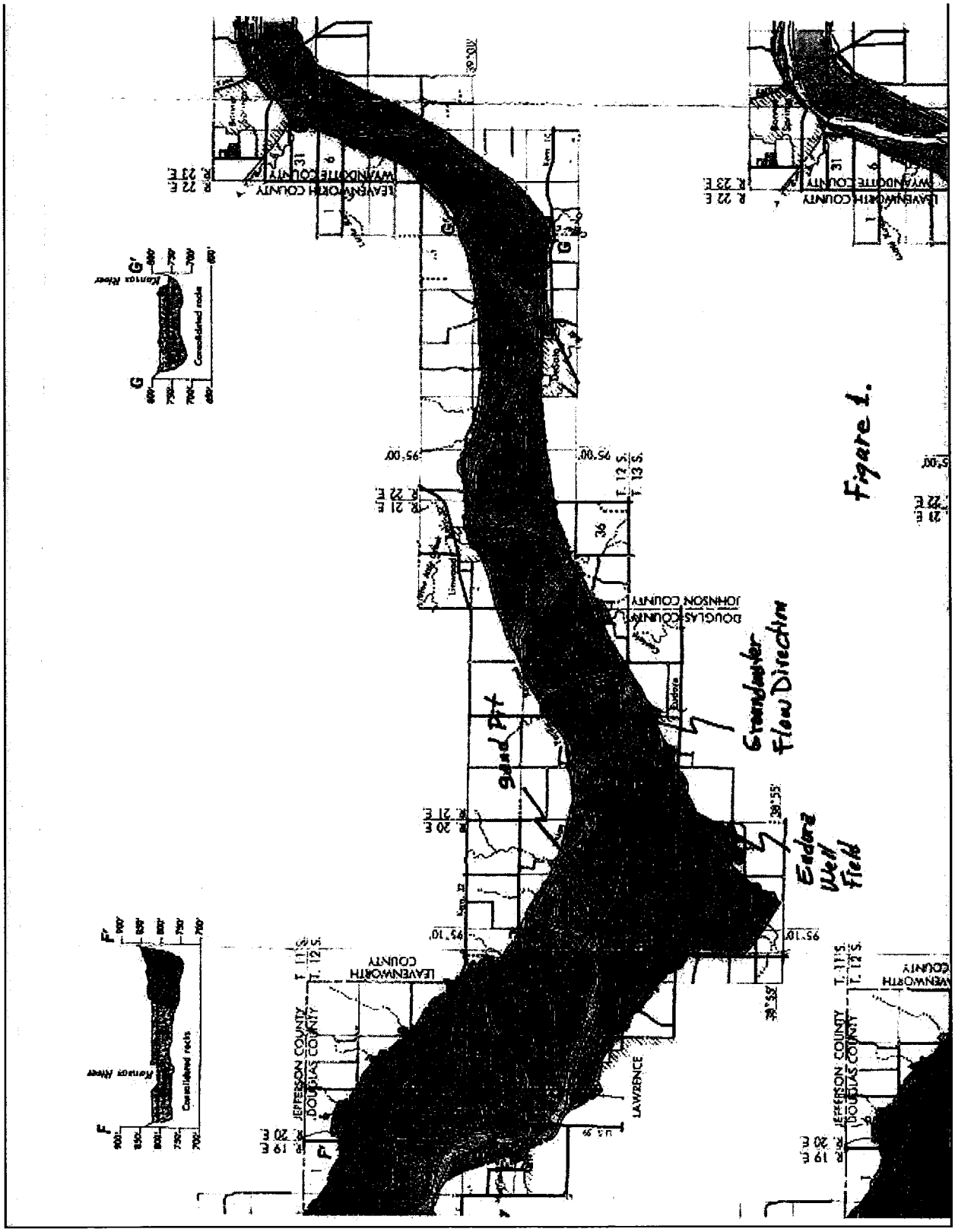


Figure 1.
Groundwater Flow Direction
Eudora Well Field
Eudora
LAWRENCE
JEFFERSON COUNTY
DOUGLAS COUNTY
LEAVENWORTH COUNTY
WYANDOTTE COUNTY
JOHNSON COUNTY
Kansas River
Consolidated rocks

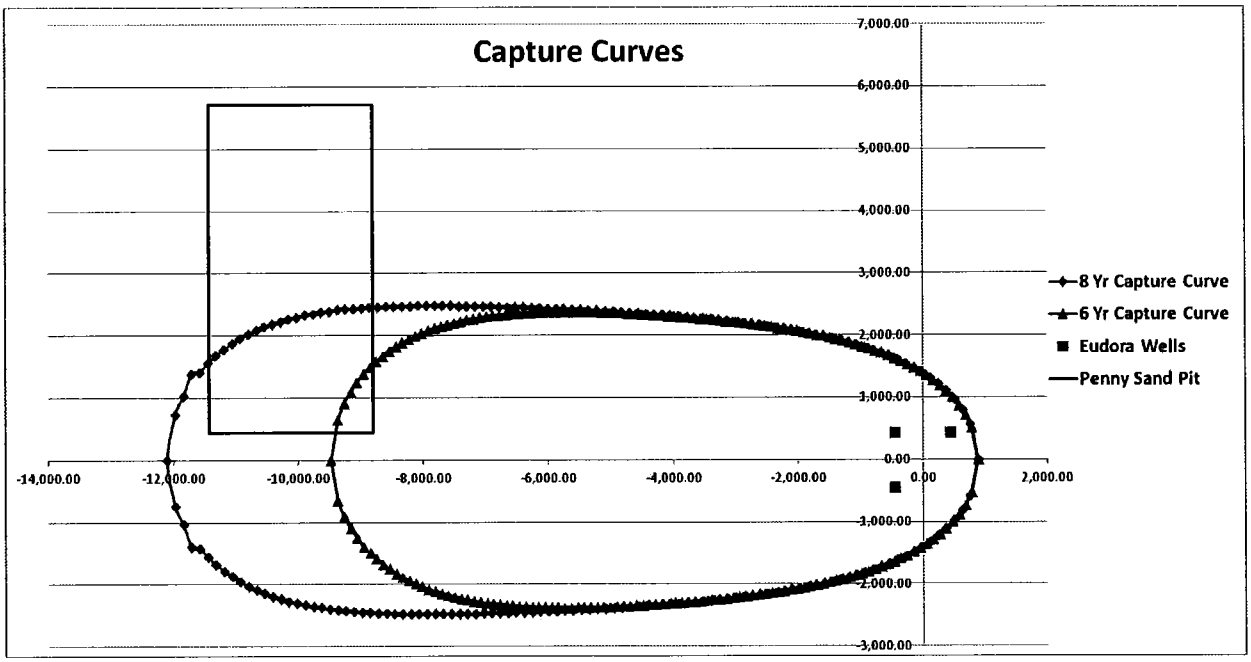


Figure 2.

Both of the KGS reports referred to are old and can't be relied on for absolute numbers. However, they do allow us to reach some general conclusions. In addition, there is a lot of variability in the aquifer (things change with space and time). So, the conclusion must be that one can't state with certainty that the proposed sand pit will have no effect on the Eudora Well Field. Of course there are many other private wells that are down-gradient from the proposed sand pit and much closer that could also be affected.

Effect of Pit on Water Levels and Quality in Aquifer

Mr. Nuzman states on page 8 that "The static water level elevation in the sand pit will be about the same as the water surface elevation in the Kansas River." That is probably true if the pit is close to the river. This means that the water level in the aquifer will be lowered around the pit, because the water levels in the aquifer are generally a little higher than the river level. This could negatively affect some nearby wells. Mr. Nuzman also states that "Sand pits beneficially support the yield of wells that are down-gradient from a pit that is within the area of influence of a well." In other words the well would be pumping water from the pit. This means

that the quality of the well water would depend on the quality of the water in the pit. In general, the quality of surface water in rivers and lakes is much poorer than the quality of groundwater. So there is the potential for pollution.

If this pit is allowed, a huge deep lake (about 70 feet deep on average) will be created. This will be a flow-through lake, which means that groundwater from up-gradient will flow in one side of the lake and flow out the down-gradient side of the lake. The net result is a continual mixing of the groundwater and the surface water from the pit, which then continues to flow down the valley in the aquifer to the next user of the groundwater.

As the well drilling logs in Mr. Nuzman's reports shows, the overburden (soil, silt, and clay) that must be removed to access the sand is substantial. It is in the range of 15-23 feet in most places, in some areas less and some areas more. However, most logs in the vicinity of the proposed sand pit indicate about 23 feet of overburden to be dealt with. This is a major logistics problem that must be dealt with while keeping any surface runoff out of the pit. There is the potential for pollution from surface runoff. This overburden material has been the filter material to keep pollutants out of the deeper aquifer, removing it exposes the aquifer. The resulting piles of surficial material may contain fertilizer and pesticide residue and daughter products from their decay. Apparently, the plan is to emplace at least some of this material back into the pit. If this is done, the overburden material should be extensively tested for possible pollutants before such use.

Mr. Nuzman mentions that a few investigations have been made on the effect of sand pits on groundwater quality and that they have not shown any significant human health effect. However, one can't infer from these few studies that there will never be a problem. In fact, at least one of those studies (KGS OFR 2008-4) did come to the conclusion that there was a measurable interconnection between the sand pit waters and the local aquifer and that there was a potential for pollution. The following is a direct quote from the conclusions of that study.

"The concentration distributions of pesticides and organics other than pesticides at the four pit sites in northwest Wichita, as well as the general pattern in iron, manganese, and ammonium ion concentrations in the downgradient well waters relative to the upgradient well and pit waters, indicate that surface water in the sand pits flows into the ground water in the southeast to south-southeast

direction of the ground-water flow at the study sites. The evidence for connection between the surface and ground waters at the two southern Wichita sites is not as strong as for the four northwest Wichita sites. However, distribution of some constituents and chemical properties do fit the general pattern of entrance of pit water into the ground water. This would be expected to occur most prominently when surface runoff into the pits increases the hydraulic gradient between the pit surface and ground-water levels. Thus, stormwater runoff containing contaminants can enter ground water through the sand pits and impact ground-water quality"

Effect of Pit on the River System

Material has previously been provided that shows the river bank in the vicinity of this proposed sand pit is unstable and has moved over time. Geologic history tells us this river will move again, we just don't know when. During a flood event the river could change course and breach the proposed sand pit. This would have a dramatic effect on the river system. Since the sand pit is deep (about 70 feet) and the river is very shallow, the pit would capture the bed load of the river and cause the river to become unstable. This would result in deepening the channel upstream (head cutting) and degradation of the channel downstream. It would take years for the river to reach a new stable equilibrium. Pits should not be allowed in areas where pit capture is a possibility.

Conclusions

I have shown that a reasonable interpretation of the available groundwater data indicates that the proposed sand pit could indeed have an effect on the Eudora Well Field and other local wells. The net effect will be a flow-through lake that mixes up-gradient aquifer water with sand pit water and sends it down-gradient into the aquifer and further down the valley. This behavior has been documented in studies of sand pits and aquifers. So, the conclusion is that any pollution must be prevented. The huge amount of overburden produced and its handling could be a source of pollution. Finally, the unstable nature of the river bank in this area makes it possible that the sand pit could capture the river during high flows and cause a channel change. If this were to happen, the river bed would be unstable for years until a new equilibrium was reached.

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Resume

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Appendix I.

This calculations presented here is based on work I did and published back in 1991 in the *Ground Water* journal. I have supplied to the Planning Department a copy of that article for reference. This work shows that the minimum travel time from the Penny sand pit to the Eudora Well Field is about 5.5 years. This is from the closest point of the pit to the center of the well field. I have also calculated the 6 and 8 year capture curves for the Eudora Well field. The work shows that these capture curves include significant portions of the proposed pit.

The important parameters are as follows:

K - hydraulic conductivity - I used 1000ft/day. This is a measure of how fast water moves in the aquifer. The Nuzman report uses data from a well test on Eudora No. 8 and reports 8800 gpd/ft2, which is 1176 ft/day. This also agrees with data I have personally collected from the Kansas River Valley.

I - Hydraulic gradient (slope) of the ground water system - I used .0005, which is about 5ft in 2 miles. Bulletin 130, Part 1 and Bulletin 206, part 2 from the Kansas Geological Survey show head maps of the area in question that support this number.

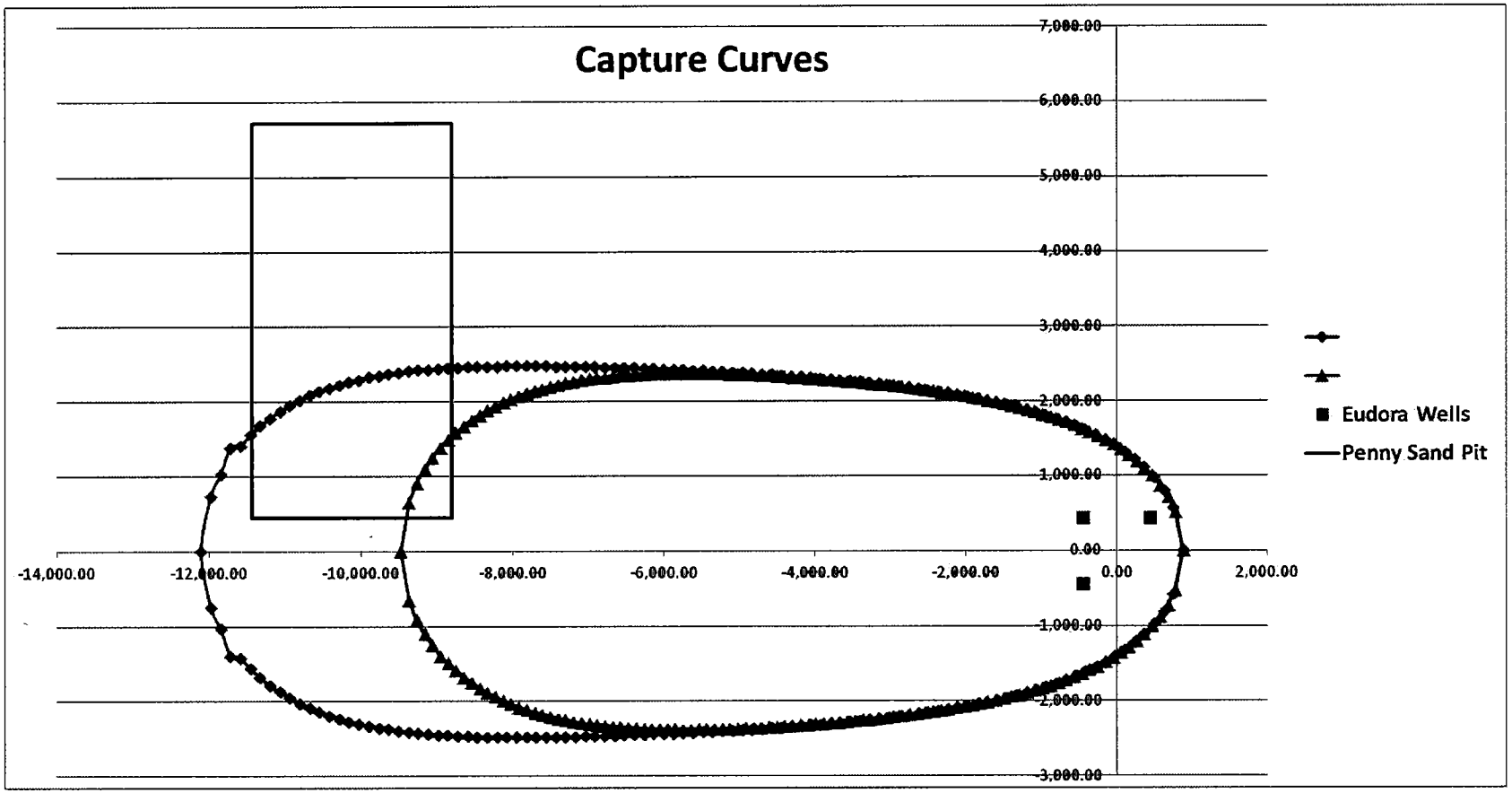
qo = -KI = -0.5 ft/day - average Darcy velocity in the aquifer - Multiplying the above two values gives this result.

B - Effective saturated thickness of aquifer - I used 30 feet. Although the aquifer has greater saturated thickness, the upper part is much finer material and has much less hydraulic conductivity. I have seen this consistently in my field work.

n - effective porosity (a measure of the pore space that water flows through) - I used 0.15 which is an average value suggested by the work of Bull 260, and also is consistent with my field work.

Q - Pump rate of the Eudora Well Field - I used 83425 ft3/day which is the approved water right of 227.77 MGY or about 433gpm.

These parameters can be used to calculate the average travel times and capture curves for parcels of water moving under the influence of the natural groundwater flow system and the influence of the pumping in the Eudora Well Field. The details of the background material to arrive at the formulas used in the following pages are given in the above referenced *Ground Water* article. The pages that follow show the capture curves for 6 and 8 years and the average minimum travel time between the sand pit and the Eudora Well Field. A capture curve outlines the area of groundwater that will flow to the pumping well in a given amount of time.


Capture Curves
7,000.00
6,000.00
5,000.00
4,000.00
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-3,000.00
-14,000.00
-12,000.00
-10,000.00
-8,000.00
-6,000.00
-4,000.00
-2,000.00
0.00
2,000.00
Eudora Wells
Penny Sand Pit

qo =	-0.5	Average Darcy Velocity
n =	0.15	Effective Porosity
Q =	83425	Well Discharge
B =	30	Effective Aquifer Thickness
X =	-3800	Distance traveled along X axis
t =		Time of travel

$$X = \frac{qo}{n}t + \frac{Q}{2\pi qoB} ln\left(1 + \frac{2\pi qoB}{Q}X\right)$$

$$t = \left[\frac{n}{qo}\right]\left[X - \frac{Q}{2\pi qoB} ln\left(1 + \frac{2\pi qoB}{Q}X\right)\right]$$

t = 2005 days = 5.49 years

6 yr. Capture Curve Data

X(Ft)	Y(Ft)
8.8508E+02	0.0000E+00
7.8145E+02	-5.1844E+02
6.7783E+02	-7.2470E+02
5.7420E+02	-8.7735E+02
4.7057E+02	-1.0015E+03
3.6694E+02	-1.1069E+03
2.6331E+02	-1.1989E+03
1.5969E+02	-1.2804E+03
5.6059E+01	-1.3536E+03
-4.7568E+01	-1.4198E+03
-1.5120E+02	-1.4802E+03
-2.5482E+02	-1.5357E+03
-3.5845E+02	-1.5867E+03
-4.6208E+02	-1.6340E+03
-5.6571E+02	-1.6778E+03
-6.6933E+02	-1.7187E+03
-7.7296E+02	-1.7568E+03
-8.7659E+02	-1.7925E+03
-9.8022E+02	-1.8259E+03
-1.0838E+03	-1.8573E+03
-1.1875E+03	-1.8869E+03
-1.2911E+03	-1.9147E+03
-1.3947E+03	-1.9410E+03
-1.4984E+03	-1.9659E+03
-1.6020E+03	-1.9894E+03
-1.7056E+03	-2.0117E+03
-1.8092E+03	-2.0328E+03
-1.9129E+03	-2.0529E+03
-2.0165E+03	-2.0720E+03
-2.1201E+03	-2.0901E+03
-2.2238E+03	-2.1074E+03
-2.3274E+03	-2.1239E+03
-2.4310E+03	-2.1396E+03
-2.5346E+03	-2.1546E+03
-2.6383E+03	-2.1689E+03
-2.7419E+03	-2.1825E+03
-2.8455E+03	-2.1956E+03
-2.9491E+03	-2.2081E+03
-3.0528E+03	-2.2200E+03
-3.1564E+03	-2.2314E+03
-3.2600E+03	-2.2423E+03

-3.3637E+03	-2.2527E+03
-3.4673E+03	-2.2627E+03
-3.5709E+03	-2.2722E+03
-3.6745E+03	-2.2813E+03
-3.7782E+03	-2.2899E+03
-3.8818E+03	-2.2982E+03
-3.9854E+03	-2.3060E+03
-4.0891E+03	-2.3135E+03
-4.1927E+03	-2.3206E+03
-4.2963E+03	-2.3272E+03
-4.3999E+03	-2.3335E+03
-4.5036E+03	-2.3394E+03
-4.6072E+03	-2.3449E+03
-4.7108E+03	-2.3500E+03
-4.8144E+03	-2.3547E+03
-4.9181E+03	-2.3590E+03
-5.0217E+03	-2.3628E+03
-5.1253E+03	-2.3662E+03
-5.2290E+03	-2.3691E+03
-5.3326E+03	-2.3715E+03
-5.4362E+03	-2.3733E+03
-5.5398E+03	-2.3746E+03
-5.6435E+03	-2.3753E+03
-5.7471E+03	-2.3754E+03
-5.8507E+03	-2.3747E+03
-5.9544E+03	-2.3733E+03
-6.0580E+03	-2.3712E+03
-6.1616E+03	-2.3681E+03
-6.2652E+03	-2.3642E+03
-6.3689E+03	-2.3592E+03
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-7.7160E+03	-2.1480E+03

-7.8196E+03	-2.1145E+03
-7.9233E+03	-2.0773E+03
-8.0269E+03	-2.0360E+03
-8.1305E+03	-1.9903E+03
-8.2342E+03	-1.9396E+03
-8.3378E+03	-1.8833E+03
-8.4414E+03	-1.8209E+03
-8.5450E+03	-1.7515E+03
-8.6487E+03	-1.6740E+03
-8.7523E+03	-1.5871E+03
-8.8559E+03	-1.4891E+03
-8.9596E+03	-1.3913E+03
-9.0632E+03	-1.2478E+03
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-2.7419E+03	2.1825E+03
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-2.5346E+03	2.1546E+03
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-4.6208E+02	1.6340E+03
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-2.5482E+02	1.5357E+03
-1.5120E+02	1.4802E+03
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5.6059E+01	1.3536E+03
1.5969E+02	1.2804E+03
2.6331E+02	1.1989E+03
3.6694E+02	1.1069E+03
4.7057E+02	1.0015E+03
5.7420E+02	8.7735E+02
6.7783E+02	7.2470E+02
7.8145E+02	5.1844E+02
8.8508E+02	0.0000E+00

8 yr. Capture Curve Data

X(Ft)	Y(Ft)
8.8516E+02	0.0000E+00
7.5519E+02	-5.7893E+02
6.2523E+02	-8.0688E+02
4.9526E+02	-9.7403E+02
3.6530E+02	-1.1087E+03
2.3533E+02	-1.2220E+03
1.0536E+02	-1.3199E+03
-2.4604E+01	-1.4059E+03

-1.5457E+02	-1.4824E+03
-2.8454E+02	-1.5510E+03
-4.1450E+02	-1.6130E+03
-5.4447E+02	-1.6694E+03
-6.7444E+02	-1.7210E+03
-8.0440E+02	-1.7683E+03
-9.3437E+02	-1.8118E+03
-1.0643E+03	-1.8521E+03
-1.1943E+03	-1.8893E+03
-1.3243E+03	-1.9240E+03
-1.4542E+03	-1.9562E+03
-1.5842E+03	-1.9863E+03
-1.7142E+03	-2.0144E+03
-1.8441E+03	-2.0408E+03
-1.9741E+03	-2.0655E+03
-2.1041E+03	-2.0887E+03
-2.2340E+03	-2.1106E+03
-2.3640E+03	-2.1313E+03
-2.4940E+03	-2.1507E+03
-2.6239E+03	-2.1692E+03
-2.7539E+03	-2.1866E+03
-2.8839E+03	-2.2031E+03
-3.0138E+03	-2.2188E+03
-3.1438E+03	-2.2337E+03
-3.2738E+03	-2.2479E+03
-3.4037E+03	-2.2614E+03
-3.5337E+03	-2.2742E+03
-3.6637E+03	-2.2865E+03
-3.7936E+03	-2.2982E+03
-3.9236E+03	-2.3093E+03
-4.0536E+03	-2.3200E+03
-4.1835E+03	-2.3302E+03
-4.3135E+03	-2.3399E+03
-4.4435E+03	-2.3493E+03
-4.5734E+03	-2.3582E+03
-4.7034E+03	-2.3668E+03
-4.8334E+03	-2.3750E+03
-4.9633E+03	-2.3829E+03
-5.0933E+03	-2.3904E+03
-5.2233E+03	-2.3976E+03
-5.3532E+03	-2.4046E+03
-5.4832E+03	-2.4112E+03
-5.6132E+03	-2.4175E+03

-5.7431E+03	-2.4236E+03
-5.8731E+03	-2.4293E+03
-6.0031E+03	-2.4348E+03
-6.1330E+03	-2.4401E+03
-6.2630E+03	-2.4450E+03
-6.3930E+03	-2.4497E+03
-6.5229E+03	-2.4540E+03
-6.6529E+03	-2.4581E+03
-6.7829E+03	-2.4619E+03
-6.9128E+03	-2.4653E+03
-7.0428E+03	-2.4684E+03
-7.1728E+03	-2.4712E+03
-7.3027E+03	-2.4735E+03
-7.4327E+03	-2.4755E+03
-7.5627E+03	-2.4769E+03
-7.6926E+03	-2.4779E+03
-7.8226E+03	-2.4784E+03
-7.9526E+03	-2.4782E+03
-8.0825E+03	-2.4774E+03
-8.2125E+03	-2.4758E+03
-8.3425E+03	-2.4734E+03
-8.4724E+03	-2.4701E+03
-8.6024E+03	-2.4657E+03
-8.7324E+03	-2.4602E+03
-8.8623E+03	-2.4534E+03
-8.9923E+03	-2.4451E+03
-9.1223E+03	-2.4351E+03
-9.2522E+03	-2.4234E+03
-9.3822E+03	-2.4095E+03
-9.5122E+03	-2.3934E+03
-9.6421E+03	-2.3746E+03
-9.7721E+03	-2.3530E+03
-9.9021E+03	-2.3281E+03
-1.0032E+04	-2.2995E+03
-1.0162E+04	-2.2669E+03
-1.0292E+04	-2.2297E+03
-1.0422E+04	-2.1874E+03
-1.0552E+04	-2.1393E+03
-1.0682E+04	-2.0848E+03
-1.0812E+04	-2.0230E+03
-1.0942E+04	-1.9528E+03
-1.1072E+04	-1.8730E+03
-1.1202E+04	-1.7819E+03

-1.1332E+04	-1.6775E+03
-1.1462E+04	-1.5568E+03
-1.1592E+04	-1.4155E+03
-1.1722E+04	-1.3905E+03
-1.1852E+04	-1.0325E+03
-1.1982E+04	-7.4132E+02
-1.2111E+04	0.0000E+00
-1.1982E+04	7.4132E+02
-1.1852E+04	1.0325E+03
-1.1722E+04	1.3905E+03
-1.1592E+04	1.4155E+03
-1.1462E+04	1.5568E+03
-1.1332E+04	1.6775E+03
-1.1202E+04	1.7819E+03
-1.1072E+04	1.8730E+03
-1.0942E+04	1.9528E+03
-1.0812E+04	2.0230E+03
-1.0682E+04	2.0848E+03
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-8.4724E+03	2.4701E+03
-8.3425E+03	2.4734E+03
-8.2125E+03	2.4758E+03
-8.0825E+03	2.4774E+03
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-6.5229E+03	2.4540E+03
-6.3930E+03	2.4497E+03
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6.2523E+02	8.0688E+02
7.5519E+02	5.7893E+02
8.8516E+02	0.0000E+00

Wells X (map in)	Wells Y (map in)	Wells X (ft)	Wells Y (ft)
-0.25	0.25	-440	440
-0.25	-0.25	-440	-440
0.25	0.25	440	440

Pit X (map in)	Pit Y (map in)	Pit X (ft)	Pit Y (ft)
-5	0.25	-8800	440
-6.5	0.25	-11440	440
-6.5	3.25	-11440	5720
-5	3.25	-8800	5720
-5	0.25	-8800	440

Douglas County Planning Commission
6 East 6th Street
Lawrence, Kansas 66044

October 11, 2012

Re: Proposed Conditional Use Permit for extension of sand and gravel extraction in an area adjacent to 1564 E. 1850 Road. This site lies directly south of the Kansas River midway between Lawrence and Eudora.

I recommend that this proposal be DENIED.

This conclusion is based on my many years of study and mapping of the Kansas River, including publication, in 2009, of an atlas of Historical Channel Changes of the Kansas River and its Major Tributaries. In reviewing available data I find several reasons that excavation within the proposed area could have several negative effects for the general public.

1) Potentially most serious would be pollution of the water supply for the city of Eudora. Underlying the flat valley floor in this region is a sequence of interlayered sand and gravel that approaches 100 feet in thickness. A large volume of water occupies the spaces between grains of this sediment. This water seeps slowly eastward in a downvalley direction, some being captured by both private and municipal wells. Less than two miles east of the proposed new excavation site is the well field that supplies potable water for the public water system of the City of Eudora. In other words, Eudora's water supply passes through sands lying beneath the proposed new extraction pit.

Any sand-and-gravel operation requires the presence of at least a few motors and transient vehicles that will inevitably leak contaminating fluids which can seep into and through subsurface sediments and become part of the downstream movement of the ground water. Furthermore, this area on the valley floor is subject to inundation during major floods. The high level surface flow also could pick up contaminants from the new sand pit and carry them downvalley to the Eudora well field.

Inspection of detailed maps or aerial photographs of the Kansas River Valley west of Eudora reveals that the proposed extraction site lies farther north (as well as west) of the Eudora well field. It might therefore be argued that pollutants from the proposed sand pit would pass downvalley north of the well field location and so have no influence on the wells. However, records of the location of the river channel during the past few hundred years show that the stream has locally been flowing from northwest to southeast. That means that sand bodies accumulating in the channel would be elongated in that direction, an orientation that could lead subsurface water movement to go from the pollutant source of the new pit directly to the Eudora well field.

This all means that opening a new sand and gravel extraction pit at the proposed location could seriously endanger the purity and integrity of Eudora's water supply.

2) Data currently available to me do not define the precise location of the well that supplies water to the house at 1564 E 1850 Rd. Excavation on the proposed new site for sand and gravel extraction could seriously impinge on the supply of water from that private well. In fact, opening and deepening of the new pit might divert all local groundwater flow from the well and leave the residence with no water supply at all. The situation certainly requires assessment.

3) At the northwestern corner of the proposed new operation the Kansas River follows a sharp, almost V-shaped bend to the north and then back to the southeast. This bend has been actively shifting shape and location during the past several decades. It can be assumed that this dynamic will continue at least into the near future. The trend suggests that the channel will soon cut off or cut through the sharp bend by eroding through the location of the present sand and gravel operation. This channel move could also cut away at least the northern part of the proposed new operation. Such a shift of channel position would negatively affect the new extraction operation, and might

establish a new channel dynamic that would affect streamflow in both downstream and upstream locations. Final effects and configurations cannot immediately be determined, but could involve unexpected erosion into productive cropland.

Several predictable effects of establishment of a new sand and gravel extraction operation adjacent to 1564 East 1850 Road between Lawrence and Eudora tend to have negative impacts on nearby parts of the local valley floor. However, it is endangerment of the well field for the City of Eudora municipal water supply that demands closest attention. Chance of contamination of that resource is completely unacceptable for the public welfare.

Wakefield Dort Jr.

Wakefield Dort, Jr.

Emeritus Professor Geology
The University of Kansas

Douglas County Planning Commission
6 East 6th Street
Lawrence, Kansas 66044

October 11, 2012

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Wakefield Dort Jr.

Wakefield Dort, Jr.

Emeritus Professor Geology
The University of Kansas

Oct. 2, 2012

Lawrence Douglas County
Metropolitan Planning Office
6 East 6th Street,
P.O. Box 708,
Lawrence, KS 66044

Ms. Mary Miller,

After reading your staff report which contains the following information:

"Staff contacted a hydrologist with the USGS (United States Geological Survey) Midwest Division, Kyle E Juracek, for his opinion on the impact of the dredging operation and pit on the river channel. Mr. Juracek indicated that the location of a lake could result in channel change in the event of a flood but pointed out that the river channel may change as a result of a flooding event even without a lake in close proximity."

I felt that the situation involved in this request for a CUP had not been made entirely clear to Dr. Juracek. The situation is fairly complex and deserves some more description. After making an appointment to see Dr. Juracek, I showed him Dr. Dort's work characterizing the river bank movement over the last 100 plus years, gave him a plan view map of the proposed sand pit excavation area to create the lake, and explained to him that the sand excavation would proceed to bedrock in the area. We discussed the fact that the river is trying to cut off the meander in this area. I pointed out that the proposed excavation pit (about ¾ mile wide East to West) would nearly connect the two sides of the meander.

Dr. Dort's work shows the river bank in the vicinity of this proposed sand pit is unstable and has moved over time. Geologic history tells us this river will move again, we just don't know when. During a major flood event the river could try to move again and breach the proposed sand pit.

The presence of such a large deep pit as requested at this site would make it much easier (since so much material has been removed) for the river in times of flood to cut off the meander at this site by flowing through the pit area. This would create a huge nick point (deepened point in the river bed about

50-60 feet deep) that would have a destabilizing effect on the river bed, with head cutting upstream and bed degradation downstream for some time to come, until a new stable river bed gradient was created. This erosion of the river bed could propagate upstream to the Bowersock Dam and downstream an unknown distance.

I have sent a copy of this letter to Dr. Juracek for review and he has not disagreed with my statements. I encourage you to contact him and discuss this matter with him and to ask him any questions you may have.

Thank you for your consideration. If I may answer any questions, please contact me.

Carl McElwee
Emeritus Professor of Geology
University of Kansas
Lawrence, KS 66045
785-843-4164
cmcelwee@ku.edu

Sept. 25, 2012

Lawrence Douglas County
Metropolitan Planning Office
6 East 6th Street,
P.O. Box 708,
Lawrence, KS 66044

Ms. Mary Miller:

It is unfortunate that last night's Planning Commission meeting on Item 1 degenerated into a chaotic situation, resulting in deferral for a month before some information could be communicated to the Commissioners. As I have communicated to you some weeks ago I am unable to be at the Oct. 22 Planning Commission meeting due to a commitment scheduled months ago and which is unchangeable. As the property owner most affected by this proposed CUP involving the Penny Sand Pit, as the leader of the local property owner opposition group (see signed petition), and as a qualified groundwater professional (who has submitted material for review) it would seem to be deprivation of due process to hold the meeting to discuss this issue when I can not be present. Therefore, I am respectfully asking the Douglas County Planning Commission to defer this item until the November meeting.

Thank you for your consideration. If I may answer any questions, please contact me.

Carl McElwee
1564 E. 1850 Rd.
Lawrence, KS 66046
785-843-4164
cmcelwee@ku.edu

Virginia Strong
3712 Trail Road
Lawrence, Kansas 66049

RECEIVED
OCT 22 2012
City County Planning Office
Lawrence, Kansas

October 22, 2012

Lawrence-Douglas County Planning Commission
6 East 6th Street
Lawrence, Kansas 66044

Subject: Penny Sand Pit Conditional Use Permit Hearing

To the Commissioners:

I believe that if you approve the Conditional Use Permit (CUP) requested on behalf of William Penny and Van LLC to be considered at tonight's Commisssion meeting, you will be aiding a crime against nature and *demolishing* thousands of cubic yards of prime Kaw Valley soil. I form this belief upon the common sense in continuing to make this land available for farming, and around the unintended consequences of granting the permit. As a member of the family that for several decades owned one of the adjoining parcels (on the southeast corner of the intersection of North 1500 Road and East 1900 Road), my concerns are informed by familiarity with the immediate neighborhood and its history of use, as follows:

- The prospect of a quarry dug deeper than 25 feet below the present ground level makes me question its consequences for the quality of the local aquifer, which already leaves something to be desired.
- For several years copper acetoarsenite (a highly toxic and water-insoluble pesticide and dye) was applied for pest control to some of the land under discussion, at the time planted in potatoes. Can the permit applicants rule out any reasonable possibility that remnants of that pesticide might be disturbed and made airborne by the proposed development?
- The fully excavated gravel pit is proposed to be turned into a lake, which would become a breeding ground for hordes of mosquitoes — as if we need more of those swarming around. There is also the question of how a quarry would fare in the event of a catastrophic flood, which ought to be investigated regardless of any guarantees.
- The parcel under discussion is a well-known and established resting place for migrating geese. The consequences of destroying its present character would presumably be unfortunate for the geese, the neighbors (as such), or both.
- My understanding is that the land purchases making up the parcel under discussion were made at a bargain, a fact that can be verified as a matter of public record. Would Mr. Penny be in a position to apply for the CUP at issue, if he had been called upon to purchase the land at par value? *[Continued on next page]*

- *[Continued from previous page]* If the proposed quarry is dug, how likely is it that the affected land — both that covered by the quarry, and adjoining land — could be sold at par value at any time in the foreseeable future?
- In what time frame does the proposed quarry promise to deliver higher tax revenues to the County than it could if farmed?

Finally, how much of this development process is illuminated by greed, and how much by the desire to put the targeted land to a use about which the residents of Douglas County can feel some pride?

In summary I count a number of concerns about the permit application, including at least two conceivable threats to public health that are peculiar to the area that it covers. Were I to put it more subjectively and succinctly, I could call the development plan behind the permit application hare-brained. However, that would insult the hares. I request that you consider the concerns that led to that judgment.

Sincerely,
Virginia Schaake Strong
(785) 843-2293

CC: Lawrence *Journal-World*

THE LAW OFFICES OF
DANIEL L. WATKINS
901 NEW HAMPSHIRE STREET, SUITE 200
LAWRENCE, KANSAS 66044

TELEPHONE: (785) 843-0181
DANWATKINS@SUNFLOWER.COM
FACSIMILE: (785) 749-5652

October 3, 2012

Mr. Bruce Liese, Chairman
Lawrence/Douglas County Planning Commission
c/o Scott McCullough, Director
6 East 6th Street
Lawrence, KS 66044

Dear Chair and Commissioners:

You have a request from Carl McElwee to defer the hearing regarding Bill Penny's application for a Conditional Use Permit to extract sand from a parcel of land east of Lawrence, Kansas and north of County Road 1500. While we appreciate Mr. McElwee's circumstances, we believe it is important to proceed with consideration of the application. Penny's has been diligent in meeting submittal schedules and delivering additional information to staff on a timely basis. The matter has already been deferred once due to the request of Eudora.

The Corps of Engineers has notified us that river dredging permits in this vicinity will be suspended beginning December 31, 2012. Our application was developed and submitted on a schedule that would allow dredging of sand from an off-river pit coincident with the loss of the river dredging permits if a permit application is considered and approved this fall. Deferral of this application for another month will make this schedule very difficult to meet.

Mr. McElwee has submitted considerable information for the Planning Commission to consider in its deliberations. While his presence could certainly add emotion to the arguments he has presented, the multiple written submissions and petitions fully convey his position.

We respectfully request the Lawrence-Douglas Metropolitan Planning Commission proceed with the public hearing on October 22, 2012.

Sincerely,

Dan Watkins

RECEIVED
OCT 15 2012
City County Planning Office
Lawrence, Kansas

MEMORANDUM

532 Oklahoma Street Lawrence, KS 66046 12 October 2012

To: Lawrence Douglas County Metropolitan Planning Office

From: Stan Roth, Retired Biology Teacher, USD 497 for 40 years

Re: Penny Sand Company Application for Continual Use Permit

Please deny the Penny Sand Company request for a pit mining operation for sand removal near roads 1500 North and 1850 East. This would negatively impact the surrounding agriculture activity that has sustained the local economy for decades. There are issues relating to environmental degradation that must be taken into account in the long term. The operation would result in displacement of overburden, result in instability of the nearby river channel bank, and negatively impact the ground water aquifer.

Also, the approval of this request would result in the disruption of the contemporary farming economy and adversely affect the Douglas County history of the area.

Douglas County Planning Commission
6 East 6th Street
Lawrence, Kansas 66044

October 11, 2012

Re: Proposed Conditional Use Permit for extension of sand and gravel extraction in an area adjacent to 1564 E. 1850 Road. This site lies directly south of the Kansas River midway between Lawrence and Eudora.

I recommend that this proposal be DENIED.

This conclusion is based on my many years of study and mapping of the Kansas River, including publication, in 2009, of an atlas of Historical Channel Changes of the Kansas River and its Major Tributaries. In reviewing available data I find several reasons that excavation within the proposed area could have several negative effects for the general public.

1) Potentially most serious would be pollution of the water supply for the city of Eudora. Underlying the flat valley floor in this region is a sequence of interlayered sand and gravel that approaches 100 feet in thickness. A large volume of water occupies the spaces between grains of this sediment. This water seeps slowly eastward in a downvalley direction, some being captured by both private and municipal wells. Less than two miles east of the proposed new excavation site is the well field that supplies potable water for the public water system of the City of Eudora. In other words, Eudora's water supply passes through sands lying beneath the proposed new extraction pit.

Any sand-and-gravel operation requires the presence of at least a few motors and transient vehicles that will inevitably leak contaminating fluids which can seep into and through subsurface sediments and become part of the downstream movement of the ground water. Furthermore, this area on the valley floor is subject to inundation during major floods. The high level surface flow also could pick up contaminants from the new sand pit and carry them downvalley to the Eudora well field.

Inspection of detailed maps or aerial photographs of the Kansas River Valley west of Eudora reveals that the proposed extraction site lies farther north (as well as west) of the Eudora well field. It might therefore be argued that pollutants from the proposed sand pit would pass downvalley north of the well field location and so have no influence on the wells. However, records of the location of the river channel during the past few hundred years show that the stream has locally been flowing from northwest to southeast. That means that sand bodies accumulating in the channel would be elongated in that direction, an orientation that could lead subsurface water movement to go from the pollutant source of the new pit directly to the Eudora well field.

This all means that opening a new sand and gravel extraction pit at the proposed location could seriously endanger the purity and integrity of Eudora's water supply.

2) Data currently available to me do not define the precise location of the well that supplies water to the house at 1564 E 1850 Rd. Excavation on the proposed new site for sand and gravel extraction could seriously impinge on the supply of water from that private well. In fact, opening and deepening of the new pit might divert all local groundwater flow from the well and leave the residence with no water supply at all. The situation certainly requires assessment.

3) At the northwestern corner of the proposed new operation the Kansas River follows a sharp, almost V-shaped bend to the north and then back to the southeast. This bend has been actively shifting shape and location during the past several decades. It can be assumed that this dynamic will continue at least into the near future. The trend suggests that the channel will soon cut off or cut through the sharp bend by eroding through the location of the present sand and gravel operation. This channel move could also cut away at least the northern part of the proposed new operation. Such a shift of channel position would negatively affect the new extraction operation, and might

establish a new channel dynamic that would affect streamflow in both downstream and upstream locations. Final effects and configurations cannot immediately be determined, but could involve unexpected erosion into productive cropland.

Several predictable effects of establishment of a new sand and gravel extraction operation adjacent to 1564 East 1850 Road between Lawrence and Eudora tend to have negative impacts on nearby parts of the local valley floor. However, it is endangerment of the well field for the City of Eudora municipal water supply that demands closest attention. Chance of contamination of that resource is completely unacceptable for the public welfare.

Wakefield Dort Jr.

Wakefield Dort, Jr.

Emeritus Professor Geology
The University of Kansas

Oct. 11, 2012

Lawrence Douglas County
Metropolitan Planning Office
6 East 6th Street,
P.O. Box 708,
Lawrence, KS 66044

Ms. Mary Miller:

As you know I will be out of town on Oct. 22, so I can not be at the Planning Commission meeting. So, I want to make sure that all is in readiness for that meeting. I have supplied you with additional information already and I want to alert you to additional incoming information.

First of all, the Eudora City Council meet on Monday Oct. 8 and as part of their regular meeting they held a study session concerning the Penny Sand Pit CUP. Penny Sand presented their plans for the site, then Mr. Nuzman reviewed his report. At that point I presented my report (of which you have a copy) summarizing my comments on Mr. Nuzman's report pointing out alternate interpretations and shortcomings. Then Doug Heimke of the Kansas Rural Water Association gave his thoughts on the project. Next, the Eudora City Council hydrogeology consultant Mr. Ned Marks made a presentation on the pertinent hydrogeology of the valley aquifer. Then Mr. Scott Michie advised them of certain planning considerations. Finally, the Eudora City Council deliberated on their position with regard to the Penny Sand Pit CUP. The net result was that they voted to oppose the CUP application and write a letter to your office to that effect. I must say that they made a great effort to study the situation carefully before making their decision.

We have exchanged emails regarding Dr. Juracek of the USGS. I provided you with a letter summarizing conversations that I had with him concerning the bank stability issue. The net result was that he agreed with what I had said about that. In addition, the other local expert on the Kansas River, Dr. Dort (who is retired from the KU Geology Dept.) is writing a letter opposing the CUP application based on water quality and bank instability issues. You should receive that letter soon.

I hope you will be rewriting the staff report to reflect all this new information. In particular water quality and bank instability issues must be reflected as areas of major concern. Your staff report points out that preservation of quality farm land is also a major consideration. Based on all this new information, I hope your rewritten staff report will recommend denial of the CUP application.

Since I can not be present for the Oct. 22 meeting, I have prepared a 5 minute video presentation which I would like to have played at the meeting. I am no longer asking for the consideration of this Penny Sand Pit CUP to be deferred to the Nov. meeting. I think that would be unfair to the many opponents who will be showing up for the second time, since it was deferred at the Sept. meeting. To defer it again and ask them to keep coming out for meeting after meeting would be wrong. I do ask for a fair hearing of all the available information and that a very thoughtful deliberation be made.

Thank you for your consideration. If I may answer any questions, please contact me.

Carl McElwee
1564 E. 1850 Rd.
Lawrence, KS 66046
785-843-4164
cmcelwee@ku.edu

Oct. 2, 2012

Lawrence Douglas County
Metropolitan Planning Office
6 East 6th Street,
P.O. Box 708,
Lawrence, KS 66044

Ms. Mary Miller,

After reading your staff report which contains the following information:

"Staff contacted a hydrologist with the USGS (United States Geological Survey) Midwest Division, Kyle E Juracek, for his opinion on the impact of the dredging operation and pit on the river channel. Mr. Juracek indicated that the location of a lake could result in channel change in the event of a flood but pointed out that the river channel may change as a result of a flooding event even without a lake in close proximity."

I felt that the situation involved in this request for a CUP had not been made entirely clear to Dr. Juracek. The situation is fairly complex and deserves some more description. After making an appointment to see Dr. Juracek, I showed him Dr. Dort's work characterizing the river bank movement over the last 100 plus years, gave him a plan view map of the proposed sand pit excavation area to create the lake, and explained to him that the sand excavation would proceed to bedrock in the area. We discussed the fact that the river is trying to cut off the meander in this area. I pointed out that the proposed excavation pit (about ¾ mile wide East to West) would nearly connect the two sides of the meander.

Dr. Dort's work shows the river bank in the vicinity of this proposed sand pit is unstable and has moved over time. Geologic history tells us this river will move again, we just don't know when. During a major flood event the river could try to move again and breach the proposed sand pit.

The presence of such a large deep pit as requested at this site would make it much easier (since so much material has been removed) for the river in times of flood to cut off the meander at this site by flowing through the pit area. This would create a huge nick point (deepened point in the river bed about

50-60 feet deep) that would have a destabilizing effect on the river bed, with head cutting upstream and bed degradation downstream for some time to come, until a new stable river bed gradient was created. This erosion of the river bed could propagate upstream to the Bowersock Dam and downstream an unknown distance.

I have sent a copy of this letter to Dr. Juracek for review and he has not disagreed with my statements. I encourage you to contact him and discuss this matter with him and to ask him any questions you may have.

Thank you for your consideration. If I may answer any questions, please contact me.

Carl McElwee
Emeritus Professor of Geology
University of Kansas
Lawrence, KS 66045
785-843-4164
cmcelwee@ku.edu

City Of Eudora, Kansas

Mayor Scott Hopson

October 17, 2012

Bruce Liese, Chairman
Lawrence – Douglas County Metropolitan Planning Commission
First floor, 6 E. 6th Street
Lawrence, Kansas 66044

Dear Mr. Liese,

The purpose of this letter is to inform the Douglas County Planning Commission of the vote by the Eudora City Council taken October 8, 2012 concerning the Conditional Use Permit (CUP) application by Penny Sand Company for proposed dredging operations near the Kansas River at the corner of North 1500 and East 1850 roads. The City Council voted unanimously to recommend denial of the CUP application.

The City Council heard two hours of testimony from hydrology experts, for and against the Penny Sand CUP application, and from the general public at their October 8th meeting. Eudora's recommendation for denial is based on public concern for protection of the aquifer and water table that serve as the sole source of water for the City's municipal well supply. Our analysis shows there is potential for surface water to negatively impact our water source should the CUP allow the removal of over-burden soil—built up over decades of natural flooding and silting—and the excavation to bedrock at depths of 50- to 70-feet below current grade at the site. We look forward to presenting this letter and a summary of these hydrology findings to your commission at an upcoming public hearing on this matter. Attached to this letter are several documents that were presented at the City Council meeting on October 8th. Thank you for considering the recommendation of our city council and for cooperating with our planning commission in this and other planning and zoning matters inside Eudora's designated "Planning Area."

Sincerely,

Scott Hopson

Scott Hopson
Mayor

Cc: Douglas County Commission (via e-mail)
Craig Weinaug, County Administrator (via e-mail)
Eudora City Council (via e-mail)
Scott McCullough, Director Planning and Development Services (via-e-mail)

(785)542-4111 (785)542-1237 Fax
4 East Seventh Street P.O. Box 650 • Eudora, Kansas 66025-0650

TERRANE RESOURCES CO

P.O. BOX 173 STAFFORD, KS 67578-0173 620-234-5200

17 September, 2012

Mr. John Harrenstein, City Manager
City of Eudora
P.O. Box 650
Eudora, KS 66025-0650

Re: Penny Sand CUP

Mr. Harrenstein,

This letter and enclosed Exhibit is in response to the City of Eudora's request we review and make recommendations regarding the proposed Penny Sand Facility CUP.

We have reviewed the data prepared by Dr. Carl McElwee, data submitted by Penny Sand, KGS publications, data prepared by Mr. Carl Nuzman and well log information.

Exhibit 1 is a copy of a map we modified from the Nuzman report. It shows the following:

The water table contours from the 1930 and 1974 KGS reports.
The 10 year area of influence delineated by Nuzman.
The 6 and 8 year areas of influence delineated by McElwee.
The proposed Penny Sand Facility
The test borings in the NW portion of the proposed sand facility.
Proposed observation well sites

The data indicates there has been a shift in the local ground water flow direction. The 1930 data indicates a WSW to ENE flow direction. Mr. Nuzman's Source Water Protection Area SWPA delineation tracks to the WSW from the City's well field. The 1974 data used by Dr. McElwee indicates the ground water flow has a more west to east orientation. Additionally, the 1974 shows there is less saturated thickness in the aquifer in and up-gradient of the City's well field. The SWPA delineated by McElwee extends more due west from the City's well field and further up-gradient.

It is important to understand both of these delineations are based on 83 and 39

year old water level data respectively. Both delineations used similar pumping scenarios by the City wells but do not include any potential impact local irrigation systems may have on the overall area of influence. Additionally, there is nothing in the data that suggest the existing sand operation is having any affect on the aquifer.

There are some fundamental aspects of aquifer characterization which need to be addressed. If the pumping of the City's wells remain constant (no decrease in pumping rate) and the saturated thickness decreases (lowering of the water table) then the cones of depression increase around each well. The increase in the size of the cone of depression will increase the area contributing water to the well field. If the saturated thickness continues to decrease due to seasonal or long term lowering of the water table then transmissivity and hydraulic conductivity characteristics of the aquifer can be affected. Therefore, any permanent lowering of the water table can have an impact on the area of influence to the well field which can have a deleterious effect on pumping rates.

The delineations prepared by Mr. Nuzman and Dr. McElwee represent the areas which will contribute water to the well field over time. The immediate cones of depression associated with the wells caused by pumping may not extend much more than ½ mile from the wells.

If the proposed sand pit has no affect on the water table, within the pit area, then it will yield water to the aquifer more readily than the surrounding aquifer and become a recharge area to the aquifer. If the water level in the pit is lower than the existing water level in the aquifer then it becomes a drain on that portion of the aquifer and will impact surrounding water levels in the aquifer.

Any changes to the water table can affect ground water flow direction. It appears there has been an apparent shift in the ground water flow direction by about 20 degrees between 1930 and 1974.

We have no data which indicates what affect the proposed sand pit will have on the water table. If there is no change to the water table then the affects should be minimal. However, if the sandpit caused a permanent lowering of the water table then it can have a negative affect on the recharge area to the City's well field. This will be readily apparent during periods of drought.

According to the conversation from the informal meeting held at Eudora it is our understanding the Division of Water Resources (DWR) assumes there will be no net loss of water from the aquifer under normal conditions due to evaporation. During periods of drought and extend periods of heat it would not be

unreasonable for this pit to lose and inch of water in a 24 hour period. That amount of water would equal 27,154 gallons per open acre of water. That value times 300 acres equals 8,146,200 gallons per day. This is the equivalent of 25 acre feet of water per day or a well that pumps 5657 gallons per minute 24/7.

At this time we would tend to agree with DWR's zero net loss on an average year. However, as we are currently seeing there are some years that do not get average rainfall. This is important because when the sandpit will be losing potentially large quantities of water due to evaporation the City will be pumping large quantities of water to meet demands.

Based on the limited data it appears there is the potential for impairment during periods of drought or extreme heat.

It is our understanding the sandpit will be excavated through the entire sand and gravel formation and extend to the bedrock. This process will open the entire saturated thickness to the pit. Should a contaminant enter the pit, whether it is biological or chemical, it will have access to the zone the City wells are completed in. The lower zone of the aquifer in this area is typically more prolific and has better transmissivity characteristics than the upper portions. Therefore, any contamination that makes it to the bottom of the aquifer will move faster than if it entered through the soil profile.

The well logs we rec'd from Penny Sand are informative but of limited use as they are only for a small area in the northwest portion of the sand operation. This area of the operation is remote to the City's well field. The installation of some observation wells around the perimeter of the proposed sand pit would be beneficial. At this time we recommend observation wells near the southwest and the southeast corners and near the middle of the east side of the proposed sand pit.

Additional observation wells between the proposed sand pit and the City's well field should be installed as well. Unless, existing wells can be identified, evaluated and utilized.

We do not have any recent data to evaluate the potential, negative or positive, impact of the proposed sandpit.

In order to evaluate any changes the proposed sand pit will have on the aquifer a comprehensive evaluation of the existing data, the installation of observation wells and collecting current and on going data will be needed.

Quite frankly, the delineations presented indicate the complexity of this area. Without current data, the actual effects on the aquifer are estimates at best.

Using existing wells and adding observation wells to fill in the gaps, data can be collected which will better identify, delineate and evaluate the potential affects to the aquifer.

Below is a brief outline of the proposed process we recommend the City of Eudora consider regarding Source Water Protection Area (SWPA) delineation.

Data Collection and Review
Review City files and select data for copies.
Review KDHE files at Lawrence, Topeka and State Archives as needed.
Compile well database and ground truth existing wells and associated data.
Recommend meeting with KRWA staff and bring them onboard to help with the SWPA plan compilation, implementation, presentation to neighbors and City and County Planning and Zoning Commissions.

Aquifer Testing and Observation Well Installation
Analysis of existing data may provide some of the information needed. We anticipate having to run at least one series of aquifer tests to determine the area of influence and evaluate potential well interference.

The existing data for the City wells and domestic wells can be utilized, additional observation wells may have to be installed. Some of the observation wells should be installed before the aquifer tests are run.

The wells shown in the KGS database will be of limited usage unless their locations are verified.

All wells and surface water access points, utilized in the testing process, will have to be surveyed in by a licensed surveyor.

Aquifer and Testing Data Compilation
Individual well and multiple well data will have to be evaluated.

The projection and plotting of actual areas of influence will be based on actual and current data. Once this is done we can estimate changes to the area of influence based on aquifer variables, changes in pumping rates, additional wells, saturated thickness changes, etc.

Additional Recommendations

We strongly suggest the City ask Penny Sand to postpone their meeting with Planning and Zoning. This would allow the City to obtain clarification of some of the data and present their concerns directly to Penny Sand and their consultants. It has been our experience that direct negotiations will be more beneficial and less expensive than trying to negotiate through the Planning and Zoning Process. If a mutual agreement can be reached between the City and Penny Sand, then the City simply recommends the modified plan be approved by Planning and Zoning.

Historically, it was thought the public should have complete and unrestricted access to a city's data and well field operations. We do not believe going into great detail as to how the City's wells function and the areas which directly impact the viability of the well field need be publicized.

We recommend the City monitor water levels in and around their well field. Either by utilizing existing wells if available or by installing a series of observation wells. From this network a detailed ground water flow regime map can be prepared. Additionally, seasonal variations in ground water flow can be monitored.

Once the City has a detailed Source Water Protection Area (SWPA) delineated then it can be referenced in future planning and zoning determinations.

We suggest requesting Penny Sand install, monitor and analyze samples and data from no less than three observation wells near the southwest and southeast corners and near the center of the east side of the proposed sand pit. If there are existing wells on the property, which can be used, they should be evaluated and used if possible. It would be beneficial if these wells could be installed before excavation begins. Samples should be collected in the spring and late fall to establish a baseline on quality and water levels should be measured monthly.

The main component as to whether this proposed sandpit will be an issue will depend how much impact the City's well field has on the aquifer. It is possible the data to make that determination already exists. Much of the data gathered during the construction of the wells should be available. It is important the wells be evaluated as they are operated, not as a single event or pumping well.

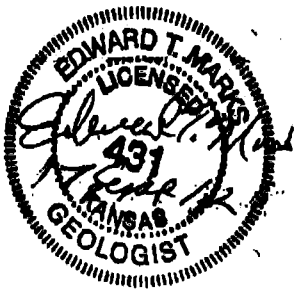
John, this is a complex issue, which may be exactly as Mr. Nuzman and Dr. McElwee have described it. It has been our experience it takes detailed analysis of the data to establish areas of influence and develop a meaningful SWPA delineation.

As Always if you or any of your colleagues have any questions do not hesitate to contact us.

Respectfully submitted

Edward "Ned" T. Marks, Geologist
Terrane Resources Co.
terrane@sbcglobal.net

Encl.



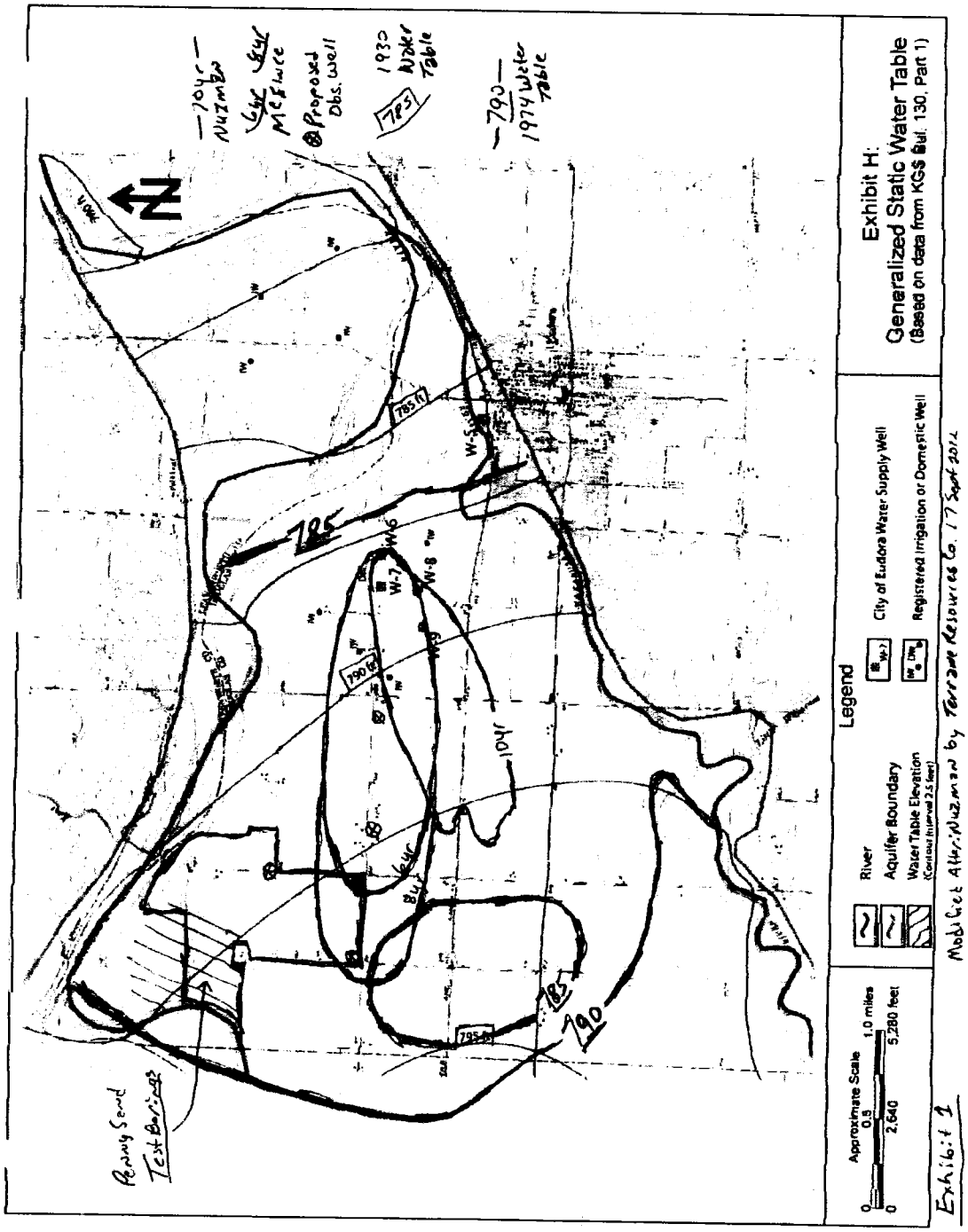


Exhibit H:
Generalized Static Water Table
(Based on data from KGS Bul. 130, Part 1)
Legend
River
Aquifer Boundary
Water Table Elevation
City of Eudora Water Supply Well
Registered Irrigation or Domestic Well
Approximate Scale
0 0.5 1.0 miles
0 2,640 5,280 feet
Modified After: Nuzman by Terrane Resources Co. 17 Sept 2012
Exhibit 1
Penny Sand Test Borings
Proposed Obs. Well
1930 Water Table
1974 Water Table
785
790
W-5
W-6
W-7
W-8
W-9
785 ft
790 ft
795 ft
104 ft
64 ft
84 ft

KANSAS
RURAL
WATER
association
Quality water, quality life

P.O. Box 226 • Seneca, KS 66538 • 785/336-3760
FAX 785/336-2751 • http://www.krwa.net

October 11, 2012

Mayor Scott Hopson
City of Eudora
P.O. Box 650
Eudora, Kansas 66025-0650

RE: Sand and Gravel
Dredging Proposal

Dear Mr. Hopson:

Thank you for allowing me the opportunity to present written information and to speak before the city council on October 8, 2012. It was obvious that the city council wanted to take the time to understand the issue and by inviting all of the interested parties to speak, they have a very good understanding of the risks and benefits moving a nearby sand and gravel dredging operation off of the Kansas River and onto the floodplain.

It should be clear to most people that removing material from the river bed will cause the river system to react to the disturbance. Sand and gravel doesn't regenerate in the river. This material in the Kansas River and its alluvium is a mixture of the material deposited from the glaciers and material eroded from the Flint Hills, the Dakota Sandstone and the Rocky Mountains. The likelihood of "new" sand and gravel coming downstream is severely limited by the existing large dams on the Kansas River and its tributaries. Initially, this disturbance will affect the bed upstream and downstream as the river attempts to restore the previous slope with sediment in the channel and / or from the banks. As it is believed that the U.S. Army Corps of Engineers will suspend the permits allowing in-stream dredging on much of the Kansas River in 2013 because of these impacts to the river, companies that use or sell sand and gravel will be looking for new sources of this material.

Unfortunately, not much planning has occurred in the counties where the Kansas River and its associated sand and gravel resources are located. This lack of comprehensive planning to identify the best locations for off-stream sand and gravel dredging operations is causing conflicts between the sand and gravel companies hoping to move onto the floodplain and public water systems that depend on the groundwater in the sand and gravel aquifers. Other interested parties affected by this change in dredging policy are transportation departments, power companies, airports, pipelines, railroads, etc. Until this planning is done, public water systems, especially those water systems that do not have treatment facilities that are capable of treating surface water or groundwater under the direct influence of surface water, will need to be vigilant in protecting their source water supplies. They will have to be actively involved in the planning process.

I believe the city council was correct in reaching a decision to recommend denial of the conditional use permit. While it was speculated in one report that the off-stream sand dredging operation would not cause "contamination" of the aquifer, no evidence was presented in written form or verbally that the proposed pit could not introduce constituents common in surface water to the groundwater supply through the beds of gravel (exposed in the sides of the pit) which extend into the aquifer. Water systems such as yours, do not have a surface water treatment plant because of the natural filtration property of the relatively undisturbed aquifer. Creating a condition that could allow bacteria, viruses, protozoa such as *Cryptosporidium* (a parasite that is resistant to chlorine disinfection), or toxins from decaying algae to enter your water supply is unreasonable and unacceptable. A fact sheet on cryptosporidiosis is enclosed.

You can reach me by telephone at 785/640-4701, by e-mail at dhelmke@krwa.net or by writing to 6847 SE 29th Street, Tecumseh, Kansas 66542-9571. You can follow me on Twitter at @KRWA_WaterRghts. Please be reminded that the KRWA website at http://www.krwa.net has news and information for water and wastewater utilities, including water rights, source water protection and training opportunities.

Sincerely,

Douglas S. Helmke

Douglas S. Helmke, L.G.
Water Rights / Source Water Specialist
Kansas Rural Water Association

DSH
Enclosure
c: KRWA
JOHN HARRENSTEIN ✓

Facts About Cryptosporidiosis

What is cryptosporidiosis?

Cryptosporidiosis is a gastrointestinal illness caused by *Cryptosporidium*, a infectious pathogen that lives in the intestines of humans and mammals. Both the disease and the organism itself are commonly referred to as **Crypto**. Crypto is one of the most common causes of waterborne diseases in the United States: outbreaks related to recreational and drinking water increase every year. It is highly contagious and when left untreated, a person can become re-infected and/or infect others. Crypto is commonly transmitted by swallowing organisms from water, food, hands or other surfaces that have been contaminated with the organism. Crypto is most common during the summer and early fall. It occurs most frequently in young children (under the age of 10) and their caregivers. While anyone can be infected with Crypto, people with weakened immune systems (malnourished children, the elderly, patients receiving cancer chemotherapy patients with HIV/AIDS, etc.) can develop serious, life-threatening illnesses from Crypto.

Symptoms

Crypto symptoms usually begin within 2 to 10 days after exposure and generally last one to two weeks in people with healthy immune systems. Common symptoms include watery diarrhea, stomach cramps or pain, dehydration, nausea, vomiting, fever and weight loss.

Diagnosis

Diagnosis of Crypto can be complex and time-consuming because the organisms are very small and difficult to see under a microscope. Confirming a diagnosis of Crypto normally involves examining multiple stool samples over a period of several days.

Other Facts about Crypto

- The word "Crypto" comes from a Greek word meaning "hidden."
- Crypto is resistant to chlorine and other chemicals commonly used in recreational and drinking water.
- Crypto is not killed by alcohol gels and hand sanitizers.
- People can continue to pass Crypto in their stools for several weeks following illness.
- When doctors suspect Crypto, they sometimes treat patients before a definitive diagnosis is secured.
- If you suspect you or a loved one has Crypto you should consult your doctor or primary care clinician.
- Transmission of Crypto is not limited to ingesting contaminated water. Food and person-to-person transmission may be at least as important as drinking water and may be more likely to transmit higher dose exposures.

How Can Crypto be Prevented and Treated?

You can help to break the chain of transmission of Crypto if you:

- Avoid swallowing water while swimming, boating, or engaging in other recreational activities.
- Wash raw fruits and vegetables thoroughly with clean water before eating them.
- Wash you hands carefully before you eat, after using the restroom or changing diapers, after you have cared for anyone with diarrhea, and any time you may have been in contact with contaminated surfaces.
- Stay away from swimming pools and other recreational waters if you or a family member has had diarrhea.

Supportive Care and Treatment

- Doctors recommend drinking plenty of fluids to prevent dehydration during infection with Crypto and other illness causing diarrhea.
- A prescription medicine called nitazoxanide (Alinia®) may be used to treat Crypto in both adults and children 12 months of age and over.
- Nitazoxanide is available as a tablet for adults and as a liquid suspension. A three-day treatment regimen is recommended.
- Side effects of nitazoxanide are similar to those of a placebo (sugar pill).
- Nitazoxanide has not been shown to be effective for the treatment of diarrhea caused by Crypto in HIV-infected or patients or patients with weak immune systems.

National Foundation for Infectious Diseases
4733 Bethesda Avenue, Suite 750, Bethesda, MD 20814
(301) 656-0003 Web site: www.nfid.org August, 2008

Facts About Cryptosporidiosis

FACT: According to the CDC, Crypto has become one of the most common causes of waterborne diseases (recreational and drinking water) in the United States, with outbreaks increasing annually

FACT: Crypto is a chlorine-resistant pathogen that poses a serious public health threat because contamination of drinking or swimming pool water can lead to large community outbreaks

FACT: Crypto is spread by contact with contaminated water, food and surfaces. Swallowing water during recreational water activities is a common way Crypto is spread.

FACT: The tell-tale sign of Crypto infection is ***frequent, watery diarrhea that is not like other cases of diarrhea***. Other symptoms include dehydration, weight loss, stomach cramps or pain, fever, nausea and vomiting. Symptoms generally begin within two to ten days after exposure and last one to two weeks

FACT: Crypto is highly contagious and when left untreated, a person can become re-infected and/or infect others. Crypto can be shed in the stool for many weeks after symptoms clear

FACT: Dehydration is the most common problem people develop after being infected with Crypto

FACT: Persons with weak immune systems may develop prolonged illness with severe dehydration and other life-threatening complications

FACT: Maintenance of adequate fluid intake is vital for persons with Crypto and other types of diarrhea

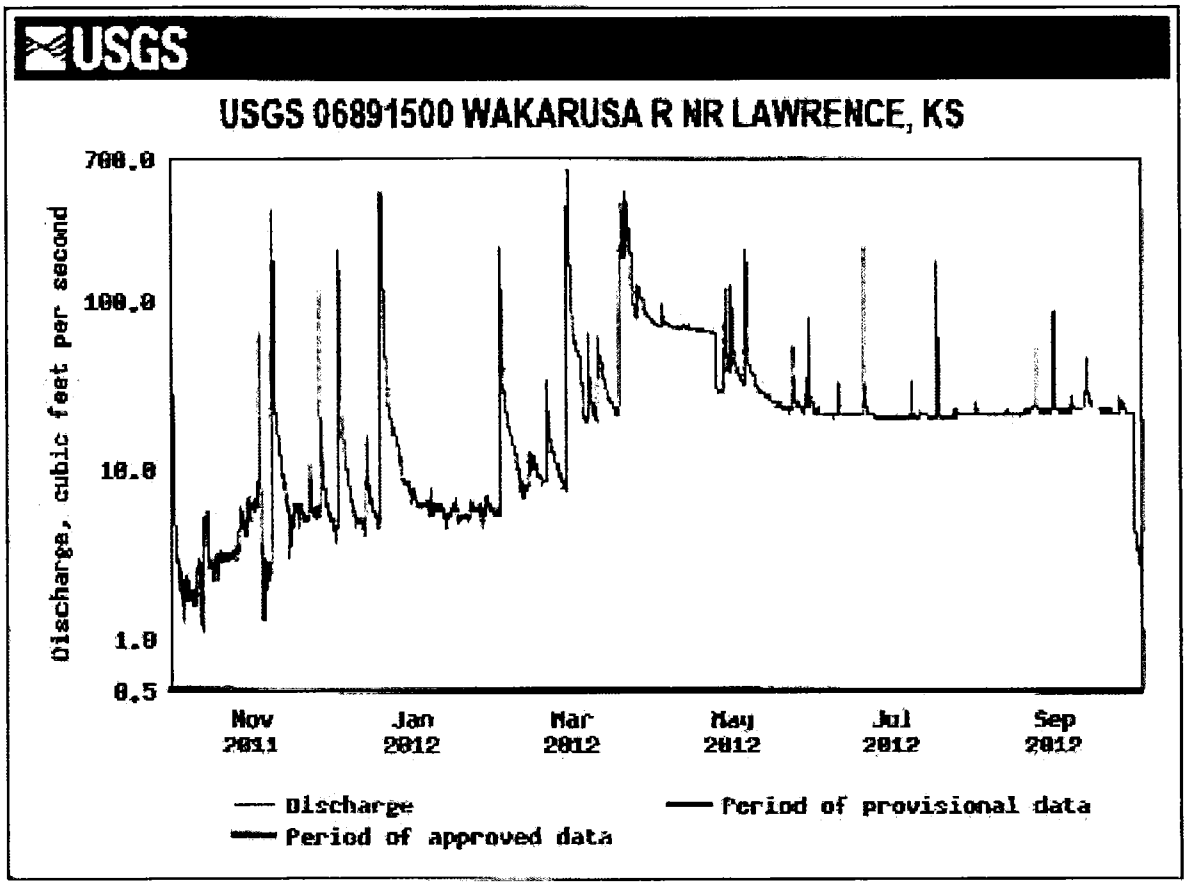
FACT: Persons who suspect diarrhea related to Crypto should consult a health-care provider.

National Foundation for Infectious Diseases
4733 Bethesda Avenue, Suite 750, Bethesda, MD 20814
(301) 656-0003 Web site: www.nfid.org August, 2008

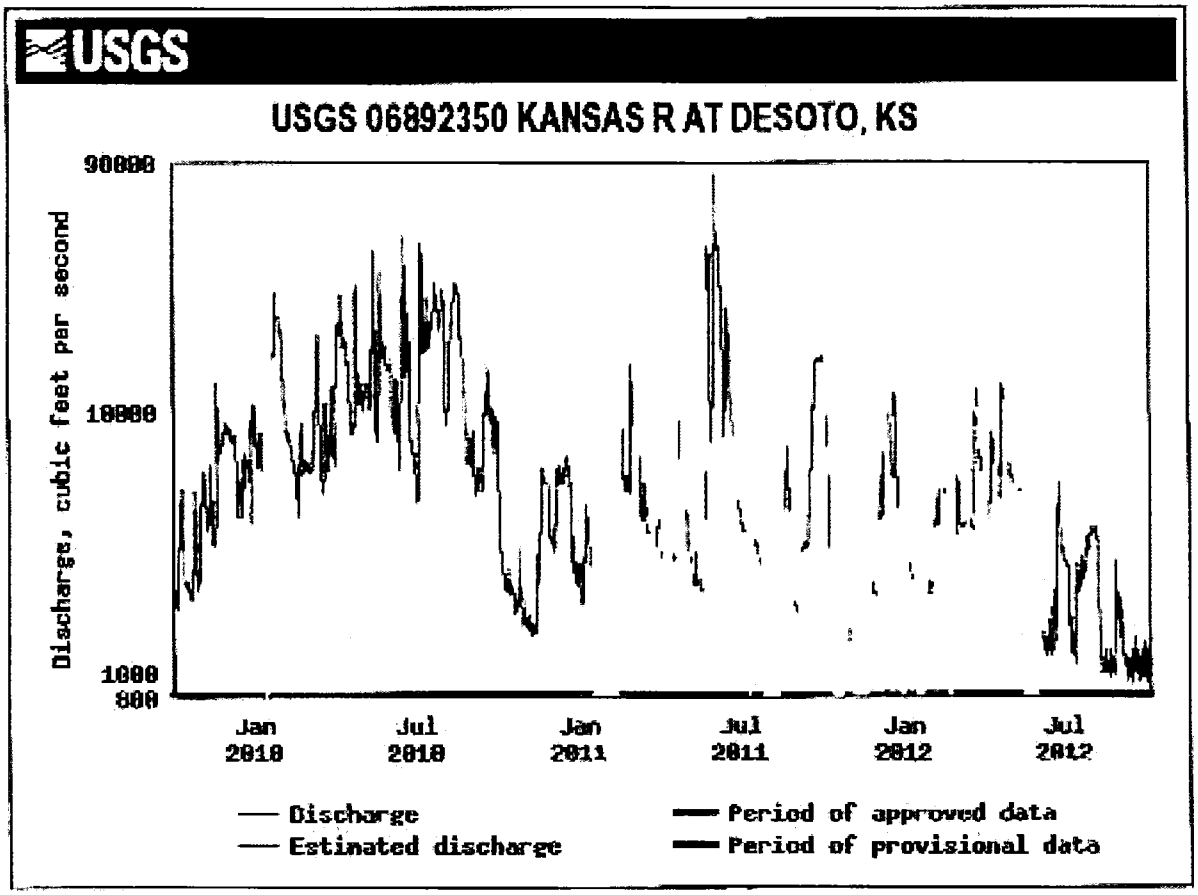
Comments Regarding the *Evaluation of a Sand Pit Operation for Penny's Concrete and Sand LLC* by Carl E. Nuzman

1. In Exhibit B, mentioned on page No. 3 of *Evaluation of Penny's Concrete and Sand LLC's Proposed Sand Pit Operation on Ground Water For the Lawrence Facility* dated September 12, 2012, Mr. Nuzman provides a "cross section" of "selected" wells, three with very detailed geologic information and two with incomplete information which do not fully penetrate the aquifer. The detailed well logs show coarse sand and gravel and one of the well logs shows boulders. This kind of material in an aquifer usually allows for high transmissivity, which is a measurement on how water flows through the aquifer formation. His report then discounts the recorded water levels on these well logs due to precipitation, drought, well test pumping, etc. and are therefore unreliable for water level use. His report then relies on "pre-development conditions", which haven't existed since the 1950's.

2. Mr. Nuzman concludes that the Wakarusa River is important to aquifer recharge, but does not supply any data showing flow in the Wakarusa River. Below is a graph showing recent flow. (From http://waterdata.usgs.gov/ks/nwis/rt)



The above graph shows instantaneous water flow in the Wakarusa River near Lawrence since October 1, 2011. Notice that some events of "high" flow have occurred but most was below 10 c.f.s. until March of this year. Releases from Clinton Reservoir contributed to an average flow of about 20 c.f.s. since June of 2012.



This graph shows the measured flow in the Kansas River near De Soto. Note that the average flow is over 100 times greater than the Wakarusa River and therefore more likely to contribute more recharge to the alluvial aquifer. At some times, flow is more than a 1,000 times greater.

3. On Page 5, Mr. Nuzman concludes that the "overappropriated" condition of the aquifer will serve to intercept any contaminants upgradient from the public water supply wellfields. Of the 4,868 acre-feet appropriated in his "effective" area, 3,686 acre-feet is the authorized total (over 75%) of just one water right. Water Right, File No. 9,391, which was last used in 2002, was recently obtained by the City of Lawrence. The City of Lawrence will not be "drawing" contaminants away from the other public water suppliers by the operation of this water right if it draws contaminants toward their wells.

4 In Section 6, no detailed information is given, including the name of the "particle tracking" analysis software that was used to generate the map identified as Exhibit F. Reference is given to K.G.S. Bulletin No. 130, part 1, which was published in 1958, which does not include a particle tracking model. It is likely (but not determined) that water level data from the 1958 report was used when the un-named software was used to generate the map. His previous comments about overappropriation are ignored when he uses the water level data from the 1950's to explain the normal conditions of today.

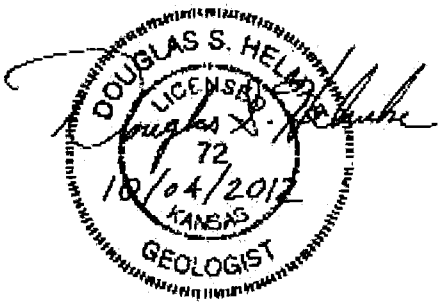
5. In Section 8, the report seems to contradict previous comments regarding the sand pit's lack of influence on water quality. Mr. Nuzman states that sand pits beneficially support the yield of wells that are down-gradient from a pit that is within the area of influence of a well. If this is true, the quality of the water in the pit will be extended into the aquifer some unknown distance.

6. In Section 9, "Conclusions", it is stated that present regulations require 200 feet of separation between a well and a surface water source. This regulation applies to public water supply wells where the screen of a well is less than 50 feet from the surface of the ground unless approved surface water treatment is employed. This regulation is drafted to account for wells in close proximity to rivers. It was not written to account for wells near pits that fully penetrate the aquifer. If the water being pumped by public water supply wells have biological, chemical or turbidity characteristics similar to surface water, it would be surprising that KDHE would not rule that the water is under the direct influence of surface water.

7. Mr. Nuzman does not mention this conclusion taken directly from Bulletin No. 130, part 1: "Wisconsinan and Recent alluvium in this portion of the Kansas River valley has an average thickness of 55 feet. This alluvium is an excellent aquifer, because the lower portion everywhere consists of several feet of permeable sand or gravel. Surficial silts several feet thick generally overlie the coarse-textured deposits and, where sandy, permit recharge from local precipitation. During periods of heavy pumpage the ground-water body, which normally discharges into Kansas River, receives large quantities of recharge from the river, increasing severalfold the amount of ground water available to properly spaced and constructed wells. Adequate quantities of ground water of fair quality are available for future municipal, irrigational, and industrial expansion in this part of the Kansas River valley."

A fully-penetrating pit likely is a greater contributor of recharge to the aquifer with minimal filtration, than a river that does not fully penetrate the aquifer. How much influence the pit has on groundwater quality has not been adequately determined. No analysis has been performed which will evaluate the behavior of the aquifer during periods of high pumpage by multiple wells, minimal precipitation in the immediate area and high flow in the Kansas River due to upstream reservoir releases, either. This worse-case scenario should be evaluated before making a determination that a sand pit will have no impact on groundwater water quality.

Submitted to the City of Eudora
October 4, 2012
Douglas S. Helmke, L.G.
Kansas Rural Water Association



Comments on the Carl Nuzman report:

"Evaluation of Penny's Concrete and Sand LLC,

Proposed Sand Pit Operation on Ground Water"

By

Carl D. McElwee, Ph.D

Emeritus Professor

Geology Department

University of Kansas

Lawrence, KS

September 18, 2012

Introduction

Mr. Nuzman has brought together a considerable amount of data regarding the proposed project. He is a respected member of the scientific community studying groundwater. As is always the case, the data must be interpreted and analyzed to draw conclusions. I would like to point out some places where the data may be interpreted and analyzed in an alternate and reasonable manner to arrive at different conclusions. In addition, I would like to bring out some other points that need to be considered in evaluating the possible impact of this pit mining operation.

Groundwater Gradient direction

The gradient of groundwater is the driving force that causes it to move. Mr.Nuzman mainly uses the water level data of Kansas Geological Survey (KGS) Bulletin 130, Part 1. The generalized static water table map that he uses (Exhibit D) gives too much weight to water moving down the Wakarusa River Valley (which joins the Kansas River Valley just south of the proposed sand pit). This distorts his ground water gradient and leads to the conclusion given in Exhibit F that the capture zone for the Eudora Well Field is south of the proposed pit.

On the other hand, if one considers the newer report KGS Bulletin 206, Part 2, it shows that the Kansas River is the major force and that water moves down the valley generally from west to east more or less parallel to the valley walls. The resulting groundwater gradient and flow direction is shown in Figure 1 below. This data shows that water will move from the proposed sand pit to the Eudora Well Field. I have done calculations of capture curves (area of groundwater capture in a given time by the well) and travel times based on work that I published in *Ground Water* (McElwee, 1991, A copy of that paper has been supplied to the DG CO Planning Office). That work shows that the minimum travel time between the proposed sand pit and the Eudora Well Field could be about 5.5 years. In addition, the 6 and 8 year capture curves significantly overlie the proposed sand pit, as shown in Figure 2 below. Details of this work are given in Appendix I.

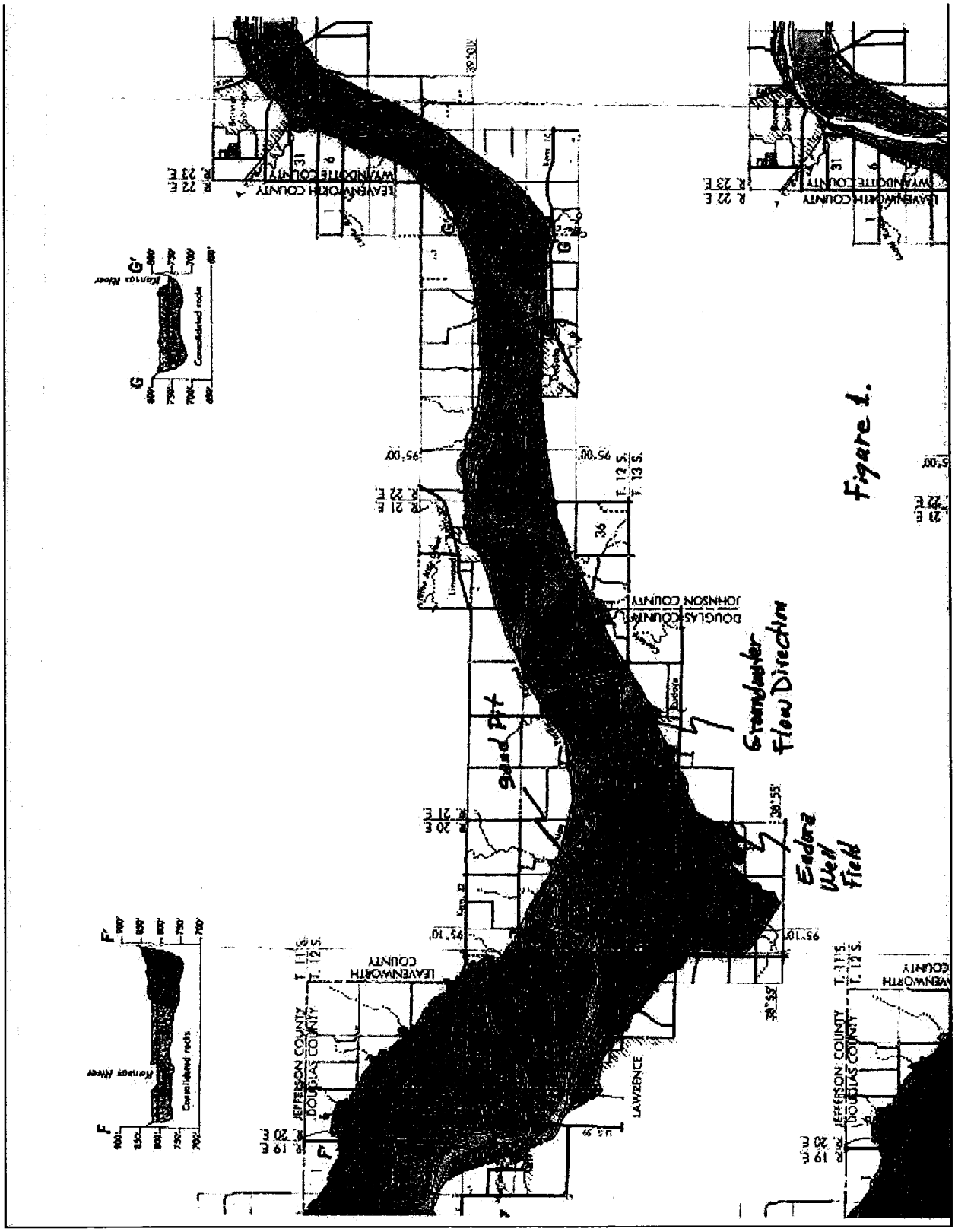


Figure 1.
Groundwater Flow Direction
Eudora Well Field
Eudora
LAWRENCE
JEFFERSON COUNTY
DOUGLAS COUNTY
LEAVENWORTH COUNTY
WYANDOTTE COUNTY
JOHNSON COUNTY
Kansas River
Consolidated rocks

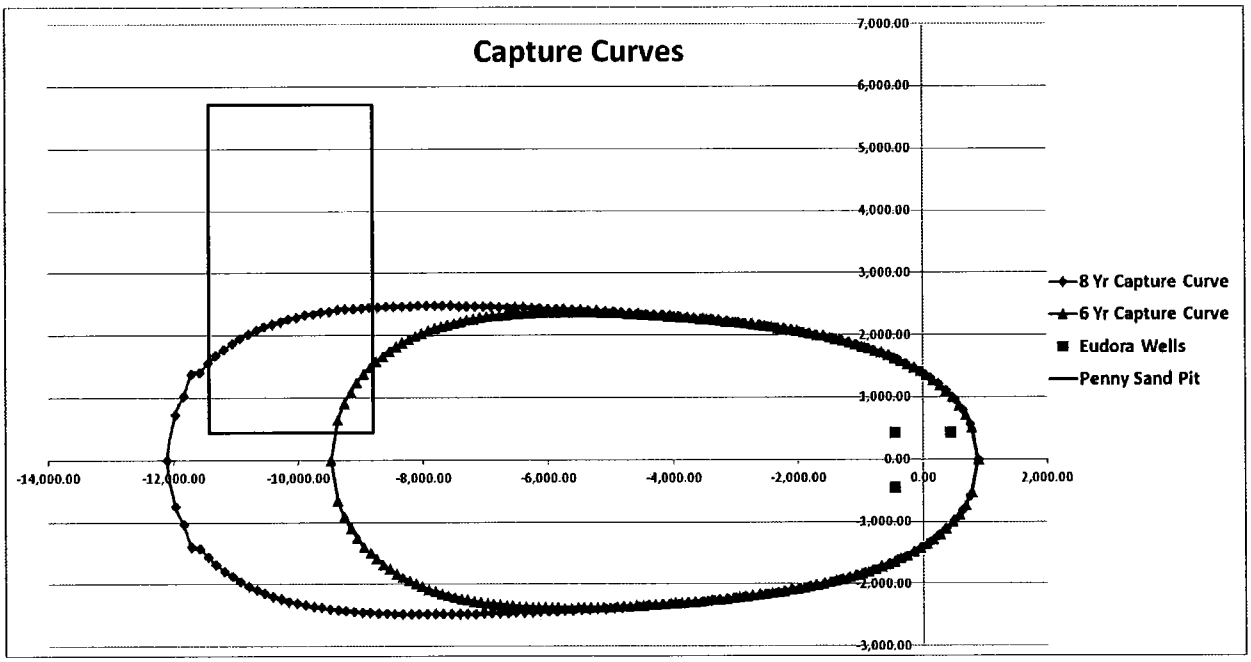


Figure 2.

Both of the KGS reports referred to are old and can't be relied on for absolute numbers. However, they do allow us to reach some general conclusions. In addition, there is a lot of variability in the aquifer (things change with space and time). So, the conclusion must be that one can't state with certainty that the proposed sand pit will have no effect on the Eudora Well Field. Of course there are many other private wells that are down-gradient from the proposed sand pit and much closer that could also be affected.

Effect of Pit on Water Levels and Quality in Aquifer

Mr. Nuzman states on page 8 that "The static water level elevation in the sand pit will be about the same as the water surface elevation in the Kansas River." That is probably true if the pit is close to the river. This means that the water level in the aquifer will be lowered around the pit, because the water levels in the aquifer are generally a little higher than the river level. This could negatively affect some nearby wells. Mr. Nuzman also states that "Sand pits beneficially support the yield of wells that are down-gradient from a pit that is within the area of influence of a well." In other words the well would be pumping water from the pit. This means

that the quality of the well water would depend on the quality of the water in the pit. In general, the quality of surface water in rivers and lakes is much poorer than the quality of groundwater. So there is the potential for pollution.

If this pit is allowed, a huge deep lake (about 70 feet deep on average) will be created. This will be a flow-through lake, which means that groundwater from up-gradient will flow in one side of the lake and flow out the down-gradient side of the lake. The net result is a continual mixing of the groundwater and the surface water from the pit, which then continues to flow down the valley in the aquifer to the next user of the groundwater.

As the well drilling logs in Mr. Nuzman's reports shows, the overburden (soil, silt, and clay) that must be removed to access the sand is substantial. It is in the range of 15-23 feet in most places, in some areas less and some areas more. However, most logs in the vicinity of the proposed sand pit indicate about 23 feet of overburden to be dealt with. This is a major logistics problem that must be dealt with while keeping any surface runoff out of the pit. There is the potential for pollution from surface runoff. This overburden material has been the filter material to keep pollutants out of the deeper aquifer, removing it exposes the aquifer. The resulting piles of surficial material may contain fertilizer and pesticide residue and daughter products from their decay. Apparently, the plan is to emplace at least some of this material back into the pit. If this is done, the overburden material should be extensively tested for possible pollutants before such use.

Mr. Nuzman mentions that a few investigations have been made on the effect of sand pits on groundwater quality and that they have not shown any significant human health effect. However, one can't infer from these few studies that there will never be a problem. In fact, at least one of those studies (KGS OFR 2008-4) did come to the conclusion that there was a measurable interconnection between the sand pit waters and the local aquifer and that there was a potential for pollution. The following is a direct quote from the conclusions of that study.

"The concentration distributions of pesticides and organics other than pesticides at the four pit sites in northwest Wichita, as well as the general pattern in iron, manganese, and ammonium ion concentrations in the downgradient well waters relative to the upgradient well and pit waters, indicate that surface water in the sand pits flows into the ground water in the southeast to south-southeast

direction of the ground-water flow at the study sites. The evidence for connection between the surface and ground waters at the two southern Wichita sites is not as strong as for the four northwest Wichita sites. However, distribution of some constituents and chemical properties do fit the general pattern of entrance of pit water into the ground water. This would be expected to occur most prominently when surface runoff into the pits increases the hydraulic gradient between the pit surface and ground-water levels. Thus, stormwater runoff containing contaminants can enter ground water through the sand pits and impact ground-water quality"

Effect of Pit on the River System

Material has previously been provided that shows the river bank in the vicinity of this proposed sand pit is unstable and has moved over time. Geologic history tells us this river will move again, we just don't know when. During a flood event the river could change course and breach the proposed sand pit. This would have a dramatic effect on the river system. Since the sand pit is deep (about 70 feet) and the river is very shallow, the pit would capture the bed load of the river and cause the river to become unstable. This would result in deepening the channel upstream (head cutting) and degradation of the channel downstream. It would take years for the river to reach a new stable equilibrium. Pits should not be allowed in areas where pit capture is a possibility.

Conclusions

I have shown that a reasonable interpretation of the available groundwater data indicates that the proposed sand pit could indeed have an effect on the Eudora Well Field and other local wells. The net effect will be a flow-through lake that mixes up-gradient aquifer water with sand pit water and sends it down-gradient into the aquifer and further down the valley. This behavior has been documented in studies of sand pits and aquifers. So, the conclusion is that any pollution must be prevented. The huge amount of overburden produced and its handling could be a source of pollution. Finally, the unstable nature of the river bank in this area makes it possible that the sand pit could capture the river during high flows and cause a channel change. If this were to happen, the river bed would be unstable for years until a new equilibrium was reached.

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Resume

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NSF Traineeship for Graduate Work (4 years, 1965-1969)

Mobil Oil Fellowship (1 year, 1969-1970)

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Sabbatical leave awarded for groundwater research in the United Kingdom (Jan.- May, 1993)

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Leo M. & Robert M. Orth Water Resources Scholarship, Dept. of Geology, 2008

Present Major Scientific Interests:

Theoretical description of flow systems • Characterization of aquifer heterogeneity by field, laboratory, and modeling activities • Model studies of groundwater availability in Kansas • Sensitivity of groundwater models to variations in transmissivity and storage • Modeling of chemical quality of groundwater systems • Application of seismic techniques to groundwater exploration and evaluation

Professional Journal Articles

McElwee, C.D., and Yukler, M.A., 1978, Sensitivity of groundwater flow models with respect to variations in transmissivity and storage: *Water Resources Research*, v. 14, no. 3, p. 451.

McElwee, C.D., 1980, Theis parameter evaluation from pumping tests by sensitivity analysis: *Ground Water,* v. 18, no. 1, p. 56.

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Appendix I.

This calculations presented here is based on work I did and published back in 1991 in the *Ground Water* journal. I have supplied to the Planning Department a copy of that article for reference. This work shows that the minimum travel time from the Penny sand pit to the Eudora Well Field is about 5.5 years. This is from the closest point of the pit to the center of the well field. I have also calculated the 6 and 8 year capture curves for the Eudora Well field. The work shows that these capture curves include significant portions of the proposed pit.

The important parameters are as follows:

K - hydraulic conductivity - I used 1000ft/day. This is a measure of how fast water moves in the aquifer. The Nuzman report uses data from a well test on Eudora No. 8 and reports 8800 gpd/ft2, which is 1176 ft/day. This also agrees with data I have personally collected from the Kansas River Valley.

I - Hydraulic gradient (slope) of the ground water system - I used .0005, which is about 5ft in 2 miles. Bulletin 130, Part 1 and Bulletin 206, part 2 from the Kansas Geological Survey show head maps of the area in question that support this number.

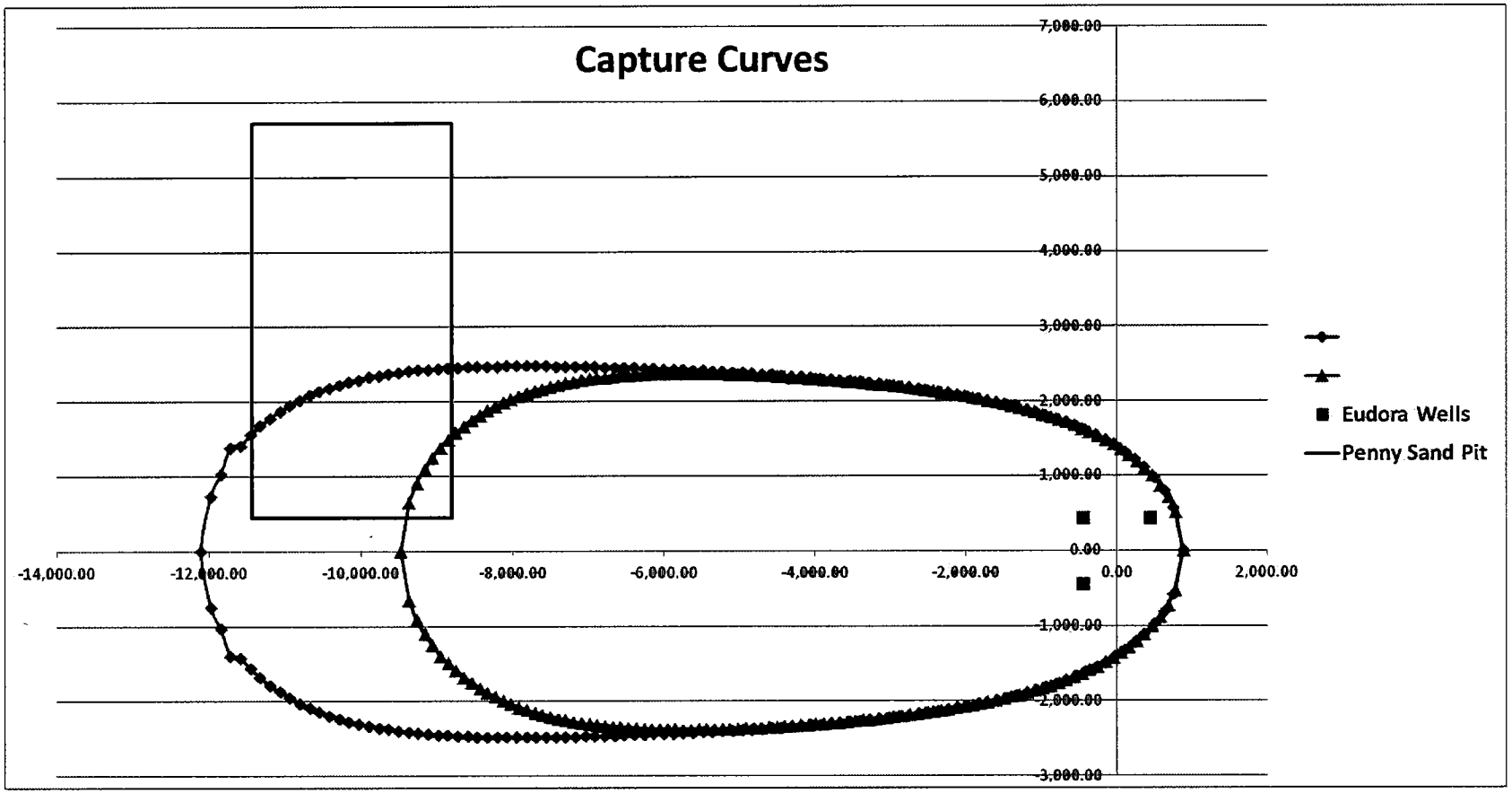
qo = -KI = -0.5 ft/day - average Darcy velocity in the aquifer - Multiplying the above two values gives this result.

B - Effective saturated thickness of aquifer - I used 30 feet. Although the aquifer has greater saturated thickness, the upper part is much finer material and has much less hydraulic conductivity. I have seen this consistently in my field work.

n - effective porosity (a measure of the pore space that water flows through) - I used 0.15 which is an average value suggested by the work of Bull 260, and also is consistent with my field work.

Q - Pump rate of the Eudora Well Field - I used 83425 ft3/day which is the approved water right of 227.77 MGY or about 433gpm.

These parameters can be used to calculate the average travel times and capture curves for parcels of water moving under the influence of the natural groundwater flow system and the influence of the pumping in the Eudora Well Field. The details of the background material to arrive at the formulas used in the following pages are given in the above referenced *Ground Water* article. The pages that follow show the capture curves for 6 and 8 years and the average minimum travel time between the sand pit and the Eudora Well Field. A capture curve outlines the area of groundwater that will flow to the pumping well in a given amount of time.


Capture Curves
7,000.00
6,000.00
5,000.00
4,000.00
3,000.00
2,000.00
1,000.00
0.00
-1,000.00
-2,000.00
-3,000.00
-14,000.00
-12,000.00
-10,000.00
-8,000.00
-6,000.00
-4,000.00
-2,000.00
0.00
2,000.00
Eudora Wells
Penny Sand Pit

qo =	-0.5	Average Darcy Velocity
n =	0.15	Effective Porosity
Q =	83425	Well Discharge
B =	30	Effective Aquifer Thickness
X =	-3800	Distance traveled along X axis
t =		Time of travel

$$X = \frac{qo}{n}t + \frac{Q}{2\pi qoB} ln\left(1 + \frac{2\pi qoB}{Q}X\right)$$

$$t = \left[\frac{n}{qo}\right]\left[X - \frac{Q}{2\pi qoB} ln\left(1 + \frac{2\pi qoB}{Q}X\right)\right]$$

t = 2005 days = 5.49 years

6 yr. Capture Curve Data

X(Ft)	Y(Ft)
8.8508E+02	0.0000E+00
7.8145E+02	-5.1844E+02
6.7783E+02	-7.2470E+02
5.7420E+02	-8.7735E+02
4.7057E+02	-1.0015E+03
3.6694E+02	-1.1069E+03
2.6331E+02	-1.1989E+03
1.5969E+02	-1.2804E+03
5.6059E+01	-1.3536E+03
-4.7568E+01	-1.4198E+03
-1.5120E+02	-1.4802E+03
-2.5482E+02	-1.5357E+03
-3.5845E+02	-1.5867E+03
-4.6208E+02	-1.6340E+03
-5.6571E+02	-1.6778E+03
-6.6933E+02	-1.7187E+03
-7.7296E+02	-1.7568E+03
-8.7659E+02	-1.7925E+03
-9.8022E+02	-1.8259E+03
-1.0838E+03	-1.8573E+03
-1.1875E+03	-1.8869E+03
-1.2911E+03	-1.9147E+03
-1.3947E+03	-1.9410E+03
-1.4984E+03	-1.9659E+03
-1.6020E+03	-1.9894E+03
-1.7056E+03	-2.0117E+03
-1.8092E+03	-2.0328E+03
-1.9129E+03	-2.0529E+03
-2.0165E+03	-2.0720E+03
-2.1201E+03	-2.0901E+03
-2.2238E+03	-2.1074E+03
-2.3274E+03	-2.1239E+03
-2.4310E+03	-2.1396E+03
-2.5346E+03	-2.1546E+03
-2.6383E+03	-2.1689E+03
-2.7419E+03	-2.1825E+03
-2.8455E+03	-2.1956E+03
-2.9491E+03	-2.2081E+03
-3.0528E+03	-2.2200E+03
-3.1564E+03	-2.2314E+03
-3.2600E+03	-2.2423E+03

-3.3637E+03	-2.2527E+03
-3.4673E+03	-2.2627E+03
-3.5709E+03	-2.2722E+03
-3.6745E+03	-2.2813E+03
-3.7782E+03	-2.2899E+03
-3.8818E+03	-2.2982E+03
-3.9854E+03	-2.3060E+03
-4.0891E+03	-2.3135E+03
-4.1927E+03	-2.3206E+03
-4.2963E+03	-2.3272E+03
-4.3999E+03	-2.3335E+03
-4.5036E+03	-2.3394E+03
-4.6072E+03	-2.3449E+03
-4.7108E+03	-2.3500E+03
-4.8144E+03	-2.3547E+03
-4.9181E+03	-2.3590E+03
-5.0217E+03	-2.3628E+03
-5.1253E+03	-2.3662E+03
-5.2290E+03	-2.3691E+03
-5.3326E+03	-2.3715E+03
-5.4362E+03	-2.3733E+03
-5.5398E+03	-2.3746E+03
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6.7783E+02	7.2470E+02
7.8145E+02	5.1844E+02
8.8508E+02	0.0000E+00

8 yr. Capture Curve Data

X(Ft)	Y(Ft)
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7.5519E+02	-5.7893E+02
6.2523E+02	-8.0688E+02
4.9526E+02	-9.7403E+02
3.6530E+02	-1.1087E+03
2.3533E+02	-1.2220E+03
1.0536E+02	-1.3199E+03
-2.4604E+01	-1.4059E+03

-1.5457E+02	-1.4824E+03
-2.8454E+02	-1.5510E+03
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-5.4832E+03	-2.4112E+03
-5.6132E+03	-2.4175E+03

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6.2523E+02	8.0688E+02
7.5519E+02	5.7893E+02
8.8516E+02	0.0000E+00

Wells X (map in)	Wells Y (map in)	Wells X (ft)	Wells Y (ft)
-0.25	0.25	-440	440
-0.25	-0.25	-440	-440
0.25	0.25	440	440

Pit X (map in)	Pit Y (map in)	Pit X (ft)	Pit Y (ft)
-5	0.25	-8800	440
-6.5	0.25	-11440	440
-6.5	3.25	-11440	5720
-5	3.25	-8800	5720
-5	0.25	-8800	440

Douglas County Planning Commission
6 East 6th Street
Lawrence, Kansas 66044

October 11, 2012

Re: Proposed Conditional Use Permit for extension of sand and gravel extraction in an area adjacent to 1564 E. 1850 Road. This site lies directly south of the Kansas River midway between Lawrence and Eudora.

I recommend that this proposal be DENIED.

This conclusion is based on my many years of study and mapping of the Kansas River, including publication, in 2009, of an atlas of Historical Channel Changes of the Kansas River and its Major Tributaries. In reviewing available data I find several reasons that excavation within the proposed area could have several negative effects for the general public.

1) Potentially most serious would be pollution of the water supply for the city of Eudora. Underlying the flat valley floor in this region is a sequence of interlayered sand and gravel that approaches 100 feet in thickness. A large volume of water occupies the spaces between grains of this sediment. This water seeps slowly eastward in a downvalley direction, some being captured by both private and municipal wells. Less than two miles east of the proposed new excavation site is the well field that supplies potable water for the public water system of the City of Eudora. In other words, Eudora's water supply passes through sands lying beneath the proposed new extraction pit.

Any sand-and-gravel operation requires the presence of at least a few motors and transient vehicles that will inevitably leak contaminating fluids which can seep into and through subsurface sediments and become part of the downstream movement of the ground water. Furthermore, this area on the valley floor is subject to inundation during major floods. The high level surface flow also could pick up contaminants from the new sand pit and carry them downvalley to the Eudora well field.

Inspection of detailed maps or aerial photographs of the Kansas River Valley west of Eudora reveals that the proposed extraction site lies farther north (as well as west) of the Eudora well field. It might therefore be argued that pollutants from the proposed sand pit would pass downvalley north of the well field location and so have no influence on the wells. However, records of the location of the river channel during the past few hundred years show that the stream has locally been flowing from northwest to southeast. That means that sand bodies accumulating in the channel would be elongated in that direction, an orientation that could lead subsurface water movement to go from the pollutant source of the new pit directly to the Eudora well field.

This all means that opening a new sand and gravel extraction pit at the proposed location could seriously endanger the purity and integrity of Eudora's water supply.

2) Data currently available to me do not define the precise location of the well that supplies water to the house at 1564 E 1850 Rd. Excavation on the proposed new site for sand and gravel extraction could seriously impinge on the supply of water from that private well. In fact, opening and deepening of the new pit might divert all local groundwater flow from the well and leave the residence with no water supply at all. The situation certainly requires assessment.

3) At the northwestern corner of the proposed new operation the Kansas River follows a sharp, almost V-shaped bend to the north and then back to the southeast. This bend has been actively shifting shape and location during the past several decades. It can be assumed that this dynamic will continue at least into the near future. The trend suggests that the channel will soon cut off or cut through the sharp bend by eroding through the location of the present sand and gravel operation. This channel move could also cut away at least the northern part of the proposed new operation. Such a shift of channel position would negatively affect the new extraction operation, and might

establish a new channel dynamic that would affect streamflow in both downstream and upstream locations. Final effects and configurations cannot immediately be determined, but could involve unexpected erosion into productive cropland.

Several predictable effects of establishment of a new sand and gravel extraction operation adjacent to 1564 East 1850 Road between Lawrence and Eudora tend to have negative impacts on nearby parts of the local valley floor. However, it is endangerment of the well field for the City of Eudora municipal water supply that demands closest attention. Chance of contamination of that resource is completely unacceptable for the public welfare.

Wakefield Dort Jr.

Wakefield Dort, Jr.

Emeritus Professor Geology
The University of Kansas

MEMORANDUM

TO:	City of Eudora Planning Commission
CC:	City of Eudora Staff
FROM:	Scott Michie, City of Eudora Planning Advisory Consultant
SUBJECT:	**Staff Findings,** Penny Sand Conditional Use Permit to Douglas County
DATE:	**September 10, 2012** **County Agenda of 9-24-2012, Sand Pit CUP**

The City of Eudora plans and code requirements are met in the subject sand pit application. These staff findings are submitted based on the three City zoning standards considered for a permit application most similar to the county's CUP:

Eudora Standard 1: Whether the proposed use meets City regulations.
Staff Finding: The subject application does not conflict with City of Eudora regulations, because the sand dredging site is at or beyond the outer northwest edge of the City's Planning Area; and as such, does not impede the City's long-standing public policies for: a) utilization and conservation of the natural resources northwest of the City, b) protection of its planned long term industrial areas, and c) minimization of industrial traffic through town on Main Street heading south to K-10 Highway.

Eudora Standard 2: Whether the proposed use complies with the Comprehensive Plan.
Staff Finding: The application does not conflict with the City of Eudora Comprehensive Plan. The City plan calls for preservation of the river floodplain natural resources in its planning area, recognizing them as "the most prominent natural features north and west of the City." As the current processing plant is outside of the City's planning area, and the expanded sand dredging would be partially beyond the City's planning area, the operation may be considered outside of the area of City concern for "preservation of the river floodplains in its planning area." In addition, the Penny Sand application complies with the industrial land use recommendation of the City Map by directing industrial traffic west of the City:

> *Industrial areas should have reasonable and convenient access to major arterials and railroad facilities as required. The use of local streets and traffic that cuts through the community off of arterial streets is strongly discouraged as it increases road maintenance and traffic conflicts.*

Eudora Standard 3: Whether the proposed use and site plan will be objectionable or detrimental to the public welfare of the community under the circumstances of the particular case regarding setback, height, density and similar aspects.
Staff Finding: No such objection or detriment is found in this case.

Review and analysis by Terrane Resources Company should be considered before the public can be assured against harm as to long-term potential impacts of the proposed sand pit operation on City of Eudora public water wells.

End of Memorandum

Friends Kaw

September 21, 2012

Douglas County Commission
1100 Massachusetts Street
Lawrence, KS 66044-3040

RE: CUP for proposed Penny's Concrete Inc. Pit Mine

Friends of the Kaw, Inc. is a 501 c 3, grassroots environmental organization whose mission is to protect and preserve the Kansas River for present and future generations. Towards that end, we have advocated - since our inception in the early 1990's - that in-river sand and gravel operations move out of the river and onto the land (pit mining) due to (a) irreparable harm done to the river's channel, banks and ecosystem; and (b) degradation of our drinking water quality; (c) degradation to public water intake supply systems; and bridge structures.

The Kansas River has been commercially mined (dredged) for sand and gravel since the early 1900's. Past dredging activities are documented to have caused significant damage to riverbed, habitat, and water quality.

The Army Corps is currently considering a proposal from five private dredging companies to increase dredging on the Kaw close to 50%, from 2.2 million tons to 3.2 million tons of sand per year.

The following preliminary findings come from a study funded by the Kansas Department of Wildlife and Parks (KDWP) and carried out by Kansas State University researchers Melinda Daniels and Craig Paukert. The scientists have documented riverbed incision in dredged reaches, which is most likely also causing excessive bank erosion both upstream and downstream of dredge sites.

Private in-channel dredging operations on rivers like the Kansas River cause deepening and widening of the channel and accelerate erosion of the banks. As a result, dredging lowers the water level of the river and the adjacent water table in the floodplain. This creates the risk for harm to public river uses (such as water treatment facilities, municipal wells, bridge footings, etc.) as well as to fish communities throughout the watershed, including endangered species.

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Friends of the Kaw recently interviewed Daniels for its public comment to the U.S. Army Corps of Engineers. "If you take 3.2 million tons from the river bottom, then the river will take 3.2 million tons from the riverbanks, trying to balance the sediment load in the system," Daniels said. "That's the simple physics of how water works in river channels to transport sediment. Landowners along the river, particularly farmers with unforested river banks next to their fields should be worried. So should anyone with a water intake pipe or a creek in their backyard. The effects of in-channel dredging will propagate both upstream and downstream from the dredge site until a hard control point, like a dam or a bedrock outcrop, is reached. That means up tributary streams as well as the main river."

Daniels surveyed major dredge holes on the Kansas River with a sophisticated new measuring technology, an acoustic Doppler instrument that mapped river channel topography and measured water velocity. The researchers discovered that while the Kansas River averages four to five feet deep, active dredge holes can measure up to forty feet deep.

The researchers also discovered that these deep dredge holes can migrate up and down river - sometimes very rapidly, depending on water conditions. Even during small flow increases, researchers documented the upslope lip of a dredge hole traveling upstream.

"People used to think the dredge holes just filled up, but now we know they don't. The holes first cause erosion upstream and downstream and then eventually do fill in, but not before causing a net loss of sediment from the bed and banks of the channel, meaning the channel does not simply go back to its original state," Daniels said. "If there's no bedrock, or physical structure like the Bowersock Dam to stop them, those dredge holes cause channel erosion that will keep on going through the entire river network. Their effects can even travel up the tributaries." Unless a bridge footing or other engineering infrastructure in the river is armored, the migrating hole could erode that physical structure as well.

The technical term for this river phenomenon is a "migrating head cut." Here's how it works:
The Kansas River is a sand bed river. Sand is a light sediment, and water transports it easily. When dredgers excavate into the riverbed, that hole creates a steep wall (or head cut) where the river depth suddenly increases. Water rushes rapidly over that wall, gaining speed and picking up sand from the upstream edge. At the same time, some sand falls into the hole. The water passing over the hole then picks up new sediment downstream, causing erosion there as well. The hole starts to expand, both upstream and downstream.

Over time, repeated dredging deepens and widens the river by removing sediment from the system. The result is that the river bottom lowers, along with the water level. This can leave the intakes for water treatment plants stranded. Dredging on the Missouri River has been scaled back recently because of similar problems propagating into the lower Kansas River and other tributaries to the Missouri.

When the river deepens, the water table in the floodplain lowers. Daniels said that this creates the potential for less water storage, which could affect the many municipal wells along the river. A lower water table also affects river vegetation and forests. For example, the cottonwood – the state tree of Kansas – can't survive unless its roots can reach a good water supply.

The deep dredge holes may affect fish populations, too. "The river's physical habitat is significantly different between dredged and un-dredged areas," noted Daniels.

However, dredging's most major environmental impacts for fish are not limited to the Kaw. Since migrating head cuts can also affect river tributaries, Daniels said the K-State study raises questions about risks to the habitat of endangered species (like the Topeka Shiner) that live in these smaller streams.

Daniels said that knowledge of the environmental impacts of dredging is incomplete without studying dredging's impacts on the entire Kansas River system.

"We need a new environmental impact study that considers the impacts of dredging on fish that live in the tributaries as well," said Daniels. Right now, the U.S. Army Corps of Engineers is depending on an environmental impact statement (EIS) dating from 1991.

Before Daniels and Paukert carried out their study, the effect of sand and gravel dredging on the Kansas River had not been seriously studied. This study was the first time such sophisticated measuring technology has been used.

"The Army Corps has studied similar conditions with sand dredging on the Missouri River," said Daniels. "They are aware of the problems, and if dredging is a problem for the Missouri River, then it's going to be a problem for the Kansas River. Simply shifting the problem from the Missouri to the Kansas is not a good strategy."

How fast will the dredge holes move? Water movement on the Kaw is greatly influenced by how much water the Army Corps releases from upstream reservoirs. Extreme rains plus reservoir releases can add a lot of extra velocity to the Kansas River system. In some circumstances, this may mean the dredge holes have the potential for very rapid movement.

Friends of the Kaw understands that sand is needed for a healthy construction economy and we believe enough geological studies provide evidence that sand can be reasonably and efficiently obtained from "off-river" pit mines in the Kansas River valley. Friends of the Kaw has reviewed the plans drafted by Land Plan Engineering for Penny's Concrete, Inc. proposed pit mine. We support this application for a pit mine by Penny's Concrete, Inc. However, we encourage the Douglas County Commission and Planning Commission to carefully consider and address the residential neighbors' concerns.

Sincerely,

Laura Calwell, Kansas Riverkeeper for Friends of the Kaw

Cc: Phil Struble, Land Plan Engineering

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Lawrence-Douglas County Planning Commission
Eudora Planning Commission
City Hall
Lawrence, Kansas 66044

RE: ITEM NO. 1: CONDITIONAL USE PERMIT FOR PENNY SAND PIT; N 1500 RD & E 1850 RD (MKM)

Dear Chairman Liese and Planning Commissioners:

The League of Women Voters of Lawrence/Douglas County bases its letters and communications on its adopted Environmental Positions. Based on excerpts from these Positions which read, to "...preserve the social and physical environment...avoid pollution of air, water, and land...[support] the conservation of agricultural land...at the county level...," we are asking that you carefully consider the environmental impact of the Penny Sand Pit excavation operation.

We recognize that the utilization of our natural resources is a necessary feature of human activities, but that we must also do it wisely and with careful consideration for preserving a sustainable environment. Therefore, based on the material available in the Staff Report, we cannot support the pit mining for sand proposed in the current request for **CUP-12-00099** and urge that the Planning Commissions deny the application.

Our reasons are as follows:

1. Contamination of the Eudora water supply is a distinct possibility based on the professional research of Professor Carl McElwee, a recognized authority on groundwater and water resources.

2. Contamination of nearby wells of neighboring properties would likely occur.

3. Chances for the permanent reorientation of the Kansas River course would be increased, especially in a flood, an environmental misfortune that many in Douglas County have attempted to avoid using containment measures.

4. Loss of irreplaceable Capability Class I and II agricultural soils would occur. *This loss would be permanent, whereas the gain from the sand production would be relatively short-lived.*

5. The effects of the mining operation would be counter to several statements and policies that *Horizon 2020* encourages us to follow.

6. Reclaiming the land and providing a safe and stable environment during the 30-year initial approval period of the CUP will be very expensive for the operator of the project. Maintaining the lake will also be someone's financial responsibility. *There is no requirement for providing a bond or other financial guarantee to the County in the event that the owner of the project goes bankrupt or otherwise fails.*

7. Because of the number of conditions required to be met, it can be predicted that these conditions will be costly to monitor and difficult to properly enforce. This will make it less of a positive revenue gain for the County.

For these reasons and others not mentioned here, we urge the Planning Commissions to recommend denial of this open pit mining **CUP-12-00099.** We appreciate the careful consideration that the Planning Commissions give to issues such as this. Thank you.

Best regards,

Melinda Henderson, President
LWV Lawrence/Douglas County

Alan Black, Chair
Land Use Committee

Comments on the Carl Nuzman report:

"Evaluation of Penny's Concrete and Sand LLC,

Proposed Sand Pit Operation on Ground Water"

By

Carl D. McElwee, Ph.D

Emeritus Professor

Geology Department

University of Kansas

Lawrence, KS

September 18, 2012

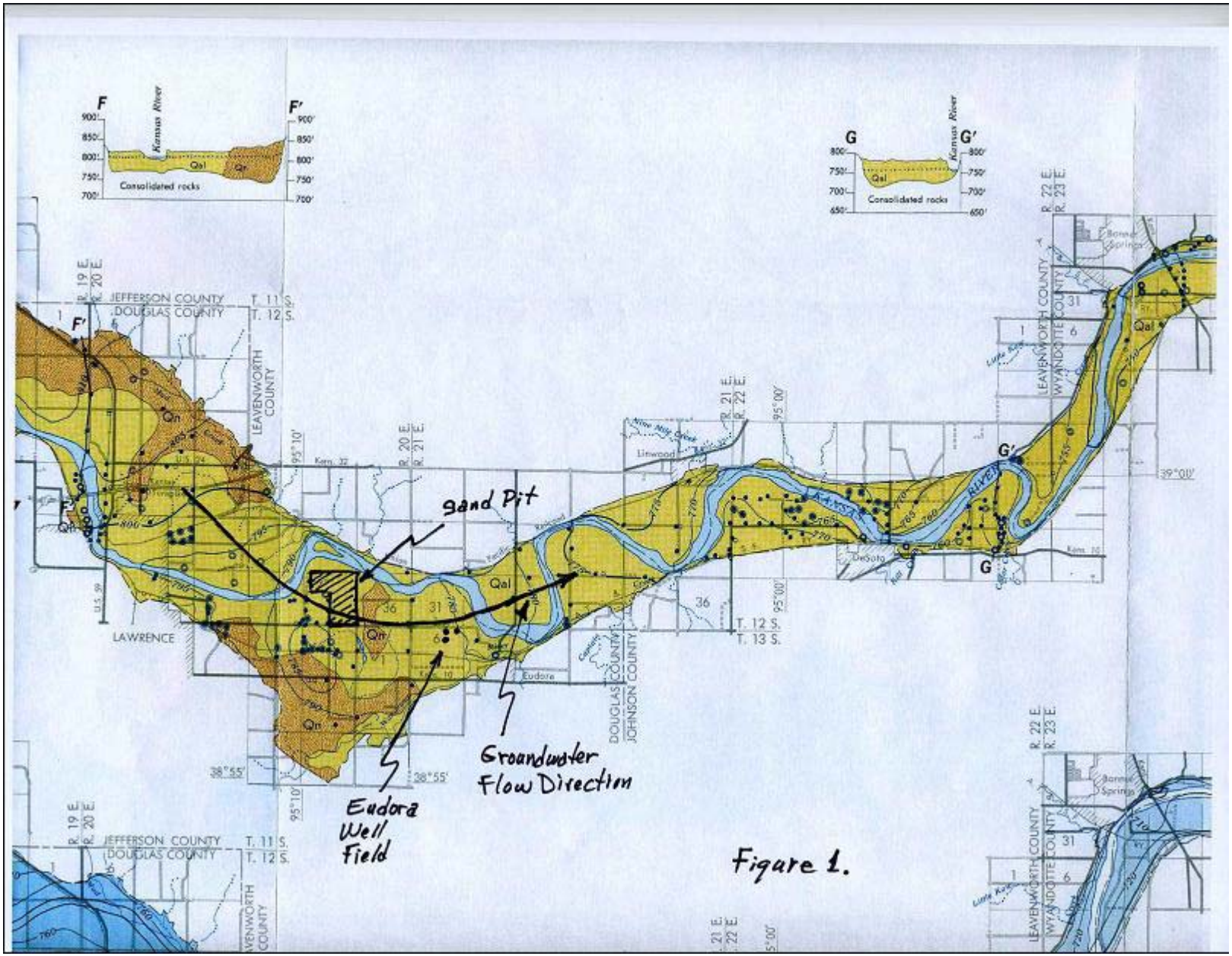
Introduction

Mr. Nuzman has brought together a considerable amount of data regarding the proposed project. He is a respected member of the scientific community studying groundwater. As is always the case, the data must be interpreted and analyzed to draw conclusions. I would like to point out some places where the data may be interpreted and analyzed in an alternate and reasonable manner to arrive at different conclusions. In addition, I would like to bring out some other points that need to be considered in evaluating the possible impact of this pit mining operation.

Groundwater Gradient direction

The gradient of groundwater is the driving force that causes it to move. Mr.Nuzman mainly uses the water level data of Kansas Geological Survey (KGS) Bulletin 130, Part 1. The generalized static water table map that he uses (Exhibit D) gives too much weight to water moving down the Wakarusa River Valley (which joins the Kansas River Valley just south of the proposed sand pit). This distorts his ground water gradient and leads to the conclusion given in Exhibit F that the capture zone for the Eudora Well Field is south of the proposed pit.

On the other hand, if one considers the newer report KGS Bulletin 206, Part 2, it shows that the Kansas River is the major force and that water moves down the valley generally from west to east more or less parallel to the valley walls. The resulting groundwater gradient and flow direction is shown in Figure 1 below. This data shows that water will move from the proposed sand pit to the Eudora Well Field. I have done calculations of capture curves (area of groundwater capture in a given time by the well) and travel times based on work that I published in *Ground Water* (McElwee, 1991, A copy of that paper has been supplied to the DG CO Planning Office). That work shows that the minimum travel time between the proposed sand pit and the Eudora Well Field could be about 5.5 years. In addition, the 6 and 8 year capture curves significantly overlie the proposed sand pit, as shown in Figure 2 below. Details of this work are given in Appendix I.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JEFFERSON COUNTY
DOUGLAS COUNTY
LEAVENWORTH COUNTY
WYANDOTTE COUNTY
JOHNSON COUNTY
LAWRENCE
Eudora
DeSoto
Linwood
Bonner Springs
Qal
Qn
Qm
Sand Pit
Groundwater Flow Direction
Eudora Well Field
T. 11 S.
T. 12 S.
T. 13 S.
R. 19 E.
R. 20 E.
R. 21 E.
R. 22 E.
R. 23 E.
95°10'
95°00'
38°55'
39°01'

Figure 1.

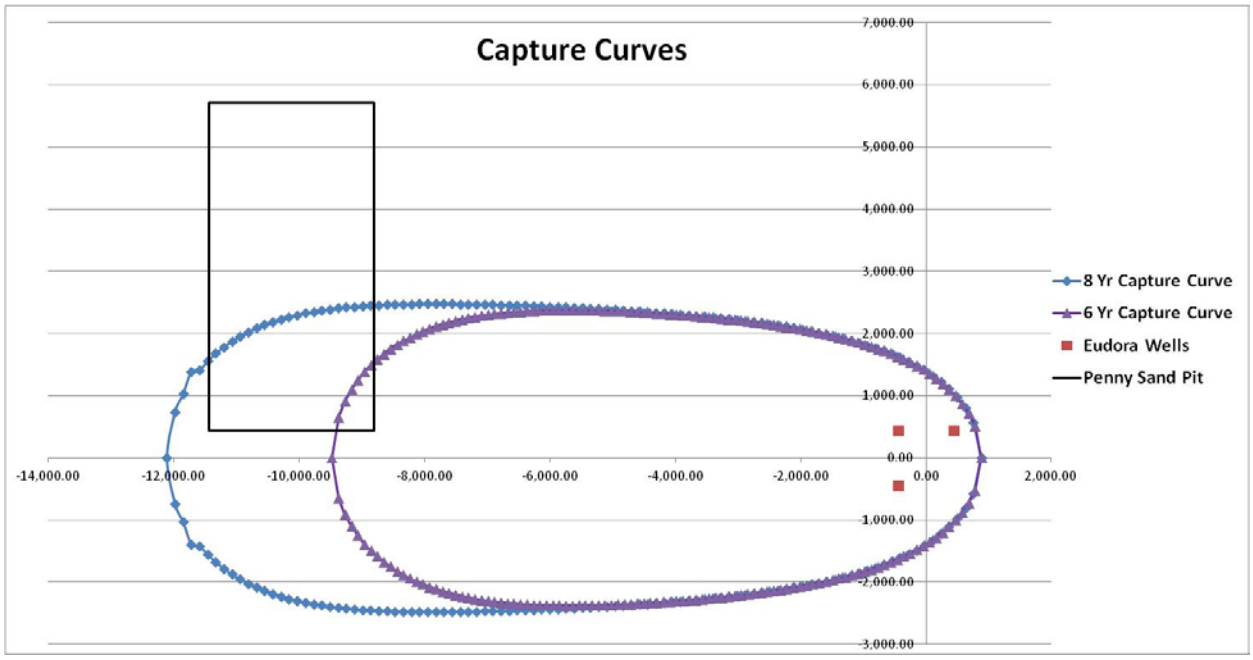

Figure 2.

Both of the KGS reports referred to are old and can't be relied on for absolute numbers. However, they do allow us to reach some general conclusions. In addition, there is a lot of variability in the aquifer (things change with space and time). So, the conclusion must be that one can't state with certainty that the proposed sand pit will have no effect on the Eudora Well Field. Of course there are many other private wells that are down-gradient from the proposed sand pit and much closer that could also be affected.

Effect of Pit on Water Levels and Quality in Aquifer

Mr. Nuzman states on page 8 that "The static water level elevation in the sand pit will be about the same as the water surface elevation in the Kansas River." That is probably true if the pit is close to the river. This means that the water level in the aquifer will be lowered around the pit, because the water levels in the aquifer are generally a little higher than the river level. This could negatively affect some nearby wells. Mr. Nuzman also states that "Sand pits beneficially support the yield of wells that are down-gradient from a pit that is within the area of influence of a well." In other words the well would be pumping water from the pit. This means

that the quality of the well water would depend on the quality of the water in the pit. In general, the quality of surface water in rivers and lakes is much poorer than the quality of groundwater. So there is the potential for pollution.

If this pit is allowed, a huge deep lake (about 70 feet deep on average) will be created. This will be a flow-through lake, which means that groundwater from up-gradient will flow in one side of the lake and flow out the down-gradient side of the lake. The net result is a continual mixing of the groundwater and the surface water from the pit, which then continues to flow down the valley in the aquifer to the next user of the groundwater.

As the well drilling logs in Mr. Nuzman's reports shows, the overburden (soil, silt, and clay) that must be removed to access the sand is substantial. It is in the range of 15-23 feet in most places, in some areas less and some areas more. However, most logs in the vicinity of the proposed sand pit indicate about 23 feet of overburden to be dealt with. This is a major logistics problem that must be dealt with while keeping any surface runoff out of the pit. There is the potential for pollution from surface runoff. This overburden material has been the filter material to keep pollutants out of the deeper aquifer, removing it exposes the aquifer. The resulting piles of surficial material may contain fertilizer and pesticide residue and daughter products from their decay. Apparently, the plan is to emplace at least some of this material back into the pit. If this is done, the overburden material should be extensively tested for possible pollutants before such use.

Mr. Nuzman mentions that a few investigations have been made on the effect of sand pits on groundwater quality and that they have not shown any significant human health effect. However, one can't infer from these few studies that there will never be a problem. In fact, at least one of those studies (KGS OFR 2008-4) did come to the conclusion that there was a measurable interconnection between the sand pit waters and the local aquifer and that there was a potential for pollution. The following is a direct quote from the conclusions of that study.

"The concentration distributions of pesticides and organics other than pesticides at the four pit sites in northwest Wichita, as well as the general pattern in iron, manganese, and ammonium ion concentrations in the downgradient well waters relative to the upgradient well and pit waters, indicate that surface water in the sand pits flows into the ground water in the southeast to south-southeast

direction of the ground-water flow at the study sites. The evidence for connection between the surface and ground waters at the two southern Wichita sites is not as strong as for the four northwest Wichita sites. However, distribution of some constituents and chemical properties do fit the general pattern of entrance of pit water into the ground water. This would be expected to occur most prominently when surface runoff into the pits increases the hydraulic gradient between the pit surface and ground-water levels. Thus, stormwater runoff containing contaminants can enter ground water through the sand pits and impact ground-water quality"

Effect of Pit on the River System

Material has previously been provided that shows the river bank in the vicinity of this proposed sand pit is unstable and has moved over time. Geologic history tells us this river will move again, we just don't know when. During a flood event the river could change course and breach the proposed sand pit. This would have a dramatic effect on the river system. Since the sand pit is deep (about 70 feet) and the river is very shallow, the pit would capture the bed load of the river and cause the river to become unstable. This would result in deepening the channel upstream (head cutting) and degradation of the channel downstream. It would take years for the river to reach a new stable equilibrium. Pits should not be allowed in areas where pit capture is a possibility.

Conclusions

I have shown that a reasonable interpretation of the available groundwater data indicates that the proposed sand pit could indeed have an effect on the Eudora Well Field and other local wells. The net effect will be a flow-through lake that mixes up-gradient aquifer water with sand pit water and sends it down-gradient into the aquifer and further down the valley. This behavior has been documented in studies of sand pits and aquifers. So, the conclusion is that any pollution must be prevented. The huge amount of overburden produced and its handling could be a source of pollution. Finally, the unstable nature of the river bank in this area makes it possible that the sand pit could capture the river during high flows and cause a channel change. If this were to happen, the river bed would be unstable for years until a new equilibrium was reached.

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Resume

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Education:

B.A., William Jewell College, Physics, 1965

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Ph.D., The University of Kansas, Physics, 1971

Professional Experience:

Professor of Geology, The University of Kansas, Lawrence, Kansas, 1997-2009, now retired.

Senior Scientist, Special Projects/Office of the Director, Kansas Geological Survey, The University of Kansas, Lawrence, Kansas, 1998-2002.

Senior Scientist, Mathematical Geology Section, Kansas Geological Survey, The University of Kansas, Lawrence, Kansas, 1987-1998.

Senior Scientist, Geophysics and Geochemistry Section, Kansas Geological Survey, The University of Kansas, Lawrence, Kansas, 1986-1987.

Associate Scientist, Geohydrology Section and Geophysics and Geochemistry Section, Kansas Geological Survey, The University of Kansas, Lawrence, Kansas, 1974-1986.

Geophysicist, Texaco Inc., Bellaire, Texas, 1970-1974.

Honors, Memberships, and Affiliations:

NSF Undergraduate Research Grant (2 years, 1963-1965)

Graduation with Honors, William Jewell College (1965)

NSF Traineeship for Graduate Work (4 years, 1965-1969)

Mobil Oil Fellowship (1 year, 1969-1970)

Sabbatical leave awarded for groundwater research in The Netherlands (Aug.-Dec., 1984)

Sabbatical leave awarded for groundwater research in the United Kingdom (Jan.- May, 1993)

Center for Teaching Excellence Outstanding Graduate Teaching Award, Dept. of Geology, Univ. of Kansas, 2001.

Sabbatical leave awarded to start writing a book on groundwater modeling, Fall Semester 2002.

Leo M. & Robert M. Orth Water Resources Scholarship, Dept. of Geology, 2008

Present Major Scientific Interests:

Theoretical description of flow systems • Characterization of aquifer heterogeneity by field, laboratory, and modeling activities • Model studies of groundwater availability in Kansas • Sensitivity of groundwater models to variations in transmissivity and storage • Modeling of chemical quality of groundwater systems • Application of seismic techniques to groundwater exploration and evaluation

Professional Journal Articles

McElwee, C.D., and Yukler, M.A., 1978, Sensitivity of groundwater flow models with respect to variations in transmissivity and storage: *Water Resources Research*, v. 14, no. 3, p. 451.

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Appendix I.

This calculations presented here is based on work I did and published back in 1991 in the *Ground Water* journal. I have supplied to the Planning Department a copy of that article for reference. This work shows that the minimum travel time from the Penny sand pit to the Eudora Well Field is about 5.5 years. This is from the closest point of the pit to the center of the well field. I have also calculated the 6 and 8 year capture curves for the Eudora Well field. The work shows that these capture curves include significant portions of the proposed pit.

The important parameters are as follows:

K - hydraulic conductivity - I used 1000ft/day. This is a measure of how fast water moves in the aquifer. The Nuzman report uses data from a well test on Eudora No. 8 and reports 8800 gpd/ft2, which is 1176 ft/day. This also agrees with data I have personally collected from the Kansas River Valley.

I - Hydraulic gradient (slope) of the ground water system - I used .0005, which is about 5ft in 2 miles. Bulletin 130, Part 1 and Bulletin 206, part 2 from the Kansas Geological Survey show head maps of the area in question that support this number.

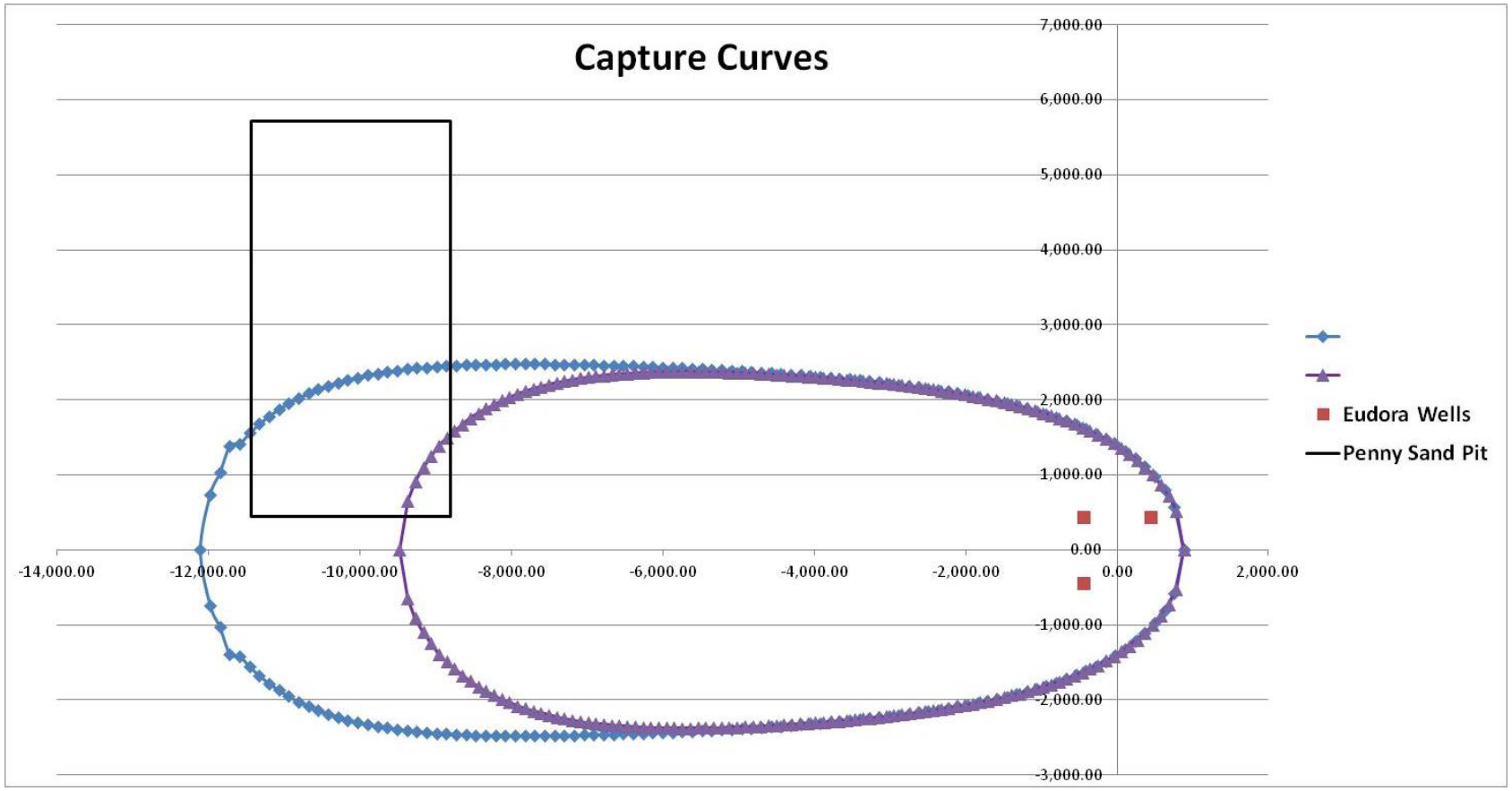
qo = -KI = -0.5 ft/day - average Darcy velocity in the aquifer - Multiplying the above two values gives this result.

B - Effective saturated thickness of aquifer - I used 30 feet. Although the aquifer has greater saturated thickness, the upper part is much finer material and has much less hydraulic conductivity. I have seen this consistently in my field work.

n - effective porosity (a measure of the pore space that water flows through) - I used 0.15 which is an average value suggested by the work of Bull 260, and also is consistent with my field work.

Q - Pump rate of the Eudora Well Field - I used 83425 ft3/day which is the approved water right of 227.77 MGY or about 433gpm.

These parameters can be used to calculate the average travel times and capture curves for parcels of water moving under the influence of the natural groundwater flow system and the influence of the pumping in the Eudora Well Field. The details of the background material to arrive at the formulas used in the following pages are given in the above referenced *Ground Water* article. The pages that follow show the capture curves for 6 and 8 years and the average minimum travel time between the sand pit and the Eudora Well Field. A capture curve outlines the area of groundwater that will flow to the pumping well in a given amount of time.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-2,000.00
0.00
2,000.00
Eudora Wells
Penny Sand Pit

qo =	-0.5	Average Darcy Velocity				
n =	0.15	Effective Porosity				
Q =	83425	Well Discharge				
B =	30	Effective Aquifer Thickness				
X =	-8800	Distance traveled along X axis				
t =		Time of travel				
	t =	**2005**	**days =**	**5.49**	**years**	

$$X = \frac{qo}{n}t + \frac{Q}{2\pi qoB} ln\left(1 + \frac{2\pi qoB}{Q}X\right)$$

$$t = \left[\frac{n}{qo}\right]\left[X - \frac{Q}{2\pi qoB} ln\left(1 + \frac{2\pi qoB}{Q}X\right)\right]$$

6 yr. Capture Curve Data

X(Ft)	Y(Ft)
8.8508E+02	0.0000E+00
7.8145E+02	-5.1844E+02
6.7783E+02	-7.2470E+02
5.7420E+02	-8.7735E+02
4.7057E+02	-1.0015E+03
3.6694E+02	-1.1069E+03
2.6331E+02	-1.1989E+03
1.5969E+02	-1.2804E+03
5.6059E+01	-1.3536E+03
-4.7568E+01	-1.4198E+03
-1.5120E+02	-1.4802E+03
-2.5482E+02	-1.5357E+03
-3.5845E+02	-1.5867E+03
-4.6208E+02	-1.6340E+03
-5.6571E+02	-1.6778E+03
-6.6933E+02	-1.7187E+03
-7.7296E+02	-1.7568E+03
-8.7659E+02	-1.7925E+03
-9.8022E+02	-1.8259E+03
-1.0838E+03	-1.8573E+03
-1.1875E+03	-1.8869E+03
-1.2911E+03	-1.9147E+03
-1.3947E+03	-1.9410E+03
-1.4984E+03	-1.9659E+03
-1.6020E+03	-1.9894E+03
-1.7056E+03	-2.0117E+03
-1.8092E+03	-2.0328E+03
-1.9129E+03	-2.0529E+03
-2.0165E+03	-2.0720E+03
-2.1201E+03	-2.0901E+03
-2.2238E+03	-2.1074E+03
-2.3274E+03	-2.1239E+03
-2.4310E+03	-2.1396E+03
-2.5346E+03	-2.1546E+03
-2.6383E+03	-2.1689E+03
-2.7419E+03	-2.1825E+03
-2.8455E+03	-2.1956E+03
-2.9491E+03	-2.2081E+03
-3.0528E+03	-2.2200E+03
-3.1564E+03	-2.2314E+03
-3.2600E+03	-2.2423E+03

-3.3637E+03	-2.2527E+03
-3.4673E+03	-2.2627E+03
-3.5709E+03	-2.2722E+03
-3.6745E+03	-2.2813E+03
-3.7782E+03	-2.2899E+03
-3.8818E+03	-2.2982E+03
-3.9854E+03	-2.3060E+03
-4.0891E+03	-2.3135E+03
-4.1927E+03	-2.3206E+03
-4.2963E+03	-2.3272E+03
-4.3999E+03	-2.3335E+03
-4.5036E+03	-2.3394E+03
-4.6072E+03	-2.3449E+03
-4.7108E+03	-2.3500E+03
-4.8144E+03	-2.3547E+03
-4.9181E+03	-2.3590E+03
-5.0217E+03	-2.3628E+03
-5.1253E+03	-2.3662E+03
-5.2290E+03	-2.3691E+03
-5.3326E+03	-2.3715E+03
-5.4362E+03	-2.3733E+03
-5.5398E+03	-2.3746E+03
-5.6435E+03	-2.3753E+03
-5.7471E+03	-2.3754E+03
-5.8507E+03	-2.3747E+03
-5.9544E+03	-2.3733E+03
-6.0580E+03	-2.3712E+03
-6.1616E+03	-2.3681E+03
-6.2652E+03	-2.3642E+03
-6.3689E+03	-2.3592E+03
-6.4725E+03	-2.3531E+03
-6.5761E+03	-2.3458E+03
-6.6797E+03	-2.3372E+03
-6.7834E+03	-2.3272E+03
-6.8870E+03	-2.3156E+03
-6.9906E+03	-2.3024E+03
-7.0943E+03	-2.2873E+03
-7.1979E+03	-2.2702E+03
-7.3015E+03	-2.2510E+03
-7.4051E+03	-2.2293E+03
-7.5088E+03	-2.2051E+03
-7.6124E+03	-2.1781E+03
-7.7160E+03	-2.1480E+03

-7.8196E+03	-2.1145E+03
-7.9233E+03	-2.0773E+03
-8.0269E+03	-2.0360E+03
-8.1305E+03	-1.9903E+03
-8.2342E+03	-1.9396E+03
-8.3378E+03	-1.8833E+03
-8.4414E+03	-1.8209E+03
-8.5450E+03	-1.7515E+03
-8.6487E+03	-1.6740E+03
-8.7523E+03	-1.5871E+03
-8.8559E+03	-1.4891E+03
-8.9596E+03	-1.3913E+03
-9.0632E+03	-1.2478E+03
-9.1668E+03	-1.0945E+03
-9.2704E+03	-9.0492E+02
-9.3741E+03	-6.4783E+02
-9.4777E+03	0.0000E+00
-9.3741E+03	6.4783E+02
-9.2704E+03	9.0492E+02
-9.1668E+03	1.0945E+03
-9.0632E+03	1.2478E+03
-8.9596E+03	1.3913E+03
-8.8559E+03	1.4891E+03
-8.7523E+03	1.5871E+03
-8.6487E+03	1.6740E+03
-8.5450E+03	1.7515E+03
-8.4414E+03	1.8209E+03
-8.3378E+03	1.8833E+03
-8.2342E+03	1.9396E+03
-8.1305E+03	1.9903E+03
-8.0269E+03	2.0360E+03
-7.9233E+03	2.0773E+03
-7.8196E+03	2.1145E+03
-7.7160E+03	2.1480E+03
-7.6124E+03	2.1781E+03
-7.5088E+03	2.2051E+03
-7.4051E+03	2.2293E+03
-7.3015E+03	2.2510E+03
-7.1979E+03	2.2702E+03
-7.0943E+03	2.2873E+03
-6.9906E+03	2.3024E+03
-6.8870E+03	2.3156E+03
-6.7834E+03	2.3272E+03

-6.6797E+03	2.3372E+03
-6.5761E+03	2.3458E+03
-6.4725E+03	2.3531E+03
-6.3689E+03	2.3592E+03
-6.2652E+03	2.3642E+03
-6.1616E+03	2.3681E+03
-6.0580E+03	2.3712E+03
-5.9544E+03	2.3733E+03
-5.8507E+03	2.3747E+03
-5.7471E+03	2.3754E+03
-5.6435E+03	2.3753E+03
-5.5398E+03	2.3746E+03
-5.4362E+03	2.3733E+03
-5.3326E+03	2.3715E+03
-5.2290E+03	2.3691E+03
-5.1253E+03	2.3662E+03
-5.0217E+03	2.3628E+03
-4.9181E+03	2.3590E+03
-4.8144E+03	2.3547E+03
-4.7108E+03	2.3500E+03
-4.6072E+03	2.3449E+03
-4.5036E+03	2.3394E+03
-4.3999E+03	2.3335E+03
-4.2963E+03	2.3272E+03
-4.1927E+03	2.3206E+03
-4.0891E+03	2.3135E+03
-3.9854E+03	2.3060E+03
-3.8818E+03	2.2982E+03
-3.7782E+03	2.2899E+03
-3.6745E+03	2.2813E+03
-3.5709E+03	2.2722E+03
-3.4673E+03	2.2627E+03
-3.3637E+03	2.2527E+03
-3.2600E+03	2.2423E+03
-3.1564E+03	2.2314E+03
-3.0528E+03	2.2200E+03
-2.9491E+03	2.2081E+03
-2.8455E+03	2.1956E+03
-2.7419E+03	2.1825E+03
-2.6383E+03	2.1689E+03
-2.5346E+03	2.1546E+03
-2.4310E+03	2.1396E+03
-2.3274E+03	2.1239E+03

-2.2238E+03	2.1074E+03
-2.1201E+03	2.0901E+03
-2.0165E+03	2.0720E+03
-1.9129E+03	2.0529E+03
-1.8092E+03	2.0328E+03
-1.7056E+03	2.0117E+03
-1.6020E+03	1.9894E+03
-1.4984E+03	1.9659E+03
-1.3947E+03	1.9410E+03
-1.2911E+03	1.9147E+03
-1.1875E+03	1.8869E+03
-1.0838E+03	1.8573E+03
-9.8022E+02	1.8259E+03
-8.7659E+02	1.7925E+03
-7.7296E+02	1.7568E+03
-6.6933E+02	1.7187E+03
-5.6571E+02	1.6778E+03
-4.6208E+02	1.6340E+03
-3.5845E+02	1.5867E+03
-2.5482E+02	1.5357E+03
-1.5120E+02	1.4802E+03
-4.7568E+01	1.4198E+03
5.6059E+01	1.3536E+03
1.5969E+02	1.2804E+03
2.6331E+02	1.1989E+03
3.6694E+02	1.1069E+03
4.7057E+02	1.0015E+03
5.7420E+02	8.7735E+02
6.7783E+02	7.2470E+02
7.8145E+02	5.1844E+02
8.8508E+02	0.0000E+00

8 yr. Capture Curve Data

X(Ft)	Y(Ft)
8.8516E+02	0.0000E+00
7.5519E+02	-5.7893E+02
6.2523E+02	-8.0688E+02
4.9526E+02	-9.7403E+02
3.6530E+02	-1.1087E+03
2.3533E+02	-1.2220E+03
1.0536E+02	-1.3199E+03
-2.4604E+01	-1.4059E+03

-1.5457E+02	-1.4824E+03
-2.8454E+02	-1.5510E+03
-4.1450E+02	-1.6130E+03
-5.4447E+02	-1.6694E+03
-6.7444E+02	-1.7210E+03
-8.0440E+02	-1.7683E+03
-9.3437E+02	-1.8118E+03
-1.0643E+03	-1.8521E+03
-1.1943E+03	-1.8893E+03
-1.3243E+03	-1.9240E+03
-1.4542E+03	-1.9562E+03
-1.5842E+03	-1.9863E+03
-1.7142E+03	-2.0144E+03
-1.8441E+03	-2.0408E+03
-1.9741E+03	-2.0655E+03
-2.1041E+03	-2.0887E+03
-2.2340E+03	-2.1106E+03
-2.3640E+03	-2.1313E+03
-2.4940E+03	-2.1507E+03
-2.6239E+03	-2.1692E+03
-2.7539E+03	-2.1866E+03
-2.8839E+03	-2.2031E+03
-3.0138E+03	-2.2188E+03
-3.1438E+03	-2.2337E+03
-3.2738E+03	-2.2479E+03
-3.4037E+03	-2.2614E+03
-3.5337E+03	-2.2742E+03
-3.6637E+03	-2.2865E+03
-3.7936E+03	-2.2982E+03
-3.9236E+03	-2.3093E+03
-4.0536E+03	-2.3200E+03
-4.1835E+03	-2.3302E+03
-4.3135E+03	-2.3399E+03
-4.4435E+03	-2.3493E+03
-4.5734E+03	-2.3582E+03
-4.7034E+03	-2.3668E+03
-4.8334E+03	-2.3750E+03
-4.9633E+03	-2.3829E+03
-5.0933E+03	-2.3904E+03
-5.2233E+03	-2.3976E+03
-5.3532E+03	-2.4046E+03
-5.4832E+03	-2.4112E+03
-5.6132E+03	-2.4175E+03

-5.7431E+03	-2.4236E+03
-5.8731E+03	-2.4293E+03
-6.0031E+03	-2.4348E+03
-6.1330E+03	-2.4401E+03
-6.2630E+03	-2.4450E+03
-6.3930E+03	-2.4497E+03
-6.5229E+03	-2.4540E+03
-6.6529E+03	-2.4581E+03
-6.7829E+03	-2.4619E+03
-6.9128E+03	-2.4653E+03
-7.0428E+03	-2.4684E+03
-7.1728E+03	-2.4712E+03
-7.3027E+03	-2.4735E+03
-7.4327E+03	-2.4755E+03
-7.5627E+03	-2.4769E+03
-7.6926E+03	-2.4779E+03
-7.8226E+03	-2.4784E+03
-7.9526E+03	-2.4782E+03
-8.0825E+03	-2.4774E+03
-8.2125E+03	-2.4758E+03
-8.3425E+03	-2.4734E+03
-8.4724E+03	-2.4701E+03
-8.6024E+03	-2.4657E+03
-8.7324E+03	-2.4602E+03
-8.8623E+03	-2.4534E+03
-8.9923E+03	-2.4451E+03
-9.1223E+03	-2.4351E+03
-9.2522E+03	-2.4234E+03
-9.3822E+03	-2.4095E+03
-9.5122E+03	-2.3934E+03
-9.6421E+03	-2.3746E+03
-9.7721E+03	-2.3530E+03
-9.9021E+03	-2.3281E+03
-1.0032E+04	-2.2995E+03
-1.0162E+04	-2.2669E+03
-1.0292E+04	-2.2297E+03
-1.0422E+04	-2.1874E+03
-1.0552E+04	-2.1393E+03
-1.0682E+04	-2.0848E+03
-1.0812E+04	-2.0230E+03
-1.0942E+04	-1.9528E+03
-1.1072E+04	-1.8730E+03
-1.1202E+04	-1.7819E+03

-1.1332E+04	-1.6775E+03
-1.1462E+04	-1.5568E+03
-1.1592E+04	-1.4155E+03
-1.1722E+04	-1.3905E+03
-1.1852E+04	-1.0325E+03
-1.1982E+04	-7.4132E+02
-1.2111E+04	0.0000E+00
-1.1982E+04	7.4132E+02
-1.1852E+04	1.0325E+03
-1.1722E+04	1.3905E+03
-1.1592E+04	1.4155E+03
-1.1462E+04	1.5568E+03
-1.1332E+04	1.6775E+03
-1.1202E+04	1.7819E+03
-1.1072E+04	1.8730E+03
-1.0942E+04	1.9528E+03
-1.0812E+04	2.0230E+03
-1.0682E+04	2.0848E+03
-1.0552E+04	2.1393E+03
-1.0422E+04	2.1874E+03
-1.0292E+04	2.2297E+03
-1.0162E+04	2.2669E+03
-1.0032E+04	2.2995E+03
-9.9021E+03	2.3281E+03
-9.7721E+03	2.3530E+03
-9.6421E+03	2.3746E+03
-9.5122E+03	2.3934E+03
-9.3822E+03	2.4095E+03
-9.2522E+03	2.4234E+03
-9.1223E+03	2.4351E+03
-8.9923E+03	2.4451E+03
-8.8623E+03	2.4534E+03
-8.7324E+03	2.4602E+03
-8.6024E+03	2.4657E+03
-8.4724E+03	2.4701E+03
-8.3425E+03	2.4734E+03
-8.2125E+03	2.4758E+03
-8.0825E+03	2.4774E+03
-7.9526E+03	2.4782E+03
-7.8226E+03	2.4784E+03
-7.6926E+03	2.4779E+03
-7.5627E+03	2.4769E+03
-7.4327E+03	2.4755E+03

-7.3027E+03	2.4735E+03
-7.1728E+03	2.4712E+03
-7.0428E+03	2.4684E+03
-6.9128E+03	2.4653E+03
-6.7829E+03	2.4619E+03
-6.6529E+03	2.4581E+03
-6.5229E+03	2.4540E+03
-6.3930E+03	2.4497E+03
-6.2630E+03	2.4450E+03
-6.1330E+03	2.4401E+03
-6.0031E+03	2.4348E+03
-5.8731E+03	2.4293E+03
-5.7431E+03	2.4236E+03
-5.6132E+03	2.4175E+03
-5.4832E+03	2.4112E+03
-5.3532E+03	2.4046E+03
-5.2233E+03	2.3976E+03
-5.0933E+03	2.3904E+03
-4.9633E+03	2.3829E+03
-4.8334E+03	2.3750E+03
-4.7034E+03	2.3668E+03
-4.5734E+03	2.3582E+03
-4.4435E+03	2.3493E+03
-4.3135E+03	2.3399E+03
-4.1835E+03	2.3302E+03
-4.0536E+03	2.3200E+03
-3.9236E+03	2.3093E+03
-3.7936E+03	2.2982E+03
-3.6637E+03	2.2865E+03
-3.5337E+03	2.2742E+03
-3.4037E+03	2.2614E+03
-3.2738E+03	2.2479E+03
-3.1438E+03	2.2337E+03
-3.0138E+03	2.2188E+03
-2.8839E+03	2.2031E+03
-2.7539E+03	2.1866E+03
-2.6239E+03	2.1692E+03
-2.4940E+03	2.1507E+03
-2.3640E+03	2.1313E+03
-2.2340E+03	2.1106E+03
-2.1041E+03	2.0887E+03
-1.9741E+03	2.0655E+03
-1.8441E+03	2.0408E+03

-1.7142E+03	2.0144E+03
-1.5842E+03	1.9863E+03
-1.4542E+03	1.9562E+03
-1.3243E+03	1.9240E+03
-1.1943E+03	1.8893E+03
-1.0643E+03	1.8521E+03
-9.3437E+02	1.8118E+03
-8.0440E+02	1.7683E+03
-6.7444E+02	1.7210E+03
-5.4447E+02	1.6694E+03
-4.1450E+02	1.6130E+03
-2.8454E+02	1.5510E+03
-1.5457E+02	1.4824E+03
-2.4604E+01	1.4059E+03
1.0536E+02	1.3199E+03
2.3533E+02	1.2220E+03
3.6530E+02	1.1087E+03
4.9526E+02	9.7403E+02
6.2523E+02	8.0688E+02
7.5519E+02	5.7893E+02
8.8516E+02	0.0000E+00

Wells X (map in)	Wells Y (map in)	Wells X (ft)	Wells Y (ft)
-0.25	0.25	-440	440
-0.25	-0.25	-440	-440
0.25	0.25	440	440

Pit X (map in)	Pit Y (map in)	Pit X (ft)	Pit Y (ft)
-5	0.25	-8800	440
-6.5	0.25	-11440	440
-6.5	3.25	-11440	5720
-5	3.25	-8800	5720
-5	0.25	-8800	440

GROUND WATER

Computer Notes

Capture Zones for Simple Aquifers

by Carl D. McElwee[a]

Abstract. **The protection and cleanup of aquifers is a matter of high priority for all states and the federal government. One concept that is receiving increased attention is that of wellhead protection. Capture zones showing the area influenced by a well within a certain time are useful for both aquifer protection and cleanup. If hydrodynamic dispersion is neglected, a deterministic curve defines the capture zone. Analytical expressions for the capture zones can be derived for simple aquifers. However, the capture zone equations are transcendental and cannot be explicitly solved for the coordinates of the capture zone boundary. Fortunately, an iterative scheme allows the solution to proceed quickly and efficiently even on a modest personal computer. Three forms of the analytical solution must be used in an iterative scheme to cover the entire region of interest, after the extreme values of the x coordinate are determined by an iterative solution. The resulting solution is a discrete one, and usually 100-1000 intervals along the x-axis are necessary for a smooth definition of the capture zone. The presented program is written in FORTRAN and has been used in a variety of computing environments. No graphics capability is included with the program; it is assumed the user has access to a commercial package. The superposition of capture zones for multiple wells is expected to be satisfactory if the spacing is not too close. Because this program deals with simple aquifers, the results rarely will be the final word in a real application. However, the program is useful as a first phase in developing wellhead protection or aquifer cleanup schemes.**

Introduction

The protection and cleanup of aquifers is a matter of high priority for all states and the federal government, as evidenced by the large number of laws and regulations that have been established in recent years. One concept that is receiving increased attention is wellhead protection, where certain potentially polluting activities are banned or regulated within an area that would affect a well within a certain time period. In terms of aquifer cleanup, one would like to know what area of an aquifer will be influenced by a discharge well within a certain time period. These areas are commonly referred to in the literature as capture zones. If hydrodynamic dispersion is neglected, a deterministic curve (sharp front) can be used to define the capture zone. Because real-world aquifers are very complex, exhibiting heterogeneity, anisotropy, and other complicating factors, the calculation of realistic capture zones is difficult. Possible techniques range from simple analytical methods to complex numerical procedures.

The calculation of sharp front movement for wells in infinite aquifers dates at least to Muskat (1937). More recently, Bear and Jacobs (1965) have investigated the movement of water bodies injected into isotropic homogeneous aquifers with uniform regional flow by analytical methods. Most ground-water texts present a steady-state analytical solution for the ground-water divide in an isotropic homogeneous aquifer with one pumping well located in a uniform regional flow field (see for example Todd, 1980, pp. 121-123); this corresponds to an infinite-time capture zone. Javandel et al. (1984, pp. 175-204) present semianalytical methods for calculating pathlines and time-related capture zones for multiple wells in simple aquifers (isotropic, homogeneous, uniform thickness, uniform regional flow, and steady state). However, their computer program is rather complex. EPA (1990) has recently sponsored development of a program to calculate wellhead protection areas (WHPA); but again the program is fairly complex. Javandel and Tsang (1986) propose infinite-time capture zone curves as a tool for aquifer cleanup; again, they use analytical methods for simple aquifers. A few authors have utilized numerical methods to calculate time-related capture zones in the presence of aquifer heterogeneity. Kinzelback (1986, pp. 227-230) presents the formalism for considering a heterogeneous velocity distribution. Shafer (1987) presents the formalism and gives examples of capture zones in heterogeneous aquifers.

The purpose of the present paper is to present a program for calculating time-related capture zones in simple aquifers. The program is short and efficient and adaptable to a range of computing environments from personal computers to mainframes. Because the program assumes simple

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aquifer conditions (isotropic, homogeneous, uniform thickness, uniform regional flow, and steady state), it should be used with care in a real-world situation. However, the program should be a useful initial planning tool for aquifer protection or cleanup.

Basic Equations

The basic equations that are used to describe the capture zone curves are taken from Bear and Jacobs (1965). As mentioned in the introduction, this formulation assumes an aquifer with a constant regional hydraulic conductivity (K). A regional flow direction and magnitude (q_o) also is assumed constant and given by the Darcy equation.

$$q_o = -K \frac{\partial h}{\partial s} \tag{1}$$

h is the regional hydraulic head (without the pumping well), and s is the direction of the head gradient perpendicular to lines of constant head. In what follows, it will be assumed the x axis is parallel (or antiparallel) to the regional flow direction. The aquifer is assumed to be of constant thickness (B) and constant effective porosity (n). At this point, a well pumping at a rate Q is superimposed upon the regional system, and a new steady-state head configuration is established. The object is to calculate the area of the aquifer that will contribute water to the well during a specified time period; or alternatively, to calculate the area affected by injection for a given time interval, after the well is in steady state with the regional system. The curves surrounding these affected areas are loosely called capture curves for a given time period. It is convenient to define three dimensionless parameters:

$$\bar{x} = \frac{2\pi q_o B}{Q} x \tag{2}$$

$$\bar{y} = \frac{2\pi q_o B}{Q} y \tag{3}$$

$$\bar{t} = \frac{2\pi q_o^2 B}{nQ} t \tag{4}$$

q_o, B, Q, and n are the previously defined Darcy velocity, aquifer thickness, pumpage rate, and effective porosity, respectively. x, y, and t are the space and time coordinates in the real world; whereas $\bar{x}$, $\bar{y}$, and $\bar{t}$ are their dimensionless counterparts. Using these dimensionless variables, Bear and Jacobs (1965) show that the capture curves are given by the following equation.

$$\exp(\bar{x} - \bar{t}) = \cos \bar{y} + \frac{\bar{x}}{\bar{y}} \sin \bar{y} \tag{5}$$

Unfortunately, equation (5) is a transcendental equation which cannot be solved explicitly for either $\bar{x}$ or $\bar{y}$.

There are two cases where equation (5) can be simplified somewhat. When $\bar{t} \to \infty$, equation (5) reduces to

$$\bar{x} = -\frac{\bar{y}}{\tan \bar{y}} \tag{6}$$

which is the familiar form for the ground-water divide (Todd, 1980, pp. 121-123). From equation (6), it is seen that as $\bar{x} \to \infty$, the limiting value of $\bar{y}$ is $\pm \pi$. The stagnation point occurs at $\bar{y} = 0$ and $\bar{x} = -1$; this result can be obtained from equation (6) by taking the limit as $\bar{y} \to 0$ (see Figure 1). Another useful simplification of equation (5) results when $\bar{y} = 0$; this corresponds to the two points where the capture curve crosses the $\bar{x}$ axis. Taking the limit as $\bar{y} \to 0$ of equation (5) gives the extreme values $\bar{x}_e$,

$$\exp(\bar{x}_e - \bar{t}) = 1 + \bar{x}_e \tag{7}$$

(See Figure 1 for examples of $\bar{x}_e$.) A slight rearrangement of equation (7) gives the form

$$\bar{t} = \bar{x}_e - \ln(1 + \bar{x}_e) \tag{8}$$

Equations (5) and (8) will form the basis for calculating capture curves at a given normalized time $\bar{t}$. Unfortunately, both are transcendental equations, so iterative techniques will be used to obtain their solution. The resulting curves will enclose the area of the aquifer containing water either injected or discharged by the well up to time $\bar{t}$. The curves represent sharp fronts (deterministic curves) because hydrodynamic dispersion has been neglected. Those who are not interested in the mathematical details of solution may wish to skip to the section describing the computer program availability.

Iterative Solution

The capture curves given by equation (5) are symmetric about the $\bar{x}$ axis; and the x axis is assumed to be parallel to the regional hydraulic gradient with its origin at the well. The requirement that the origin be at the well is relaxed in the computer program. From the discussion in the previous section, the limits on the coordinates are $-1 \leq \bar{x} \leq \infty$ and $-\pi \leq \bar{y} \leq \pi$. The solution that we shall obtain is a numerical one at discrete values of $\bar{x}$. The approach that we shall take involves solving equation (8) for the extreme values of $\bar{x}$ at a certain $\bar{t}$. The region bounded by these two extremes will be discretized to give a certain number of discrete values of $\bar{x}$ (usually between 100 and 1000). Let $\bar{x}_i$ represent one of these values. At that point with $\bar{t}$ and $\bar{x}$ known, equation (5) will be solved to obtain $\bar{y}$. Unfortunately, no single form of equation (5) seems to work well for the full range of coordinates. (Three forms will be used later.)

The extreme values of $\bar{x}$ are found by solving equation (8). Rearranging equation (8) slightly allows an iterative solution scheme to be developed (one-point method, Atkinson, 1989, pp. 76-83).

$$\bar{x}_e^{(m+1)} = \bar{t} + \ln[1 + \bar{x}_e^{(m)}] \tag{9}$$

The m in equation (9) is an iteration index. An initial guess for $\bar{x}_e$ must be known, but $\bar{x}_e = 0$ always seems to work well. Iteration continues on equation (9) until convergence occurs. If the initial guess for $\bar{x}_e$ is zero and $\bar{t}$ is positive, it is clear that equation (9) will converge on a positive value. If $\bar{t}$ is small, then $\bar{x}_e$ also will be small and the logarithmic term of equation (8) can be written as a series expansion to yield

$$\bar{t} = \frac{\bar{x}_e^2}{2} - \frac{\bar{x}_e^3}{3} + \frac{\bar{x}_e^4}{4} - \ldots \quad (10)$$

Solving for the lowest power of $\bar{x}_e$ gives

$$\bar{x}_e^{(m+1)} = \sqrt{2}\left[\bar{t} + \frac{\bar{x}_e^{(m)3}}{3} - \frac{\bar{x}_e^{(m)4}}{4} + \ldots\right]^{1/2} \quad (11)$$

Iterating equation (11) works well for small values of $\bar{t}$ and $\bar{x}_e$.

Equations (9) and (11) work well for the positive value of the $\bar{x}$ extremes; however, a slightly different version is needed to find the negative extreme value. Rearranging equation (7) slightly gives the following iterative solution.

$$\bar{x}_e^{(m+1)} = \exp(\bar{x}_e^{(m)} - \bar{t}) - 1 \quad (12)$$

Clearly, if $\bar{t} \to \infty$, equation (12) gives an extreme value of -1. If the initial guess for $\bar{x}_e$ is zero and $\bar{t}$ is positive, the result for the first iteration will be negative. Experience has shown that equation (12) converges rapidly on the negative value of $\bar{x}_e$.

Now that the extreme values of $\bar{x}$ are known for a particular $\bar{t}$, we can pick a discrete value $\bar{x}_i$ located between these two extremes. The only unknown in equation (5) is now $\bar{y}$, and an iterative solution can be set up. The most obvious iterative form is obtained from equation (5) by multiplying by $\bar{y}$ and $\exp(\bar{t} - \bar{x})$ to obtain

$$\bar{y}_i^{(m+1)} = \exp(\bar{t} - \bar{x}_i) \cdot [\bar{y}_i^{(m)} \cos \bar{y}_i^{(m)} + \bar{x}_i \sin \bar{y}_i^{(m)}] \quad \ldots . (13a)$$

However, numerical experiments show that equation (13a) does not have as wide a region of convergence as we would like. The convergence properties of equation (13a) can be changed by adding $\bar{y}_i$ to each side of the equation (Atkinson, 1989, pp. 76-83). The resulting equation which we shall use is

$$\bar{y}_i^{(m+1)} = \frac{\bar{y}_i^{(m)}}{2} + \frac{1}{2}\exp(\bar{t} - \bar{x}_i) \cdot [\bar{y}_i^{(m)} \cos \bar{y}_i^{(m)} + \bar{x}_i \sin \bar{y}_i^{(m)}] \quad (13b)$$

As long as $|\bar{y}_i| \leq \pi/2$ and $\bar{x} \geq 1$, equation (13b) works well.

An alternate form of equation (5) can be obtained by solving for $\cos \bar{y}$ and then taking the inverse cosine function.

$$\bar{y}_i^{(m+1)} = \cos^{-1}\left[\exp(\bar{x}_i - \bar{t}) - \frac{\bar{x}_i}{\bar{y}_i^{(m)}} \sin \bar{y}_i^{(m)}\right] \quad (14)$$

Numerical experiments show that this form works well for all values of $\bar{x}$ and $\bar{y}$ as long as $\bar{t} \leq 1$. For $\bar{t} \geq 1$, equation (14) can be used only for $\bar{x} \leq 1$.

The final form of equation (5) needed to fill in all remaining values of $\bar{x}$, $\bar{y}$, and $\bar{t}$ is given by rearranging and solving for the tangent of $\bar{y}_i$.

$$\tan \bar{y}_i = \left(\frac{\bar{y}_i}{\bar{x}_i}\right) \cdot \left(\frac{\exp(\bar{x}_i - \bar{t})}{\cos \bar{y}_i} - 1\right) \quad (15)$$

Using the trigonometric identity $\tan(-\theta) = \tan(\pi - \theta)$ allows us to rewrite equation (15) in iterative notation.

$$\bar{y}_i^{(m+1)} = \pi - \tan^{-1}\left[\left(\frac{\bar{y}_i^{(m)}}{\bar{x}_i}\right) \cdot \left(1 - \frac{\exp(\bar{x}_i - \bar{t})}{\cos \bar{y}_i^{(m)}}\right)\right] \quad \ldots . (16)$$

Numerical experiments show that this equation works well for $\bar{t} > 1$ and $\bar{x} > 1$ if $|\bar{y}_i| > \pi/2$. Clearly, equation (16) has a problem at $\bar{y} = \pi/2$ because the cosine function is zero. Therefore, special provision must be made to prevent equation (16) from being used too near the region where $\bar{y} = \pi/2$.

The iterative equations (13), (14), and (16) for $\bar{y}$ require an initial guess for the $m = 0$ iteration. That question was avoided in the above paragraphs where the equations were developed. However, in practice, this presents no problem. Using the extreme values of $\bar{x}$, a discrete set of $\bar{x}_i$'s are calculated by dividing the region between the extremes into an integral number of steps (usually between 100 and 1000). Solution then proceeds sequentially from the negative $\bar{x}$ extreme to the positive $\bar{x}$ extreme. At each of the extreme values of $\bar{x}$, we know that $\bar{y} = 0$. Therefore, as we step through the solution we will always know the value of $\bar{y}$ at the previous $\bar{x}$ value, and we can use this as the initial guess for $\bar{y}$ at the current value of $\bar{x}$. If at least 100 steps in $\bar{x}$ are used, the value of $\bar{y}$ does not change dramatically in one step and the above procedure is very efficient. As the solution proceeds, the appropriate equation (13), (14), or (16) is selected depending on the values of $\bar{t}$, $\bar{x}$, and the current value of $\bar{y}$.

Computer Program

A simple computer program to calculate capture curves based on the material presented here has been written in FORTRAN and is available at nominal cost from the Publication Sales Office of the Kansas Geological Survey. Computer Program Series #90-5 is a publication containing the material of this paper as well as a more detailed description of the program workings, a FORTRAN listing, some sample data sets with output, and an IBM compatible disk containing the program. We commonly run the program on an IBM AT compatible computer; however, it can be adapted easily to a wide variety of computer environments. Usually only the input and output statements need modification.

Results and Application

The results of using the algorithms discussed here are shown in Figure 1 for $\bar{t}$ values of 1, 3, 5, and ∞. The $\bar{t} = \infty$ curve corresponds to the normal ground-water divide. Equations (13), (14), and (16) can be applied only in certain regions of $\bar{t}$, $\bar{x}$, and $\bar{y}$ as discussed earlier. These various regions are shown on Figure 1, each with a different background pattern. Figure 1 was produced with a commercially available graphics package directly from the output file of the program. No graphics capability is included in the program; it is assumed that the user has access to a similar package.

In a real-world application, one will not be dealing with the dimensionless quantities $\bar{t}$, $\bar{x}$, and $\bar{y}$ but with actual time

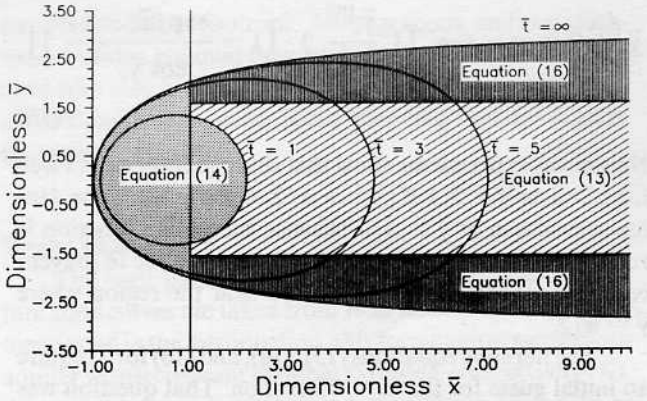

Fig. 1. Capture zones and regions of equation application.

and distances. However, equations (2), (3), and (4) provide the necessary conversions, so the simple user interface in the main program provides the connection to a specific application. Parameters may be given in any consistent set of units. To begin, one must know the average value of hydraulic conductivity and the regional hydraulic gradient vector (direction and magnitude). These quantities are used in equation (1) to calculate the specific discharge or Darcy velocity (q_o). Knowing the average regional thickness of the aquifer (B), the effective porosity (n), and the discharge (or injection) rate of the well (Q), the program can calculate $\bar{t}$ from equation (4) for the actual time of interest. The program then calculates the $\bar{x}_i$ and $\bar{y}_i$ of the capture curve of interest. These values of $\bar{x}$ and $\bar{y}$ are used with equations (2) and (3) to solve for the real-world coordinates x and y, which can then be plotted on an appropriate map base. Currently, the program assumes that the x axis is parallel to the regional hydraulic gradient; but, the well may be located at arbitrary coordinates. If the x axis assumption is not true, an appropriate rotation of coordinates will be needed before plotting on the desired map base.

Discussion

Strictly speaking, the program presented here only deals with one well in a uniform, homogeneous, isotropic aquifer with uniform, steady, regional flow. In practice these conditions are rarely satisfied. However, the type of analysis presented here can be very useful as a first phase in developing wellhead protection or aquifer cleanup schemes (Javandel and Tsang, 1986). If conservative aquifer parameters are used, the analysis presented here should outline a maximum capture zone. The program presented here only deals with one well; however, the approximate result for several wells can be obtained by applying the program once for each well and superimposing the results. As long as the capture zones do not overlap, the approximate result should be very good. As the well spacing gets smaller and the capture zones overlap, the approximate results will deviate more from the correct solution; as long as the well spacing is greater than or equal to $Q/\pi q_o B$, the results are expected to be acceptable (see Javandel and Tsang for details of superimposing multiple wells). For the final analysis, if heterogeneity and nonuniform flow are very important, a more complex program such as that presented by Shafer (1987) should be used.

The program presented here is useful for planning wellhead protection and aquifer cleanup schemes. However, the user must always be mindful of its limitations. The presented program is simple and can be embedded in many computing environments, including personal computers, work stations, and mainframes. We have used the program on a work station interfaced with a geographical information system (GIS) to plot capture zones for several wells in Kansas (Woods et al., 1987; Whittemore et al., 1987; and Merchant et al., 1988). The program is presented here in the hope that it will be useful to others.

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* * * * *

Carl D. McElwee graduated in 1965 from William Jewell College with a B.A. in Physics. He received the M.A. and Ph.D. degrees from the University of Kansas in 1967 and 1971, respectively. His research area was solid-state physics. From 1971 to 1974 he worked for Texaco, Inc., in Houston, Texas, as a Research Geophysicist. Since 1974 he has worked for the Kansas Geological Survey in the Geohydrology, Geophysics, and Advanced Projects Sections. His area of special interest is the quantitative description of aquifer systems by field measurements and modeling.

Sept. 9, 2012

Lawrence Douglas County
Metropolitan Planning Office
6 East 6th Street,
P.O. Box 708,
Lawrence, KS 66044

Planning Staff:

As interested property owners, we are writing this letter to object to the Conditional Use Permit (CUP) that Penny Sand Co. has applied for near 1500N and 1850E. This CUP asks permission for a pit mining operation for sand removal. This would completely change the agricultural setting of the area. If allowed, this CUP would subject the area to dramatically increased industrial activity, including noise, dust, and environment destruction. We ask that you deny the CUP for the following reasons:

(1)The affected area has some interesting Douglas County history associated with it and contains some historic houses.

(2) The river bank in the vicinity of this proposed pit mining operation is unstable and has moved considerably over recent times. If pit mining is allowed in this area, in times of flood the chances of a dramatic river channel change is magnified greatly.

(3) On this proposed 434 acre pit mining site, the majority of the area is covered by some of the highest quality soils as defined by the US Department of Agriculture. It seems very short sighted to produce sand for short term gain and lose the potential for significant food and fiber production indefinitely.

(4)There is a large amount of overburden (unusable soil, silt and clay) that must be removed (typically 23-24 feet). Removing this much overburden will create an environmental nightmare

(5) Opening this pit operation will expose one of the most prolific aquifers in this region to potential pollution. This aquifer is a magnificent resource that must be protected and preserved for the future.

(6)Several neighboring house wells could be affected by this pit. Just down the valley about 1 5/8 miles lies the Eudora Public Water Supply Well Field; it could also be affected by the proposed pit mining operation.

Thank you for your consideration of our concerns.

Penny Sand Pit Petition

Name	Address	Phone Number	email
Print: Carl McElwee	1564 E. 1850 Rd.	785	cmcelwee@ku.edu
Signature: Carl McElwee	Lawrence, KS 66046	843-4164	
Print: MARGERY McELWEE	1564 E 1850 Rd	785	
Signature: Margery McElwee	Lawrence KS 66046	843-4164	
Print: Rick Gaebler	1555 E 1850 Rd	785-393-	
Signature: Rick Gaebler	Lawrence KS	9028	
Print: Esther McCabria	1455 E 1900 Rd	542	BMccabria@aol.com
Signature: E. McCabria	Eudora, KS 66025	2492	
Print: Robert McCabria	1455 E 1900 Rd	542	"
Signature: Robert E McCabria	Eudora, KS 66025	2492	
Print: Scott	1964 N 1550 Rd	785	Scothjackson
Signature: Scott Jackson	Eudora 66025	331 6561	1964@yahoo.com
Print: Bruce Perkins	Eudor 66025	785	BrucePerkins55@
Signature: Bruce Perkins		764 6295	Gmail.com
Print: Philip R Ernst	826 Mass, Lawrence	843-2313	
Signature: Ernst			
Print: NORMA L. SCHMILZ	1610 E. GLENN DR.		
Signature: Norma L. Schmilz	LAWRENCE, KS 66044	843-0943	
Print: AL W DEATHE	1918 N 1500 RD		AWDVKD@
Signature: Al W Deathe	EUDORA KS	542-2352	SUNFLOWER.COM
Print: ViAnn K. Deathe	1918 N 1500 Rd		
Signature: ViAnn K Deathe	Eudora, KS 66025	542-2352	

Penny Sand Pit Petition

Name	Address	Phone Number	email
Print: Gregory Shype Signature: Gregory Shype	1394 E 1900 Rd Eudora, Ks 66025	785-542-227[illegible]	KSwikes@hotmail.com
Print: Virginia S. Strong Signature: Virginia S. Strong	3712 Trail Rd. Lawrence, Ks 66049	785 843-2293	
Print: DAVID VERTAČNIK Signature: David Vertačnik	1403E 1850 Road Lawrence, KS	785 842-4428	davidve ku.edu
Print: Wendy Leet Vertacnik Signature: Wendy Leet Vertacnik	1403 E. 1850 Rd Lawrence. KS 66046	785-842.4428	vertacnike sunflower.com
Print: Dr Karen Johnston Signature: K Johnston	1928 N 1500 Rd Eudora KS 66025	785 393 2933	drkarenjohnston@gmail.com
Print: Linda Knabe Signature: Linda Knabe	39460 W 145th ST Eudora, Ks 66025	785 542 2228	knabefarms@wildblue.net
Print: Richard Knabe Signature: Richard Knabe	Same		
Print: PETER SHENOUDA Signature: Peter Shenouda	1411 E. 1850 Road lawrence, KS 66046	785-856-3999	pshenouda@hotmail.com
Print: Building Blocks Daycare Signature: ~~Steve Boyer~~	1411 E. 1850 Road lawrence, KS 66046	785-856-3999	buildingblocks@sunflower.com
Print: Steve BOYER Signature: Steve Boyer	Eudora K.S. 2027 N 1500 RD	785-218-2491	
Print: Nancy Jackson Signature: Nancy Jackson	1964 N 1550th Rd Eudora, KS 66025	785-331-8743	nancyjackson66@gmail.com

Penny Sand Pit Petition

Name	Address	Phone Number	email
Print: Daniel C. Brune	242 E. Cairo Dr.	480-967-8622	dbrune@asu.edu
Signature: Daniel C. Brune	Tempe, AZ 85282		
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Penny Sand Pit Petition

Name	Address	Phone Number	email
Print: DOUGLAS GILMORE	826 W 59 Ter KC MO 64113	816 444 3516	
Signature: Douglas Gilmore			
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Building Blocks Daycare Center
1411 E 1850 Road
Lawrence, KS 66046
(785) 865-3999

To: ***Lawrence Douglas County***
Metropolitan Planning Office
6 East 6th Street,
P.O. Box 708,
Lawrence, KS 66044

We want to object to the greatly increased heavy truck traffic on 442 due to this application, which will interfere with our customers dripping off and picking up children. We are a licensed daycare center near the proposed Penny Sand Plant. We are licensed for 129 children that can attend our center. We have over 30 teachers that work at the center. Parents and teachers drive daily between 7 AM to 6 PM Monday through Friday. Few years back we requested the Burlington Rail Road and the State of Kansas to review the increased traffic going through 1850 Road. Within a few months of the study both the State and Burlington implemented a railroad crossing due to the increased traffic.

Please realize that we already have the following people using 442 (Old K 10).

- Up to 129 parents dropping children during the day.
- Over 30 teachers coming to our facility during the day.
- Public school buses coming to our facility to drop children at the center.
- Our current vans driving during the day to pick and bring back children from different schools in Lawrence and Eudora.
- Folks visiting Pendleton during the year to purchase vegetables and fruits.
- Folks that work in Eudora and travel to Lawrence for employment.
- Folks that live in KC and work in Lawrence use the back road (442) to get to work.

Currently everyone in the neighborhood have a well for water source to either their house or business. We can't afford to lose our only source of water. I just can't imagine digging that many acres won't affect our only water source to the facility. Without water we would lose our children and would be forced to close the facility as water is a requirement by KDHE and would eliminate over 30 jobs.

We request that you deny the permit for the safety of the children, teachers and everyone traveling on the highway.

Sincerely,

Peter Shenouda

Peter Shenouda

RECEIVED
JAN 25 2013
City County Planning Office
Lawrence, Kansas

January 24, 2013

Lawrence Douglas County
Metropolitan Planning Office
6 E 6th Street
Lawrence, KS 66044

Dear Commissioners,

I am writing to express my concerns regarding the proposed Penny's sand pit. I live across the Kansas River in Leavenworth County just north and east of the current in stream dredging operation. This past fall we were subjected to hours of loud dredging noises that sometimes lasted all night long. It was actually this activity that led those of us who live on this side of the river to question whether we deserved some input regarding the proposed pit. The fact that some of us live slightly outside of the 1000ft area that required notification of the public hearing does not mean we are not affected by the operations across the river. I called the Corps of Engineers to question whether there were any regulated hours for the dredging and learned that there are no limits to the hours that the actual dredge equipment can operate. In the current staff report under Condition 14 it states "Hours of operation are 6:30 AM to 6:30 PM, Monday through Friday… however dredging and extraction of sand may exceed these hours when necessary." This exception in the Corps permits allows the dredge to operate 24 hours a day as well as weekends. The dredge equipment that was used was unusually loud and was heard throughout the area from the river to HWY 32. The noise issue must be addressed. I am requesting a noise study and strict regulations regarding the hours of operation of the actual dredge equipment. One resident was told by the Leavenworth County sheriff that there was nothing he could do as this is "construction" noise. If construction noise can not be regulated then dredging needs to be reclassified.

This should not be dismissed as a case of NIMBY. This is would be better described as a case of indifference on the part of the dredge operators to the residents and environs of the area they in which wish to expand their sand operations.

I am however in agreement with the concerns addressed by Carl McElwee in his very good correspondence with the planning office regarding the loss of prime crop land and the possible problems that would come with a flooding event. I think these issues should be your prime considerations before granting the CUP. On the soil maps these are contiguous tracts of class 1 & 2 soils. These soil types have been identified as a great economic resource to the community in Horizon20/20. This area is also in a FEMA Zone A flood area. This is an appropriate area for farming not industry.

Joanne Bergman

Joanne Bergman
25253 Alexander Road
Lawrence KS 66044

Jan. 23, 2013

Lawrence Douglas County
Metropolitan Planning Office
6 East 6th Street,
P.O. Box 708,
Lawrence, KS 66044

Douglas County Planning Commissioners,

On Jan. 30 you will consider again the CUP for Penny Sand to pit mine over 400 acres. I know that there is a massive amount of information that has been submitted over the months that this request has been considered. I trust that you have looked over that material is some detail, so I only want to summarize the material that indicates the request should be denied.

As I see it, there are three main reasons to deny this request: The river bank in this area is unstable and excavation of a pit would make it easier for the river to cut off the meander; The Kansas River Valley is a magnificent aquifer and the opening of this pit will make the aquifer much more vulnerable to pollution; Finally, the destruction of 400 plus acres of prime farmland for short term sand production is short sighted.

I would like to expand on each of these items in a little more detail. First, I would like to tell you that I am a groundwater professional who has spent 35 years at KU, much of that time studying the Kansas River Valley aquifer. I have done extensive research at a field site Northeast of the Lawrence Airport. So, I am qualified to comment on the aquifer.

The first item I would like to discuss is the instability of the river bank in this area. I have submitted excerpts of Dr. Dort's work showing the river bank positions over the last hundred plus years. The river is trying to cut off the meander in this area. The presence of an open pit the magnitude proposed by Penny Sand would make it much easier for the river to cut off this meander in times of flood. I live out there and observed personally the 1993 flood sweep across this area. If the pit had been present, the river would have been flowing freely through it. If the pit is present and the river

cuts into it then two things will occur that are very undesirable: First the pit will become a huge nick point; Second the river water will be in direct contact with the complete thickness of the aquifer over the entire extent of the pit. The presence of the large nick point will produce an unstable river bed and degradation will proceed upstream and downstream a considerable distance until a new stable bed develops. Preservation of river bed at current levels is the reason that dredgers are being thrown off the river in some areas. The flooding of the pit with river surface water of poorer quality than aquifer water would lead to degradation of the aquifer water in this area. As I have documented in other submitted material, the two local experts on the Kansas River Dr. Dort (Retired KU Geology) and Dr. Juracek (USGS) do not dispute what I have said in this paragraph.

The second item is the protection of the Kansas River aquifer. This is an extensive aquifer of high quality water and must be protected for future generations. The opening of this huge pit will make the aquifer much more vulnerable to pollution. The dredging operation will proceed down to the bedrock exposing the coarse high conductivity sands at the bottom of the aquifer. Anything that gets into the pit threatens the quality of the aquifer since it can move very easily in the coarse bottom layer. Once the pit is opened it must be monitored carefully in perpetuity to insure a clean aquifer. This pit will cause a large change in the hydraulic regime and will cause a significant change in water levels in the area. The Penny Sand report indicated the water level in the pit will probably be near that of the river. Currently the water levels in the aquifer are several feet higher than the river, so the result will be lowered water levels in the area and a huge flow-through lake created by the pit. Any user of the aquifer down-gradient of this pit must be concerned with the quality of the water in the pit. Fertilizers are widely and heavily used in this area and would be a potential source of nitrate pollution for the aquifer that could easily travel long distances. The city of Eudora Municipal Well Field is down-gradient from this proposed pit and work that I have submitted shows that the 6 and 8 year capture curves for the well field likely overlie the proposed pit. Of course longer time periods will make the capture curves expand to cover larger portions of the proposed pit.

The third item is the destruction of over 400 acres of prime farmland. Soils maps show this area to contain large contiguous areas of the highest quality soils capable of producing vast quantities of food and fiber indefinitely. It will only take 30 years to destroy this soil, which has taken nature thousands

of years to produce. The sand produced in this pit will largely leave Douglas County and the pit operation will not involve many jobs as indicated in the Penny Sand Application. So, it seems the overall benefit to Douglas County is not large for this CUP. On the other hand, the preservation of clean water and highly productive soils for future generations is of great value to Douglas County.

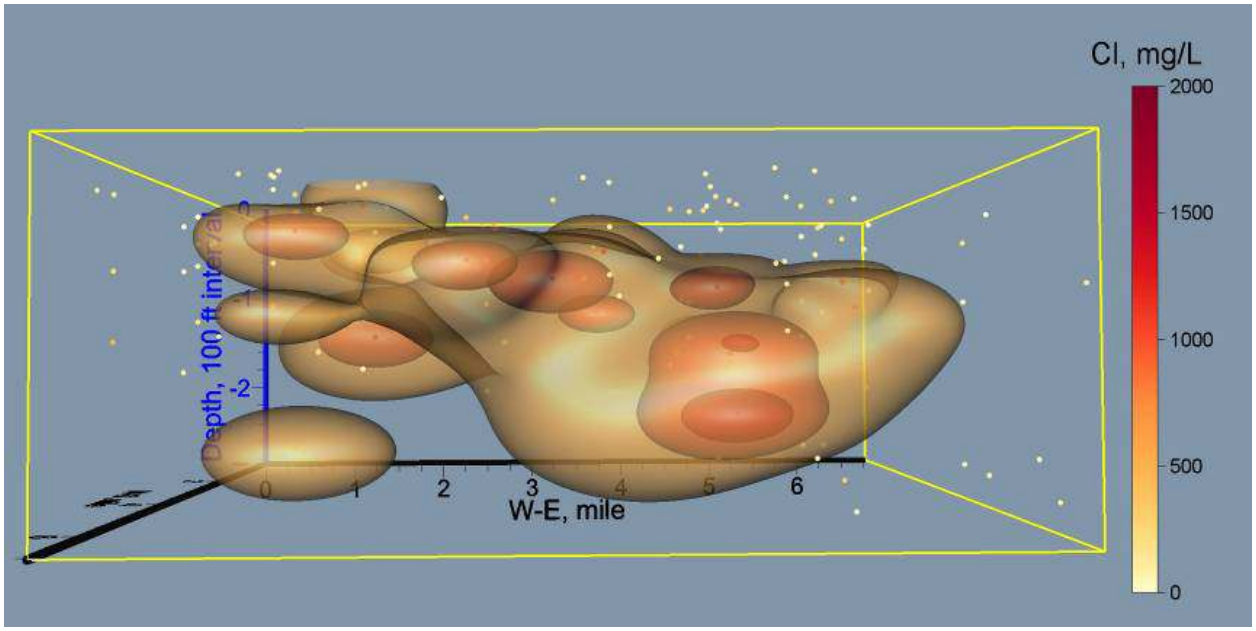
The Douglas County Commissioners requested an independent unbiased third party report reviewing the material submitted for the CUP to give them additional guidance. The report obtained from Conestoga-Rovers and Associates (CRA) is hardly that. CRA states in their information that they widely consult for the aggregate industry, so their lack of bias is questionable. In addition, none of the signers of the report are experts on the Kansas River Valley Aquifer. In fact, their examples of systems studied are in Canada. They say that they see no real problems with the CUP, but proceed to lay out several additional things that need to be done before granting the CUP. For the most part, I agree with the additional work they recommend. Tacitly in requesting this additional work, they are admitting that this CUP makes the aquifer much more vulnerable to pollution. If there was really no potential problem, no additional work would need to be done.

Penny Sand and CRA like to point to various sand pits that have not caused pollution problems. However, you can not prove the point that sand pits never pollute with a few examples. There is always the potential for pollution if pollutants are present and we know that nitrates are prevalent in this area. Sand pits are not greatly different from other surface water bodies and the groundwater literature is full of examples of pollution from surface water bodies that has moved large distances. One example from the state of Kansas is a saltwater plume moving from the town of Burrton toward the Wichita Well Field. This results from the disposal of saltwater in surface water ponds years ago that is continually making its way to the Wichita Well Field. This pollution has travelled miles. Salt and nitrate are called conservative tracers because they are not easily adsorbed and can travel long distances in permeable aquifers. I am including as an appendix to this letter a plot of the mapped pollution in that area. I hope this explains why this proposed pit causes great vulnerability to the aquifer in this area.

For all these reasons, I ask you to deny this request for a pit mining CUP by Penny Sand. Thank you for your consideration. If I may answer any questions, please contact me.

Carl McElwee
Emeritus Professor of Geology
University of Kansas
Lawrence, KS 66045
785-843-4164
cmcelwee@ku.edu

Appendix



3D view of the saline water plume in the Burrton Intensive Groundwater Control Area

January 28, 2013

Lawrence-Douglas County Planning Commission
Dear Chairman Liese,

To prevent further erosion of the Kansas River bank and degradation of bridges and infrastructure upstream and downstream, we support removing sand dredging from the Kansas River. While sand pit extraction also has significant concerns, sand pit mining in **an appropriate location** remains an important improvement over sand dredging in the Kansas River.

After a presentation by Dr. Melinda Daniels summarizing her research on the impacts of sand dredging within the Kansas River, she was asked about the Penny Sand Pit proposal. Dr. Daniels, a Kansas State University Geography Professor, shared concerns that the placement of this sand pit was too close to the Kansas River. She reasoned that if the Kansas River changed course and flowed through this sand pit, it would have the same degradation impacts as in-stream river dredging. Mr. Phil Struble, Landplan Engineering, stated during testimony about this application with the Planning Commission on October 22, 2012, that rivers move and it is hard to control rivers. We are very concerned about the possibility of the Kansas River rechanneling through this proposed sand pit leading to further degradation of the Kansas River threatening bridges, the Bowersock dam, and river stream banks.

The proposed location for this sand pit is composed principally of Class I and II soils. (Please refer to Exhibit A, Page 1 illustrating Class I soils, shaded red, and Class II soils, shaded yellow.) Horizon 2020 states in Chapter 7 that the "preservation of high-quality agricultural land, which has been recognized as a finite resource that is important to the regional economy, is of important value to the community."

According to the USDA Web Soil Survey (Exhibit B, Pages 1 & 3), the majority of the soils in this proposed location are a "poor" source of sand. The only soils identified as a "fair" source of sand are the 30 acres along the Kansas River.

The soils on this property used for an aquifer-fed excavated pond are ranked "very limited". According to the USDA Web Soil Survey (Exhibit C, page 3), "'Very limited' indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected."

The majority of the soils on this property are "very limited" used as embankments, dikes, and levees according to USDA Web Soil Survey (Exhibit D, page 3 & 4). The only soils that differ and are "somewhat limited" are directly along the Kansas River. The use of "very limited" soils as a levee can lead to expected poor performance and high maintenance.

Given that the importance of the preservation of prime soils to our community and the threat of the Kansas River cutting through this sand pit in the future, we recommend rejecting this

conditional use permit. We conclude this location is inappropriate as a sand pit. It is a poor source for sand. The existing soils are very limited to serve as an excavated pond and levee. Poor performance and high maintenance costs can be expected in the future. This is excellent farmland. It should remain as prime farmland.

Thank you for your consideration of these comments.

Sincerely,

Jerry Jost
217 North Fifth Street
Lawrence, KS 66044

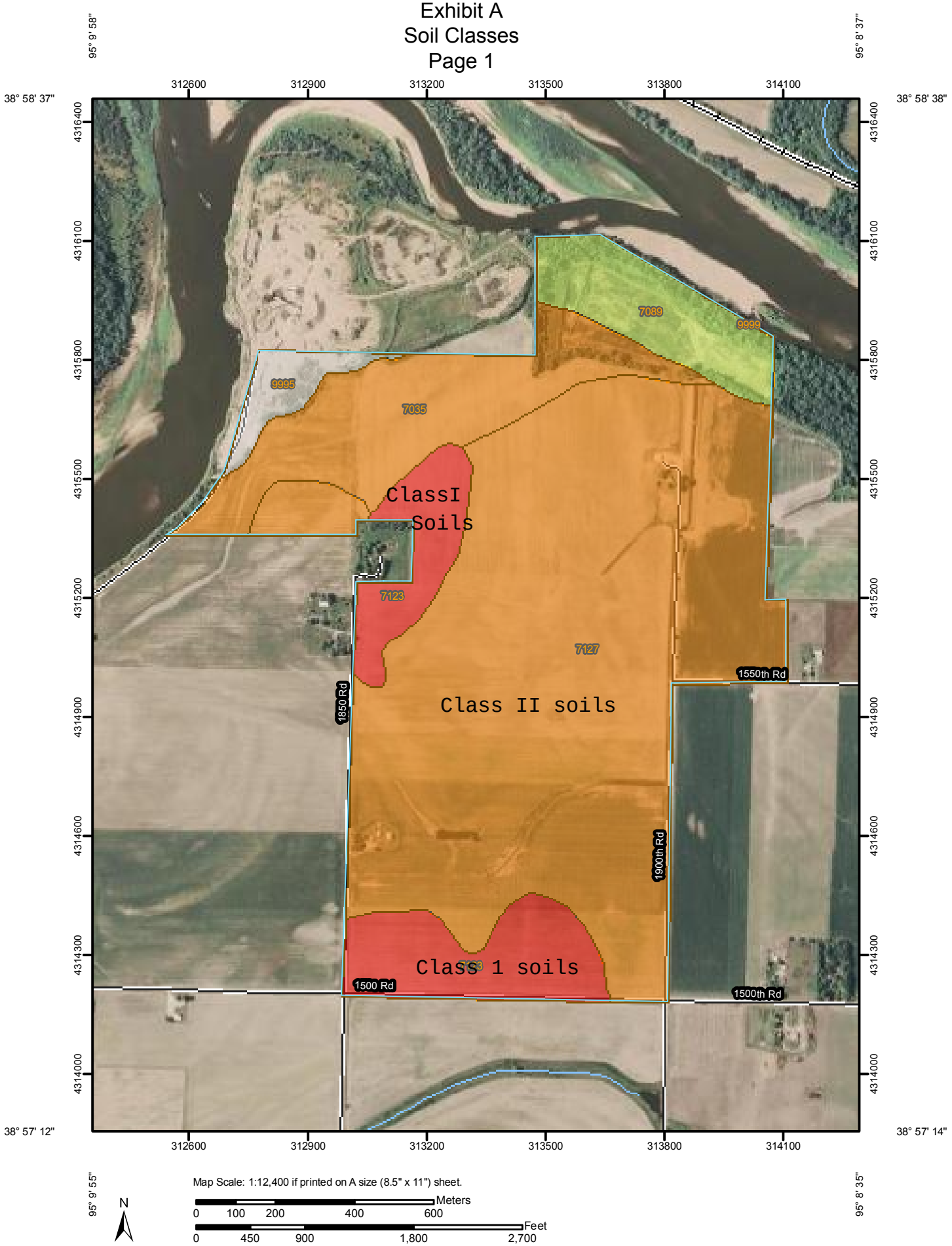
Barbara Clark
2050 East 1550 Road
Lawrence, KS 66044

Charles NovoGradac
945 Ohio Street
Lawrence, KS 66044

Deb Milks
945 Ohio Street
Lawrence, KS 66044

Lane Williams
1735 East 1500 Road
Lawrence, KS 66044-9305

Exhibit A
Soil Classes
Page 1



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Units

Soil Ratings

- Capability Class - I
- Capability Class - II
- Capability Class - III
- Capability Class - IV
- Capability Class - V
- Capability Class - VI
- Capability Class - VII
- Capability Class - VIII
- Not rated or not available

Political Features

- Cities

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:12,400 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 15N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Douglas County, Kansas
Survey Area Data: Version 9, Sep 24, 2012

Date(s) aerial images were photographed: 6/15/2006

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Nonirrigated Capability Class

Nonirrigated Capability Class— Summary by Map Unit — Douglas County, Kansas (KS045)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
7035	Eudora-Bismarckgrove fine sandy loams, overwash, occasionally flooded	2	60.2	13.7%
7089	Stonehouse-Eudora fine sandy loams, overwash, occasionally flooded	4	30.1	6.9%
7123	Eudora silt loam, rarely flooded	1	53.8	12.3%
7127	Eudora-Kimo complex, overwash, rarely flooded	2	284.2	64.8%
9995	Sand Pits		10.3	2.4%
9999	Water		0.1	0.0%
Totals for Area of Interest			**438.7**	**100.0%**

Description

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations that show suitability and limitations of groups of soils for rangeland, for woodland, or for engineering purposes.

In the capability system, soils are generally grouped at three levels-capability class, subclass, and unit. Only class and subclass are included in this data set.

Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have few limitations that restrict their use.

Class 2 soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that reduce the choice of plants or that require very careful management, or both.

Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: *None Specified*

Tie-break Rule: Higher

Exhibit B
Source of Sand
Page 1



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Soil Ratings
- Poor
- Fair
- Good
- Not rated or not available

Political Features
- Cities

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:12,100 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 15N NAD83

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Soil Survey Area: Douglas County, Kansas
Survey Area Data: Version 9, Sep 24, 2012

Date(s) aerial images were photographed: 6/15/2006

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Sand Source

Exhibit B
Source of Sand
Page 3

Sand Source— Summary by Map Unit — Douglas County, Kansas (KS045)						
Map unit symbol	**Map unit name**	**Rating**	**Component name (percent)**	**Rating reasons (numeric values)**	**Acres in AOI**	**Percent of AOI**
7035	Eudora-Bismarckgrove fine sandy loams, overwash, occasionally flooded	Poor	Eudora (55%)	Bottom layer (0.00)	59.7	13.7%
				Thickest layer (0.00)		
			Bismarckgrove (25%)	Bottom layer (0.00)		
				Thickest layer (0.00)		
7089	Stonehouse-Eudora fine sandy loams, overwash, occasionally flooded	Fair	Stonehouse (50%)	Thickest layer (0.03)	29.6	6.8%
				Bottom layer (0.13)		
7123	Eudora silt loam, rarely flooded	Poor	Eudora (85%)	Bottom layer (0.00)	52.8	12.1%
				Thickest layer (0.00)		
7127	Eudora-Kimo complex, overwash, rarely flooded	Poor	Eudora (60%)	Bottom layer (0.00)	280.8	64.6%
				Thickest layer (0.00)		
			Kimo (30%)	Bottom layer (0.00)		
				Thickest layer (0.00)		
			Wabash (5%)	Bottom layer (0.00)		
				Thickest layer (0.00)		
9995	Sand Pits	Not rated	Pits, sand (100%)		11.8	2.7%
9999	Water	Not rated	Water (100%)		0.0	0.0%
Totals for Area of Interest					**434.7**	**100.0%**

Sand Source— Summary by Rating Value		
Rating	**Acres in AOI**	**Percent of AOI**
Poor	393.4	90.5%
Fair	29.6	6.8%
Null or Not Rated	11.8	2.7%
Totals for Area of Interest	**434.7**	**100.0%**

Exhibit B
Source of Sand
Page 4

Description

Sand is a natural aggregate (0.05 millimeter to 2 millimeters in diameter) suitable for commercial use with a minimum of processing. It is used in many kinds of construction. Specifications for each use vary widely. Only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material.

The properties used to evaluate the soil as a source of sand are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the bottom layer of the soil contains sand, the soil is considered a likely source regardless of thickness. The assumption is that the sand layer below the depth of observation exceeds the minimum thickness. The ratings are for the whole soil, from the surface to a depth of about 6 feet.

The soils are rated "good," "fair," or "poor" as potential sources of sand. A rating of "good" or "fair" means that sand is likely to be in or below the soil. The bottom layer and the thickest layer of the soil are assigned numerical ratings. These ratings indicate the likelihood that the layer is a source of sand. The number 0.00 indicates that the layer is a "poor source." The number 1.00 indicates that the layer is a "good source." A number between 0.00 and 1.00 indicates the degree to which the layer is a likely source.

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Rating Options

Aggregation Method: Dominant Condition

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Condition" first groups like attribute values for the components in a map unit. For each group, percent composition is set to the sum of the percent composition of all components participating in that group. These groups now represent "conditions" rather than components. The attribute value associated with the group with the highest cumulative percent composition is returned. If more than one group shares the highest cumulative percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher group value should be returned in the case of a percent composition tie.

The result returned by this aggregation method represents the dominant condition throughout the map unit only when no tie has occurred.

Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Lower

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

Exhibit C
Excavated Ponds (Aquifer-Fed)
Page 1



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Soil Ratings
- Very limited
- Somewhat limited
- Not limited
- Not rated or not available

Political Features
- Cities

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:12,100 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 15N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Douglas County, Kansas
Survey Area Data: Version 9, Sep 24, 2012

Date(s) aerial images were photographed: 6/15/2006

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Excavated Ponds (Aquifer-Fed)

Exhibit C
Excavated Ponds (Aquifer-Fed)
Page 3

Excavated Ponds (Aquifer-Fed)— Summary by Map Unit — Douglas County, Kansas (KS045)						
Map unit symbol	**Map unit name**	**Rating**	**Component name (percent)**	**Rating reasons (numeric values)**	**Acres in AOI**	**Percent of AOI**
7035	Eudora-Bismarckgrove fine sandy loams, overwash, occasionally flooded	Very limited	Eudora (55%)	Depth to water (1.00)	59.7	13.7%
			Bismarckgrove (25%)	Depth to water (1.00)		
7089	Stonehouse-Eudora fine sandy loams, overwash, occasionally flooded	Very limited	Stonehouse (50%)	Depth to water (1.00)	29.6	6.8%
			Eudora (30%)	Depth to water (1.00)		
7123	Eudora silt loam, rarely flooded	Very limited	Eudora (85%)	Depth to water (1.00)	52.8	12.1%
7127	Eudora-Kimo complex, overwash, rarely flooded	Very limited	Eudora (60%)	Depth to water (1.00)	280.8	64.6%
			Wabash (5%)	Slow refill (1.00)		
				Unstable excavation walls (0.10)		
9995	Sand Pits	Not rated	Pits, sand (100%)		11.8	2.7%
9999	Water	Not rated	Water (100%)		0.0	0.0%
Totals for Area of Interest					**434.7**	**100.0%**

Excavated Ponds (Aquifer-Fed)— Summary by Rating Value		
Rating	**Acres in AOI**	**Percent of AOI**
Very limited	422.9	97.3%
Null or Not Rated	11.8	2.7%
Totals for Area of Interest	**434.7**	**100.0%**

Description

Excavated ponds (aquifer-fed) are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, saturated hydraulic conductivity (Ksat) of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: *None Specified*

Tie-break Rule: Higher

Exhibit D
Embankments, Dikes, Levees
Page 1



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Soil Ratings
- Very limited
- Somewhat limited
- Not limited
- Not rated or not available

Political Features
- Cities

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

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Please rely on the bar scale on each map sheet for accurate map measurements.

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Embankments, Dikes, and Levees

Exhibit D
Embankments, Dikes, Levees
Page 3

Embankments, Dikes, and Levees— Summary by Map Unit — Douglas County, Kansas (KS045)						
Map unit symbol	**Map unit name**	**Rating**	**Component name (percent)**	**Rating reasons (numeric values)**	**Acres in AOI**	**Percent of AOI**
7035	Eudora-Bismarckgrove fine sandy loams, overwash, occasionally flooded	Very limited	Eudora (55%)	Piping (1.00)	59.7	13.7%
			Bismarckgrove (25%)	Piping (1.00)		
7089	Stonehouse-Eudora fine sandy loams, overwash, occasionally flooded	Somewhat limited	Stonehouse (50%)	Seepage (0.27)	29.6	6.8%
7123	Eudora silt loam, rarely flooded	Very limited	Eudora (85%)	Piping (1.00)	52.8	12.1%
7127	Eudora-Kimo complex, overwash, rarely flooded	Very limited	Eudora (60%)	Piping (1.00)	280.8	64.6%
			Kimo (30%)	Ponding (1.00)		
				Depth to saturated zone (1.00)		
				Piping (0.07)		
			Wabash (5%)	Depth to saturated zone (1.00)		
				Hard to pack (1.00)		
9995	Sand Pits	Not rated	Pits, sand (100%)		11.8	2.7%
9999	Water	Not rated	Water (100%)		0.0	0.0%
Totals for Area of Interest					**434.7**	**100.0%**

Embankments, Dikes, and Levees— Summary by Rating Value		
Rating	**Acres in AOI**	**Percent of AOI**
Very limited	393.4	90.5%
Somewhat limited	29.6	6.8%
Null or Not Rated	11.8	2.7%
Totals for Area of Interest	**434.7**	**100.0%**

Description

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. Embankments that have zoned construction (core and shell) are not considered. The soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the suitability of the undisturbed soil for supporting the embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: *None Specified*

Tie-break Rule: Higher

Dear Douglas County Planning Commission,

My name is Nancy Schwarting and my property is at 1706 N 1500 Road, just west of the proposed sand pit CUP. I am writing to express my concern about this proposed CUP that would allow a large open sand pit project to be initiated next to the Kaw River and within a mile of my property on 1500 Road. I've attended the initial Planning Commission co-meeting with Eudora, the Douglas County Commission meeting, and multiple other smaller community meetings to learn more about this project and its possible ramifications for the land and the people who live near it.

I have chosen to assess this project in terms of the good vs. bad that would come out of it.

As far as the water and possible contamination of the aquifer, I have listened to all the discussions of experts, and it is clear that there are no certainties in this picture. Although the risks may be there, I've heard a volley of opposing views on how likely or unlikely various bad things are to happen. We have no ability to predict for sure that the project will contaminate the aquifer or cause the river channel to change. But far more importantly, we have absolutely no assurance that nothing will go wrong. We have no way of even quantifying what those risks might be. Do we assume no risk because we don't know for sure what will happen?

I heard that strictest of measures are taken in the drilling of a single well, a 4" hole into the aquifer, just to protect the aquifer from contamination via that hole. How could there not be multifold more risk for contamination when 'the hole' is several hundred feet across and twice as deep as the aquifer is? Why is equal precaution not mandatory for this hole?

We do know the town officials of Eudora vigorously oppose this CUP due to the unknowns involved in digging a hole through the aquifer. Eudora does not want to play Russian roulette now with their water, to find out in 5 or 10 years what those risks actually are. By the time any contamination reaches the Eudora wells several years from now it will be too late to fix!

One doesn't buy insurance planning to have an accident, but has it in case there is one. An 'accident' in this case would cost Eudora millions. What assurances are in place to address a disaster such as contamination of the water supply and who is liable, should this happen? Is the County accepting this responsibility if they approve this CUP? How can this City or County ethically approve a use that could endanger the water of another County and City downstream?

The risk of aquifer contamination may remain unquantifiable. But there are a lot of things we do know for sure will happen if this project becomes a reality.

We know if this project is approved the prime farmland (and this land IS zoned as agricultural land) will be all gone, and gone for good. It took hundreds of years for this land to form, and once the topsoil is stripped off it will never be there again as it is now. Is this permanent change to the land worth 30 years of profit for one company?

We do know for certain that the aquifer will be left exposed. The hole that is requested will go through the aquifer and more than 30' deeper. We do know that once this 70' hole in the ground and through the aquifer is there, it too will be there forever. Will the berms protecting that hole be there forever? What provisions are in place to maintain the berms after 30 years, or perhaps even sooner, after the land is 'used up' and the owner then sells it? Who will pay for this indefinitely?

We know the truck traffic, dust and machinery noise will be an ongoing entity for the duration of the 30 year project. This will decrease the property values for all of us who live in this area. The truck traffic will necessarily increase the maintenance needs of the roads. Who pays for that? The county, via the people who pay taxes?

We are told that at the end of this project, when there will be a huge hole in the ground from all the topsoil and sand removed, it will be filled with water and called a 'recreational lake'. Does this mean the lake will it be open to the public? Will we, the community actually benefit from this 'lake'? Will that water be safe to swim in? It is my understanding that the water level will be some 20+ feet below the edges of the 'lake'. How will people access the water to recreate there? Also, if the droughts continue, how will the exposure of this lake to evaporation affect the aquifer that it is then integrally connected to?

<u>As far as long term benefits of this CUP to the county, city and community, I can think of none.</u>

I would like to know if there is an urgent need for a new sand source: There are a number of other currently active sites in the area. Penny owns several of these. I would also like to know what percentage of the sand from the proposed CUP would actually even go to Lawrence and Douglas County?

I see no County or City employment opportunities for the area, and no economic gains from this CUP: The income from this project will go to one company. No new jobs are being created – only a few people will run this entire operation.

There certainly are no community gains: we the neighbors will be seeing the traffic, suffering from the dust, and hearing the noise for the next 30 years. None of the profit from this operation is going back into the surrounding community.

There are no agricultural gains, only losses: all the valuable topsoil will be gone, sold off, along with all potential of this land ever being farmable again.

Most important, there are NO environmental gains, and possibly many losses: The pit will jeopardize the water supply and potentiate the river cutting through a new course. There will be noise pollution. There will be dust. This segment of the river habitat and its wildlife will surely be the worse for the project.

Also I am at a loss as to why the Planning Commission would feel obligated to approve this CUP just because they have denied other Penny requests in the past. It is not the City's or County's obligation nor should it be their priority to accommodate the short term financial gains of one man and one company at the expense of the community they serve.

I believe the Planning Commission is entrusted with making decisions that benefit the City and County, ones that perpetuate long term benefits to our community. There are none to be had in this CUP.

This request is called a Conditional Use Permit because it asks permission to deviate from the original zoning and intent for the land. The land involved has been zoned agricultural for very good reasons. USDA reports verify highest quality soils, but poor for sand production due to the depth of the sand underground. This land has been prime farmland for many years. Penny bought this land knowing that it was zoned for agriculture. He is now asking for permission to NOT use it as it is already zoned. If this CUP is denied, this landowner is not being denied fair use of his land for profit, he is only being required to use it as it is already zoned. He is still free to use the land for agriculture.

All of us who live in this area chose our properties because the land as it was zoned as it is now, and for the agricultural nature of the area. It is not fair to change the use of this land for one man when the impact of this change will affect so many, in so many negative ways.

This temporary conditional use permit would result in a permanent change to the land. It makes no sense that this kind of massive permanent damage over several hundred acres, only a few miles from the city limits, and for short term gain could possibly be something the City or County would condone.

I would ask every Commission member, as decision makers for our community, to consider the words of Oren Lyons, Chief of the Onondaga Nation: "We are looking ahead, as is one of the first mandates given us as chiefs, to make sure and to make every decision that we make relative to the welfare and well-being of the seventh generation to come… " " What about the seventh generation? Where are you taking them? What will they have?"

How far ahead is this Commission, entrusted with Planning the very best for the community future, really thinking if they approve a plan that leaves that land gouged, permanently altered, un-farmable and uninhabitable, and even the slightest potential for a contaminated aquifer, all in less than one generation?

Please, for the good of all the people you serve don't approve this CUP.

Sincerely,

Nancy Schwarting

PO Box 901
Lawrence, KS 66044
785-887-6801
nschwarting@ku.edu

RECEIVED
JAN 28 2013
City County Planning Office
Lawrence, Kansas

January 25, 2013

Lawrence/Douglas County Metropolitan Planning Department
6 E. 6th St.
Lawrence, KS 66044

Re: Conditional Use Permit for Penny Sand Pit

Dear Commissioners,

I am a neighbor who lives north of the proposed sand pit.

I urge inclusion of the complete set of recommended conditions provided by the Conestoga-Rovers and Associates' report.

However, there needs to be a condition addressing noise abatement. Condition 14.f.i. as written is not acceptable. Dredging and extraction of sand need to also be restricted to 6:30 AM to 6:30 PM. The noise from the dredging process is excruciating for neighbors to the north. The combination of loudness, pitch, resonance and frequency are intolerable. This is not background noise that is heard outside. It penetrates our homes, even when windows are closed, and bores into one's head. I can best describe it as a low-frequency, constant loud hum that is inescapable. During portions of 2012, the dredging operation would operate essentially 24 hours a day making restful sleep impossible.

The same dredging process is planned for the pit and will create the same noise.

Please make changes to Condition 14.f.i. so that neighbors to the north can continue to have the benefits of full use of their properties including being able to sleep at night.

Thank you,

Bob Yoos
25253 Alexander Rd.
Lawrence, KS 66044

RECEIVED

JAN 28 2013

City County Planning Office
Lawrence, Kansas

January 25, 2013

Lawrence Douglas County
Metropolitan Planning Office
6 E 6th St.
Lawrence, KS 66044

Dear Commissioners:

The Reetz/Cox Family has lived in this area of the Kansas River valley since buying our land from the Delaware families who lived here before us. We are farmers and ranchers and this floodplain soil is some of the best agricultural soil in the state. As an historian I have done extensive research on this entire area that documents the lives of the people who farmed here as well as the Delaware who lived here for about a 50 years before us. The native people hunted and fished along the banks of the river and had fishing huts on the south side of the river. This area is alive with history and the beauty of the Kansas River.

The land here would be ruined by an industrial sand mining operation. The resulting "lake" will be nothing more than a stagnant body of water surrounded by unsightly rip rap for years to come. We are concerned about the sand dust, mosquitoes, noise and the general nuisance of the whole operation in our neighborhood. In late fall of last year our lives were disturbed by a loud droning sound that ran for hours at a time – sometimes 24 hours a day. We later learned from our neighbors that it was the new dredging equipment at the Penny's site on the river. We are all aware of the degradation that is occurring and know the dredging is supposed to end soon. They dredged day and night until they had removed all of the sand they could legally remove by the end of 2012. They were contacted by the Corps of Engineers about the complaints they were getting. Apparently the condition of the river and the quality of life for the people who live in this area is not a concern to the sand operators. Is this the type of operation we want to give a 30 year permit too? I don't think so!

It is true that the Penny Concrete bought the land but they bought agricultural land not industrial land. This is a farm valley that relies on wells for water. This is a food production area on the edge of Lawrence not an undiscovered wasteland waiting to be exploited. This unsightly operation will be seen from K-10 as well as from the river and from the Leavenworth county side. All this is happening just as the Kansas River is being discovered for its beauty and potential tourism opportunities and we read that Douglas County working on the very definition of "agritourism." Do not allow this destruction to occur! This is not a good location for this operation.

Lorene Cox

Lorene Cox
23787 Guthrie Road
Linwood, KS 66052

RECEIVED
JAN 28 2013
City County Planning Office
Lawrence, Kansas

Jan. 27, 2013

To the ~~Douglas~~ County Planning Commission

As you consider the request of Mr. Penny to open a sand operation on his property directly south of our home. We live in Leavenworth County on Alexander Road on the North side of the Kaw River. Last fall the machinery that produces sand ran 24 hours a day for several weeks. It was distressful to sleep at night and irritating to have so much noise at our country home. We request that you plan for some noise abatement to be required of the operation.

I also have a question about where the river is? I walked across a dry river bed from the north side toward the South bank and could only find the water behind "No Trespassing" signs on the south side. I have never seen the river this dry. We have lived here for 52 years. Will the new channel be in the dredge canal?

Thank you for your consideration.

Charles & Kathy Hagen

843-5093

RECEIVED
JAN 28 2013
City County Planning Office
Lawrence, Kansas

To whom this may concern:

My name is Steve Layman, and I live north east of the proposed sand pit.

There are 35 residences that have been bothered by the noise generated from the dredge in the river. These residences vary in distance from 3,000 feet to over 10,000 feet from the river dredge (as far north as 32 hwy). Several of the persons have complained of not being able to sleep at night, or giving up outdoor activities due to the loud sound.

I have cattle that are usually wintered in the corn field just north of the UP railroad tracks, this year they were acting stressed and always on the north side of the field. I moved them to a field farther north which helped, but cattle would still stay on north side of pasture. I finally moved them to the pasture closest to Alexander Rd. luckily dredging had stopped, cattle calmed shortly thereafter.

1. There needs to be a noise study done to find out the full extent of the issue
2. I would like to have no more than 40 DBA at the North River Bank
3. Hospital grade mufflers installed on all equipment used on the sight
4. Sound abatement enclosures on the dredge engines
5. Dredging done only during NORMAL business hours (6AM to 6PM) Monday through Friday, no holidays
6. An afterhours contact that could stop excessive noise if it happens again (when I called the Douglas County Sherriff at 3:00 am on 12/04/12 I was told dredging was construction work and was not considered a disturbance).
7. Some type of dust study since the wind is predominantly out of the SW, and my residence would be directly in line with silica dust leaving storage piles or excavation sites (silicosis is being discussed as one byproduct of sand quarrying).

I have lived in my house since 2005 and watched the sand piles grow and shrink every year, until this fall the river dredging sound has not been to the point I can't sleep in my own house due to the constant noise.

I have included a slideshow (cd) of various views of the sand pit in Desoto with Google earth views since its first topsoil removal in 1991 to present (pay attention to profile of pit banks they do not look like the "not to scale" reclamation drawing in your supplied prints). There are also views from Gardner rd looking west at the pit same site. Also included are pictures of the dredge at the KAW site that is causing the noise issues (it will give you a reference as to topsoil removal depth, and what dredge pit walls really look like. There are a few pictures of the now empty Kaw River channel that has been replaced by the dredge channel.

Steve Layman

01/27/2013


THE MASTER'S
DREDGING CO.
RESCUE MASTER
AIRBOATS
8220 GARDNER RD.


SPEED
LIMIT
10


SPEED
LIMIT
10


NO TRESPASSING
UNDER
PENALTY OF LAW
ALL VIOLATORS WILL BE PROSECUTED
TO THE FULLEST EXTENT OF THE LAW
FEDERAL LAW
PROHIBITS
UNAUTHORIZED
VISITATION














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FEDERAL LAW
PROHIBITS
UNAUTHORIZED
VISITATION


FEDERAL LAW
PROHIBITS
UNAUTHORIZED
VISITATION














DANGER
BOATERS
KEEP CLEAR
OF DREDGE
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RIDGID


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RIDGID


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BOATERS
KEEP CLEAR
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OF DREDGE








DANGER
HOT
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RIDGID








NO TRESPASSING
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TO THE FULLEST EXTENT OF THE LAW






FEDERAL LAW
PROHIBITS
UNAUTHORIZED
VISITATION





































2012

Image U.S. Geological Survey

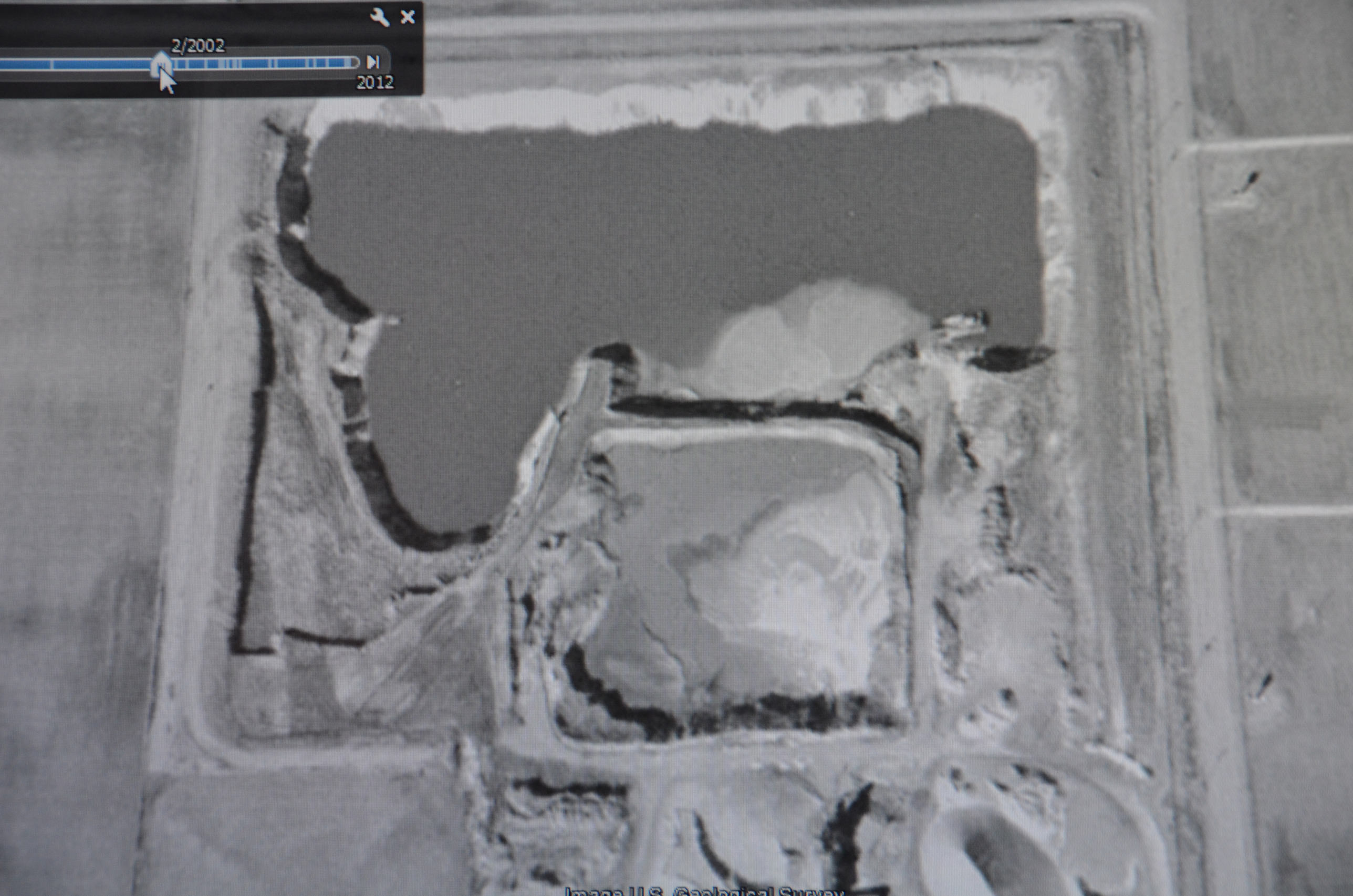
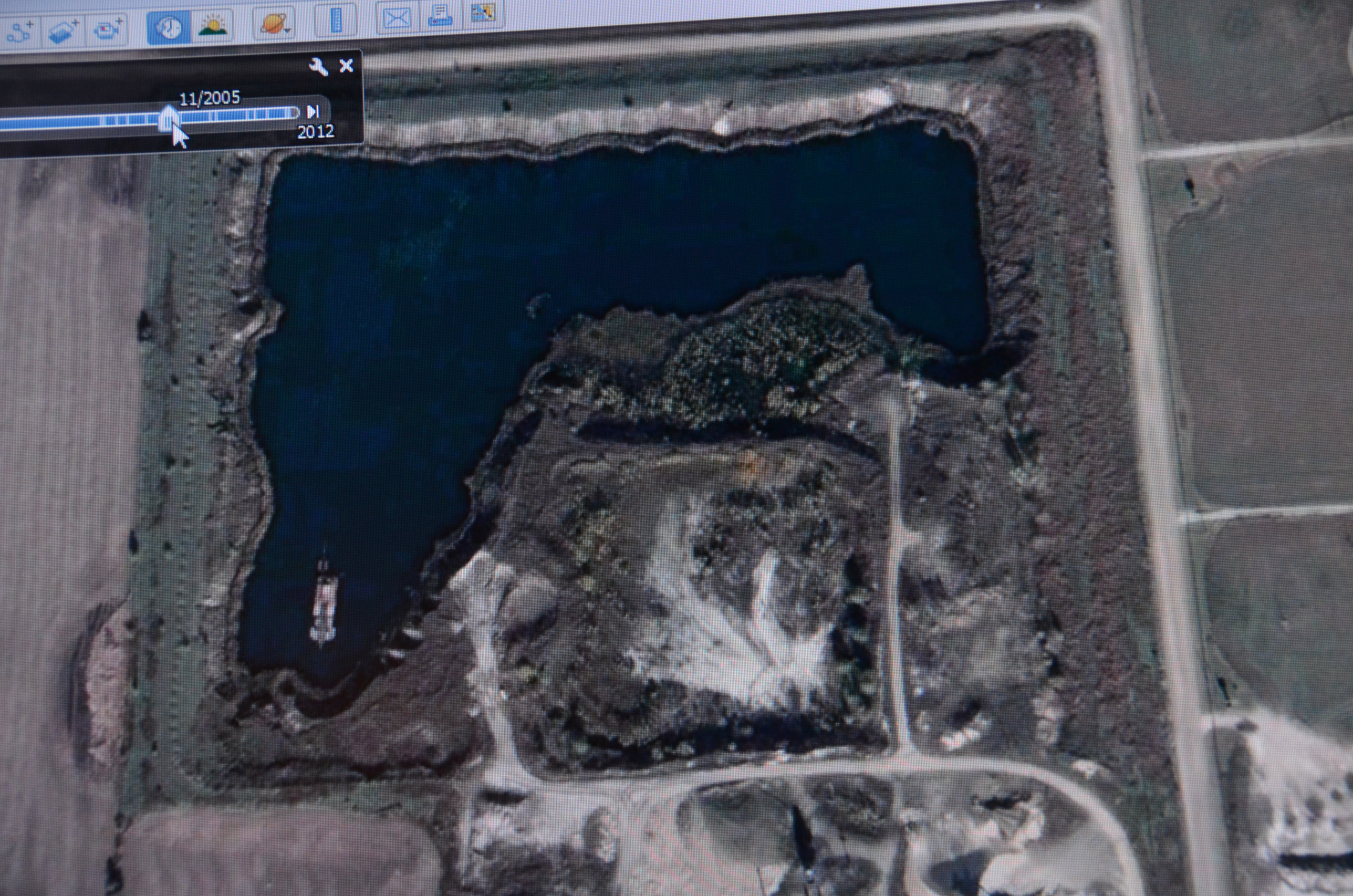


Image U.S. Geological Survey


1/2003
2012


11/2005
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8/2006
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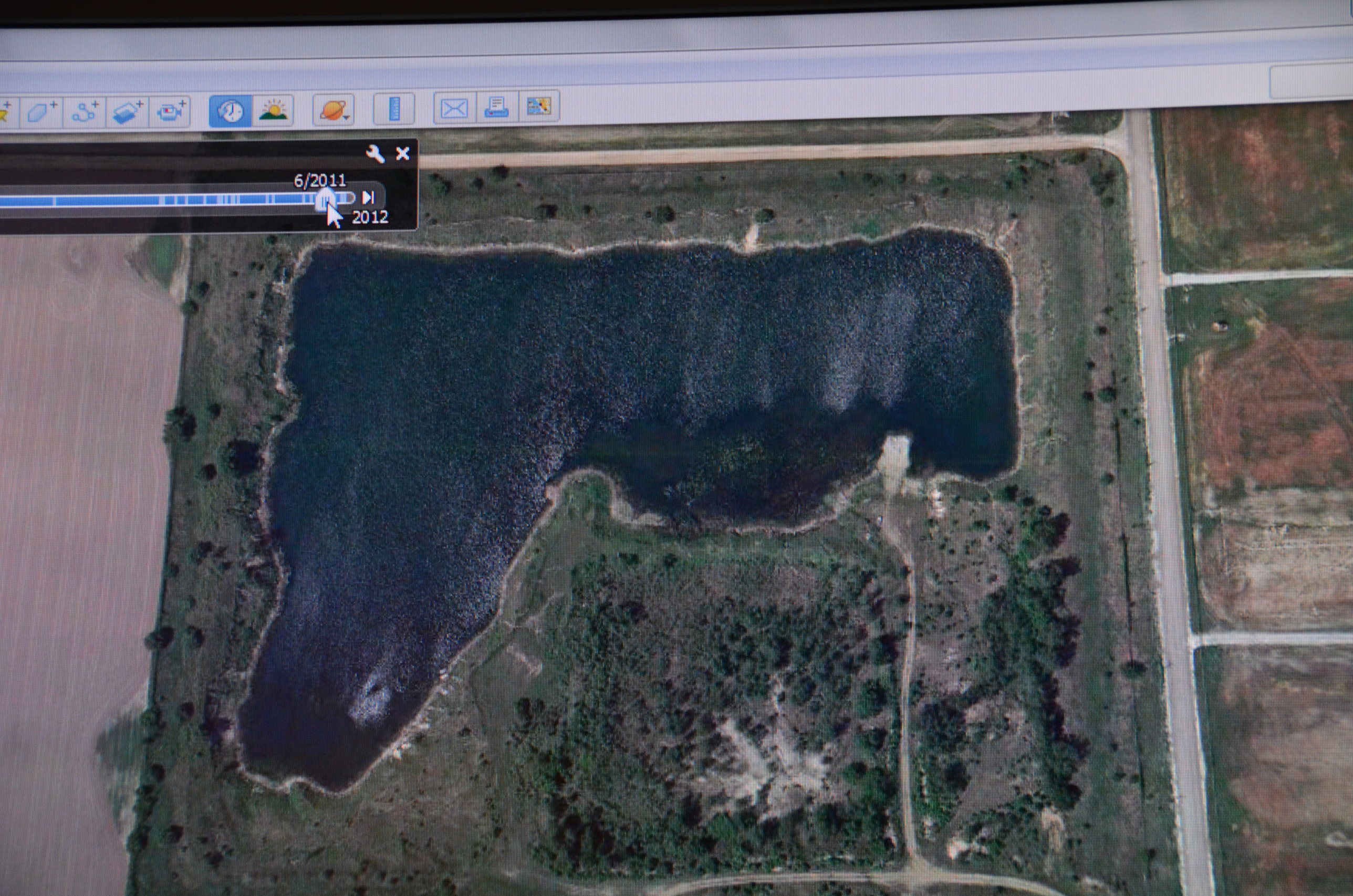
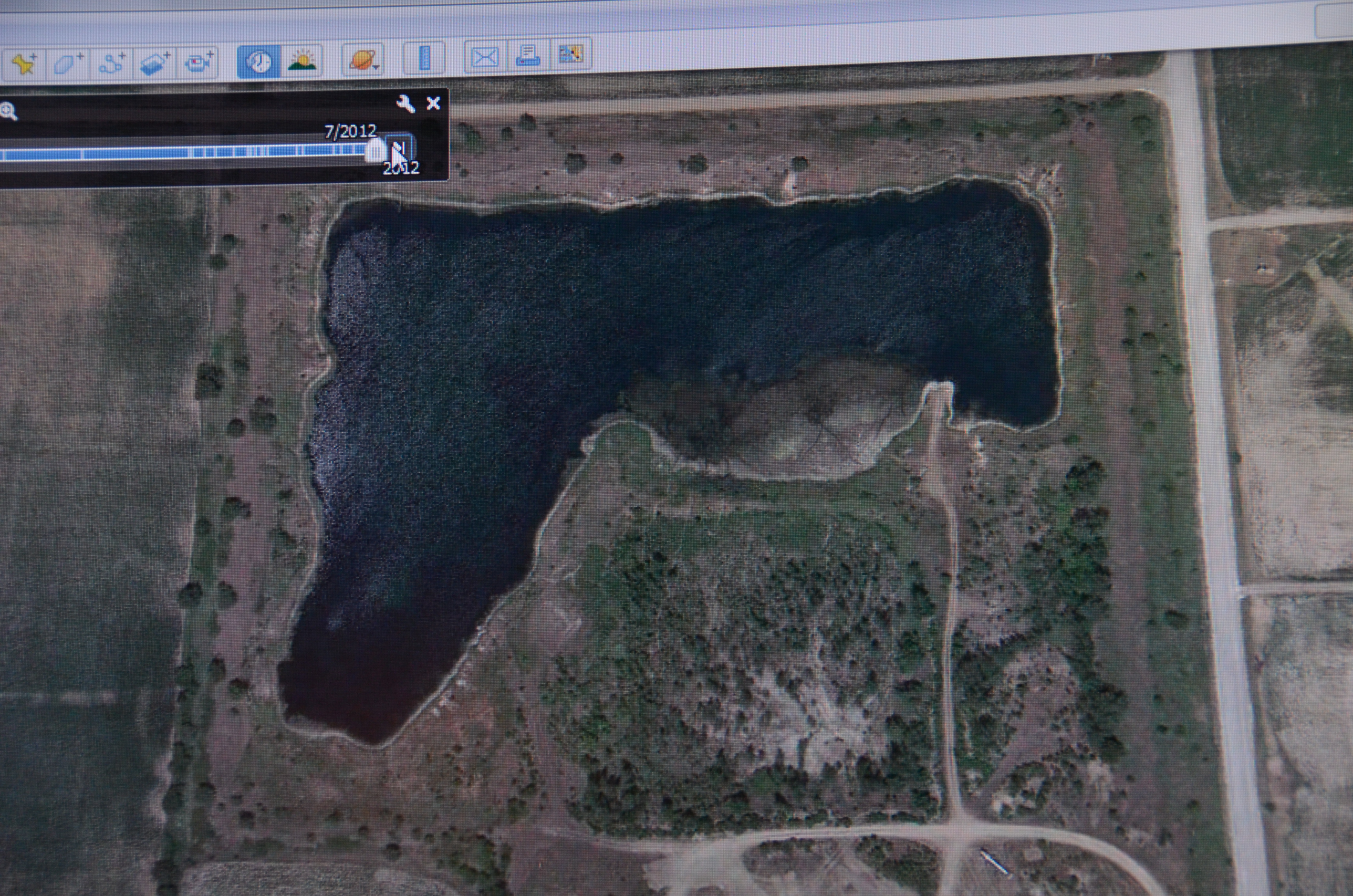
3/2008
2012
Image U.S. Geological Survey

5/2010

2012


6/2011
2012


7/2012
2012

Memorandum
City of Lawrence – Douglas County
Planning & Development Services

TO: **Lawrence-Douglas County Metropolitan Planning Commission**

FROM: **Mary Miller, Planner**

CC: **Scott McCullough, Director of Planning and Development Services**
Sheila Stogsdill, Assistant Director of Planning

Date: **For January 30, 2013 meeting**

RE: **ITEM NO. 9 PRELIMINARY DEVELOPMENT PLAN FOR THE LINKS; 251 QUEENS RD (MKM)**

The concerns raised in the public communication from Matthew Gough, representing Jack Graham, were brought to staff's attention on Friday. The applicant and the property owner discussed the items noted in the letter and The Links at Lawrence agreed to the following:

1) A fence shall be constructed along the north property line to prevent trespassing. Details of the fencing will be worked out with the neighbor and will be noted on the Final Development Plan.

2) The connecting leg of the walkway/recreation path (approximately 50 ft) providing access from the south to the north Links property line will not be connected to the north property line until development has been approved on the property to the north. (Figure 1) The location of the connection may be revised at that time if necessary to provide a suitable connection to the future development.

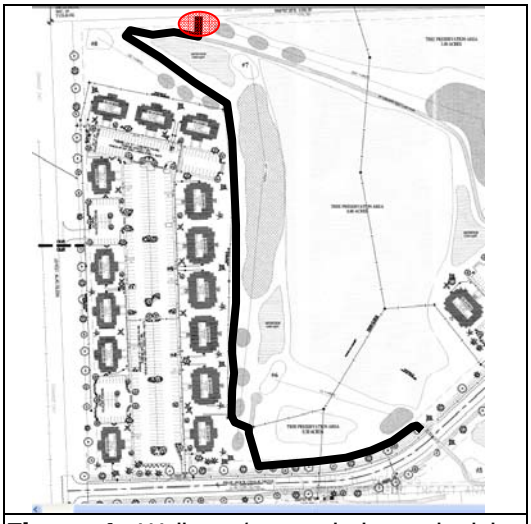


Figure 1. Walkway/rec path is marked in bold. The portion that is to be constructed at a later time is circled (approximately 50').

The third item raised in the communication was the agreement not to protest the formation of a benefit district for future street improvements to George Williams Way. This is currently a recommended condition of approval.

The fourth item regards effective stormwater management. The City Stormwater Engineer reviews the drainage plan and requires detention in conformance with the City's adopted

Stormwater Policy. We will keep the property owner to the north notified of studies and provisions related to stormwater drainage as the review of this project progresses.

Action Requested:
Revise the conditions of approval listed in the staff report as follows so the fence and walkway items are included (new language shown in **bold**):

1. Agreements not to protest the formation of a benefit district must be executed by the applicant and provided to the Planning Office before recording of the Final Development Plan for the following:
   a. Street and sidewalk improvements for Queens Road.
   b. Street and sidewalk improvements for George Williams Way.
   c. Geometric intersection improvements for Queens Road and Wakarusa Drive.
   d. Intersection improvements, geometric and signalization, for Queens Road and W 6th Street.
   e. Intersection improvements, geometric and signalization, for George Williams Way and Rock Chalk Drive.
2. Provision of a revised Preliminary Development Plan with the following changes:
   a. Remove General Note 1. The City Engineer approved the location of the driveway proposed on George Williams Way.
   b. Show Utility Easements on the plan.
   c. Make minor changes to utilities shown on the plan per City Utilities Engineer's approval.
   d. Revise any reference on the plan to 'Wakarusa Drive' to 'Rock Chalk Drive'.
   e. Addition of a note stating that prior to any construction activity the perimeter of the protected wooded areas adjacent to the construction activity will be fenced at the drip line and signage stating that any construction activity, grading, trenching or storage is prohibited within the fenced area will be erected.
   f. Safety measures the City Traffic Engineer determines are necessary for the golf cart and pedestrian crossings shown across Rock Chalk Drive such as signage and pavement treatment shall be shown on the plan and implemented on site.
   g. Note any approved modifications on the face of the plan.
   h. Note the number of van accessible ADA parking spaces provided in the parking data on Sheet C1.00 and include dimensions for ADA spaces.
   i. Label the remnant parcel created in the southwest corner of the intersection of the extension of Headwaters Drive and Rock Chalk Drive as Tract A.
   j. Include a landscape summary on the Landscaping Plan (Sheet 6). This summary shall note the landscape requirements for the interior parking lots, perimeter parking lots, bufferyards, and street trees and note the landscaping provided on the plan.
   k. Revise species listed on the landscape plans per the City Horticulture and Forestry Manager's recommendations.
   l. Provide hydrants and other site improvements per Fire Code Official's recommendations.
   m. Provide a pedestrian access easement for the shared use path being provided from the south to the north border of the property.
   n. Remove General Note 27.
   o. Show the location of the bicycle parking on the plan.
   p. **Show a fence along the north property line**.

q. **Label that portion of the walkway/recreation path which connects to the north property line as "*To be constructed by property owner when development has been approved for property to the north or if a walkway/recreation path is otherwise constructed from the north. The location of the connection may be revised at that time if necessary to provide a suitable connection to the future development.*"**

PLANNING COMMISSION REPORT
Regular Agenda -Public Hearing Item

PC Staff Report
1/30/13

ITEM NO. 9: PRELIMINARY DEVELOPMENT PLAN FOR THE LINKS; 251 QUEENS RD (MKM)

PDP-12-00283: Consider a Preliminary Development Plan for The Links at Lawrence, a 630 unit multi-dwelling residential planned development with 9 hole golf course on approximately 81 acres located at 251 Queens Road and associated modification from the height limitation in the RM12 Base District. Submitted by Holloway Engineering, Surveying & Civil Design, PLLC., for Links at Lawrence, property owner of record.

STAFF RECOMMENDATION ON MODIFICATION: Planning Staff recommends approval of the requested modification from the maximum height limitation of 35 ft in the RM12 District in Section 20-601 of the Development Code to permit residential buildings (Buildings 1-23 and 30-37) to be built with a maximum height of 39 ft and the club house to be constructed with a maximum height of 41.5 ft.

STAFF RECOMMENDATION ON PRELIMINARY DEVELOPMENT PLAN: Planning Staff recommends approval of The Links at Lawrence Preliminary Development Plan based upon the findings of fact presented in the body of the staff report and subject to the following conditions:

1. Agreements not to protest the formation of a benefit district must be executed by the applicant and provided to the Planning Office before recording of the Final Development Plan for the following:
   a. Street and sidewalk improvements for Queens Road.
   b. Street and sidewalk improvements for George Williams Way.
   c. Geometric intersection improvements for Queens Road and Wakarusa Drive.
   d. Intersection improvements, geometric and signalization, for Queens Road and W 6th Street.
   e. Intersection improvements, geometric and signalization, for George Williams Way and Rock Chalk Drive.

2. Provision of a revised Preliminary Development Plan with the following changes:
   a. Remove General Note 1. The City Engineer approved the location of the driveway proposed on George Williams Way.
   b. Show Utility Easements on the plan.
   c. Make minor changes to utilities shown on the plan per City Utilities Engineer's approval.
   d. Revise any reference on the plan to 'Wakarusa Drive' to 'Rock Chalk Drive'.
   e. Addition of a note stating that prior to any construction activity the perimeter of the protected wooded areas adjacent to the construction activity will be fenced at the drip line and signage stating that any construction activity, grading, trenching or storage is prohibited within the fenced area will be erected.
   f. Safety measures the City Traffic Engineer determines are necessary for the golf cart

and pedestrian crossings shown across Rock Chalk Drive such as signage and pavement treatment shall be shown on the plan and implemented on site.

g. Note any approved modifications on the face of the plan.
h. Note the number of van accessible ADA parking spaces provided in the parking data on Sheet C1.00 and include dimensions for ADA spaces.
i. Label the remnant parcel created in the southwest corner of the intersection of the extension of Headwaters Drive and Rock Chalk Drive as Tract A.
j. Include a landscape summary on the Landscaping Plan (Sheet 6). This summary shall note the landscape requirements for the interior parking lots, perimeter parking lots, bufferyards, and street trees and note the landscaping provided on the plan.
k. Revise species listed on the landscape plans per the City Horticulture and Forestry Manager's recommendations.
l. Provide hydrants and other site improvements per Fire Code Official's recommendations.
m. Provide a pedestrian access easement for the shared use path being provided from the south to the north border of the property.
n. Remove General Note 27.
o. Show the location of the bicycle parking on the plan.

Reason for Request: Revised preliminary development plan submitted to utilize revised density calculations for Planned Developments.

KEY POINTS

- Environmentally sensitive lands including a stream corridor and stands of mature trees are located on the subject property.
- A modification is being requested from the City Commission as permitted in Section 20-701(f) from the 35' building height limitation for the RM12 District in Section 20-601 to permit the construction of a 41.5 ft tall clubhouse and 39 ft tall three-story apartment buildings.
- Per Section 20-701(f)(3) density calculations in the PD Overlay District are weighted based on the number of bedrooms proposed in a dwelling unit.

FACTORS TO CONSIDER

- Conformance with the purpose of Planned Developments (Section 20-701, Development Code).
- Compliance with Development Code.
- Conformance with *Horizon 2020*.
- Conformance with Subdivision Regulations.

ASSOCIATED CASES/OTHER ACTION REQUIRED

Associated Cases

ANNEXATION

- The City Commission approved annexation request (A-11-07-07) at their February 26, 2008 meeting. The annexation became effective with adoption and publication of Ordinance 8825.

REZONING

- The City Commission approved rezoning requests [Z-11-28A-07 and Z-11-28B-07] to the RM12 District and –PD Overlay Districts at their February 26, 2008 meeting. The RM12 rezoning was conditioned to permit a maximum residential density of 6 dwelling units per acre. These rezonings became effective with adoption and publication of Ordinance Nos. 8226 and 8227.

DEVELOPMENT

- The City Commission approved a Preliminary Development Plan [PDP-11-06-07] for The Links at Lawrence, a Planned Residential Development containing 40 multi-dwelling buildings with 12 dwelling units per building for a total of 480 dwelling units, on February 27, 2008.
- A Final Plat (PF-08-05-09) and Final Development Plan (FDP-08-07-09) were submitted in August of 2009. The applicant hired a new consultant in 2012 and submitted the revised preliminary plan on the agenda tonight.

Other Action Required

- City Commission approval of Preliminary Development Plan and requested modifications.
- Submittal and administrative approval of Final Development Plan.
- Recording of Final Development Plan with the Douglas County Register of Deeds.
- Submittal and administrative approval of Final Plat.
- City Commission acceptance of dedications shown on the Final Plat.
- Public Improvement Plans submitted to City Public Works and Utilities Departments. The plans must be approved and the means of ensuring completion of public improvements accepted prior to recording the Final Plat.
- Recording of the Final Plat with the Douglas County Register of Deeds.
- Building permits must be obtained prior to construction of structures.

PUBLIC COMMENT

- No public comment was received prior to printing this staff report.

GENERAL INFORMATION

Current Zoning and Land Use: RM12-PD (Multi-Dwelling Residential with Planned Development Overlay) District; woodland and agricultural uses.

Surrounding Zoning and Land Use:

To the west:

GPI (General Public and Institutional Use) District; agricultural uses with development applications in various stages of approval for a Recreation/Sports Facility.

To the north:

Property outside the city limits which is zoned A (Agricultural); rural residences, woodland, and agricultural uses.

To the east:

RS7 (Single-dwelling Residential) District, single-dwelling residences.

PRD (Westwood Hills Planned Residential Development); undeveloped.

To the south:

RM12D (Multi-dwelling Residential), RS7 (Single-dwelling Residential), OS (Open Space) Districts;

platted subdivision which has not yet been developed. The OS area has been designated as a city park.

UR (Urban Reserve) District; unplatted property within the City limits; agricultural uses.
(Figure 1.)

Area

Gross Area	81.31 acres	
Right-of-Way	8.55 acres	
Net Area	72.76 acres	
Lot 1, Block One	50.63 acres	(2,205,442 sq ft)
Lot 1, Block Two	22.13 acres	(963,983 sq ft)
Tract A, Block Three	.02 acres	(871 sq ft)

SITE SUMMARY			
	Existing	**Proposed**	**Change**
Land Use:	Woodland and Agriculture	*Multi-Dwelling Residential, accessory parking, passive recreation*	Change in use
Land Area (sq ft):	72.76 acres 3,169,426 sq ft	72.76 acres 3,169,426 sq ft	--
Existing Building (sq ft):	0 sq ft	244,807 sq ft	+ 244,807 sq ft
Total Pavement:	0 sq ft	223,462 sq ft	+ 223,462 sq ft
Total Impervious Area (sq ft):	0 sq ft	468,269 sq ft (15% of site)	+ 468,269 sq ft
Total Pervious Area (sq ft):	3,169,033 sq ft	2,700,764 (85% of site)	- 468,269 sq ft

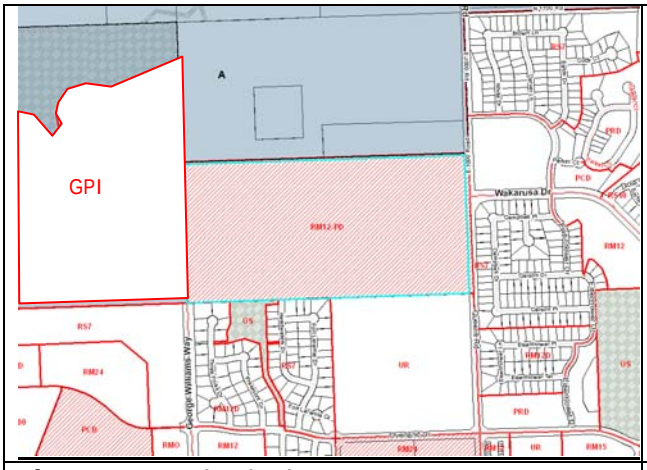


Figure 1a. Zoning in the area.

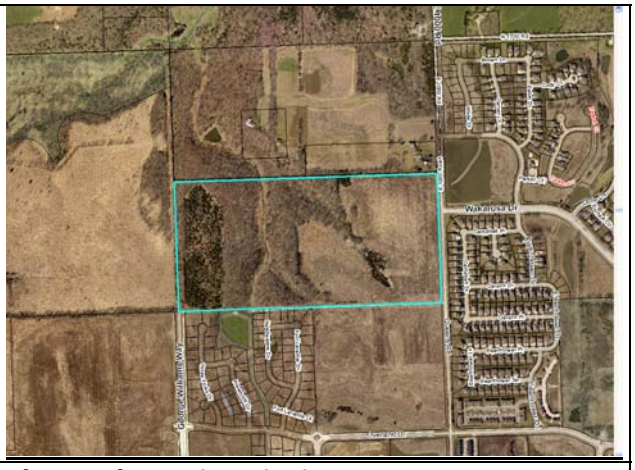


Figure 1b. Land use in the area.

Parking Summary			
Use	**Req. per Sec 20-902**	**Parking Required**	**Parking Provided**
Multi-Dwelling Residential	1 vehicle space / bedroom + 1/10 units	1050 bedrooms + 630 units= 1113 vehicle spaces	
Participant Sports, Indoor Club house (10,000 sq. ft.)	1 vehicle space / 500 sq. ft.	10,000 sq ft clubhouse= 20 vehicle spaces	
Participant Sports, Outdoor Pool area (13,200 sq. ft)	1 vehicle space / 500 sq. ft. of activity area	13,000/500= 26 vehicle spaces	
Active Recreation Playground	1 vehicle space / 500 sq. ft.	1,500 sq ft= 3 vehicle spaces	
TOTAL		1162 vehicle 220 bicycle	1164 vehicle 222 bicycle
ADA Accessible Spaces	20 spaces plus 1 for every 100 over 1000 1 of every 8 spaces must be van accessible	22 ADA spaces 19 vehicle 3 van accessible	23 ADA
Bicycle Parking	1 per every 4 vehicle spaces	291	304

Adequate parking is being provided for the proposed development. The parking summary on the plan should be revised to note how many van accessible ADA parking spaces are provided to insure compliance with Code. The location of the bicycle parking should be shown on the plan.

STAFF ANALYSIS

The property is located approximately ½ mile north of W 6th Street west of Queens Road. Access to the development will be provided from Rock Chalk Drive, the extension of Wakarusa Drive through the property, as well as one access point on George Williams Way. The subject property will be bounded by residential development to the east and south. The property to the west has recently been rezoned to the GPI (General Public and Institutional Use) District and has development approvals in various stages for a recreation/sports facility including KU Athletics and a City recreation center. The property to the north is agricultural/rural land outside the city limits.

When development was originally proposed on this property in 2007, the Development Code required all residential developments with sensitive lands to develop either as a Cluster Development or as a Planned Development. The property was rezoned to a base district with a planned overlay district and development plans were submitted in compliance with the Code. The Code required that a minimum of 20% of the site be set aside as common open space and that 50% of the area set-aside be developed as Recreational Open Space. As the proposal was to develop apartments with a nine-hole golf course, more than 20% of the site was proposed as common open space.

The original preliminary development plan contained 40 multi-dwelling buildings with 12 dwelling units per building for a total of 480 dwelling units and was approved by the City

Commission in February of 2008. A final plat and final development plan were then submitted. A text amendment revising the method for calculating density in planned developments was adopted in 2012. The developer is interested in using the new method of calculating density but does not want to increase the footprint of the development as the open space is an important feature. The open space would contain a 9-hole golf course as well as the protected sensitive lands. In order to utilize the new density calculation and develop with a greater number of dwelling units while maintaining the basic footprint of the development it was necessary to increase the height of the buildings.

While the change in density calculations could have been accomplished with the Final Development Plan, the increase in height required the submittal of a revised Preliminary Development Plan. Per Section 20-1304(e)(2)(iii) major changes to the proposed development require rehearing and reapproval of the Preliminary Development Plan. The changes being proposed include a reduction in the amount of common open space being provided and an increase of more than 5 ft in the height of a building. These changes are considered major changes; therefore, a revised Preliminary Development Plan has been submitted for rehearing and reapproval.

The following table compares the previously approved and current development plan:

	Previously Approved PDP	**Current PDP**	**Change**
Site Area	72.76 acres	72.76 acres	--
Common Open Space area (% of total)	46.11 acres (63.4%)	43.88 acres (60.3%)	- 2.23 acres
Protected Sensitive Lands area (% of total)	15 acres in natural open space 21% of total site	14.62 acres in natural open space 20% of total site)	- .38 acres
# of buildings	40	37	- 3
Number of dwelling units	480	630	+ 150
Number of bedrooms	800	1050	+ 250
Density	6 du/acre	4.65 du/acre	(weighted density used)
Amount of parking provided	854 spaces	1164 spaces	+ 310 spaces
Building sq ft	243,936 sq ft	244,807 sq ft	+ 871 sq ft
Total impervious surface	462,607 sq ft (14.59%)	468,269 sq ft (14.77%)	+ 5662 sq ft
Building Height	41.5 ft Club House* (*Modification approved by City Commission) 31.4 ft Apartment	41.5 Club House 39 ft Apartment	-- +7.6 ft

Table 1. Comparison between PDP-11-06-07 and PDP-12-00283

Figure 2 compares the development pattern in the previously approved PDP and that being proposed with the current PDP.

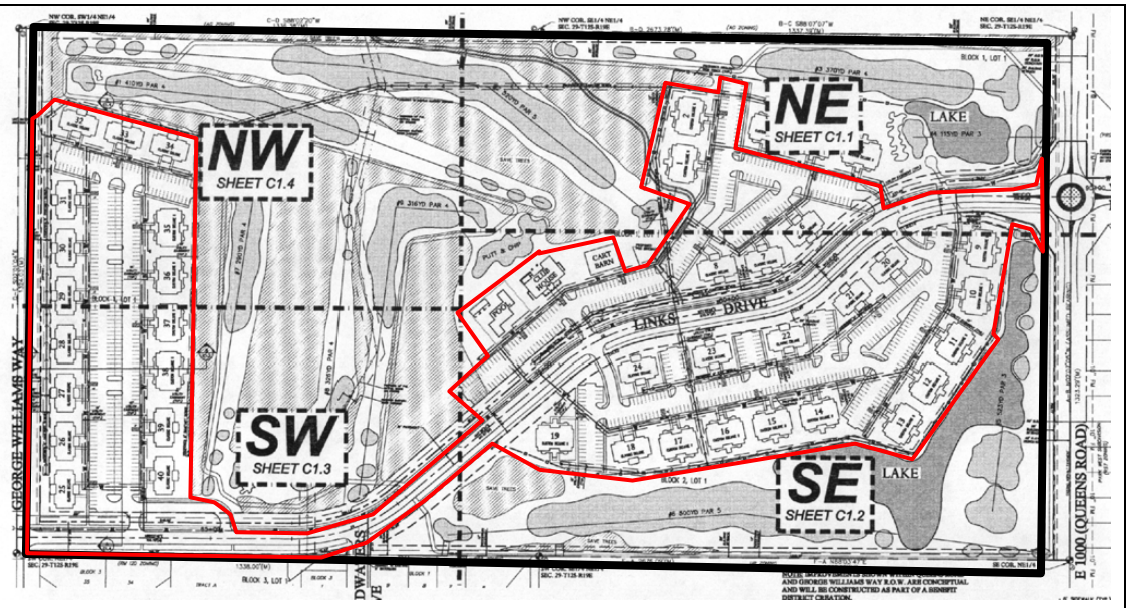


Figure 2a. Previously approved PDP with building/parking layout outlined in red.

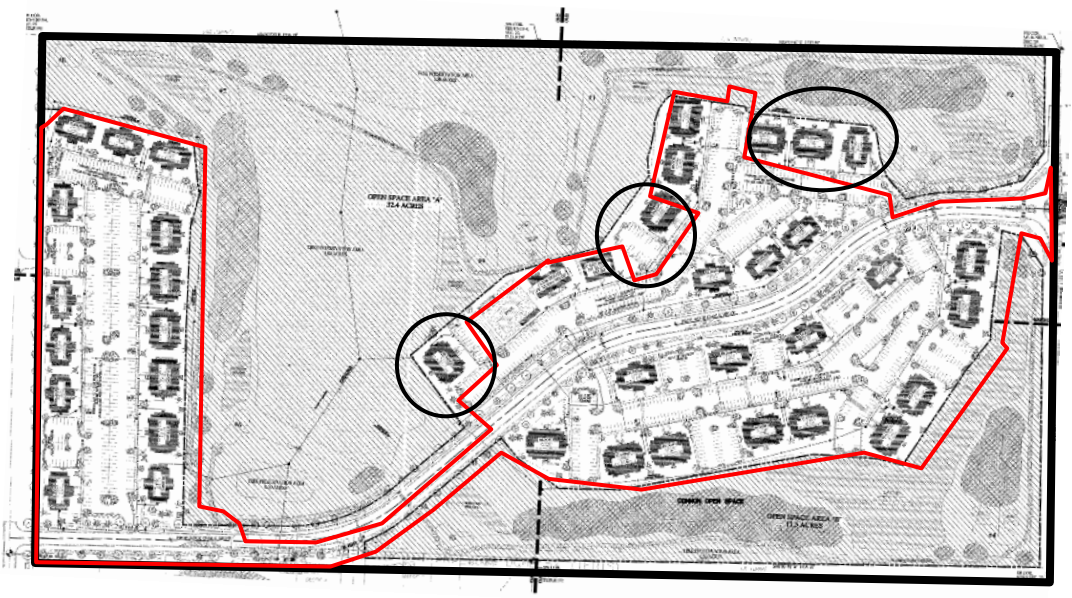


Figure 2b. Proposed revised PDP, with building layout from previous PDP overlaid. Additional development area circled. The golf course has been pulled out of the sensitive areas also.

The proposed Preliminary Development Plan for The Links at Lawrence has been evaluated based upon findings of fact and conclusions per Section 20-1304(d)(9) of the Development Code for the City of Lawrence, requiring consideration of the following nine items:

1) *The Preliminary Development Plan's consistency with the Comprehensive Plan of the City.*

The subject property is within the Baldwin Creek Drainage Basin, an area in which *Horizon 2020* recommends development not be permitted until plans to extend sanitary sewer service to the entire drainage basin have been developed. The West Baldwin Creek Sanitary Sewer Interceptor from pump station PS45 located along the north edge of the Oregon Trail Addition north and east through the subject property to the pump station PS48 has been completed.

The Comprehensive Plan recommends that new large-scale, low-density, single-family residential development be located to the west of the city, with the area east of the South Lawrence Trafficway being developed prior to the area to the west. (page 5-4) The proposed development is a large-scale, low-density residential development which is proposing multi-dwelling rather than single-dwelling residences.

Policy 5.1 of the plan recommends that natural environmental features within residential areas be preserved and protected. (page 5-19) The Preliminary Development Plan clusters the dwelling units and parking areas so they utilize approximately 11 acres leaving approximately 62 acres as common open space which insures the protection of natural features and sensitive lands. Some of the common open space will be used for a nine-hole golf course, but 20% of the site will be designated as natural open space.

The Comprehensive Plan recommends that Development Proposals be reviewed for compatibility with existing land uses, including any neighborhood plan. (Policy 4.1, page 5-17) The property lies within the boundary of *The Northwest plan (1997)*. The *Northwest Plan* recommends that residential uses vary from W 6th Street to the north from higher density near W 6th Street to lower density northward. The *Northwest plan* recommends low-density, which the development proposal meets; but also recommends single-family residences. The typical land use arrangement at the time the *Northwest plan* was adopted was for single-family residences to be lower density and multi-family residential developments to be higher density. With the adoption of the 2006 Development Code new single-dwelling zoning districts were created which could be developed at 'medium-density'. Under the Development Code, the level of density does not dictate the housing type as it did when the *Northwest Plan* was adopted.

Chapter 16 of the Comprehensive Plan, *Environment*, recommends the following (staff discussion follows each recommendation in *italics)*:

- "Development should maintain the natural benefits of existing topography. Development on steep slopes (above 15%) should be done in a manner that encourages the use of the existing topography with minimal grading to minimize adverse effects." (Policy 2.1, page 16-12)

  Steep slopes were included in the sensitive area site plan, although the Development Code does not require their protection as environmentally sensitive lands. The improvements being proposed to the site are located outside of this area with the exception of some of the golf course. (Figure 3)

- "Encourage environmentally sensitive site design practices which minimize the unnecessary physical and visual impacts upon the surrounding landscape caused by removal of woodlands." (Policy 2.2(a)(2), page 16-12)

The development of the golf course requires the removal of trees, but allows more contiguous areas to be protected than would occur with traditional low density residential development. Traditional low density residential development requires the installation of roads and city utilities throughout the site and would break the wooded areas up into fragments. Figure 4 shows the areas of woodlands that will remain undisturbed.

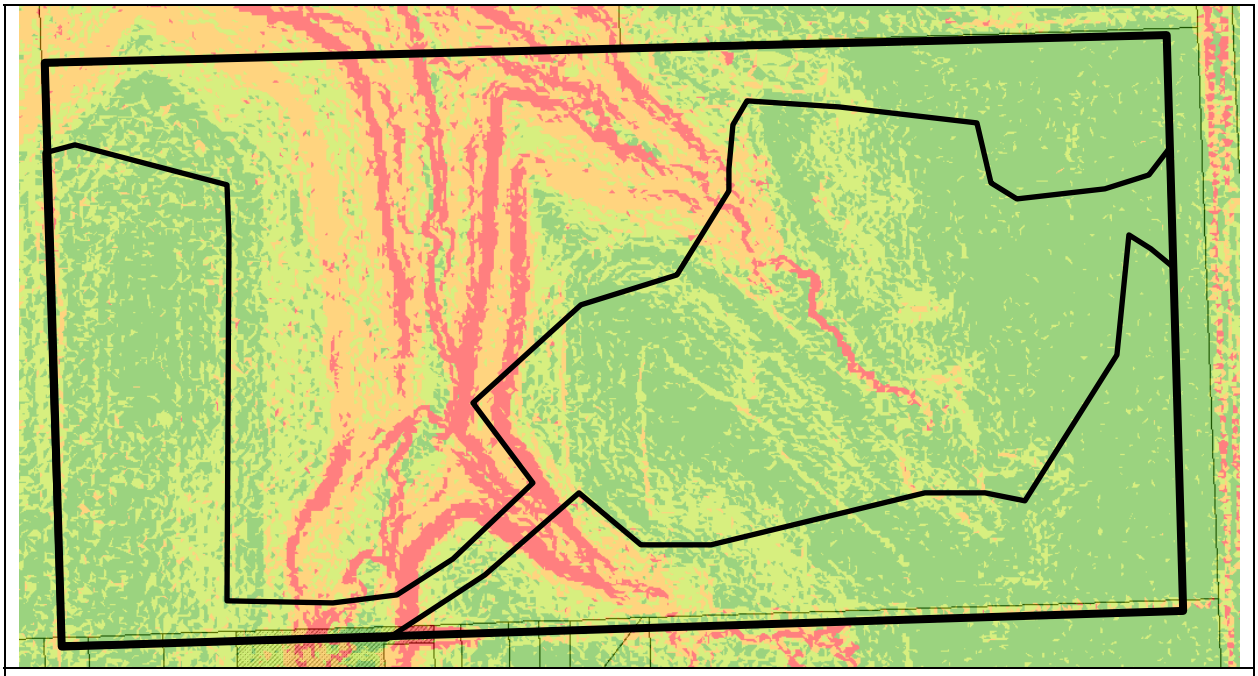


Figure 3. Steep slopes (>15%) shown in red. The area being developed with buildings or pavement is outlined.



Figure 4. Stands of mature trees that will remain undisturbed with this development. (The easement shown in the tree protection area marks the sanitary sewer easement. Trees were removed in this area for the installation of the sewer line.)

Staff Finding – The proposed development complies with the general land use provisions found in *Horizon 2020* and the *Northwest plan*. A low-density multi-dwelling development is unique and is being proposed here to allow for the development of a golf course and the extraordinary protection of open space and natural features. The development does not conform strictly with the wording of the *Northwest plan*, but does comply with the intent of providing low-density residential development further from W 6th Street and with *Horizon 2020's* recommendation of low-density residential development and the protection of natural features.

2) Preliminary Development Plan's consistency with the Planned Development Standards of Section 20-701 including the statement of purpose.

The purpose statement includes the following (staff comments follow in *italics*):

a) Ensure development that is consistent with the comprehensive plan.
As discussed previously, the development is consistent with the comprehensive plan and the adopted plan for the area.

b) Ensure that development can be conveniently, efficiently and economically served by existing and planned utilities and services.
Waterlines are located within the area and the Baldwin Creek Interceptor Sewer Line has been installed through the property. The development can be conveniently served by existing utilities and services.

c) Allow design flexibility which results in greater public benefits than could be achieved using conventional zoning district regulations.
This area could develop as a conventional RM12 District, however when rezoned in 2006 the Development Code required that properties containing substantial amounts of environmentally sensitive lands, as defined by Code, be developed as a Planned Development. The Development Code has since been revised to remove this requirement and allow properties with environmentally sensitive lands to develop with base zoning through the site planning process. Design flexibility is provided through the planned development process through modifications to the standards in the base district such as a smaller lot size, increased density, reduced setbacks, increased height, and a change in parking requirements. These modifications allow the development to be tailored to the particular use and the site specific characteristics.

d) Preserve environmental and historic resources.
There are no known historical resources in this area. The environmental resources in the area are the stands of mature trees and the stream corridor. The plan concentrates development on the more level areas which allows for the protection of the stream corridor and many of the wooded areas.

e) Promote attractive and functional residential, nonresidential, and mixed-use developments that are compatible with the character of the surrounding area.
More than 50% of the total land area is being set aside as common open space. The buildings will be set back from the property line, with the exception of along George Williams Way where the buildings will be set near the road with the parking behind it to create an attractive street frontage. The buildings are set back from Queens Road between approximately 150 ft at the nearest point and 360 ft at the furthest. A portion of the golf course is to be located between the buildings and Queens Road. The large setback and the open space provided will provide an effective buffer between the properties. Rock Chalk Drive will border the development on the western portion of the

southern boundary and the drive in addition to the golf course will provide buffering and separation from the future single-dwelling residences in the Oregon Trail Addition Subdivision.

The proposed development, as conditioned, meets the standards for a Planned Development in Section 20-701, with approval of the modification being requested. The proposed development meets the minimum area requirement for a PD district. The applicant is requesting that the City Commission approve the requested modification to the height standard to allow the residential structures that are not fronting George Williams Way to be constructed 39 ft in height and the club house to be constructed 41.5 feet in height rather than the 35 feet that is permitted within the RM12 District. The club house is to be located in the interior of the site and is at least 640 feet from the nearest residentially zoned district. The residential buildings will be set back from the property line as noted in the following figure. The additional height proposed for the buildings (39 ft) is approximately 11% greater than that permitted by Code (35 ft). The requested modification should not negatively impact any nearby development or property owners.

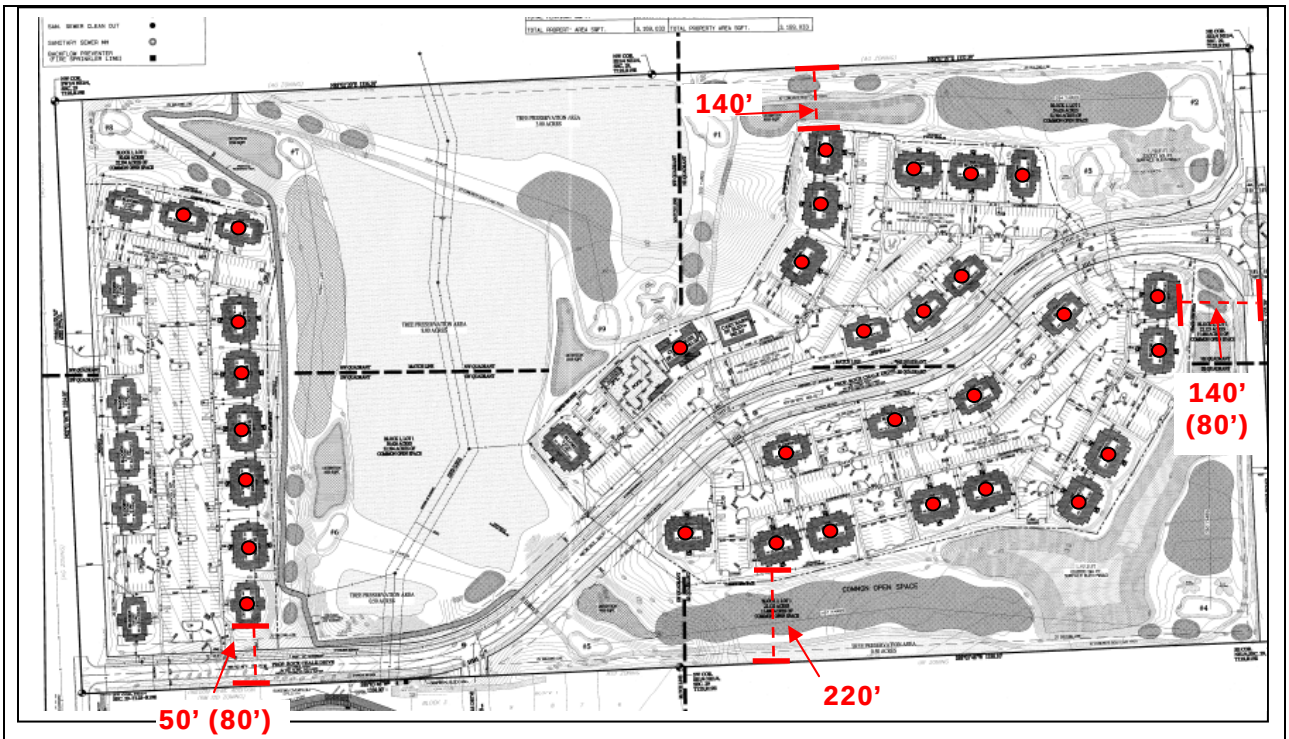


Figure 5. The buildings which are included in the modification request for an increase in height are marked with red dots. The figures show the distance the building is setback from the property line (any additional row is noted in parenthesis). Minimum setback from adjacent property line is 130 ft in southwest corner.

Section 20-701(d) states that all of the standards of the Development Code apply to development within a PD District except as expressly authorized by regulations of Section 20-701. With the approval of the modification requested from the height limitation, the density and dimensional standards of the RM12 District are met. The parking requirements of Article 9 apply to this development and have been met. The remnant parcel created in the southwest corner of

the intersection of the extension of Head Waters Drive and Rock Chalk Drive is a tract and should be labeled as Tract A on the plan.

The landscaping requirements of Article 10 apply to this development. The landscape requirements are noted in Table 2. The City Horticulture and Forestry Manager recommended a change to the species list to insure a good mix of species and to use plants which are best adapted to the climatic conditions of the area. The landscaping plans should be revised per the City Horticulture and Forestry Manager's recommendations.

Landscaping	**Requirement**	**Required**	**Provided**
Interior Parking Lot Landscaping	40 sq ft for each parking space. 1 tree and 3 shrubs per 10 parking spaces.	1164 parking spaces * 40 = 46,560 sq ft 1164/10=117; 117 trees and 351 shrubs	*The landscape summary table does not list the landscape area and number of species provided. This should be added to the plan to insure compliance with the Code.*
Perimeter Parking Lot Landscaping	1 shade tree per 25 ft of parking lot frontage along r-o-w.	parking lot frontage along r-o-w divided among 12 locations (see Figure x) = 58 trees	45 trees and 224 shrubs. Shrubs were used in many locations where trees could not be planted due to proximity of underground utility lines.
Bufferyard Landscaping		Bufferyard required along north, east and south sides of property where single-dwelling residential zoning exists or is recommended in the long-range area plan.	Alternative compliance has been granted from this requirement as the separation of the buildings from the adjacent residences and the placement of the golf course in this area.

Table 2. Landscaping

The landscaping cover sheet should be revised to note the total area of interior parking lot landscaping provided to insure compliance with Code. The number of trees and shrubs provided for each parking area should also be noted. Table 3 illustrates the perimeter parking lot landscaping that is required per Code. Space constraints, particularly with underground or overhead utilities may require a reduction in the number of trees provided. In that case, other landscaping measures as approved by the Planning Director, such as shrubs or berms, may be used to meet this requirement. Table 3 provides the requirements for perimeter landscaping.

The development takes access primarily to the internal street, Rock Chalk Drive, and has a secondary access point shown on George Williams Way (extended). George Williams Way is not currently improved to this location, but will be extended with the development of Rock Chalk Park to the west.

Staff Finding – The proposed Preliminary Development Plan is consistent with the Statement of Purpose of Planned Development. The proposed Preliminary Development Plan, as conditioned, is consistent with the standards of Section 20-701 of the Development Code with the exception of the proposed height of the club house, and the required buffer along the western property line, and the applicant has requested a modification from the City Commission and a waiver from the Planning Commission from these standards.

Parking Area and frontage	Trees Required	Provided
A 126 ft	5	2 trees 18 shrubs
B 85 ft	4	1 tree 11 shrubs
C 65 ft	3	1 tree 10 shrubs
D 290 ft	8	7 trees 46 shrubs
E 280 ft	8	5 trees 50 shrubs
F 160 ft	7	7 trees 23 shrubs
G 65 ft	3	4 trees
H 110 ft	5	2 trees 16 shrubs
I 65 ft	3	4 trees 11 shrubs
J 130 ft	6	6 trees 27 shrubs
K 50 ft	2	2 trees
L 100 ft	4	4 trees 12 shrubs
Total	58	45 trees and 224 shrubs

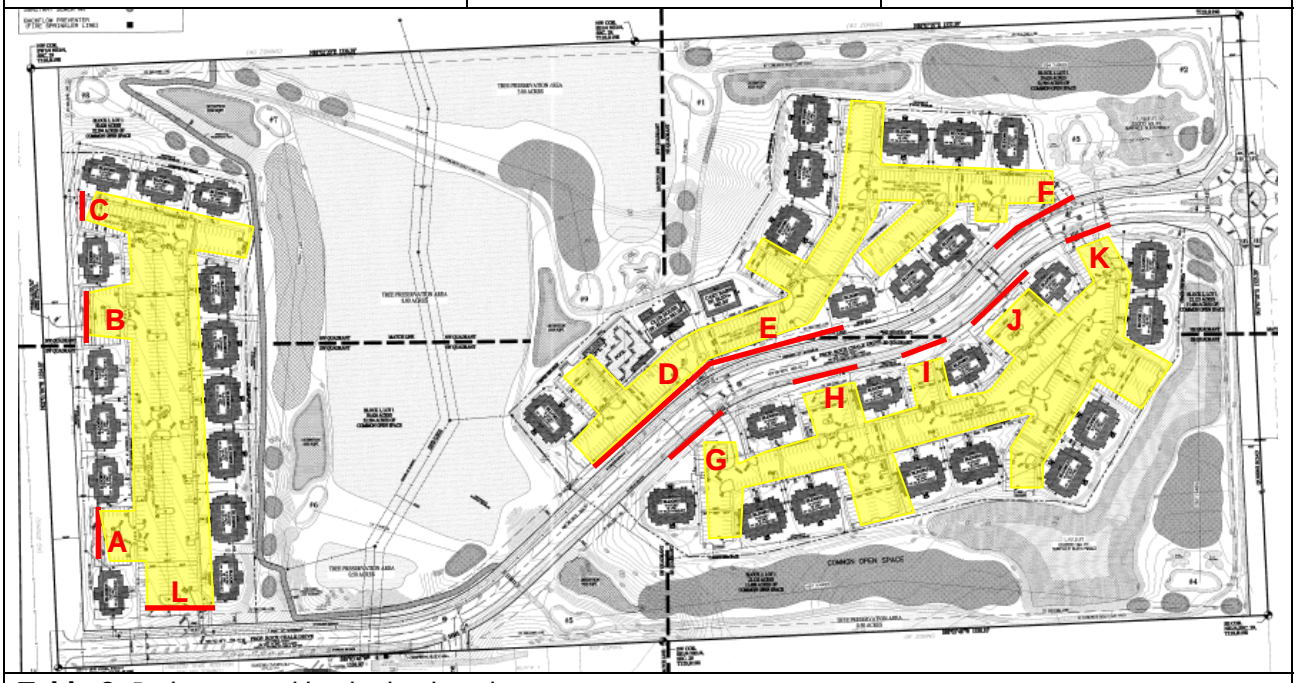


Table 3. Perimeter parking lot landscaping.

3) The nature and extent of the common open space in the Planned Development.
Portions of the sensitive lands which include heavily wooded areas and steep slopes will be protected and will provide common open space. The applicant's intent is to develop an apartment complex and golf course. The golf course, swimming pool, and club house make up the open recreation space, and are a part of the common open space. 43.88 acres, 60.3% of

the site, is being set aside as common open space and 14.6 acres, 20% of the site is being maintained as natural open space. The common open space provided complies with the requirements in the Development Code.

The Code requires that a minimum of 50% of the common open space be developed as recreational space. The proposed development provides 26.81 acres of recreational space (61% of the common open space) which includes a golf course, playgrounds near the apartments, a pool and club house, as well as a walking trail and exceeds the requirement for recreational open space.

Staff Finding – The proposed Preliminary Development Plan will provide common open space which exceeds that required by Code.

4) The reliability of the proposals for maintenance and conservation of the common open space.

The plan notes that Links at Lawrence will own the property and will maintain the common open space. The plan notes the areas to be conserved. A note must be placed on the Preliminary Development Plan that prior to any construction activity occurring on the site, the perimeter of the wooded areas adjacent to any construction activity will be fenced at the drip line and signage erected which states that any construction activity, grading, trenching or storage is prohibited within the fenced area.

Staff Finding –Links at Lawrence will own and maintain the common open space. A note must be placed on the plan to insure protection of the common open space which contains environmentally sensitive features during construction.

5) The adequacy or inadequacy of the amount and function of the common open space in terms of the densities and dwelling types proposed in the plan.

The density of the entire site is 4.65 dwelling units per acre; however, the 630 dwelling units will be clustered on a portion of the site. The Development Code requires 50 sq. ft. of outdoor area that can be used for recreational purposes for each dwelling unit in a conventional RM12 District. The Code states that the required outdoor areas serves as an alternative to a large rear setback and is an important aspect in addressing the livability of a residential structure on a small lot. The development plan proposes 630 dwelling units. The Development Code would require 31,500 sq. ft., (630 x 50 sq. ft) or nearly 1 acre, of outdoor area to mitigate the small lot size in a conventional RM12 Zoning District. This development is being designed as a planned development but the apartments are located in small areas, similar to the conventional RM12 zoning district. Where 31,500 sq. ft. would adequately mitigate the denser development, per Code, the Preliminary Development Plan provides approximately 44 acres of common open space. Approximately 15 acres will remain as natural open space and will provide a scenic, natural area for the site. The remainder, approximately 29 acres, will be developed as a golf course, and a swimming pool which will provide recreational opportunities for residents.

Staff Finding – The amount and function of the common open space is adequate based on the overall density and the actual density of the areas developed for residential uses. The dwelling types are apartment buildings. The amount of open space being provided exceeds that required by the Development Code to mitigate the denser development in the conventional RM12 District.

6) Whether the Preliminary Development Plan makes adequate provisions for public services, provides adequate control over vehicular traffic, and furthers the amenities of light and air, recreation and visual enjoyment.

The Fire Code Officials have been discussing the proposed plans with the applicant. Any changes recommended by the Fire Code Officials should be made to the Preliminary Development Plan.

The development is designed to further the amenities of light and air, recreation and visual enjoyment. Wooded areas will be conserved to provide visual enjoyment. The large amount of common open space will provide ample light and air. There will be several opportunities for recreational enjoyment on the site. The golf-course, playgrounds, and swimming pool are part of the common open space being provided as open recreational space. A club house will be located near the pool, which will provide indoor recreation. A 10 ft wide bike/rec path will be installed on one side of Rock Chalk Drive to connect with the bicycle/walking path system in the area. A pedestrian/access easement will be provided from the parkland in the Oregon Trail Addition at the southern border of the property to the northern border. A walkway will be constructed with this development. The width of the walkway will be determined in coordination with the City Park and Recreation Department and noted on the Final Development Plan. Per Section 20-810(f)(4)(iii) pedestrian easements must be a minimum of 12' in width. This easement will be shown on the Preliminary Development Plan, but may be subject to change with the location of the sanitary sewer and golf course layout. The easement location will be finalized at the final plat stage.

Staff Finding – The Preliminary Development Plan's provisions for Fire/Medical access are being discussed with the Fire Code Officials and the plan will be revised to reflect any changes recommended. The Preliminary Development Plan has made adequate provisions for public services and provides adequate control over vehicular traffic through limited access points onto Rock Chalk Drive, which is designated on the Major Thoroughfares Map as a collector street. The plan furthers the amenities of light and air, recreation and visual enjoyment through the provision of common open space, open recreation space, and other recreational facilities.

7) Whether the plan will measurably and adversely impact development or conservation of the neighborhood area by:

a) doubling or more the traffic generated by the neighborhood;

The City Transportation Planner indicated that the development would increase the traffic in the neighborhood by more than double; but pointed out that there is little development existing in the area. The residential area to the east of Queens Road and St Margaret's Episcopal Church to the south are the only developments in the area. Therefore, the fact that the amount of traffic generated will be more than doubled is tempered by the fact that the area is currently undeveloped.

b) proposing housing types, building heights or building massings that are incompatible with the established neighborhood pattern; or

The housing types and massings are compatible with the established neighborhood pattern. The houses located along Queens Road face away from the road, therefore this development is to their rear. The buildings proposed in this development may not be appropriate in close proximity to the other residences in the neighborhood; however, the impact of the buildings type and massing will be mitigated by the separation distance and the golf course landscaping. The buildings will be located 150 ft to 360 ft from Queens Road. A portion of the golf course will be located within this buffer area. The property is further separated from the residences by

Queens Road, a collector street. The houses adjacent to Queens Road face away from the development. The impact of the building type and massing should be minimal on the neighborhood to the east.

Property to the south has been platted as a residential subdivision. Rock Chalk Drive will separate the development from the residences to the south. South of Rock Chalk Drive, where it borders the south side of the subject property, will be residences, most of which face away from Rock Chalk Drive, and City parkland. Two lots near Headwaters Drive may have their sides toward the proposed development. No buildings are planned for this area. The golf course and open space will be located north across Rock Chalk Drive. The impact of the building type and massing should be minimal on the neighborhood to the south.

The land to the west, across George Williams Way, is zoned GPI and is being planned as a sports/recreation facility for KU and the City of Lawrence. The building type and massing should have no impact on this future development.

Golf courses and open space abut the northern property line. The buildings are located at least 160 ft into the interior of the site, behind the golf course. The building type and massing should have minimal impact on the existing rural residences or on future development to the north.

c) increasing the residential density 34% or more above the density of adjacent residential properties.

The property to the north is outside the city limit and is zoned for agricultural uses, but is recommended in the Northwest Area Plan for low density residential development. The property to the east is zoned for RS7 (Single-dwelling Residential) uses with a maximum density of 6.2 units per acre. To the south is a platted subdivision, which has not yet been constructed. The properties in this subdivision are zoned for RS7 (Single-dwelling Residential), RM12 (Multi-dwelling Residential) and RM12D (Multi-dwelling Residential, duplex) uses. The densities to the south are a maximum of 6.2 and 12 units per acre. The proposed density of the Links at Lawrence development is 6 units per acre. The development will not increase the residential density above the density of adjacent residential properties.

Staff Finding-- Staff has determined that the Preliminary Development Plan will not have measurable and adverse impact on the development or conservation of the neighborhood area. The density is less or similar to surrounding residential properties and the buffering provided by the building setbacks and the golf course will minimize any negative impacts the multi-dwelling structures may have on adjacent properties.

8) Whether potential adverse impacts have been mitigated to the maximum practical extent.

The parking areas location within the interior of the site should prevent any glare or spill-over light onto adjacent properties. A photometric plan will be required at the final development plan stage to insure there is no adverse impact from the proposed exterior lighting. The recreational facilities are located in the center of the site and should not impact the surrounding properties. The golf course is listed as being private, for public use and use may be determined by membership or on a 'pay and play' basis. To insure that the club house and pool remain accessory uses to the apartment complex and do not become commercial facilities, a note must be placed on the plan indicating that the club house and pool is open to members only or to residents of The Links at Lawrence and their guests.

Staff Finding – Possible adverse impacts of exterior lighting will be addressed with a photometric plan to insure there is no spillover light. The location of the recreational facilities in the center of the site insulates the noise and activity from surrounding properties. The use of the club house and pool may have an adverse effect on the neighborhood---depending on how it is used; therefore a note restricting the use of the club house and pool to residents, guests and members is required on the plan.

9) The sufficiency of the terms and conditions proposed to protect the interest of the public and the residents of the Planned Unit Development in the case of a plan that proposes development over a period of years.

Staff Finding- A phased development has not been proposed.

Staff Review and Conclusion

The proposed Preliminary Development Plan conforms to the anticipated land use for this area as stated in the Comprehensive Plan, and *Northwest plan* and 6th & K-10/South Lawrence Trafficway Nodal Plan . The development will conserve environmentally sensitive lands while providing multi-dwelling residences at a density similar to single-family units (6 units per acre). The proposal allows the property to be utilized for residences while retaining much of the natural features on the site through the use of multi-dwelling residences (apartments) to cluster the residential development. While 20% of the site is required to be set aside as common open space with a Planned Development, the use of apartments rather than single-dwelling residences in this location allows 60% of the property to be set aside as common open space.

The amount of open space being utilized with this development and the interior location of the residential structures minimizes any negative impacts on surrounding residential properties to the north, east and south.

PRELIMINARY DEVELOPMENT PLAN FOR THE LINKS AT LAWRENCE LAWRENCE, KANSAS

14 Jan 2013

GENERAL NOTES:

1. NO DRIVEWAY ACCESS SHALL BE PERMITTED TO/FROM GEORGE WILLIAMS WAY.
2. REDUCTION OF DRIVEWAY SPACING FROM 300 TO 270 AT WESTERN MOST DRIVEWAY RELATIVE TO GEORGE WILLIAMS WAY HAS BEEN APPROVED BY THE CITY ENGINEER.
3. OWNER AGREES NOT TO PROTEST THE FORMATION OF A BENEFIT DISTRICT FOR IMPROVEMENTS TO QUEENS ROAD AND GEORGE WILLIAMS WAY.
4. TOPOGRAPHICAL INFORMATION PROVIDED BY THE DEPARTMENT OF PUBLIC WORKS FROM AERIAL MAPS PREPARED FOR THE CITY OF LAWRENCE. INFORMATION FOR HEADWATERS DRIVE OBTAINED FROM PUBLIC IMPROVEMENT PLANS FOR OREGON TRAIL ADDITION PROVIDED BY THE DEPARTMENT OF PUBLIC WORKS.
5. PROPOSED UTILITY LOCATIONS AND SIZES ARE PRELIMINARY AND SHALL BE FINALIZED UPON SUBMISSION OF PUBLIC IMPROVEMENTS CONSTRUCTION DOCUMENTS.
6. PUBLIC IMPROVEMENT PLANS FOR THE STREETS, SIDEWALKS, SANITARY AND STORM SEWERS AND WATERLINES SHALL BE SUBMITTED TO THE PUBLIC WORKS DEPARTMENT AND DEPARTMENT OF UTILITIES FOR REVIEW AND APPROVAL. THESE IMPROVEMENTS MUST BE CONSTRUCTED AND COMPLETE PRIOR TO ISSUANCE OF OCCUPANCY PERMITS.
7. PUBLIC IMPROVEMENT PLANS WILL BE SUBMITTED TO THE PUBLIC WORKS DEPARTMENT AND DEPARTMENT OF UTILITIES BEFORE THE FINAL DEVELOPMENT PLAN IS FILED AT THE REGISTER OF DEEDS. REFER TO THESE PLANS FOR DETAILED INFORMATION REGARDING ALL UTILITY IMPROVEMENTS
8. WAKARUSA DRIVE AS WELL AS ALL SANITARY SEWERS AND WATERLINES WITHIN PUBLIC UTILITY EASEMENT OR RIGHT-OF-WAY SHALL BE MAINTAINED BY THE CITY OF LAWRENCE.
9. A BOND, IF REQUIRED, SHALL BE PROVIDED TO THE PUBLIC WORKS DEPARTMENT AND DEPARTMENT OF UTILITIES TO ASSURE ALL THE PUBLIC IMPROVEMENTS SHALL BE CONSTRUCTED PER PLANS AND MEETING THEIR STANDARDS.
10. ALL BUILDING AND GROUND MOUNTED MECHANICAL UNITS SHALL BE SCREENED IN ACCORDANCE WITH SECTION 20-1006(b)
11. ALL ACCESSIBLE SIDEWALK RAMPS BY ADA STANDARDS.
12. SITE PLAN HAS BEEN DESIGNED TO COMPLY WITH THE PROVISIONS OF THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG) FOR BUILDINGS AND FACILITIES, APPENDIX A TO 28CFR PART 36.
13. SITE PLAN HAS BEEN DESIGNED TO COMPLY WITH THE MINIMUM PROVISIONS OF THE FINAL FAIR HOUSING ACCESSIBILITY GUIDELINES, 24 CFR, CHAPTER 1, SUBCHAPTER A, APPENDIX II, OF THE FAIR HOUSING ACT OF 1968, AS AMENDED.
14. THE CITY OF LAWRENCE WILL NOT BE HELD RESPONSIBLE FOR DAMAGE CAUSED BY TRASH TRUCKS
15. GOLF COURSE SHALL BE OPERATED AS A PRIVATE FACILITY OPEN TO THE PUBLIC BY MEMBERSHIP AND/OR PLAY FOR PLAY.
16. TRAFFIC CONTROL SIGNS PLACED ON PRIVATE PROPERTY OPEN TO THE GENERAL PUBLIC SHALL COMPLY WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND STANDARD HIGHWAY SIGNS, PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION WITH RESPECT TO SIZE, COLOR, RETROFLECTIVITY AND POSITION.
17. ENTIRE COMPLEX TO BE CONSTRUCTED AT ONE TIME (A SINGLE PHASE). OCCUPANCY PERMITS TO BE ISSUED PER BUILDING WHEN NECESSARY IMPROVEMENTS HAVE BEEN COMPLETED FOR EACH STRUCTURE.
18. THE PROJECT WILL BE UNDER COMMON OWNERSHIP WHICH WILL MAINTAIN THE COMPLEX.
19. COMMON OPEN SPACE, NON-ENCROACHABLE AREA, AND ANY OTHER AREA WITHIN THE PROPOSED DEVELOPMENT THAT IS TO BE RETAINED PRIMARILY FOR THE EXCLUSIVE USE AND BENEFIT OF THE RESIDENTS, LESSEES AND OWNERS OF THE PLANNED DEVELOPMENT TO BE OWNED AND MAINTAINED BY LINKS AT LAWRENCE A.L.P.
20. OWNER HEREBY DEDICATES TO THE CITY OF LAWRENCE THE RIGHT TO REGULATE ANY CONSTRUCTION OVER THE AREA DESIGNATED AS COMMON OPEN SPACE, OPEN AIR RECREATION AREA AND NON-ENCROACHABLE AREA AND TO PROHIBIT ANY CONSTRUCTION WITHIN SAID AREAS AND SPACES INCONSISTENT WITH THE APPROVED USE OF ENJOYMENT OF RESIDENTS, LESSEES AND OWNERS OF THE PLANNED DEVELOPMENT.
21. DUMPSTERS TO BE SCREENED AS REQUIRED IN SECTION 20-1006(b) AND ENCLOSURES WILL BE BUILT TO CITY SPECIFICATIONS.
22. ALL CURB AND GUTTER NOT INTERSECTION SIDEWALKS SHALL BE TYPE I AS PER THE CITY OF LAWRENCE STANDARD DETAILS.
23. ANY RELOCATION OF EXITING AT&T FACILITIES TO BE AT DEVELOPER S EXPENSE.
24. NO COVENANTS OR ADDITIONAL EASEMENTS ARE BEING PROPOSED AT THIS TIME.
25. A STORMWATER POLLUTION PREVENT PLAN (SWP3) MUST BE PROVIDED FOR THIS PROJECT PER SECTION 9-903B. THIS PROJECT WILL NOT BE RELEASED FOR BUILDING PERMITS UNTIL AN APPROVED SWP3 HAS BEEN OBTAINED. CONSTRUCTION ACTIVITY, INCLUDING SOIL DISTURBANCE OR REMOVAL OF VEGETATION SHALL NOT COMMENCE UNTIL AN APPROVED SWP3 HAS BEEN OBTAINED.
26. ALL INFRASTRUCTURE IMPROVEMEN"S WILL BE PAID FOR BY THE DEVELOPER AT THE TIME OF CONSTRUCTION.
27. OWNER AGREES TO PROVIDE A LANDSCAPE BUFFER ON THE NORTH, EAST AND SOUTH SIDES WITHIN 60 FEET OF THE PERIPHERAL BOUNDARY OF THE PLANNED DEVELOPMENT CONSISTING OF A BERM (4 HEIGHT MINIMUM), A MASONRY WALL (6 HEIGHT MINIMUM) OR A FENCE (6 HEIGHT MINIMUM) PER SECTION 20-701 OF THE CITY OF LAWRENCE LAND DEVELOPMENT CODE. A WAIVER HAS BEEN GRANTED FROM THIS REQUIREMENT ON THE WEST PROPERTY SIDE.
28. THE DENSITY OF THE DEVELOPMEN" IS LIMITED TO 6 DWELLING UNITS PER ACRE PER THE RM12-PD ZONING [Z-11-28A-07].
29. USE OF THE CLUB HOUSE AND POOL IS RESTRICTED TO MEMBERS ONLY OR TO RESIDENTS OF THE LINKS AT LAWRENCE AND THEIR GUEST.
30. HORIZONTAL SEPARATION BETWEEN ALL SANITARY SEWER LINES AND WATER LINES SHALL BE 10 MINIMUM FROM EDGE OF PIPE TO EDGE OF PIPE, OR EDGE OF MANHOLE TO EDGE OF PIPE.
31. THE GOLF COURSE WILL BE DEVELOPED AND MAINTAINED ACCORDING TO THE AUDUBON INTERNATIONAL ENVIRONMENTAL MANAGEMENT PRACTICES OF GOLF COURSES. THE OWNER SHALL APPLY FOR AND MAINTAIN MEMBERSHIP IN THE AUDUBON COOPERATIVE SANCTUARY PROGRAM. THE OWNERS SHALL PROVIDE THE CITY OF LAWRENCE PLANNING DEPARTMENT WITH A COPY OF THE ORIGINAL SITE ASSESSMENT AND ENVIRONMENTAL PLAN AND THE YEARLY REPORT SHALL BE KEPT ON SITE AND MADE AVAILABLE TO THE PUBLIC.
32. SITE RESTORATION AFTER MAINTENANCE WORK ON THE BALDWIN CREEK WEST INTERCEPTOR LINE LOCATED IN THE AREA OF THE DAMS AND PONDS/LAKES SHALL FOLLOW THE SAME PROCEDURE AS NOTED ABOVE AND ALSO INCLUDE REPLACING ANY PATHWAY TO PREVIOUS EXISTING CONDITIONS. UPON NOTICE FROM THE CITY OF LAWRENCE PUBLIC WORKS DEPARTMENT THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR DRAINING THE LAKES AND FULLY OPENING THE DOWNSTREAM OUTLETS. IT SHALL NOT BE THE RESPONSIBILITY OF THE PROPERTY OWNER TO DIVERT ANY STORM WATERS WHILE THE BALDWIN CREEK WEST INTERCEPTOR LINE US UNDER MAINTENANCE WORK.
33. PUMP STATION #46 AND BALDWIN CREEK WEST CONNECTION FEES TO BE PAID PRIOR TO THE FIRST BUILDING PERMIT APPLICATION (C.O. NO. 8043 AND 8192). THE PUMP STATION #46 FEE PER ORDINANCE US $2,840/GPM. THE BALDWIN CREEK WEST INTERCEPTOR FEE PER ORDINANCE IS $311/GPM. THE DOWNSTREAM SANITARY SEWER ANALYSIS STATES 304 GPM FLOW FROM THIS DEVELOPMENT BASED ON 630 UNIT DEVELOPMENT. THIS RESULTS IN PUMP STATION #46 FEE OF $863,360.00 AND A BALDWIN CREEK WEST INTERCEPTOR FEE OF $94,544.00.

THIS PROJECT



VICINITY MAP NTS

OWNER/DEVELOPER

LINKS AT LAWRENCE
1165 JOYCE BOULEVARD
FAYETTEVILLE, AR 72703
CONTACT: KIM FUGIT
PROJECT MANAGER
(479) 521-6686

GENERAL LOT INFORMATION:

CURRENT ZONING:	RM12-PD OVERLAY
CURRENT USAGE:	UNDEVELOPED AGRICULTURE LAND
PROPOSED USAGE:	MULTI-DWELLING RESIDENTIAL WITH GOLF COURSE (PASSIVE RECREATION)
LAND AREA:	81.31 ACRES

BUILDING/UNIT SUMMARY:

CLUBHOUSE - 2 STORY - (HGT.=41.5')
GOLF CART BARN - (HGT.=31.6')
31 - 3 STORY 18 UNIT BLDGS. (HGT.=38.5') = 558 UNITS
6 - 2 STORY 12 UNIT BLDGS. (HGT.=32') = 72 UNITS
TOTAL = 630 UNITS

1-BEDROOM UNITS = 210 UNITS
2-BEDROOM UNITS = 420 UNITS

SITE SUMMARY

BLOCK 1 LOT 1 =	50.63 ACRES
BLOCK 2 LOT 1 =	22.13 ACRES
TRACT "A" =	0.02 ACRES
TOTAL ROW DEDICATION =	8.55 ACRES
COMMON OPEN SPACE BLOCK 1	32.39 ACRES
COMMON OPEN SPACE BLOCK 2	11.49 ACRES
% COMMON OPEN SPACE BLOCK 1 =	63.97% / 20% REQ.
% COMMON OPEN SPACE BLOCK 2 =	51.92% / 20% REQ.
BUILDING FOOTPRINT =	5.62 ACRES
PAVEMENT AREAS =	5.13 ACRES
TOTAL IMPERVIOUS=	10.75 ACRES

WEIGHTED DENSITY

BLOCK 1 LOT 1
ONE BEDROOMS - 132 X .4 = 53 UNITS
TWO BEDROOMS - 264 X .6 = 159 UNITS
TOTAL = 212 UNITS/50.63 ACRES = 4.19 UNITS PER ACRE

BLOCK 2 LOT 1
ONE BEDROOMS - 78 X .4 = 32 UNITS
TWO BEDROOMS - 156 X .6 = 94 UNITS
TOTAL = 126 UNITS/22.13 ACRES = 5.69 UNITS PER ACRE

DEVELOPMENT TOTAL = 338 UNITS/72.76 ACRES = 4.65 UNITS PER ACRE

SHEET INDEX

C0.00	COVER SHEET
C1.00	SITE PLAN OVERVIEW
C1.01	SITE PLAN NE QUADRANT
C1.02	SITE PLAN SE QUADRANT
C1.03	SITE PLAN SW QUADRANT
C1.04	SITE PLAN NW QUADRANT
C1.05	COMMON OPEN SPACE DELINEATION
C1.06	EXISTING SENSITIVE AREAS
C1.07	EXISTING AREAS SITE PLAN OVERVIEW
C1.08	NATURAL OPEN SPACE/RECREATIONAL OPEN SPACE
C2.00	GRADING & DRAINAGE OVERVIEW
C2.01	SITE PROFILES OVERVIEW
C2.02	SITE PROFILES SHEET 1 OF 2
C2.03	SITE PROFILES SHEET 2 OF 2
C3.00	EROSION CONTROL PLAN
C5.00	ROADWAY OVERALL PLAN
C5.01	ROADWAY PLAN & PROFILES - SHEET 1 OF 3
C5.02	ROADWAY PLAN & PROFILES - SHEET 2 OF 3
C5.03	ROADWAY PLAN & PROFILES - SHEET 3 OF 3
C5.04	ROADWAY TYPICAL SECTIONS
C6.00	LANDSCAPE COVERSHEET,DETAILS,AND NOTES
C6.01	LANDSCAPE OVERALL SITE PLAN
C6.02	LANDSCAPE - SHEET 1 OF 4
C6.03	LANDSCAPE - SHEET 2 OF 4
C6.04	LANDSCAPE - SHEET 3 OF 4
C6.05	LANDSCAPE - SHEET 4 OF 4

ROBERT D. HOLLOWAY LICENSED PROFESSIONAL ENGINEER 2221

Holloway Engineering
Surveying & Civil Design, PLLC
200 Casey Drive
Maumelle, Arkansas 72113
(501) 851-3366
hollowayfirm@sbcglobal.net

Cover Sheet for Preliminary Development Plan
The Links at Lawrence
Lawrence, Kansas
For:Lindsey Management Company

date	revisions	int.

dwg by: JEH
checked: RDH
date: 1/14/2013
scale: AS SHOWN

C0.00

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LEGEND

FOUND IRON PIN	● FIP
SET IRON PIN - 1/2"REBAR WITH CAP	● SIP
CONCRETE MONUMENT	⊙ CM
CENTERLINE OF ROAD	
RIGHT OF WAY	
LOT LINES	
FENCE (8' WOOD)	—X—
FENCE (6' IRON)	
EASEMENT	
OVERHEAD ELECT.	—E—
SEWER LINE	—S—
WATER LINE	—W—
CURB & GUTTER	
FIRE HYDRANT	
WATER METER	
FIRE DEP. CONNECTION	
LIGHT POLE	
SAN. SEWER CLEAN OUT	
SANITARY SEWER MH	
BACKFLOW PREVENTER (FIRE SPRINKLER LINE)	

LEGAL DESCRIPTION:

A parcel of land being the South Half of the Northeast Quarter of Section 29, Township 12 South, Range 19 East of the Sixth P.M. Douglas County, Kansas, being described as follows:
Beginning at the Southeast Corner of the Southeast Quarter of said Northeast Quarter; thence North 02 degrees 07 minutes 05 seconds West (Assumed Bearing) on the East Line of said Southeast Quarter Northeast Quarter, a distance of 1323.29 feet to the Northeast Corner of said Southeast Quarter Northeast Quarter; thence South 88 degrees 07 minutes 07 seconds West on the North Line of said Southeast Quarter Northeast Quarter, a distance of 1337.39 feet to the Northwest Corner of said Southeast Quarter Northeast Quarter; thence South 88 degrees 02 minutes 20 seconds West on the North Line of the Southwest Quarter of said Northeast Quarter, a distance of 1336.38 feet to the Northwest Corner of said Southwest Quarter Northeast Quarter; thence South 02 degrees 01 minutes 04 seconds East on the West Line of said Southwest Quarter Northeast Quarter, a distance of 1324.03 feet to the Southwest Corner of said Southwest Quarter Northeast Quarter; thence North 88 degrees 03 minutes 47 seconds East on the South Line of said Southwest Quarter Northeast Quarter, a distance of 1338.00 feet to the Southwest Corner of said Southeast Quarter Northeast Quarter; thence North 88 degrees 03 minutes 47 seconds East on the South Line of said Southeast Quarter Northeast Quarter, a distance of 1338.10 feet to the true point of beginning containing 81.31 acres, more or less.

CURVE DATA

CURVE	DELTA	RADIUS	TANGENT	LENGTH	CHD BRG	CHD LGTH
C1	44°27'02"	450.00'	183.87'	349.11'	S85°58'44"W	340.42'
C2	35°05'25"	250.00'	79.04'	153.11'	N61°17'56"E	150.73'
C3	29°58'35"	500.00'	133.86'	261.59'	S62°29'42"W	258.62'
C4	40°33'22"	450.00'	166.26'	318.53'	N57°47'05"E	311.92'

PARKING DATA

REGULAR PARKING	1 PER BEDROOM	- TWO BEDROOM UNITS 420 X2	= 840
		ONE BEDROOM UNITS	= 210
		ONE SPACE PER TEN UNITS 630/10	= 63
	1 PER 500 SQFT REC AREA	- CLUB HOUSE 10,000 SQFT/500=	20
		POOL AREA 13,000 SQFT/500 =	26
		PLAYGROUND 1,500 SQFT/500 =	3
		TOTAL REQUIRED	=1162
		TOTAL PROVIDED	=1164
HANDICAP ACCESSIBLE	PARKING>1000 - 20 SPACES PLUS 1 FOR EVERY 100 OVER 1000	22 REQ/ 24 PROVIDED	
BICYCLE PARKING REQUIRED	- 1 PER 4 PARKING SPACES	-	1164/4 = 291
BICYCLE PARKING PROVIDED	- 8 SPACES PER BLDG.	-	38x8 = 304

PROPERTY SURFACE SUMMARY

EXISTING SUMMARY		POST DEVELOPMENT SUMMARY	
TOTAL BUILDINGS SQFT.	0	TOTAL BUILDINGS SQFT.	244,807
TOTAL PAVEMENT SQFT.	0	TOTAL PAVEMENT SQFT.	223,462
TOTAL IMPERVIOUS SQFT.	0	TOTAL IMPERVIOUS SQFT.	468,269
TOTAL PERVIOUS SQFT.	3,169,033	TOTAL PERVIOUS SQFT.	3,169,033
TOTAL PROPERTY AREA SQFT.	3,169,033	TOTAL PROPERTY AREA SQFT.	3,169,033

GENERAL NOTES:

1. AN ALL-WEATHER ROAD ACCESSING THE SITE SHALL BE CONSTRUCTED IN A LOCATION ACCEPTABLE TO THE FIRE MARSHALL.
2. ALL RESIDENTIAL STRUCTURES TO BE EQUIPPED WITH FIRE SPRINKLERS.
3. AN AGREEMENT OR AGREEMENTS DESIGNATING RESPONSIBILITY FOR REPAIRS TO ROCK CHALK DRIVE THAT ARE CAUSED BY CONSTRUCTION VEHICLES OR ACTIVITY RELATED TO THE CONSTRUCTION OF THE ONSITE INFRASTRUCTURE AND BUILDINGS SHALL BE PROVIDED TO THE PUBLIC WORKS DEPARTMENT.
4. KANSAS DEPARTMENT OF HEALTH APPROVAL WILL BE OBTAINED FOR UTILITY EXTENTIONS PRIOR TO THE ISSUANCE OF BUILDING PERMITS.
5. APPROPRIATE UTILITY AND DRAINAGE EASEMENTS TO BE PROVIDED FOR ALL PUBLIC FACILITIES WITH THE LOCATION AND WIDTH TO BE PER CITY REQUIREMENTS.
6. DUMPSTERS TO BE SCREENED WITHIN BRICK ENCLOSURES PER CITY OF LAWRENCE STANDARDS.
7. PERMANENT EASEMENT FOR WATERLINE OUTSIDE OF RIGHT-OF-WAY MUST BE AT LEAST 15 FEET IN WIDTH IF THERE IS NO ADJACENT ACCESS EASEMENT. EASEMENT TO BE CENTERED ON WATERLINE.
8. PERMANENT EASEMENT FOR SANITARY SEWERLINE SHALL BE A MINIMUM OF 15 FEET IN WIDTH AND CENTERED ON THE SANITARY SEWER MAIN. THE EASEMENT SHALL INCREASE IN WIDTH ACCORDING TO PIPE DEPTH PER CITY OF LAWRENCE REQUIREMENTS.
9. THE AREAS DESIGNATED AS "DETENTION, LAKE#1 AND LAKE#2" WILL BE PRIVATELY OWNED AND MAINTAINED. THE DEVELOPER IS RESPONSIBLE FOR ESTABLISHING OWNERSHIP AND MAINTENANCE OF SAME VIA INDIVIDUAL OWNER MAINTENANCE.
10. ALL CURB INLETS WILL BE CONSTRUCTED PER CITY STORM SEWER STANDARD DETAILS.
11. THE SWIMMING POOL CONSTRUCTION WILL COMPLY WITH CITY CODE CHAPTER 19, ARTICLE 11.
12. THE PERIMETER OF ALL PARKING LOTS SHALL HAVE A CURB AND GUTTER PER SECTION 20-913(i).
13. ALL PARKING SPACES ARE 9' x 20'.

GRAPHIC SCALE 1"=100'
0 100 200



ROBERT D. HOLLOWAY LICENSED PROFESSIONAL ENGINEER 22210

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Site Plan Overview for
Preliminary Development Plan,
The Links at Lawrence,
Lawrence, Douglass Co., Kansas
For:Lindsey Management Co.

date	revisions	int.

dwg by: JEH
checked: RDH
date: 1/14/2013
scale: AS NOTED

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LEGEND

FOUND IRON PIN	● FIP
SET IRON PIN - 1/2"REBAR WITH CAP	● SIP
CONCRETE MONUMENT	○ CM
CENTERLINE OF ROAD	
RIGHT OF WAY	
LOT LINES	
FENCE (8' WOOD)	-X-X-
FENCE (6' IRON)	
EASEMENT	
OVERHEAD ELECT.	-E-E-
SEWER LINE	-S-S-
WATER LINE	-W-W-
CURB & GUTTER	
FIRE HYDRANT	
WATER METER	
FIRE DEP. CONNECTION	
LIGHT POLE	
SAN. SEWER CLEAN OUT	
SANITARY SEWER MH	
BACKFLOW PREVENTER (FIRE SPRINKLER LINE)	

N

GRAPHIC SCALE 1"=50'
0 50 100

NE COR. SE1/4 NE1/4, SEC. 29, T12S,R19E

(AG ZONING)

N88°07'07"E 1337.39'

25' BUILDING LINE

10' CONCRETE GOLF CART PATH

DETENTION 20000 SQFT.

#1

#2

#3

354 YARDS

BLOCK 1, LOT 1
50.626 ACRES
32.394 ACRES OF
COMMON OPEN SPACE

BLDG#1 3-STORY 18 UNIT FF ELEV=982.50'
BLDG#2 3-STORY 18 UNIT FF ELEV=980.50'
BLDG#3 3-STORY 18 UNIT FF ELEV=979.00'
BLDG#4 3-STORY 18 UNIT FF ELEV=981.50'
BLDG#5 3-STORY 18 UNIT FF ELEV=983.00'
BLDG#6 3-STORY 18 UNIT FF ELEV=984.50'
BLDG#7 3-STORY 18 UNIT FF ELEV=984.50'
BLDG#8 3-STORY 18 UNIT FF ELEV=986.00'
BLDG#9 3-STORY 18 UNIT FF ELEV=984.50'
BLDG#10 3-STORY 18 UNIT FF ELEV=989.50'
BLDG#11 3-STORY 18 UNIT FF ELEV=991.00'
BLDG#22 3-STORY 18 UNIT FF ELEV=987.25'

CLUB HOUSE FF. ELEV= 981.00'
CART BARN FF. ELEV= 982.50'

PROPOSED 8" SANITARY SEWERLINE
PROPOSED 12" WATERMAIN
PROP. 8" WATERMAIN
MAIL
6' CONCRETE SIDEWALK
6' CONCRETE SIDEWALK
6' GRAVEL HIKE PATH
PARKING LOT "A" CONCRETE PAVING
PARKING SPACES = 344
VEH. USE AREA LANDSCAPING = 18,887
DUMPSTER
COMMON OPEN SPACE
SAND HAZARD
PRACTICE GREEN
LAKE #1 & 2
22,000 SQ. FT.
SURFACE ELEV=983.0
60 YARDS
(PRD ZONING)
NW QUADRANT
NE QUADRANT
MATCH LINE
SE QUADRANT
NE QUADRANT
MATCH LINE
S02°07'05"E 1323.29'
BLOCK 2, LOT 1
22.125 ACRES
11.488 ACRES OF
COMMON OPEN SPACE
E PROP. ROCK CHALK DRIVE
80' PUBLIC R.O.W.
TWO 12' BIKE LANES
TWO 11' LANES
W/ CURB & GUTTER
EXISTING 12" WATERLINE
EXISTING 8" SANITARY SEWERLINE
EXISTING 12" WATERLINE
60.0'R
40.0'
25' BUILDING LINE
25' BUILDING LINE

ROBERT D. HOLLOWAY
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PROFESSIONAL ENGINEER
22211
1/14/13

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Holloway Engineering

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hollowayfirm@sbcglobal.net

Site Plan NE Quadrant for
Preliminary Development Plan,
The Links at Lawrence,
Lawrence, Douglass Co., Kansas
For:Lindsey Management Co.

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dwg by: JEH
checked: RDH
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date: 1/14/2013			
scale: AS NOTED			

Site Plan SE Quadrant for
Preliminary Development Plan,
The Links at Lawrence,
Lawrence, Douglass Co., Kansas
For:Lindsey Management Co.

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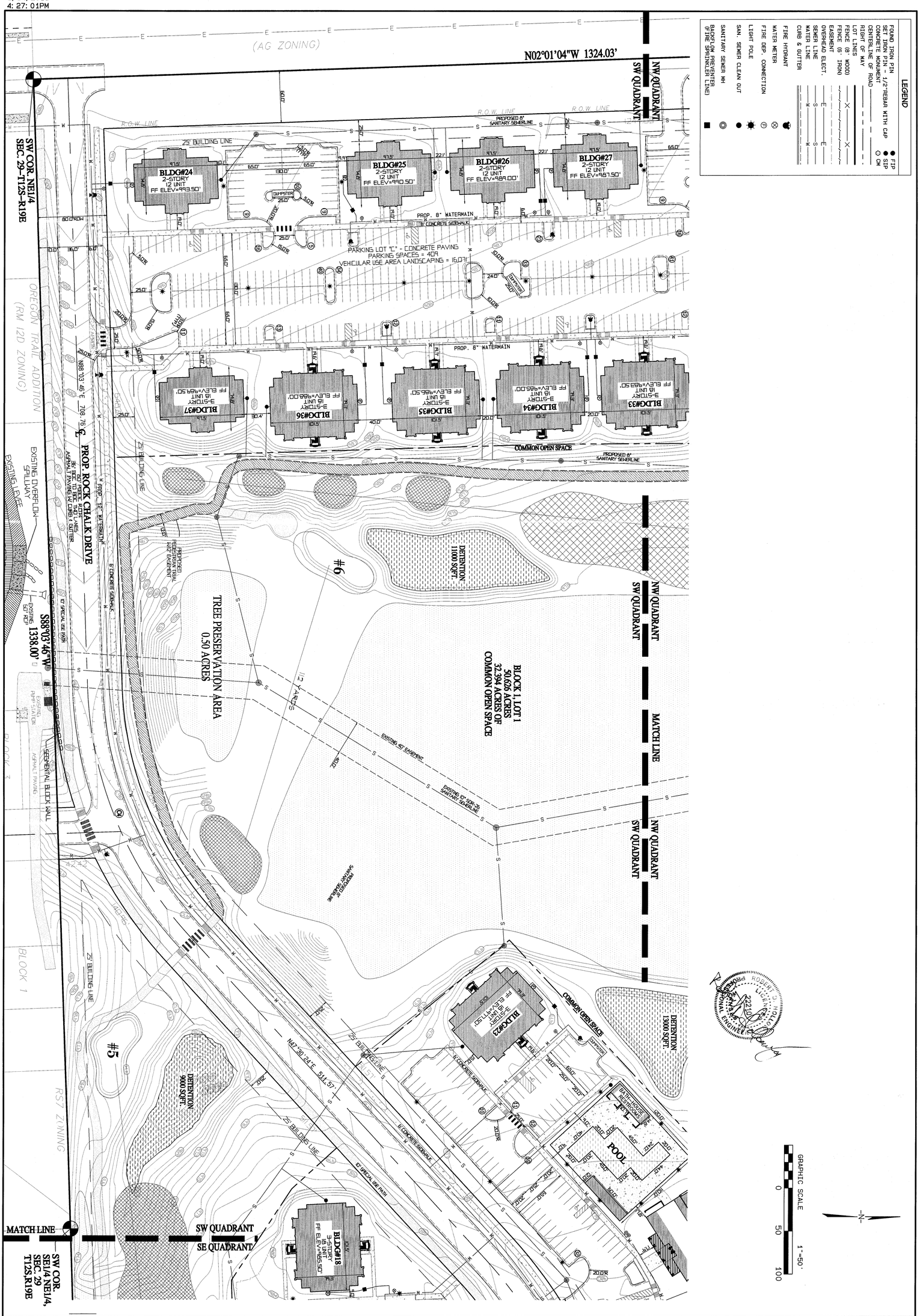

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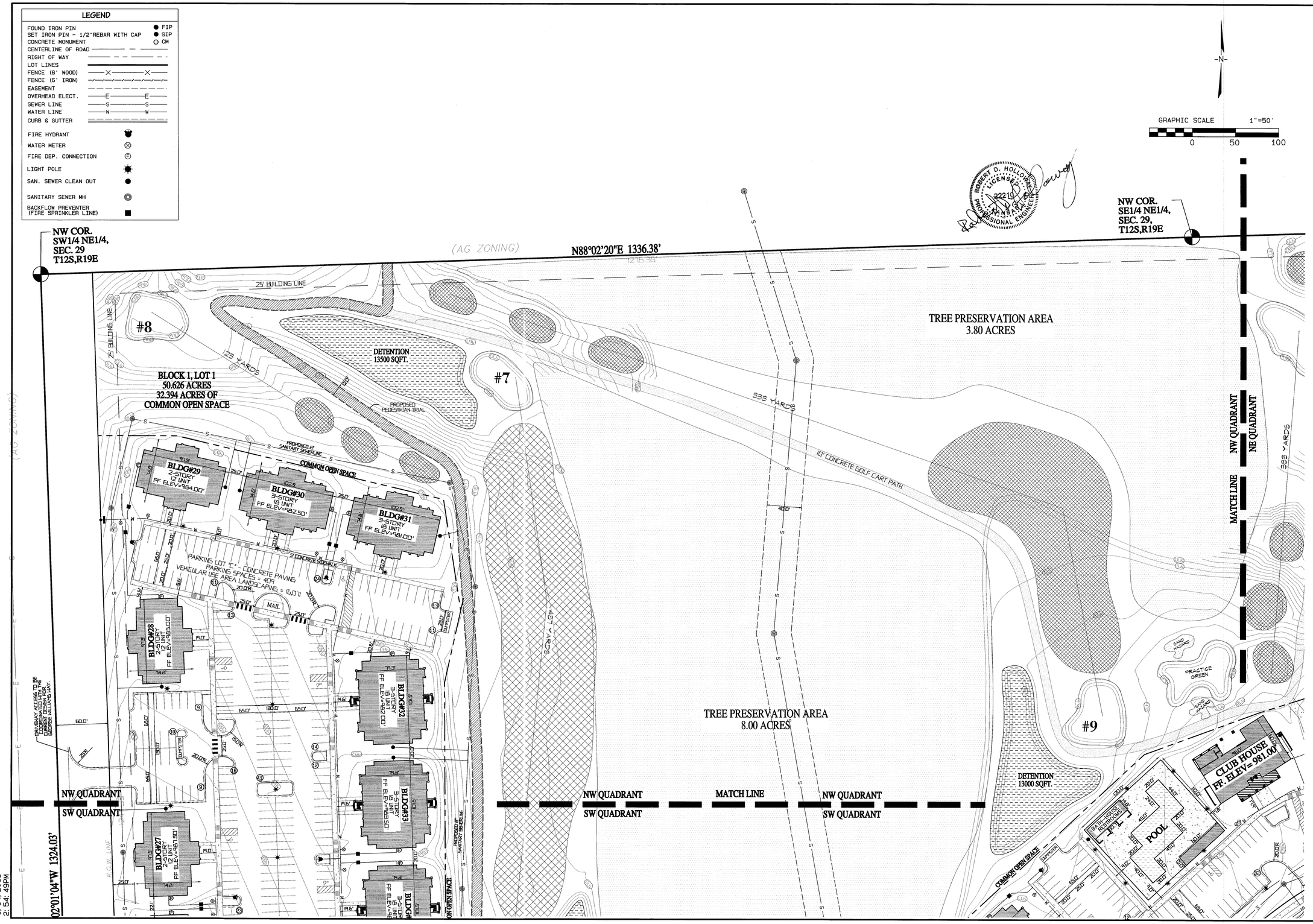
	date: 1/14/2013			
	scale: AS NOTED			

Site Plan SW Quadrant for
Preliminary Development Plan,
The Links at Lawrence,
Lawrence, Douglass Co., Kansas
For:Lindsey Management Co.

Holloway Engineering
Surveying & Civil Design, PLLC
200 Casey Drive
Maumelle, Arkansas 72113
(501) 851-3366
hollowayfirm@sbcglobal.net



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Holloway Engineering

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Site Plan NW Quadrant for Preliminary Development Plan, The Links at Lawrence, Lawrence, Douglass Co., Kansas For:Lindsey Management Co.

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date: 1/14/2013
scale: AS NOTED

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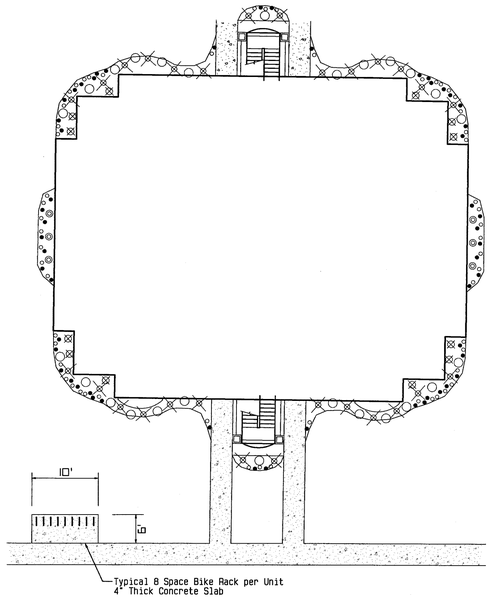


TYPICAL UNIT LANDSCAPING

LEGEND:

	QTY	DESCRIPTION
A	56 Street Trees 56 Total	Freeman Maple (Acer x freemanii) 2-1/2" B&B
B	4 Street Trees 25 Interior 29 Total	Honeylocust (Gleditsia triacanthos) 2-1/2" B&B
C	30 Street Trees 1 Interior 31 Total	Swamp White Oak (Quercus bicolor) 2-1/2" B&B
D	31 Street Trees 31 Total	Sawtooth oak (Quercus acutissima) 2-1/2" B&B
E	10 Street Trees 76 Interior 86 Total	Red Sunset Maple (Acer rubrum) 2-1/2" B&B
F	13 Street Trees 13 Total	Bur Oak (Quercus macrocarpa 2-1/2" B&B
G	13 Street Trees 31 Interior 44 Total	Upright Chinese Juniper (Juniperus chinensis) 1-1/2" B&B
H	5 Street Trees 21 Interior 26 Total	Chinkapin oak (Quercus muehlenbergii) 2-1/2" B&B
J	56 Interior 56 Total	Serviceberry (Amelanchier x grandiflora) 1-1/2" B&B
K	36 Interior 36 Total	Indian Summer Crabapple (Malus augustifolia 'Indian Summer') 1-1/2" B&B
L	33 Interior 33 Total	Star Magnolia (Magnolia stellata) 1-1/2" B&B
M	5 Street 222 Typ.Unit 227 Total	Golden Privet (Ligustrum 'Vicaryi) 3 GAL. MINIMUM HEIGHT = 30"
N	925 Typ.Unit 312 Interior 1237 Total	Virginia Sweetspire (Itea virginica 'Henry's Garnet') 3 GAL. MINIMUM HEIGHT = 24"
P	10 Street 1037 Typ.Unit 1047 Total	Rugosa Rose (Rosa rugosa) 3 GAL. MINIMUM HEIGHT = 24"
Q	407 Typ.Unit 407 Total	Dwarf Burning Bush (Euonymus alatus 'Compactus') 3 GAL MINIMUM HEIGHT = 24"
R	2072 Typ.Unit 2072 Total	Daylily (Hemerocallis 'Almost Indecent') 1 GAL.
S	2001 Typ.Unit 2001 Total	Daylily (Hemerocallis 'Call Me Irresistible') 1 GAL.
T	513 Interior 513 Total	Purple Beautyberry (Callicarpa dichotoma) 3 GAL MINIMUM HEIGHT = 24"

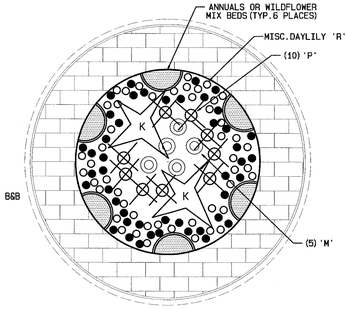
Note: Daylily varieties may be substituted as desired due to availability and local cost consideration

NOTES:

ABOVE NOTED LANDSCAPE QUANTITIES DO NOT INCLUDE TYPICAL UNIT LANDSCAPING.

GROUND COVER TO BE ZOYSIA GRASS UNLESS NOTED OTHERWISE.

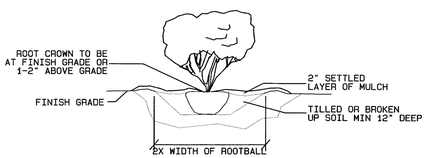
ALL LANDSCAPING TO BE IRRIGATED



ROUND-A-BOUT PLANTING DETAIL

LANDSCAPE NOTES

1. Approvals: Owner shall approve plant materials, hardscape and softscape construction for conformance to specifications, placement, and quantities prior to planting.
2. Plant quality and selection shall be in accordance with latest standards set forth by the American Nurseryman's Association and the Arkansas State Plant Board. Deliver plant materials to site with identification labels attached or certification of species and variety by supplier. Plant materials with broken limbs, scarred or scrapped trunks, and loose root balls or loose in their containers will not be approved. Trees and shrubs indicated on the plan shall be of the same variety when alternate varieties are noted unless approved by Landscape Architect.
3. Quantities: The contractor is responsible for verifying site measurements and plant/construction material quantities. In the event of conflict, notify Owner or Owners Representative.
4. Plant Material Installation: Install all shrubs one inch above finished grade of bed. Install all trees one inch above finished grade of bed or sod.
5. Soil mix: For lawn installation used imported topsoil free of weeds, grass, rocks, roots, and construction debris. Test imported topsoil and amend as recommended by Pulaski County Extension Service for lawns. For shrub and groundcover beds, use SuperSoil. Install all plant materials in gently mounding beds (6:1 minimum) Mound bed from edge of bed to building or center of bed (See "Site Conditions" and "Drainage" below)
6. Site Conditions: It is anticipated that the site has unfavorable planting conditions. On site soils are likely to be compacted, clayey, and poorly drained or Donna fill. Shrub Planting Beds: Elevate (mound) proposed beds as shown in detail for placement of SuperSoil. Lawn Areas: Excavate a minimum of 3 inches below finish grade and remove debris for placement of topsoil. IMPORTANT: Good internal soil drainage is essential to establish proposed trees, shrubs, and groundcovers
7. Drainage: Place new soil and soil mixes. Lightly tamp to compress. Shrub beds: Provide positive drainage away from building and toward walks, drainage channels, drainage basins, or lawn. Mound beds and fine grade to create a finished slope of 6:1 (6' H to 1' V). Finished grade of soil shall be at least 3" lower than finish floor elevation if building. Sod Areas: Slope all sodded areas to drain away from buildings and beds and toward walks, drainage channels, drainage basins, parking areas, or other lawns. Roof Downspouts: Extend all roof downspouts to the edge of planting beds, drainage channels, or streets
8. Sod Placement: Remove all grass, rocks, roots, and construction debris from area to be sodded. Place topsoil and soil amendments and blend well. Lightly tamp to compact and fine grade to drain. Install sod pieces with tight joints between sections. Roll as needed to achieve a smooth, evenly graded, lawn surface free of gaps, cavities, holes, or uneven areas. Match the elevation of adjacent surfaces. Trim edges to a smooth line. Irrigate sufficiently to establish sod.
9. Irrigation system: Landscape contractor shall install an irrigation system. Avoid over-spray onto buildings and pavements. General Contractor shall install sleeving (double, 4", Schedule 40, PVC pipe) under all new pavements to accommodate irrigation system and other utilities (see Landscape Plan) mark location of sleeves for future reference. Landscape Contractor shall coordinate location of irrigation meter, irrigation control box, and electrical supply with Owner or General Contractor. Owner or General Contractor shall provide a water meter or water connection for the irrigation system and a location and electrical connection for the irrigation controller. Landscape Contractor shall demonstrate full coverage performance of irrigation system for owner's approval prior to acceptance.
10. Mulch: Install shredded bark mulch 3" deep in all planting beds and around trees. Depth shall be measured after mulch has been watered. Do not place mulch on top of groundcovers, shrubs, shrub branches, or within 1" of tree trunks and shrub or perennial crowns. Cover tree basins and soil rims with 2" of mulch "Tuck" mulch behind steel edging and behind curb to reduce erosion.
11. Steel Edging: Provide and install Ryerson steel edging or edging material manufactured by local steel supply company (3/32"x4") painted with two coats of rust inhibiting black or green paint. Provide painted stakes or hocks as needed to firmly secure edging material in clean, sharp, straight and arced lines as shown on plan. Edging height shall be 1" above lawn.
12. Annual Beds as located by Owner preference: Delete some of the Liriope and Daylilies and prepare annual beds using 100% Supersoil and 1" shredded bark mulch. Install seasonal annuals appropriate for the season with sufficient density to provide full coverage in the bed. (Pansies at 6" o.c.)
13. Guarantee: Guarantee all work performed under this contract for a period of one year. Guarantee replacement plants and materials for a period of one year from the date of replacement.
14. Utilities: Call Arkansas 'ONE-CALL', Inc. (501-833-8045) prior to any excavation to locate any existing utilities. Locate, flag, and protect existing irrigation piping, heads, valves, electric systems, sleeves, drainage, or other site improvements prior to construction if present.

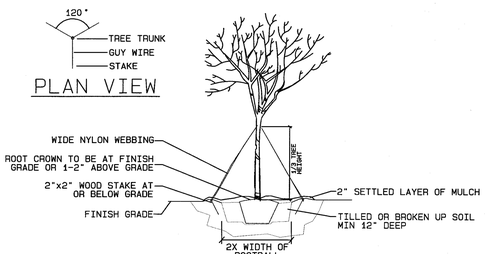


TYP. SHRUB PLANTING: INDIVIDUAL PLANTING HOLE

NOT TO SCALE

NOTES: TYPICAL SHRUB PLANTING, INDIVIDUAL PLANTING HOLE

1. DIG PLANTING HOLE AT LEAST 2X THE WIDTH OF THE ROOT BALL OR CONTAINER.
2. SCARIFY SUBGRADE AND SIDES OF PLANTING HOLE WHEN PLANTING IN CLAY SOILS.
3. SET THE TOP OF THE ROOT BALL LEVEL WITH THE SOIL SURFACE, OR 1-2" ABOVE IF THE SOIL IS PRONE TO SETTLING.
4. IF CONTAINER GROWN PLANT, GENTLY SLIDE PLANT OUT OF CONTAINER. DISTURB THE ROOTS.
5. IF B&B PLANT, REMOVE BURLAP FROM AT LEAST THE TOP 12 INCHES OF THE ROOTBALL, WITHOUT DISTURBING THE ROOTBALL. REMOVE ALL CORD FROM THE TRUNK. REMOVE BURLAP AND WIRE BASKET (IF PRESENT) FROM THE ROOT BALL.
6. BACK FILL THE PLANTING HOLE WITH EXCAVATED NATIVE SOIL. BROKEN UP OR TILLED. WATER TO REMOVE AIR POCKETS. DO NOT ADD AMENDMENTS.
7. PLACE PINE STRAW OR BARK MULCH ON THE SURFACE TO A (SETTLED) DEPTH OF 1 TO 3 INCHES.

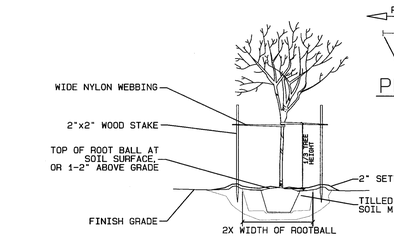


TREE PLANTING (>2" CAL.)

NOT TO SCALE

NOTES: TREE PLANTING (>2"CAL.)

1. ALL PLANT MATERIALS SHALL BE IN ACCORDANCE WITH THE AMERICAN STANDARDS FOR NURSERY STOCK (ANSI Z60.1-2004) . PLANT ACCORDING TO ANSI A300 PART 6.
2. DIG THE PLANTING HOLE A MINIMUM OF 2x WIDTH OF ROOTBALL FOR AT LEAST THE FIRST 12 INCHES OF DEPTH. BELOW 12 INCHES, DIG HOLE WIDE ENOUGH TO PERMIT ADJUSTING. DO NOT DIG THE HOLE DEEPER THAN ROOT BALL DEPTH.
3. SCARIFY THE SUBGRADE AND SIDES OF THE PLANTING HOLE WHEN PLANTING IN CLAY SOILS (MORE THAN 15% CLAY).
4. LIFT AND SET THE TREE BY ROOT BALL ONLY. DO NOT LIFT USING THE TREE TRUNK AND DO NOT USE TREE TRUNK AS A LEVER.
5. SET THE TOP OF THE ROOT BALL LEVEL WITH THE SOIL SURFACE OR SLIGHTLY HIGHER IF THE SOIL IS PRONE TO SETTLING.
6. AFTER THE TREE IS SET IN PLACE, REMOVE BURLAP, WIRE AND STRAPS FROM AT LEAST THE UPPER 1/3 OF THE ROOTBALL.
7. BACKFILL WITH EXISTING SOIL THAT HAS BEEN WELL-TILLED OR BROKEN UP. DO NOT ADD AMENDMENTS TO THE BACKFILL SOIL. AMEND THE SURFACE WITH MULCH.
8. USE THREE 2" X 2" WOOD STAKES DRIVEN INTO UNDISTURBED SOIL A MINIMUM OF 16 INCHES. SPACE STAKES EQUALLY AROUND THE TREE.
9. ATTACH 3/4" NYLON WEBBING TO CONNECT THE TREE TO STAKES. ATTACH WEBBING AT 1/3 THE TREE HEIGHT.
10. APPLY A 2-3" (SETTLED) DEPTH OF PINE STRAW OR BARK MULCH TO THE PLANTING SURFACE. LEAVE A 2" SPACE AROUND THE TRUNK FOR AIR CIRCULATION.
11. PRUNING SHALL BE LIMITED TO DEAD, DISEASED, OR BROKEN LIMBS ONLY AND SHALL BE IN ACCORDANCE WITH ANSI A300 SPECIFICATIONS.
12. REMOVE ANY TRUNK WRAP REMAINING AT TIME OF PLANTING. NO WRAPS SHALL BE PLACED ON TRUNK.

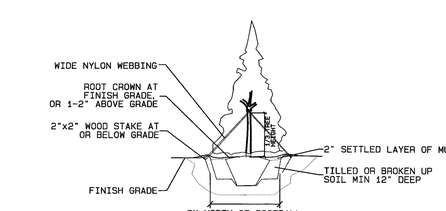


SMALL TREE PLANTING (<2" CAL.)

NOT TO SCALE

NOTES: SMALL TREE PLANTING (<2" CAL.)

1. ALL PLANT MATERIALS SHALL BE IN ACCORDANCE WITH THE AMERICAN STANDARDS FOR NURSERY STOCK (ANSI Z60.1-2004) . PLANT ACCORDING TO ANSI A300 PART 6.
2. DIG THE PLANTING HOLE A MINIMUM OF 2x WIDTH OF ROOTBALL FOR AT LEAST THE FIRST 12 INCHES OF DEPTH. BELOW 12 INCHES, DIG HOLE WIDE ENOUGH TO PERMIT ADJUSTING. DO NOT DIG THE HOLE DEEPER THAN ROOT BALL DEPTH.
3. SCARIFY THE SUBGRADE AND SIDES OF THE PLANTING HOLE WHEN PLANTING IN CLAY SOILS (MORE THAN 15% CLAY)
4. LIFT AND SET THE TREE BY ROOT BALL ONLY. DO NOT LIFT USING THE TREE TRUNK AND DO NOT USE TREE TRUNK AS A LEVER.
5. SET THE TOP OF THE ROOT BALL LEVEL WITH THE SOIL SURFACE OR SLIGHTLY HIGHER IF THE SOIL IS PRONE TO SETTLING.
6. AFTER THE TREE IS SET IN PLACE, REMOVE BURLAP, WIRE AND STRAPS FROM AT LEAST THE UPPER 1/3 OF THE ROOTBALL.
7. BACKFILL WITH EXISTING SOIL THAT HAS BEEN WELL-TILLED OR BROKEN UP. DO NOT ADD AMENDMENTS TO THE BACKFILL SOIL. AMEND THE SURFACE WITH MULCH.
8. USE THREE 2" X 2" WOOD STAKES 1/3 TREE HEIGHT IN LENGTH DRIVEN INTO UNDISTURBED SOIL A MINIMUM OF 16 INCHES. STAKES SHOULD BE SPACED EQUALLY ACROSS FROM AND IN LINE WITH THE TRUNK PARALLEL TO THE PREVAILING WIND.
9. ATTACH 3/4" NYLON WEBBING TO CONNECT THE TREE TO STAKES. ATTACH WEBBING AT 1/3 THE TREE HEIGHT.
10. APPLY A 2-3" (SETTLED) DEPTH OF PINE STRAW OR BARK MULCH TO THE PLANTING SURFACE. LEAVE A 2" SPACE AROUND THE TRUNK FOR AIR CIRCULATION.
11. PRUNING SHALL BE LIMITED TO DEAD, DISEASED, OR BROKEN LIMBS ONLY AND SHALL BE IN ACCORDANCE WITH ANSI A300 SPECIFICATIONS.
12. REMOVE ANY TRUNK WRAP REMAINING AT TIME OF PLANTING. NO WRAPS SHALL BE PLACED ON TRUNK.



EVERGREEN TREE PLANTING

NOT TO SCALE

NOTES: EVERGREEN TREE PLANTING

1. ALL PLANT MATERIALS SHALL BE IN ACCORDANCE WITH THE AMERICAN STANDARDS FOR NURSERY STOCK (ANSI Z60.1-2004) . PLANT ACCORDING TO ANSI A300 PART 6.
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7. BACKFILL WITH EXISTING SOIL THAT HAS BEEN WELL-TILLED OR BROKEN UP. DO NOT ADD AMENDMENTS TO THE BACKFILL SOIL. AMEND THE SURFACE WITH MULCH.
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10. APPLY A 2-3" (SETTLED) DEPTH OF PINE STRAW OR BARK MULCH TO THE PLANTING SURFACE. LEAVE A 2" SPACE AROUND THE TRUNK FOR AIR CIRCULATION.
11. PRUNING SHALL BE LIMITED TO DEAD, DISEASED, OR BROKEN LIMBS ONLY AND SHALL BE IN ACCORDANCE WITH ANSI A300 SPECIFICATIONS.
12. REMOVE ANY TRUNK WRAP REMAINING AT TIME OF PLANTING. NO WRAPS SHALL BE PLACED ON TRUNK.

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Landscape Coversheet, Details and Notes for Preliminary Development Plan
The Links at Lawrence, Lawrence, Kansas
for Lindsey Management

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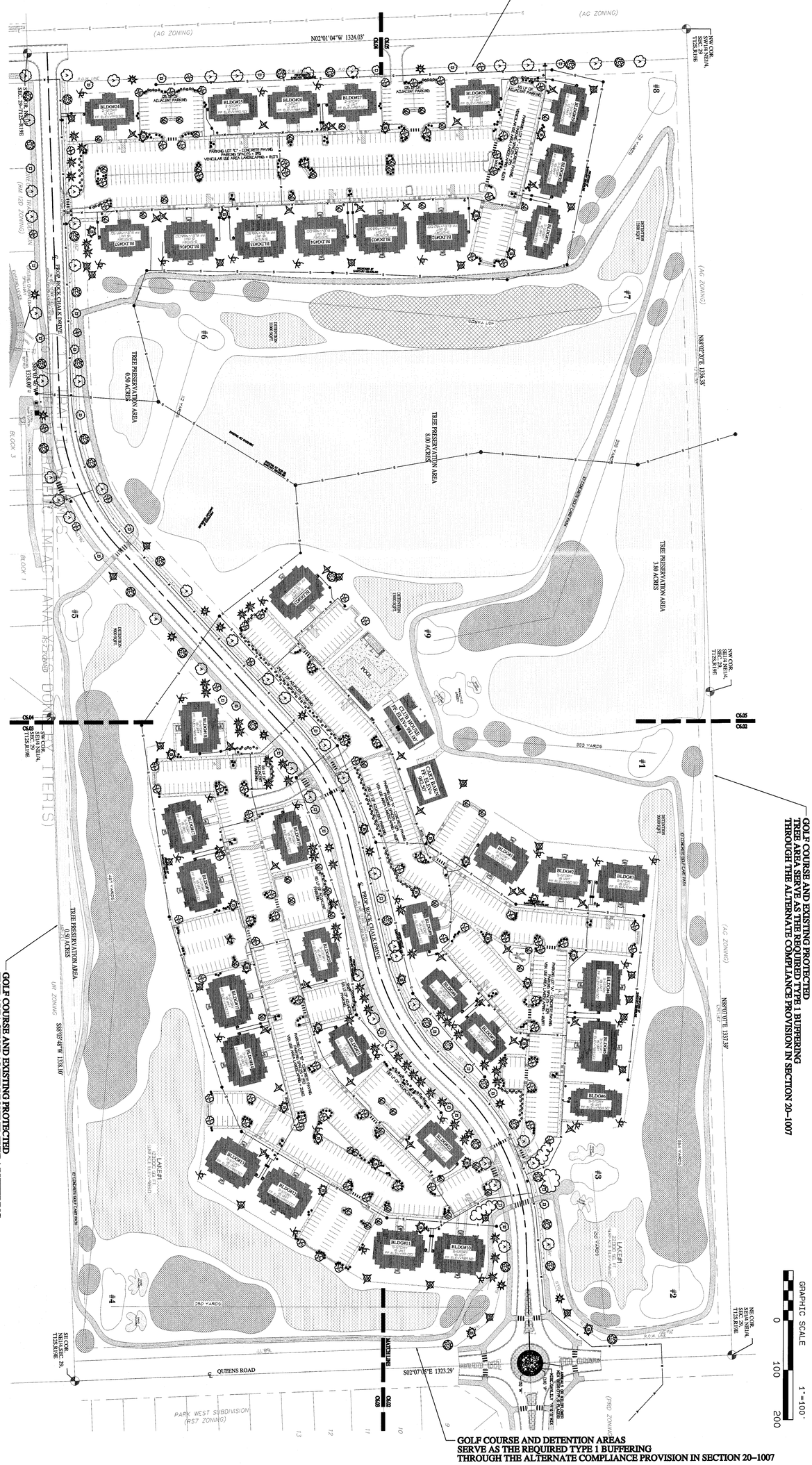

ROBERT D. HOLLOWAY
LICENSED PROFESSIONAL ENGINEER
22210
STATE OF KANSAS

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	date: 1/14/2013			
	scale: AS NOTED			

Landscape Overall Site Plan for
Preliminary Development Plan
The Links at Lawrence, Lawrence, Kansas
for:Lindsey Management

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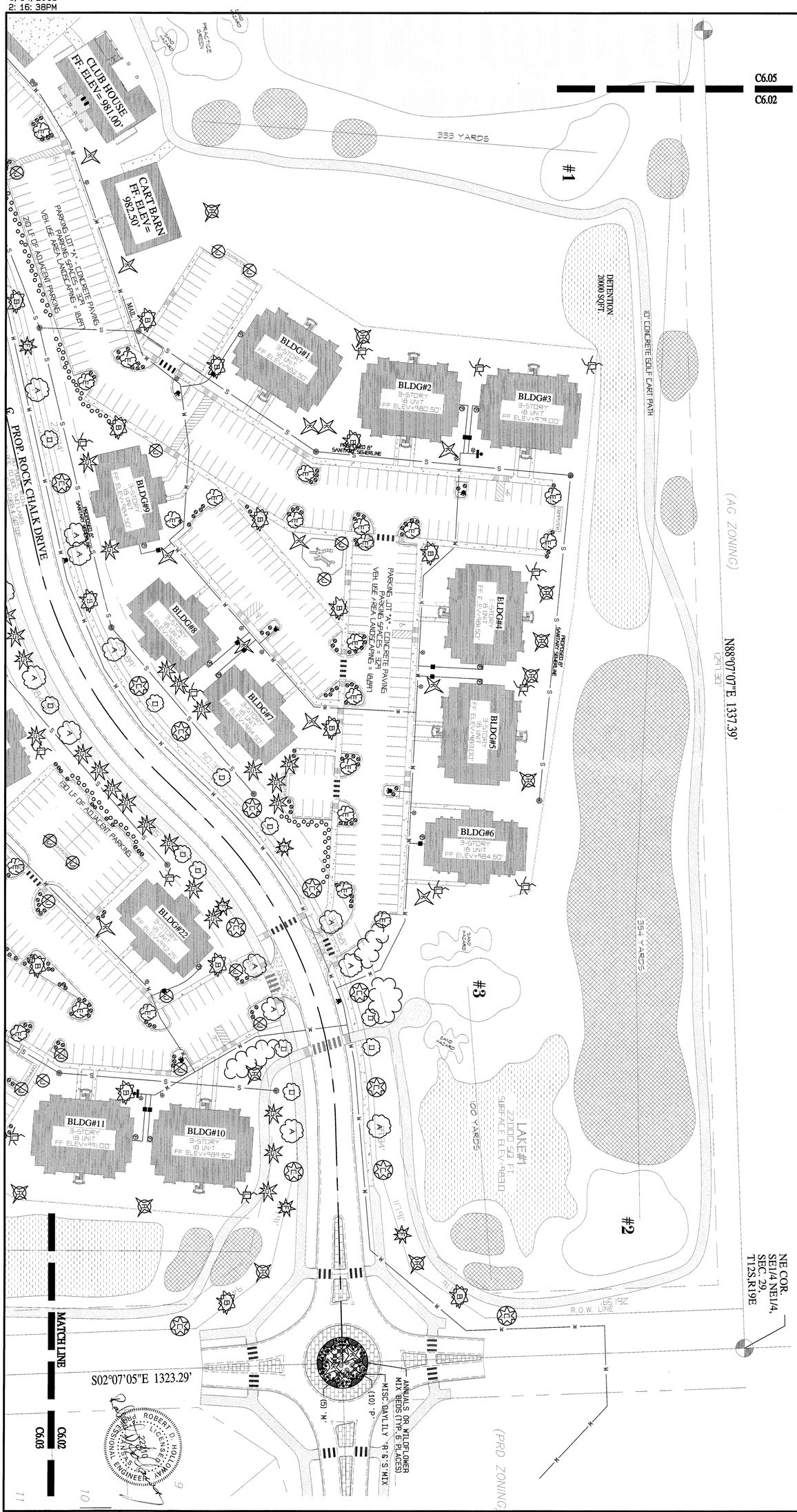

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	date: 1/14/2013				
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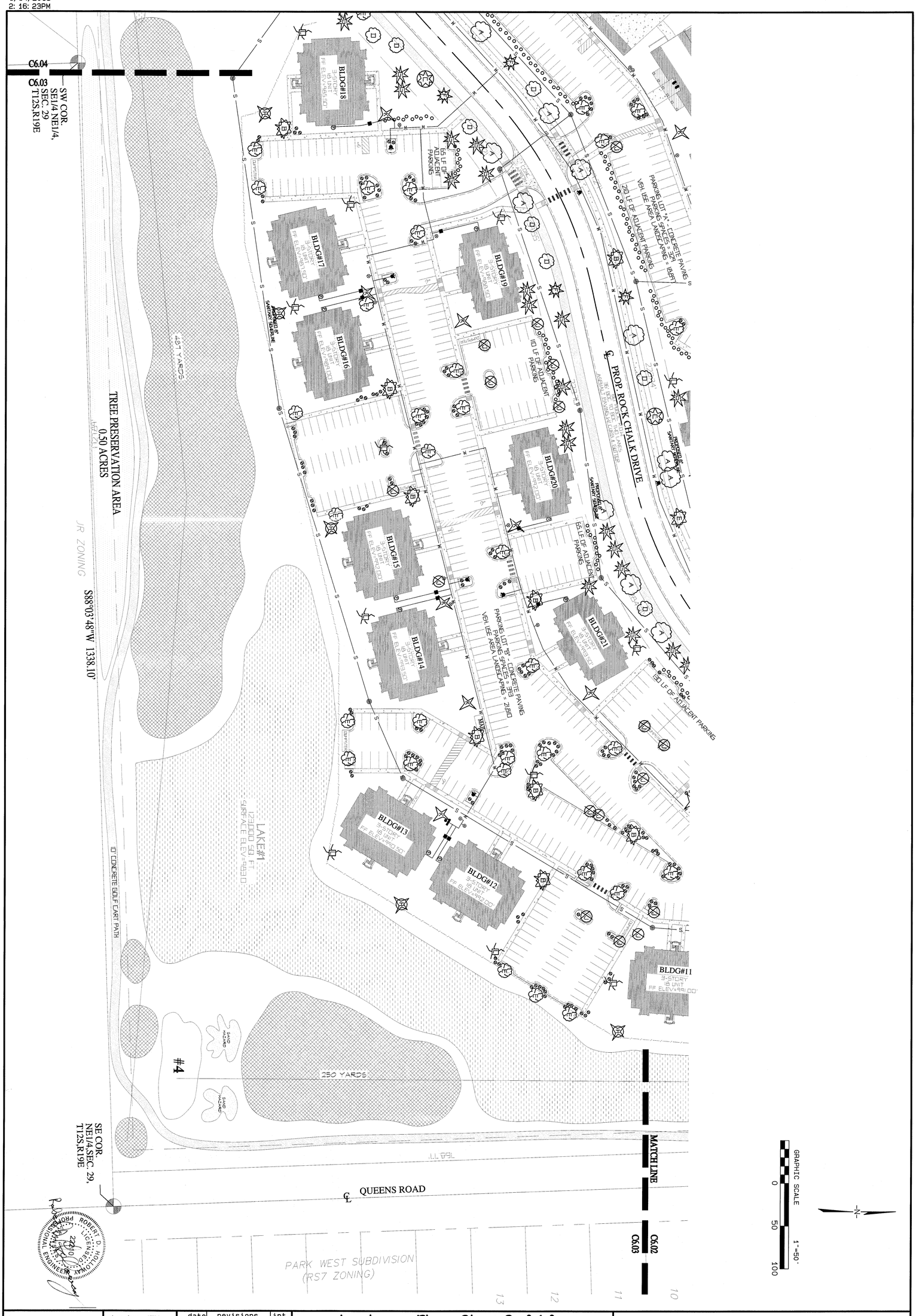

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	scale: AS NOTED			

Landscape Plan - Sheet 2 of 4 for
Preliminary Development Plan
The Links at Lawrence, Lawrence, Kansas
for:Lindsey Management

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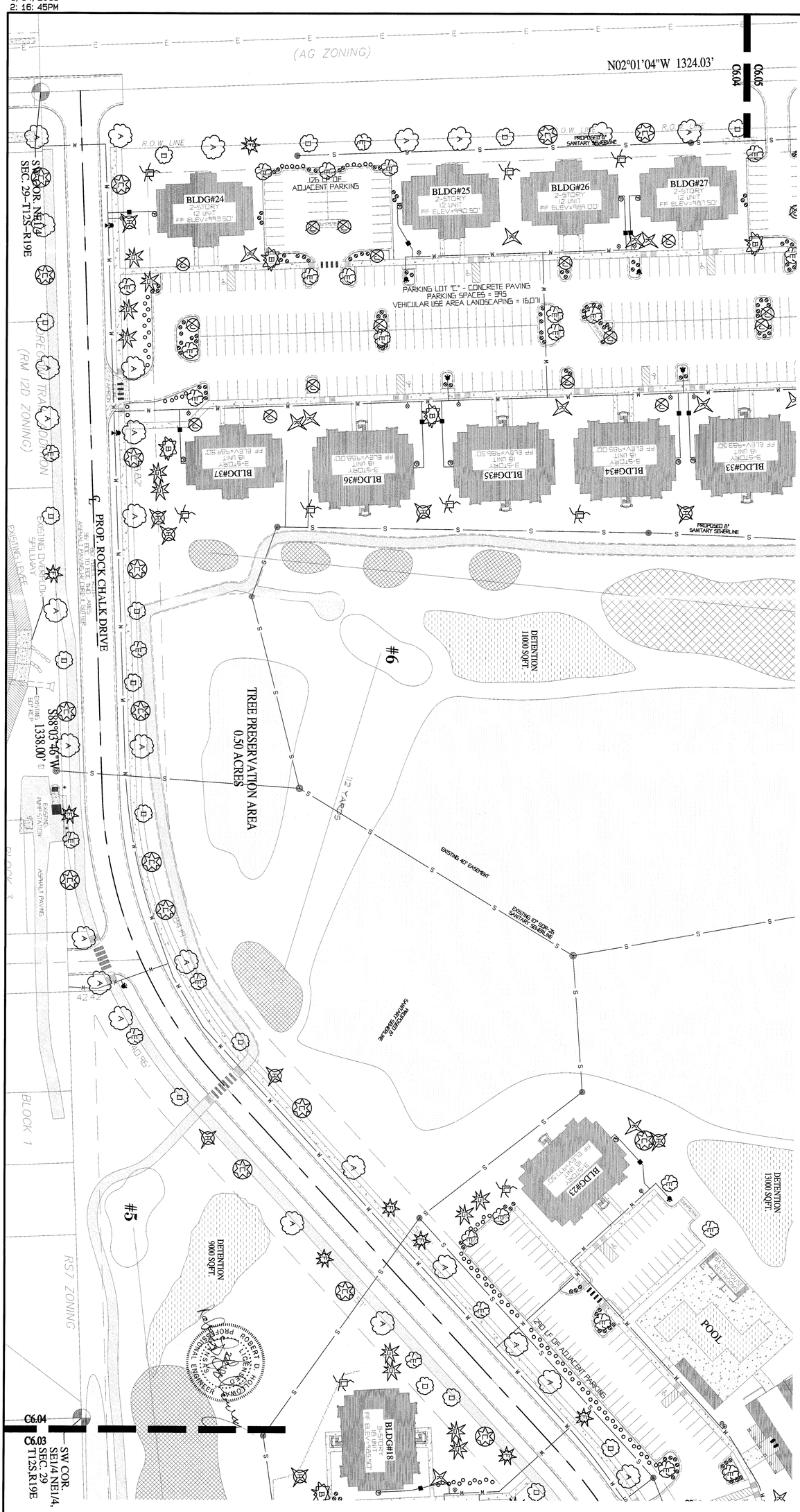

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	date: 1/14/2013					200 Casey Drive, Maumelle, Arkansas 72113 (501) 851-3366 hollowayfirm@sbcglobal.net
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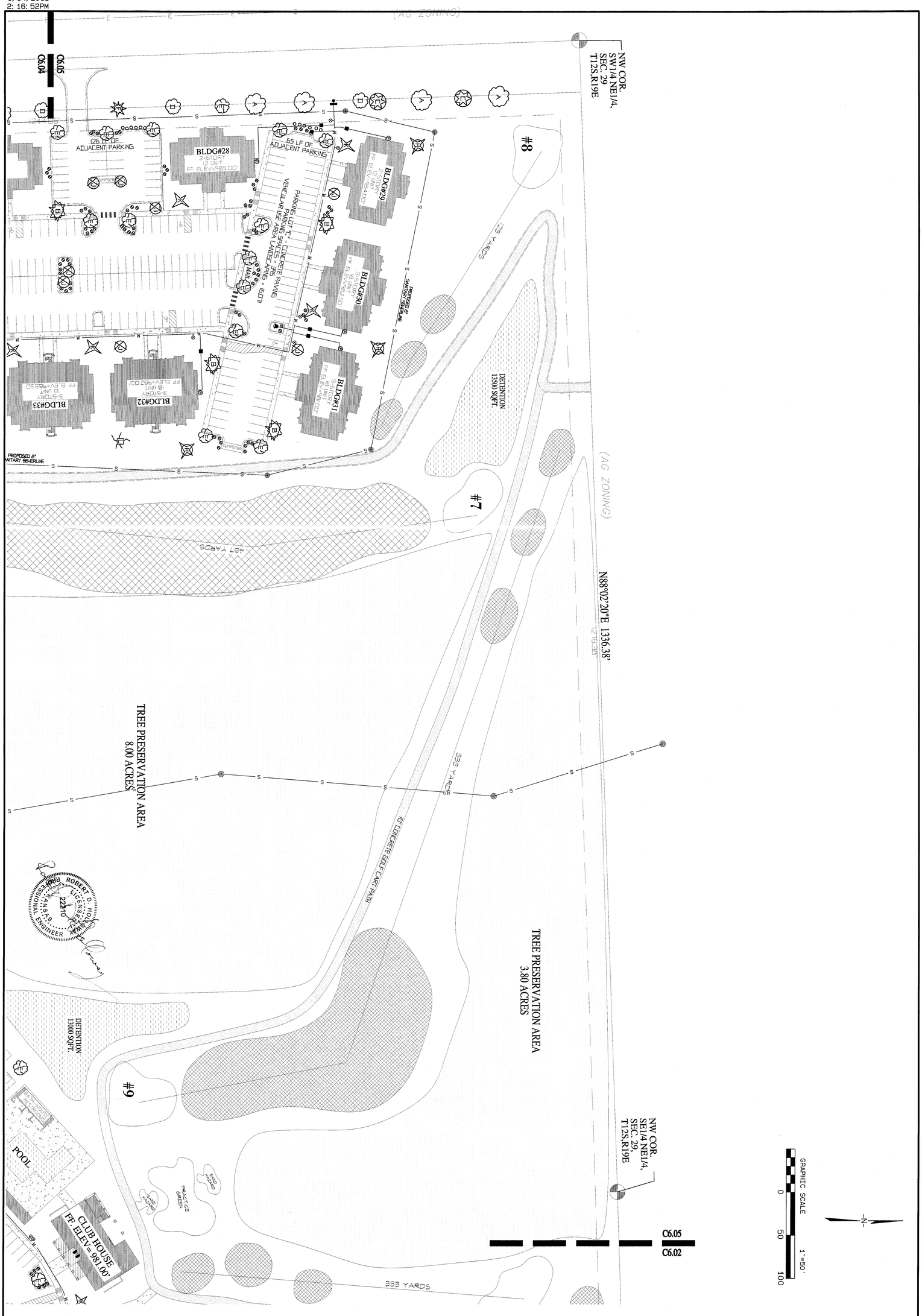

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	checked: RDH					200 Casey Drive Maumelle, Arkansas 72113 (501) 851-3366 hollowayfirm@sbcglobal.net
	date: 1/14/2013					
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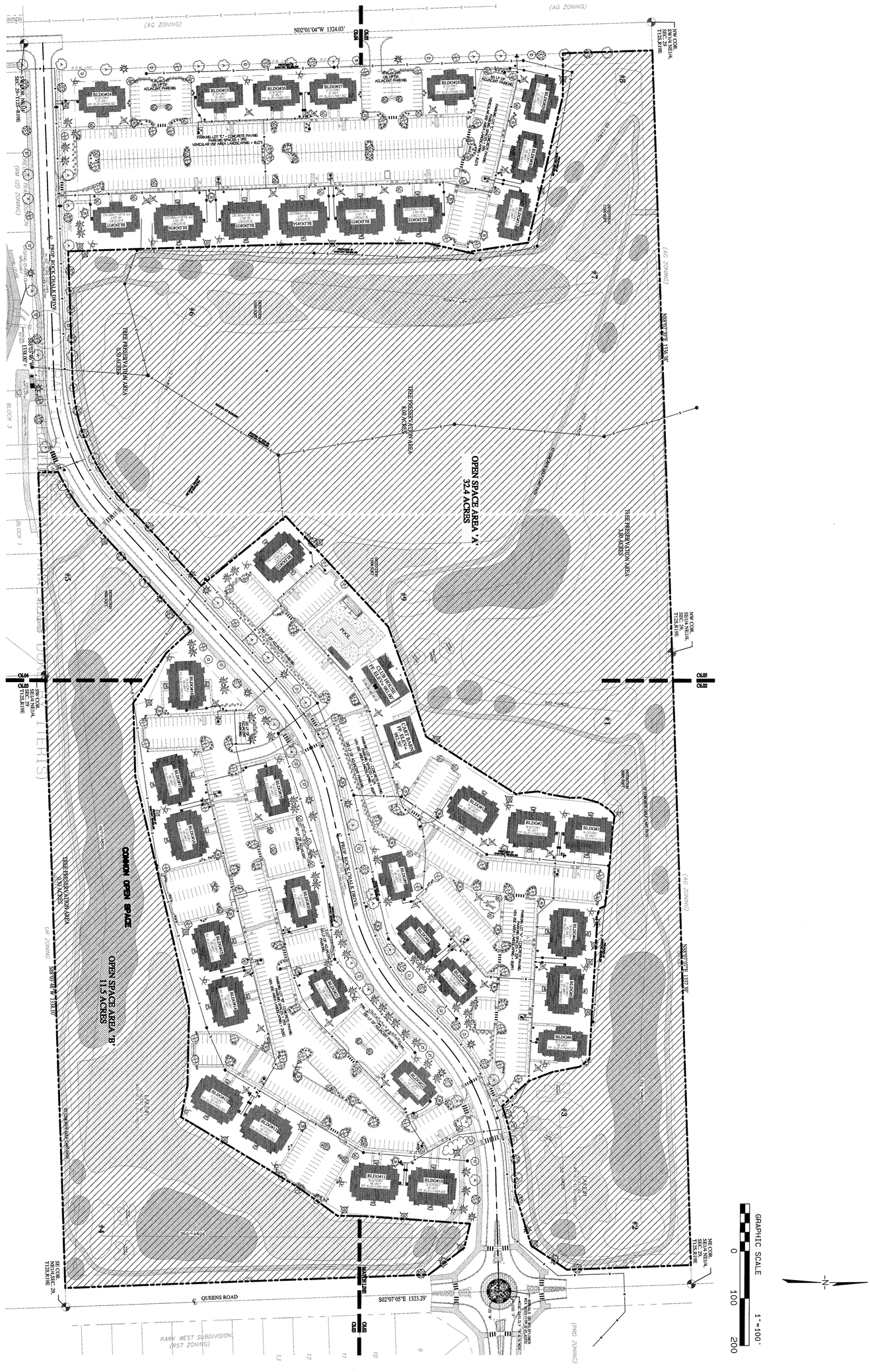

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	checked: RDH					200 Casey Drive Maumelle, Arkansas 72113 (501) 851-3366 hollowayfirm@sbcglobal.net
	date: 1/14/2013					
	scale: AS NOTED					

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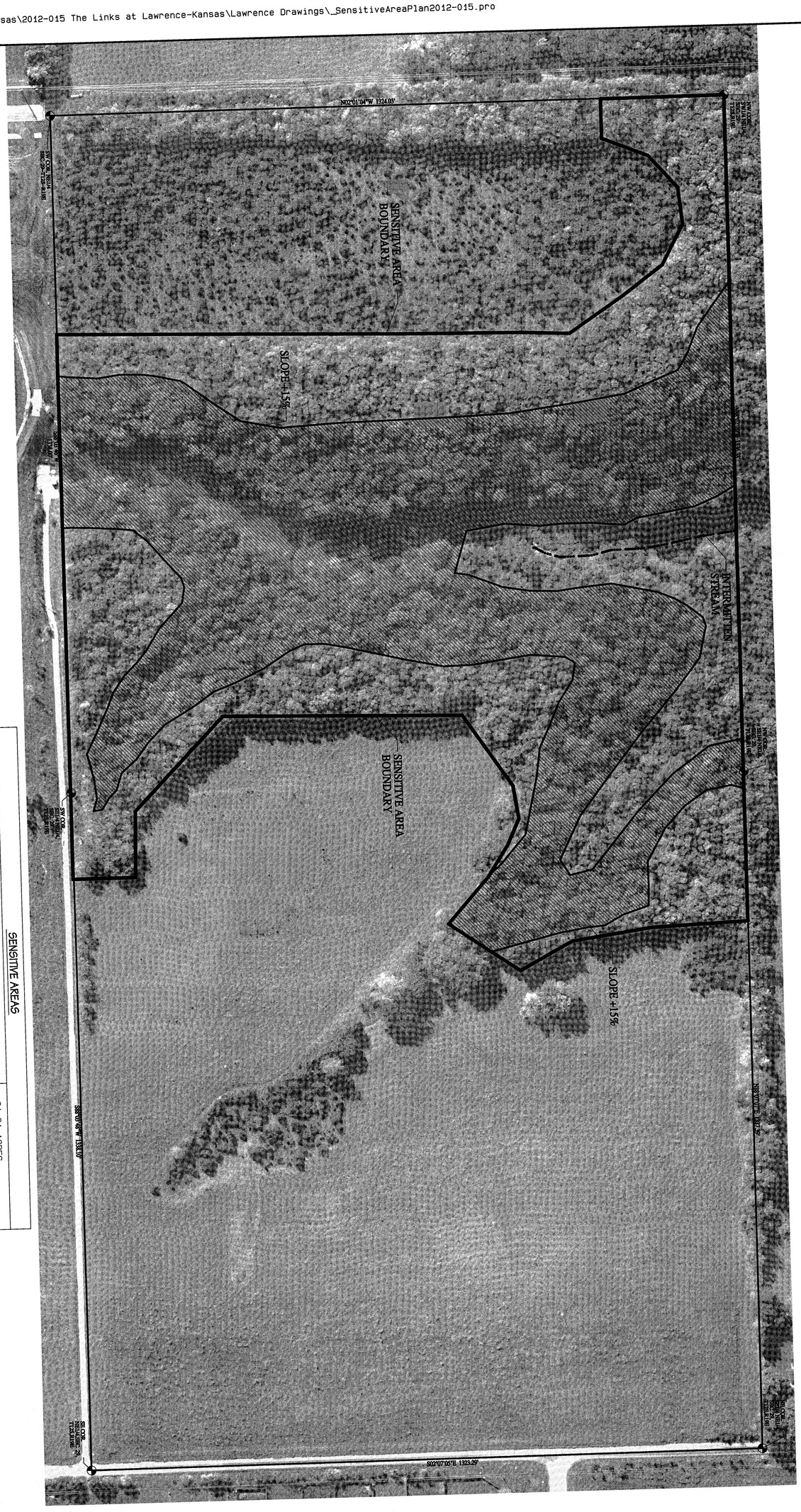

GRAPHIC SCALE 1"=100'
0 100 200

SENSITIVE AREAS

TOTAL AREA OF SITE	81.31 ACRES
TOTAL AREA OF SENSITIVE LANDS	31.17 ACRES
TOTAL AREA OF EXISTING +15% SLOPES	16.49 ACRES
TOTAL L.F. OF INTERMITTEN STREAM	405 L.F.
PERCENT OF SENSITIVE LAND IN TOTAL SITE	38.33%
PERCENT OF EXISTING +15% SLOPES IN TOTAL SITE	20.28%

ROBERT D. HOLLOWAY
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PROFESSIONAL ENGINEER
KANSAS

C1.06	dwg by: JEH	date	revisions	int.
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Existing Sensitive Area Plan for
Preliminary Development Plan,
The Links at Lawrence,
Lawrence, Douglass Co., Kansas
For:Lindsey Management Co.

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Surveying & Civil Design, PLLC
200 Casey Drive
Maumelle, Arkansas 72113
(501) 851-3366
hollowayfirm@sbcglobal.net



SENSITIVE AREAS	
BUILDING COVERAGE WITHIN SENSITIVE AREA	0.334 ACRES
% OF SENSITIVE LAND AREA COVERED WITH BUILDINGS	1.07 %
IMPERVIOUS SUFACE ADDED WITHIN SENSITIVE LAND AREA	1.655 ACRES
% OF SENSITIVE LAND AREA WITH IMPERVIOUS SURFACE	5.30%
% OF SENSITIVE LAND AREA WITH PERVIOUS SURFACE	94.70%

ROBERT D. HOLLOWAY LICENSED 222100 KANSAS PROFESSIONAL ENGINEER

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hollowayfirm@sbcglobal.net

Sensitive Area Site Plan Overview for Preliminary Development Plan, The Links at Lawrence, Lawrence, Douglass Co., Kansas For:Lindsey Management Co.

date	revisions	int.

dwg by: JEH
checked: RDH
date: 1/14/2013
scale: AS NOTED

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SENSITIVE AREAS

TOTAL AREA OF SITE	81.31 ACRES
TOTAL AREA OF SENSITIVE LANDS	31.17 ACRES
TOTAL AMOUNT OF COMMON OPEN SPACE	43.90 ACRES
AMOUNT OF SENSITIVE LANDS IN COMMON OPEN SPACE	27.70 ACRES
TOTAL AMOUNT OF NATURAL OPEN SPACE PROVIDED	17.09 ACRES
TOTAL AMOUNT OF SENSITIVE LAND WITHIN NATURAL OPEN SPACE	14.62 ACRES
TOTAL AMOUNT OF OPEN RECREATIONAL SPACE PROVIDED	26.81 ACRES

CERTIFICATE OF AUTHORIZATION
Holloway Engineering
Maumelle, Arkansas

C1.08

dwg by: JEH	
checked: RDH	
date: 1/14/2013	
scale: AS NOTED	

date	revisions	int.

Natural Open Space/Recreational Open Space for
Preliminary Development Plan,
The Links at Lawrence,
Lawrence, Douglass Co., Kansas
For:Lindsey Management Co.

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hollowayfirm@sbcglobal.net

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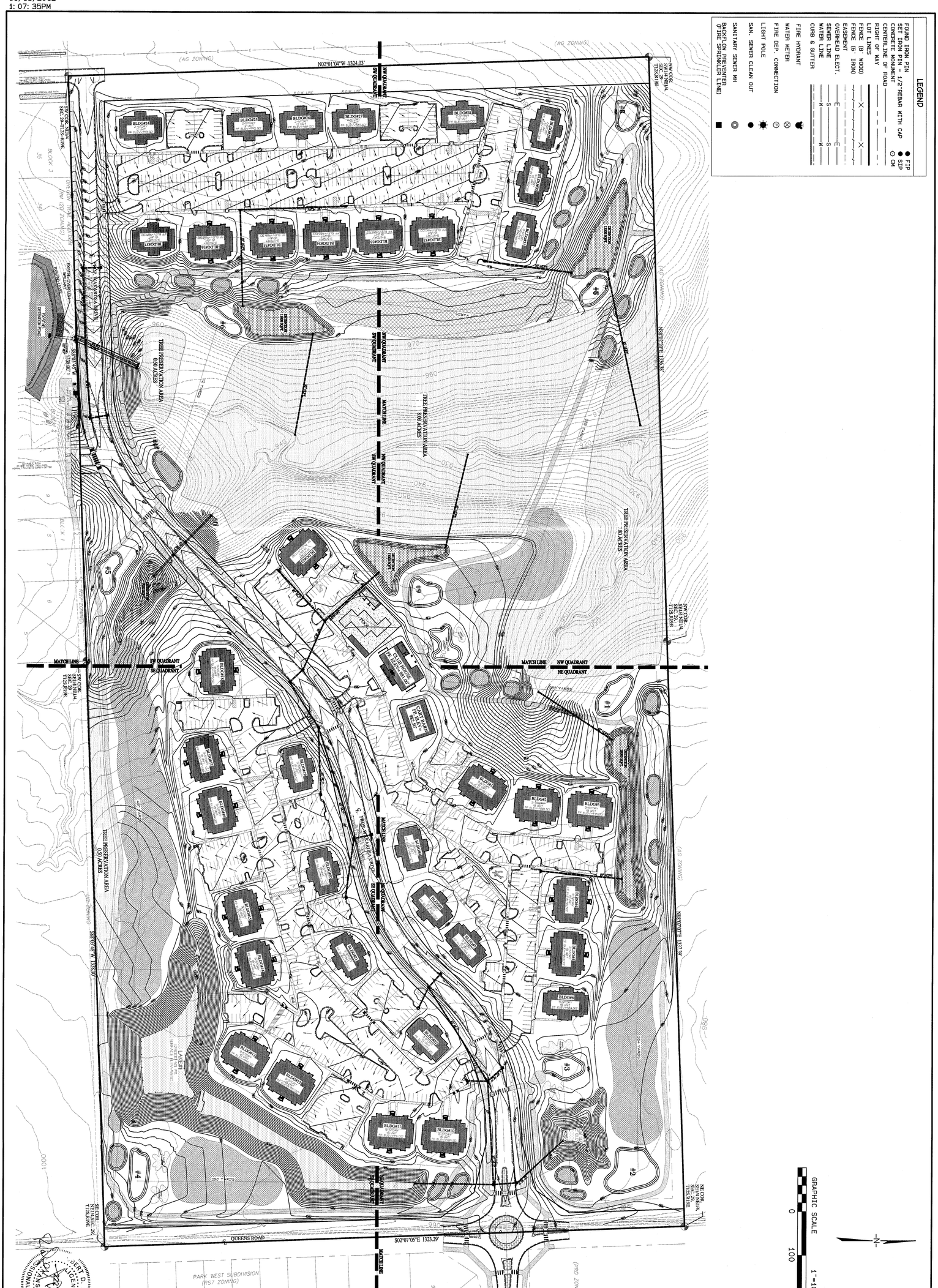

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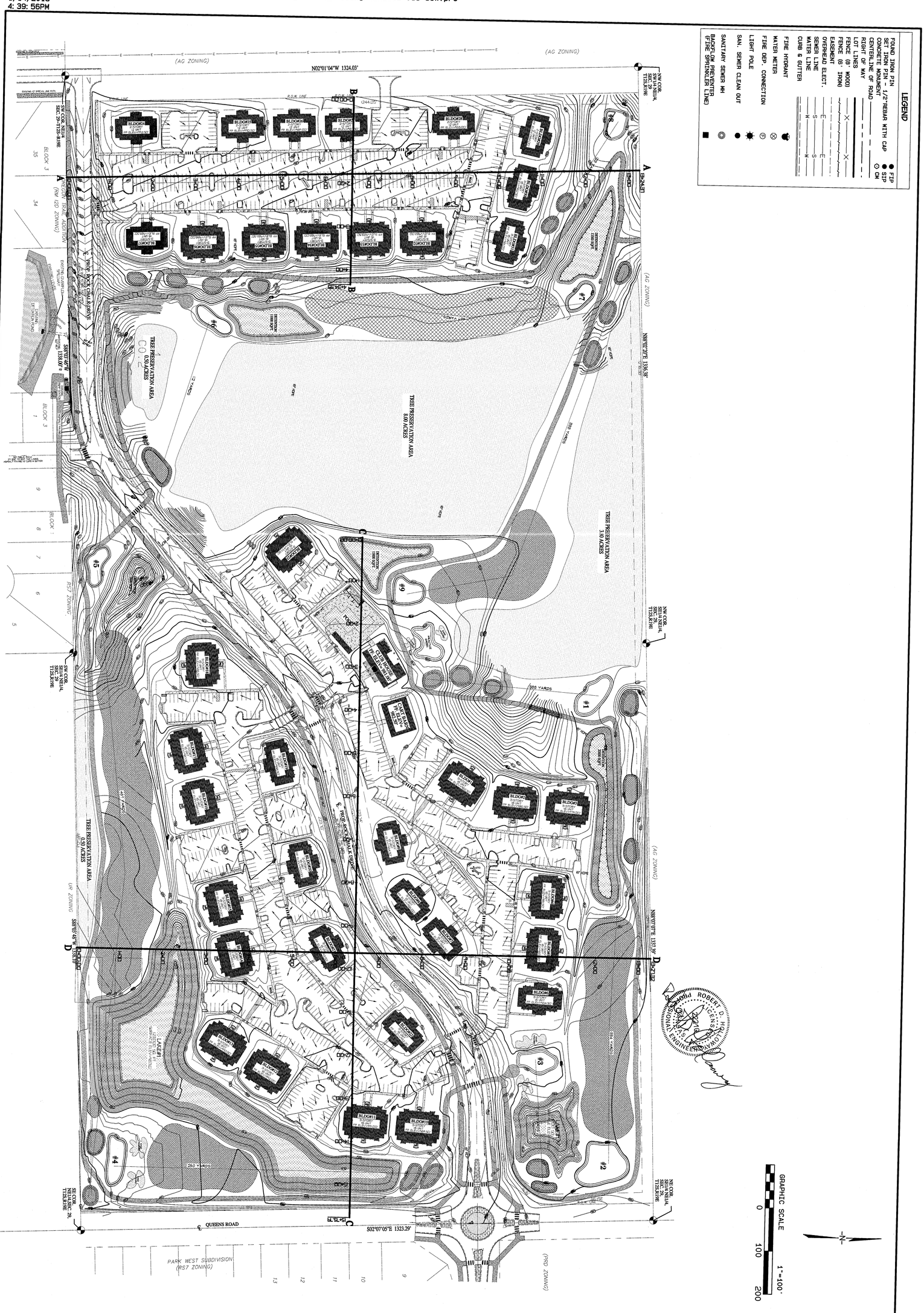

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	date: 1/14/2013				
	scale: AS NOTED				

Holloway Engineering
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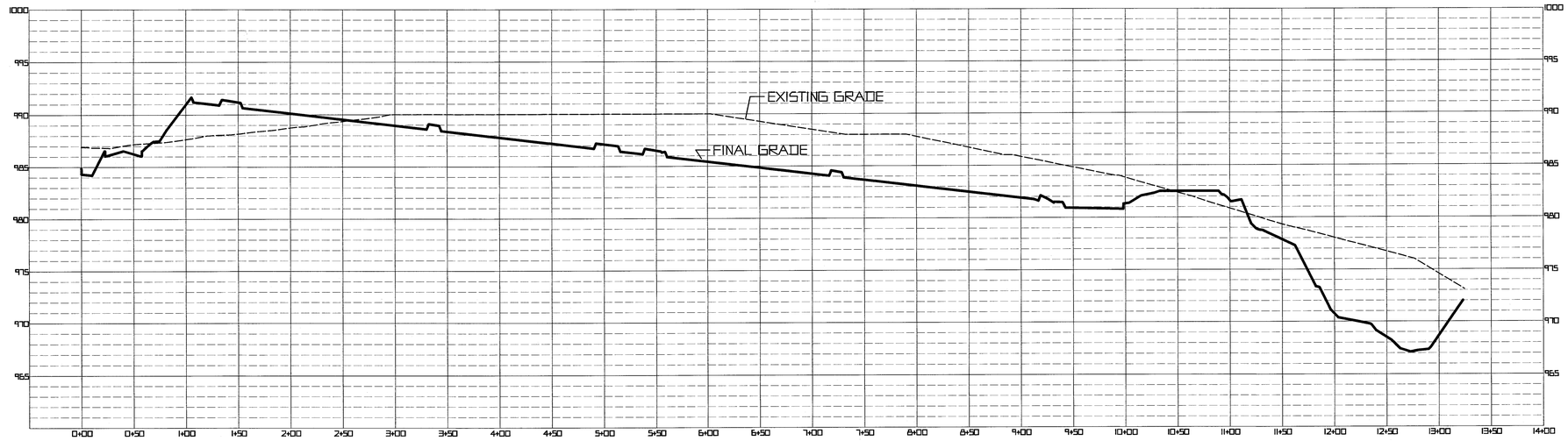
hollowayfirm@sbcglobal.net



PROFILE VIEW SECTION AA

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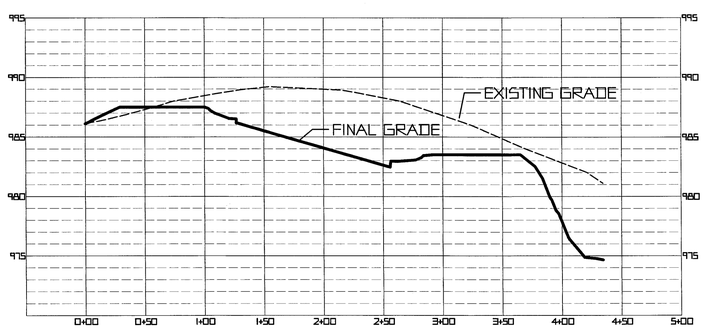
VERTICAL SCALE 1 = 5'



PROFILE VIEW SECTION BB

HORIZONTAL SCALE 1 = 60'
VERTICAL SCALE 1 = 5'

Holloway Engineering
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Site Profiles Sheet 1 of 2
Preliminary Development Plan,
The Links at Lawrence,
Lawrence, Kansas
For:Lindsey Management Co.

date	revisions	int.

dwg by: DLW
checked: RDH
date: 1/14/2013
scale: AS NOTED

ROBERT D. HOLLOWAY
LICENSED
22210
KANSAS
PROFESSIONAL ENGINEER

C2.02

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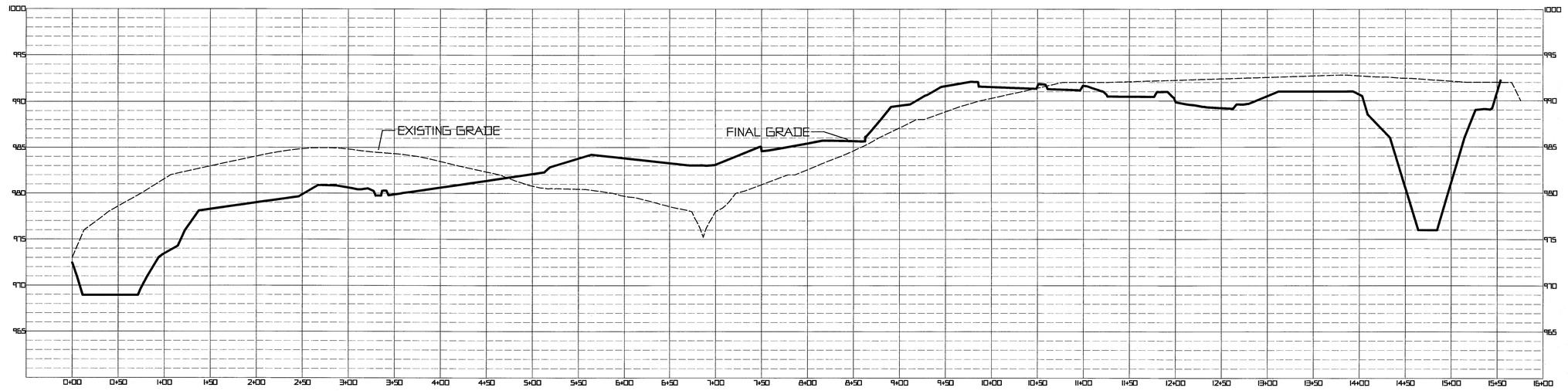

PROFILE VIEW SECTION CC

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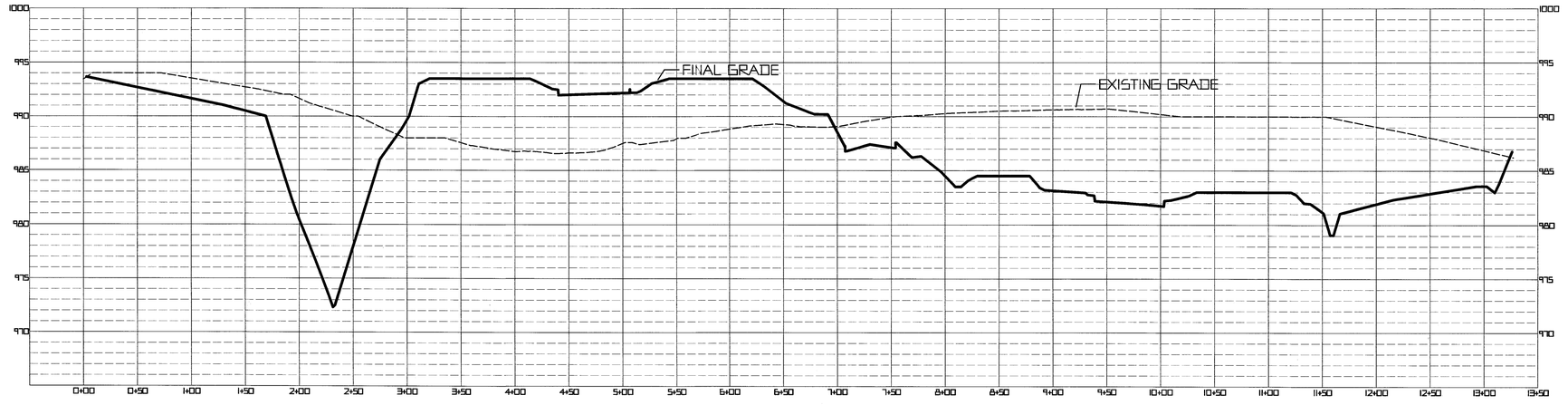

PROFILE VIEW SECTION DD

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VERTICAL SCALE 1 = 5'

Holloway Engineering
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Maumelle, Arkansas 72113
(501) 851-3366
hollowayfirm@sbcglobal.net

Site Profiles Sheet 2 of 2
Preliminary Development Plan,
The Links at Lawrence,
Lawrence, Kansas
For:Lindsey Management Co.

date	revisions	int.

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date: 1/14/2013
scale: AS NOTED

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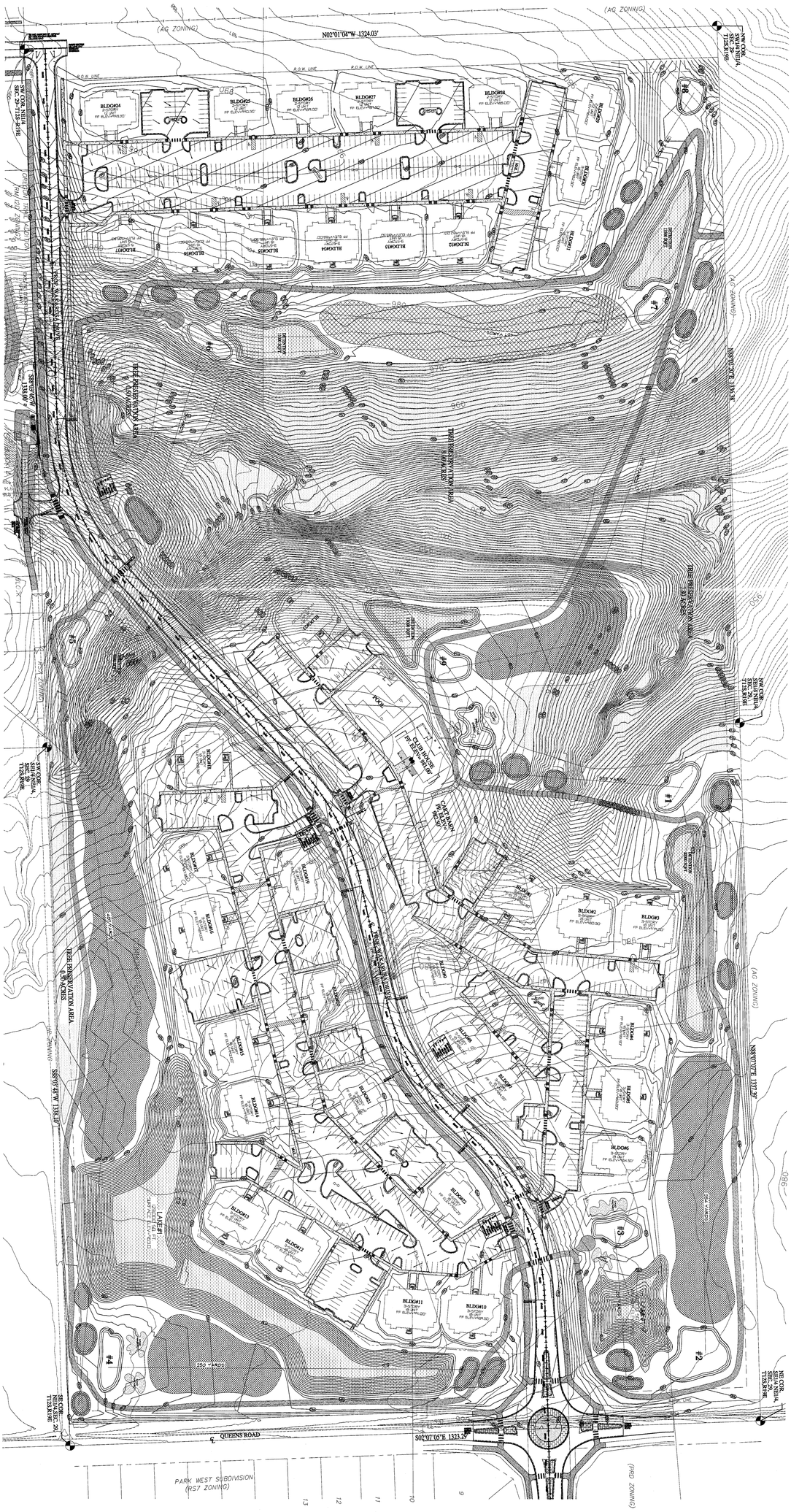



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	date: 11/19/2012			
	scale: AS NOTED			

Roadway Overall Plan for
Preliminary Development Plan
The Links at Lawrence, Lawrence, Kansas
for:Lindsey Management

Holloway Engineering
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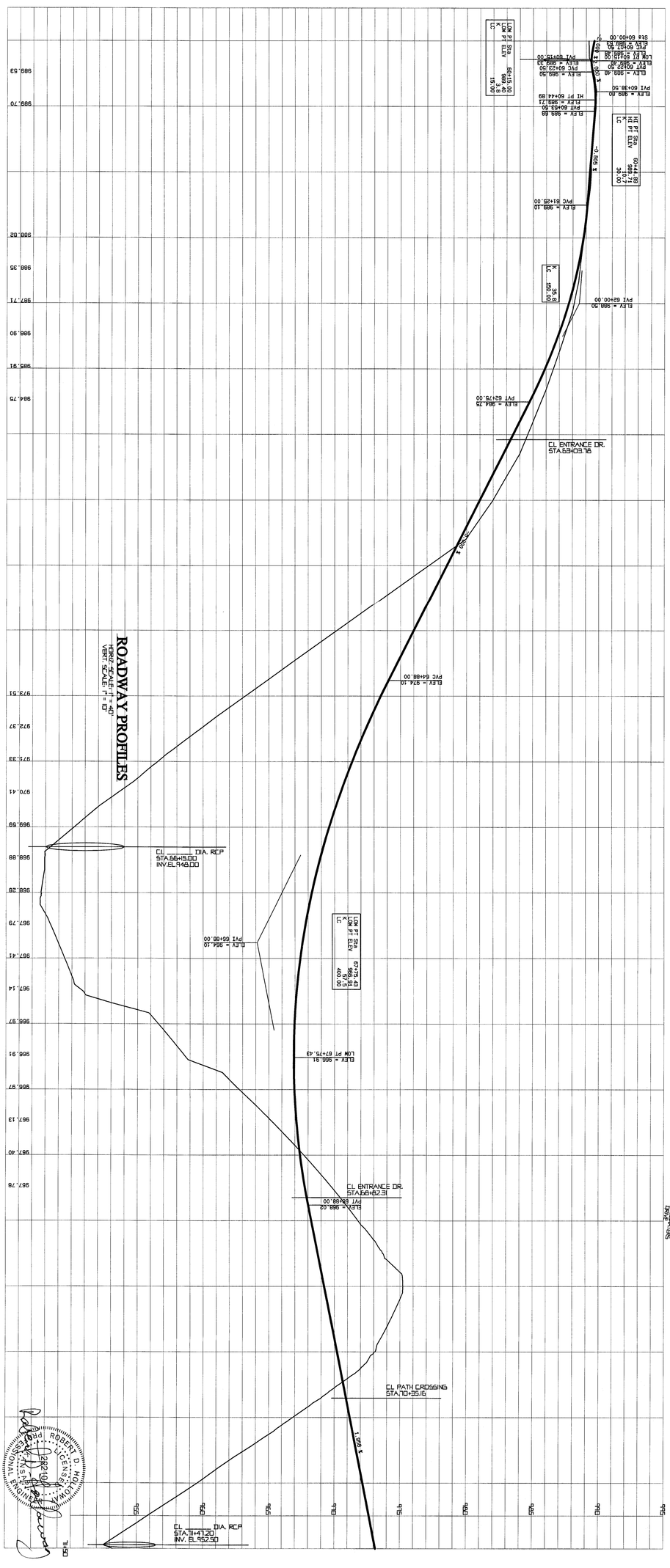

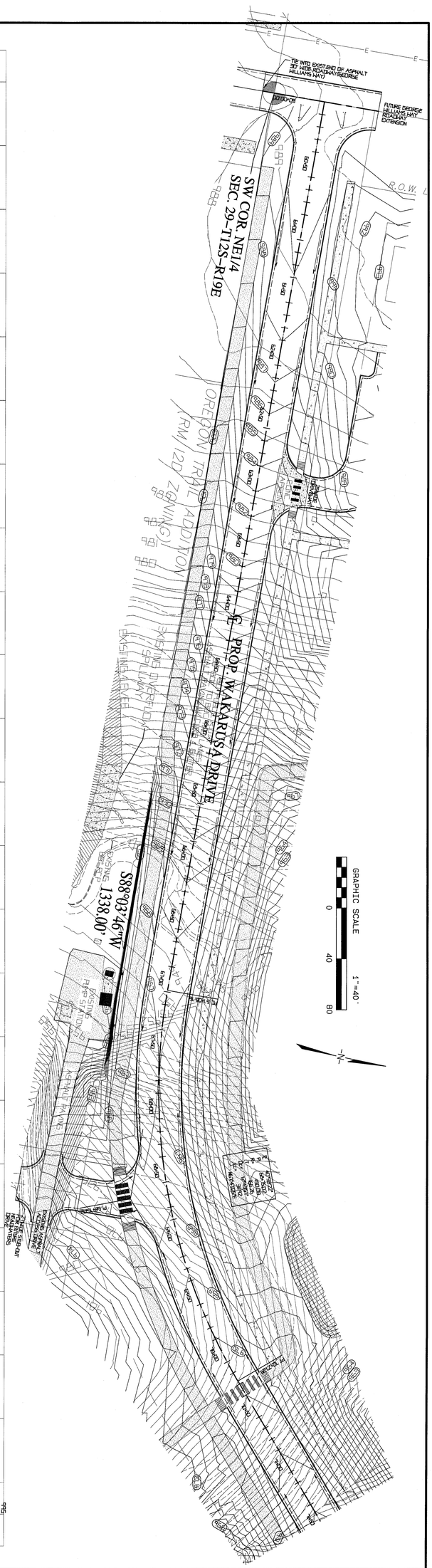

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Roadway Plan and Profiles - Sheet 1 of 3 for
Preliminary Development Plan
The Links at Lawrence, Lawrence, Kansas
for:Lindsey Management

Holloway Engineering
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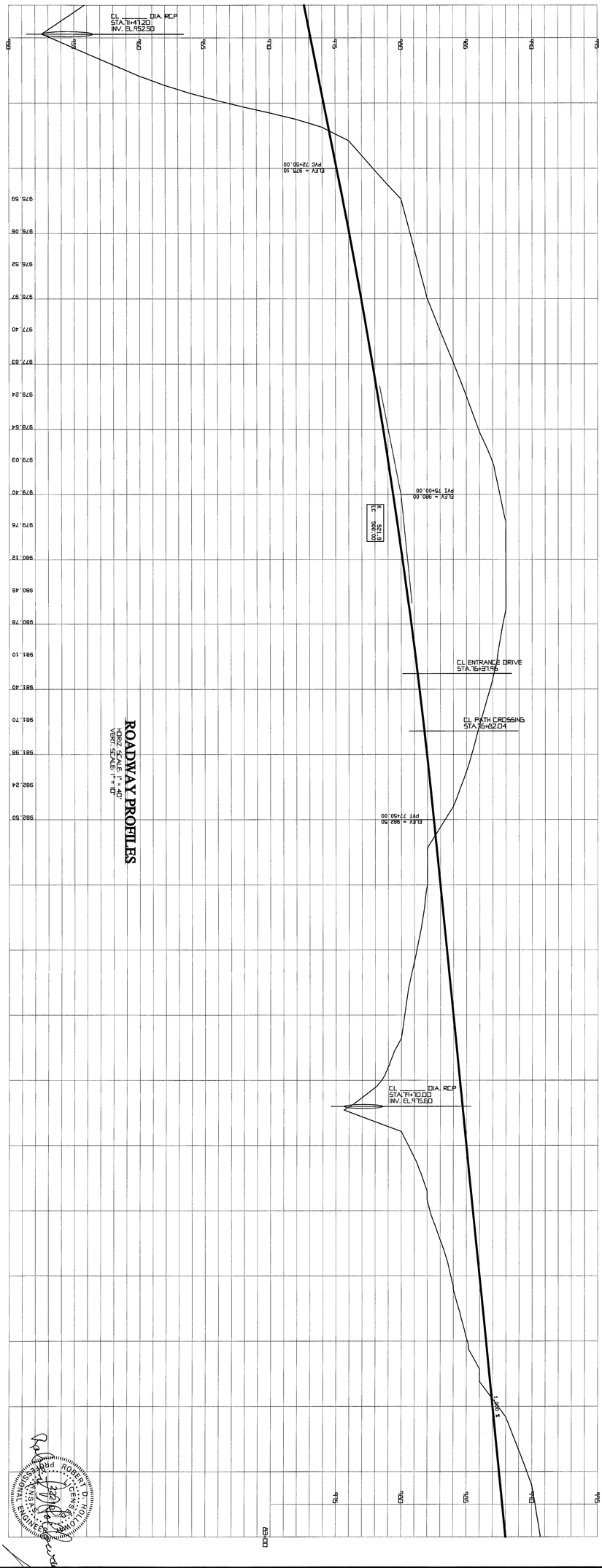

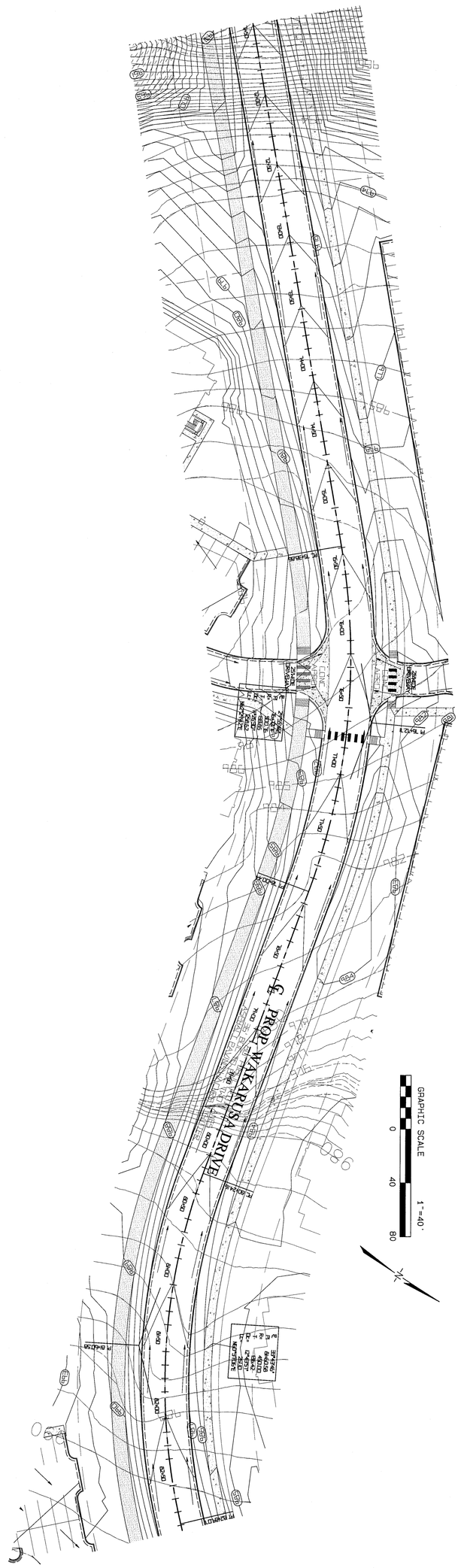

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Roadway Plan and Profiles - Sheet 2 of 3 for
Preliminary Development Plan
The Links at Lawrence, Lawrence, Kansas
for:Lindsey Management

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hollowayfirm@sbcglobal.net

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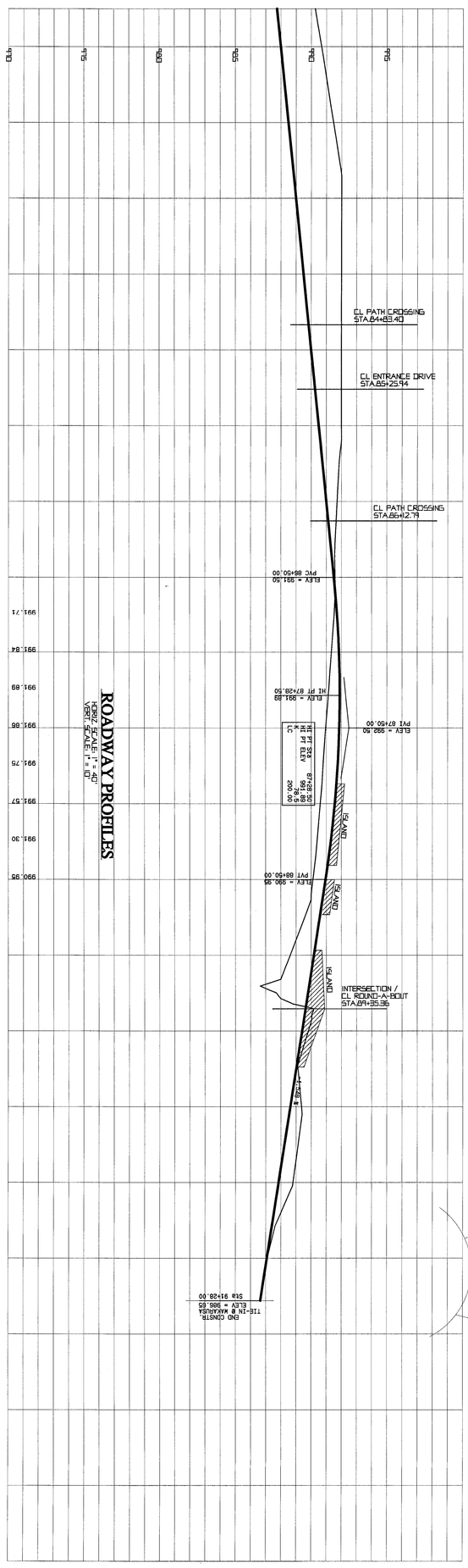
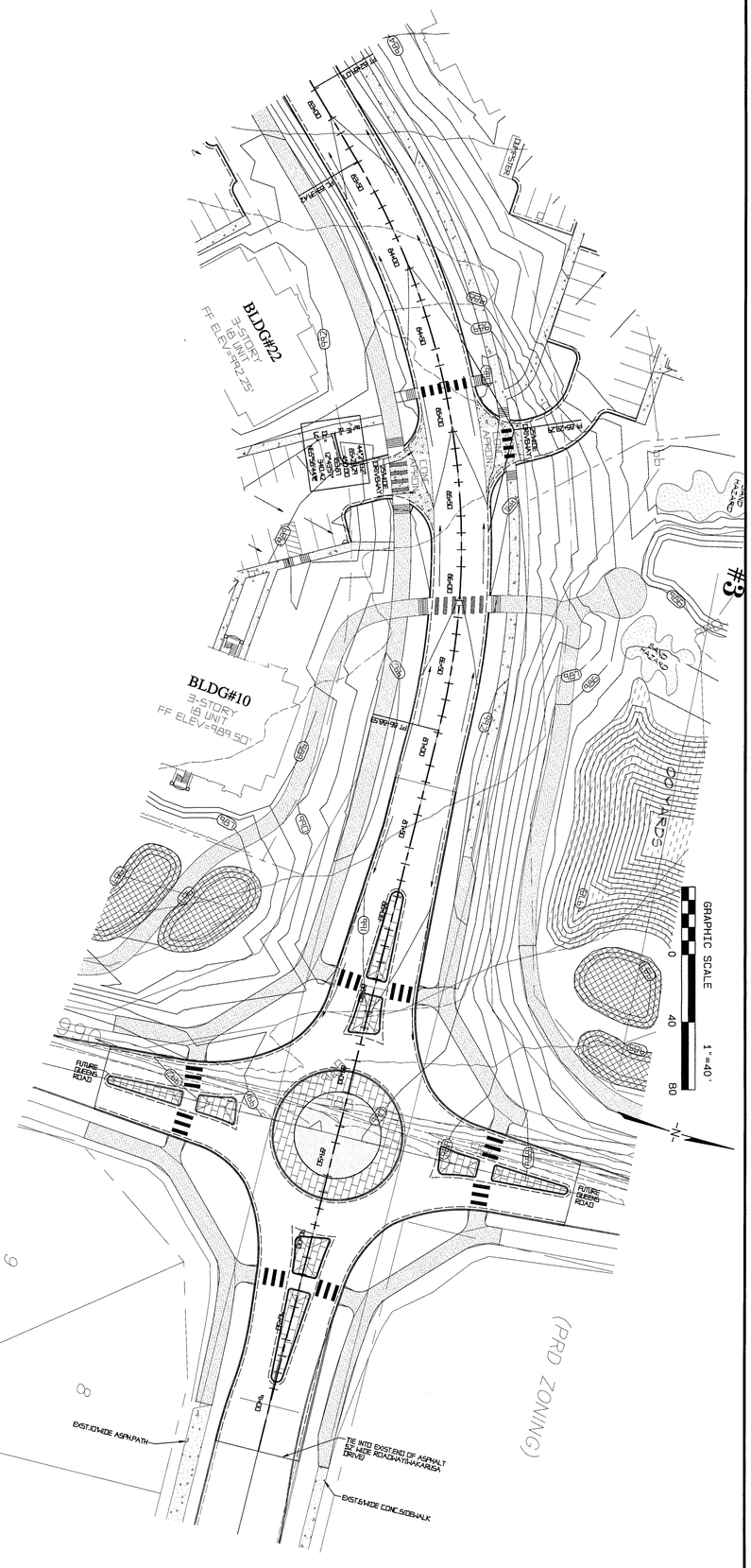
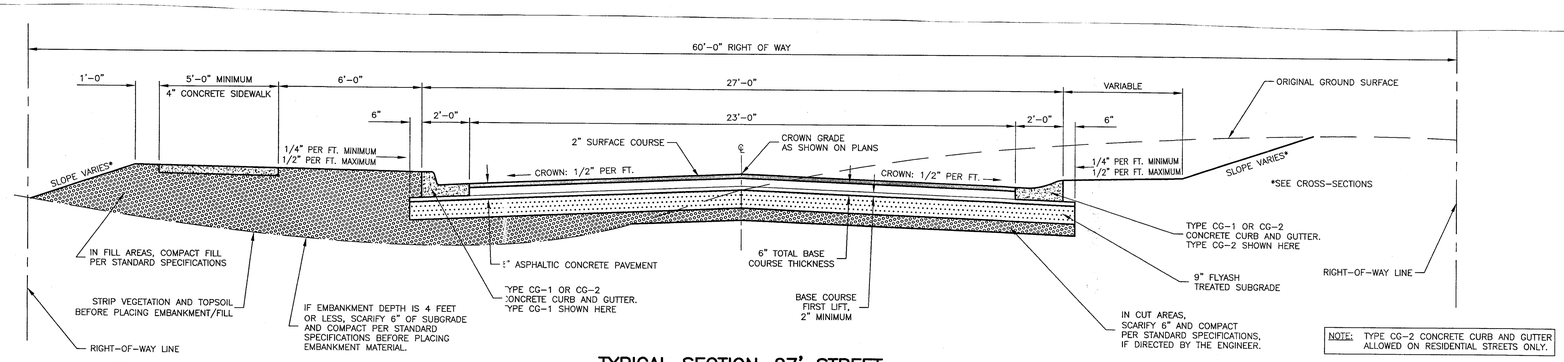
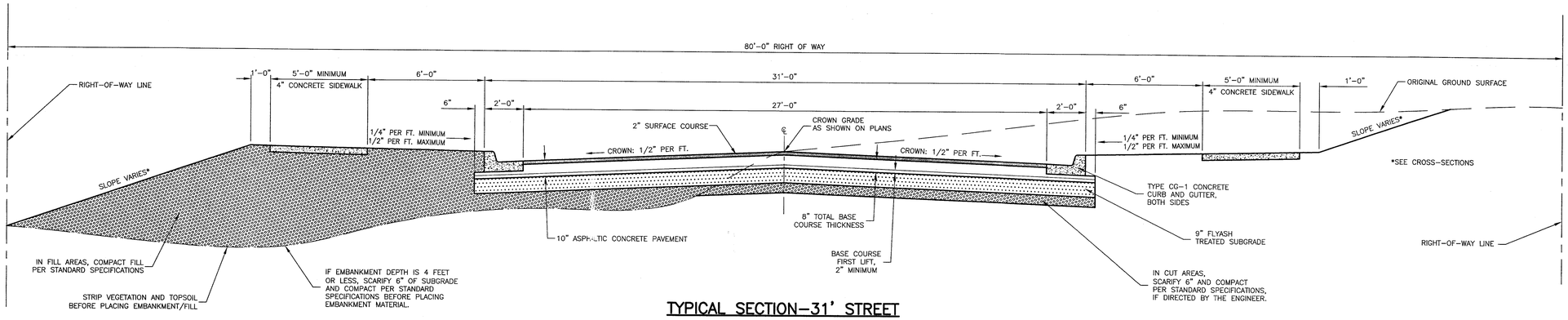






TYPICAL SECTION–27' STREET



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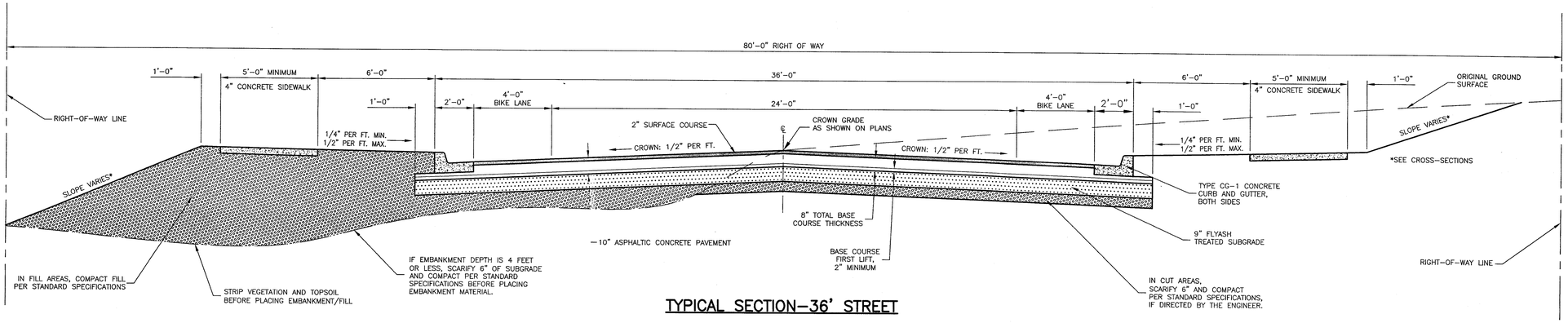

TYPICAL SECTION–36' STREET

Holloway Engineering
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hollowayfirm@sbcglobal.net

Roadway Typical Sections
Preliminary Development Plan
The Links at Lawrence, Lawrence, Kansas
for Lindsey Management

int.	date	revisions

dwg by: JEH
checked: RDH
date: 11/19/2012
scale: AS NOTED

C5.04

ROBERT D. HOLLOWAY
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ARKANSAS
PROFESSIONAL ENGINEER

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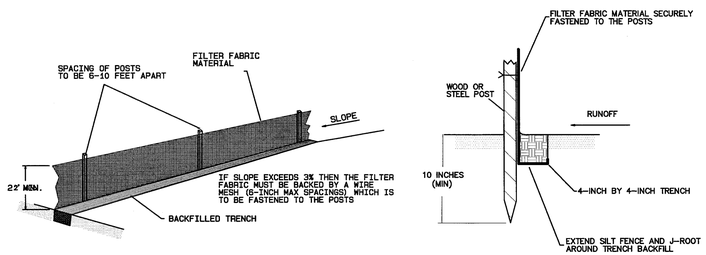

SILT FENCE DETAIL

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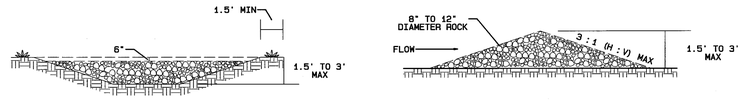

ROCK CHECK DAM

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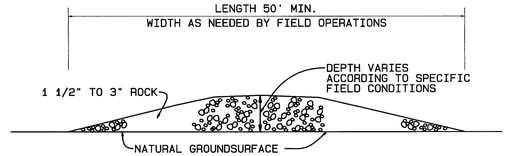

ROCK MOUND@ EXIT

NOTES:

1. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO THE BEGINNING OF CONSTRUCTION BY CALLING KANSAS ONE-CALL AT 811.
2. WHEN SOIL IS EXPOSED FOR MORE THAN 21 DAYS WITH NO CONSTRUCTION ACTIVITY IMMINENT, THE SOIL SHALL BE STABILIZED WITH SEED AND MULCH.
3. ADDITIONAL EROSION CONTROL MEASURES SHALL BE EMPLOYED AS CONDITIONS WARRANT.
4. CONSTRUCTION EXITS SHALL BE MAINTAINED TO PREVENT THE TRACKING OR FLOW OF MUD AND DEBRIS ONTO PUBLIC RIGHT-OF-WAYS.
5. ALL EROSION CONTROL DEVICES MUST BE INSPECTED WEEKLY AND AFTER EVERY PRECIPITATION EVENT. THE DEVICES MUST BE REPAIRED OR REPLACED IF THEIR CONDITION WARRANTS IT. A RECORD OF ALL INSPECTIONS AND REPAIRS MUST BE KEPT ONSITE.
6. EROSION CONTROL DEVICES MUST REMAIN IN PLACE UNTIL ALL UPSTREAM GROUND HAS BEEN STABILIZED.
7. SEDIMENT MUST BE REMOVED FROM SILT FENCES, SEDIMENT TRAPS AND BASINS ONCE THE VOLUME OF SEDIMENT REACHES ONE HALF OF THE DEVICES' CAPACITY.
8. A CONCRETE WASH OUT AREA MUST BE PROVIDED BY THE CONTRACTOR IN ORDER TO ISOLATE THE WASHOUT FROM CONCRETE TRUCKS FROM INTERMINGLING WITH STORMWATER.
9. THE CONTRACTOR MUST STORE ALL ON-SITE FUELS AND HAZARDOUS MATERIALS SUCH THAT NO SPILL OF THE HAZARDOUS MATERIAL CAN CONTAMINATE STORMWATER RUNOFF, SURFACE OR GROUND WATER.

N

GRAPHIC SCALE 1"=100'

0 100 200

BASIS OF BEARING
STATE PLANE COORDINATES
ARKANSAS NORTH ZONE NAD-83



ROBERT D. HOLLOWAY LICENSED PROFESSIONAL ENGINEER STATE OF KANSAS

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Erosion Control Plan
The Links at Lawrence
Lawrence, Kansas
for: Lindsey Management

dwg by: DLW	date	revisions	int.
checked: RDH			
date: 11/19/2012			
scale: noted			

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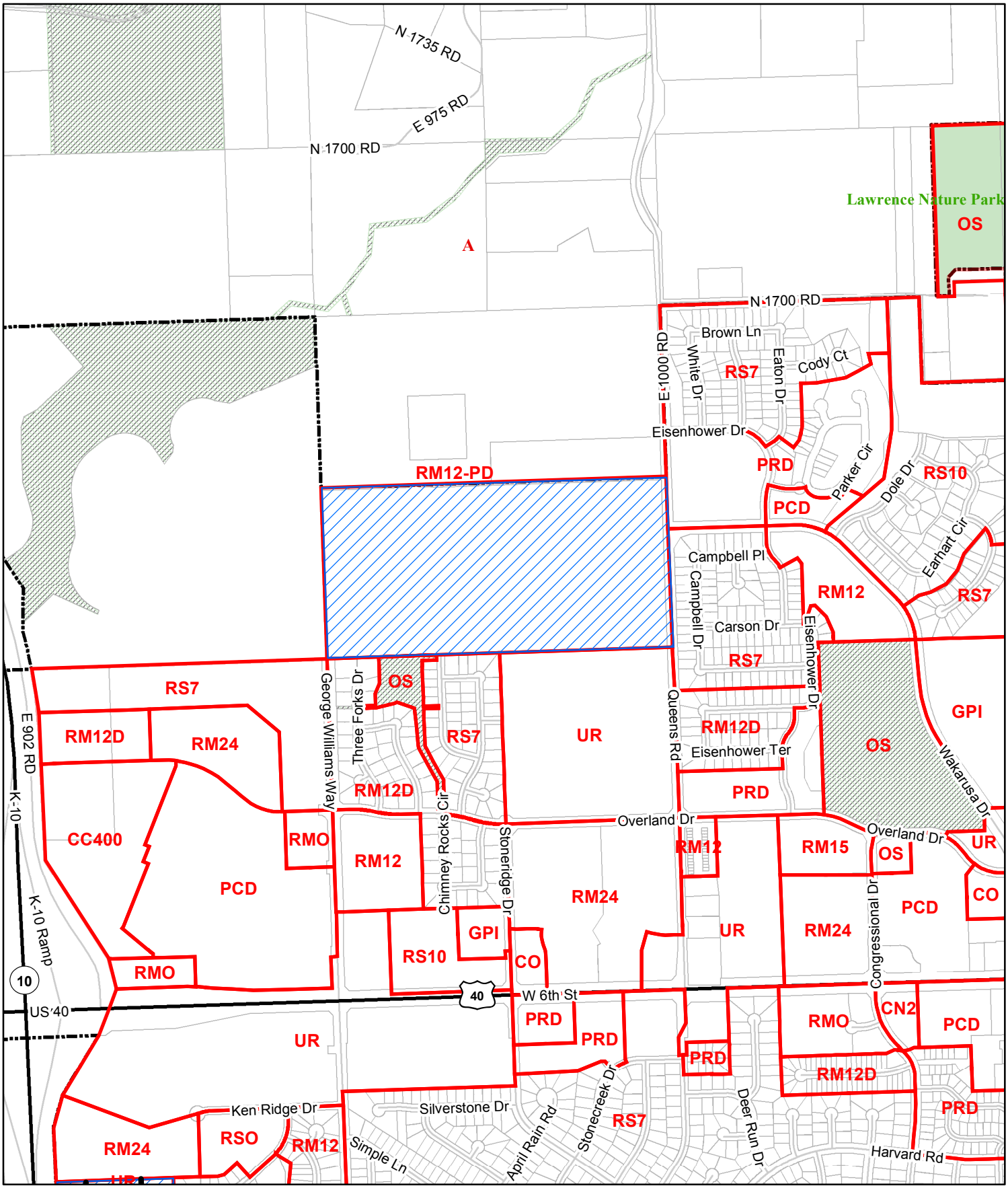

PDP-12-00283: Preliminary Development Plan for the Links at Lawrence, a 630 unit multi-dwellling residential planned development with a 9 hole golf course
251 Queens Rd

Lawrence-Douglas County Planning Office

January 2013

Area Requested

Scale: 1 Inch = 1000 Feet

LAW OFFICES
BARBER EMERSON, L.C.
1211 MASSACHUSETTS STREET
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LAWRENCE, KANSAS 66044
(785) 843-6600
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JOHN A. EMERSON
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JANE M. ELDREDGE
MARK A. ANDERSEN*
TERRENCE J. CAMPBELL*
MATTHEW S. GOUGH*

*ADMITTED IN KANSAS AND MISSOURI

Matthew S. Gough
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LINDA K. GUTIERREZ
CATHERINE C. THEISEN
MATTHEW B. TODD
EDWARD H. TULLY*

RICHARD A. BARBER
(1911-1998)

GLEE S. SMITH, JR.
OF COUNSEL

January 25, 2013

VIA E-MAIL ONLY
Lawrence-Douglas County Planning Commission
Attn: Bruce Liese, Chair
City Hall, 6 East 6th Street
Lawrence, KS 66044
bruce@kansascitysailing.com

Re: Preliminary Development Plan for The Links
*PDP-12-00283 (the "**PDP**")*

Dear Commissioner Liese:

I am writing on behalf of Mr. Jack Graham, the owner of adjacent property immediately north of The Links project (the "**Project**"). Mr. Graham expressed several concerns about the Project. In cooperation with Ms. Mary Miller and members of the City Staff, and as a result of a telephone conference with Hugh Jarratt, Esq., attorney for Lindsey Management Co. ("**Developer**"), I am pleased to report that Mr. Graham's concerns appear to have been addressed, as follows:

1. **Fencing**. Mr. Jarratt indicates that Developer intends to construct a fence along the north property line of the Project. Mr. Graham is appreciative of the fence, because it minimizes the likelihood that golfers or occupants of the Project will enter Mr. Graham's property.

2. **Future Street Improvements**. Developer has agreed not to protest the formation of a benefit district for future extensions of George Williams Way to the north, which should be reflected in Developer's agreements with the City.

3. **Cart Path Extension**. The PDP shows a cart path or walking trail extending to the north boundary of the Project, in the northwest corner of the site. Developer agrees with Mr. Graham and Ms. Miller that such extension should not be constructed unless and until the path is connected to a walking trail to the north.

4. **Drainage**. The PDP contains numerous detention ponds and lakes. Mr. Jarratt indicated Developer's acknowledgment, consistent with City Code, that the Project will not increase the flow of stormwater runoff onto Mr. Graham's property. We will be observant of the final drainage study provided by Developer, but it appears that all drainage concerns have been addressed. We are appreciative of Mr. Matt Bond's attention to this matter, as it appears that all parties involved have the same understanding.

With the clarification and resolution of the above-described concerns, Mr. Graham has no objection to the PDP.

Very truly yours,

BARBER EMERSON, L.C.

Matthew S. Gough

Matthew S. Gough

MSG:plh
cc: Scott McCullough, Planning Director (via e-mail only)
Mary Miller, Planner (via e-mail only)
Matt Bond, City Stormwater Engineer (via e-mail only)
Hugh Jarratt, Attorney for Developer (via e-mail only)
Jack Graham (via e-mail only)

PLANNING COMMISSION REPORT
Regular Agenda

PC Staff Report
1/30/13

ITEM NO. 10: CONDITIONAL USE PERMIT FOR BAKER WETLANDS VISITOR CENTER COMPLEX; 1365 N 1250 RD (MKM)

CUP-12-00248: Consider a Conditional Use Permit for Baker Wetlands Visitor Center Complex, located at 1365 N 1250 Rd. Submitted by Baker University, for the KS Department of Transportation, property owner of record.

STAFF RECOMMENDATION: Staff recommends approval of the Conditional Use Permit for the Baker Wetlands Visitor Center and forwarding it to the Board of County Commissioners with a recommendation for approval based on the findings of fact found in the body of the staff report subject to the following conditions:

1) The provision of a revised Conditional Use Site Plan with the following changes:
   a. Addition of a minimum of 5 bicycle parking spaces.
   b. Show the areas for the 2 septic systems and a back-up site for the visitor center septic system on the plan. These areas must be a minimum of 3 acres outside of the 100 year floodplain.
   c. Label or otherwise identify the existing residence, shed, and info pavilion.
   d. Addition of the following note regarding the measures being taken to improve fire protection at the site: *"The supply line will be increased from 3" to 4" with a flush-out in front of the existing wetland manager's residence on N 1250 Rd. The applicant will pay RWD #2 the cost of establishing a flush out/hydrant from their 10" line on the south side of N 1250 Rd approximately 2,200 ft west of the residence and visitor center. These changes will be completed prior to release of a certificate of occupancy for the visitor center."*
2) Wakarusa Fire Chief approval of the proposed fire protection measures.

Reason for Request: *"To construct a visitor center and storage shed on the premises."*

KEY POINTS
- The proposed use, a visitor center for the Baker Wetlands, is permitted in the A and V-C District with approval as a Conditional Use. Section 12-319-4.11 of the Zoning Regulations for the Unincorporated Territory of Douglas County lists *non-profit, religious, educational and philanthropic institutions* as a use which may be approved as a Conditional Use.
- KDOT, Baker University, and other interested parties have developed a Mitigation Plan in conjunction with the South Lawrence Trafficway project. This CUP request was submitted for improvements on property now owned by KDOT pursuant to the terms of the Mitigation Plan.

ATTACHMENTS
A – CUP Plan

DESCRIPTION OF USE
The applicant is requesting a Conditional Use Permit to allow the development of a visitor center for the Baker Wetlands at 1365 N 1250 Road. The wetland manager's residence is located on the subject property and the improvements will include a 3,160 sq ft display hall, approximately 2,000 sq ft of classrooms, a 374 sq ft gift shop, and accessory offices. The facility will also include a 3,000 sq ft storage facility and a 3,322 sq ft truck garage/workshop. The facility will be accessed

from N 1250 Road which will terminate in a cul-de-sac at the visitor center. Hike/Bike trails will be installed by KDOT along N 1250 Road and to the north to allow additional access to the visitor center and wetlands.

ASSOCIATED CASES/OTHER ACTION REQUIRED

- Approval of Conditional Use by the Board of County Commissioners.
- Conditional Use Permit Plan released to the Zoning and Codes Office.
- Issuance of permit for the Conditional Use by the Zoning and Codes Department following application and determination that all conditions have been met.
- Building plans submitted for approval and issuance of building permit from the Douglas County Zoning and Codes Office prior to development.

PUBLIC COMMENT RECEIVED PRIOR TO PRINTING

- No public comment has been received.

GENERAL INFORMATION

Current Zoning and Land Use:	A (Agricultural), V-C (Valley Channel), F-W (Floodway Overlay) and F-F (Floodway Fringe Overlay) Districts; single-family residence and mitigated Baker Wetlands.
Surrounding Zoning and Land Use:	To the north and west: A (Agricultural), V-C (Valley Channel) and F-F (Floodway Fringe Overlay) District agricultural uses. To the south: V-C (Valley Channel), F-W (Floodway Overlay), and F-F (Floodway Fringe Overlay) Districts; agricultural uses. To the east: V V-C (Valley Channel), F-W (Floodway Overlay), and F-F (Floodway Fringe Overlay) Districts; undeveloped, the Baker Wetlands. (Figure 1)

Site Summary:	
Subject Property:	7,056,720 sq ft (approximately 162 acres)
Existing Buildings:	3,061 sq ft
Proposed Buildings:	17,761 sq ft
Off Street Parking Required:	Public library, museum, art gallery, community center: 10 plus 1 per each 300 sq ft in excess of 1000 sq ft. 8,378 sq ft = 10 + (7378/300=25)—35 spaces required. ADA: 26 to 50 parking spaces requires 2 ADA spaces.
Off Street Parking Provided:	36 spaces. 2 ADA spaces

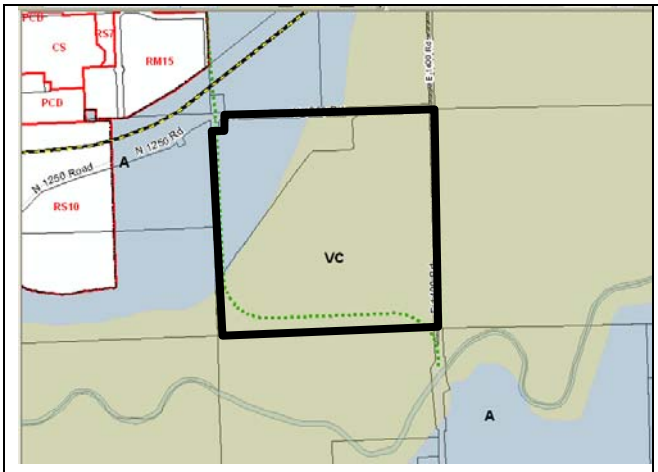


Figure 1a. Area zoning. (Subject property outlined.)



Figure 1b. Area land use. (Subject property outlined.)

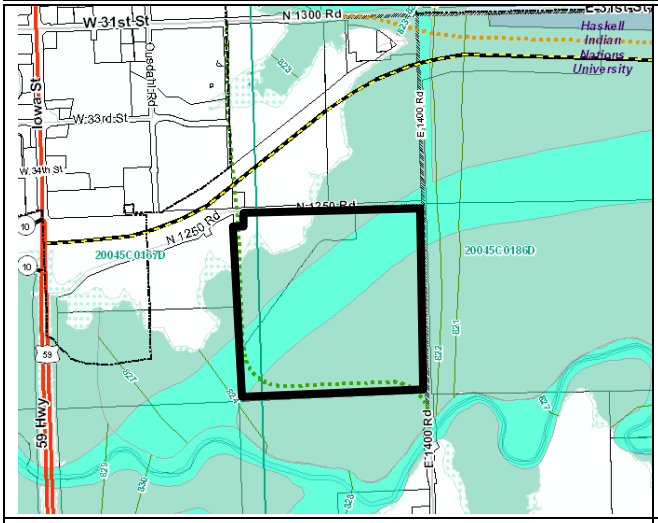


Figure 1c. Floodplain in the area

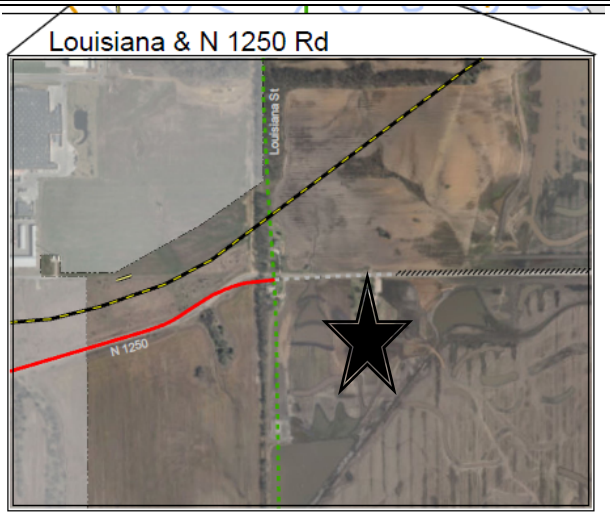


Figure 2. Changes to roads in the area due to construction of the SLT. N 1250 Road is a major collector (red) to the realigned Louisiana Street, it then becomes a local road and terminates at the subject property (marked with a star). Roads to be removed are shown with hatchmarks.

I. ZONING AND USES OF PROPERTY NEARBY

The surrounding area is zoned A (Agricultural) and V-C (Valley Channel) with both F-W (Floodway Overlay) and F-F (Floodway Fringe Overlay) Districts. The Wakarusa River is located to the south and the adjacent floodplain and wetlands are natural amenities in the area. The Baker Wetlands are located to the east and northeast of the subject property and the Haskell Wetlands are located further to the northeast. The subject property contains mitigated wetlands which were required for the construction of the South Lawrence Trafficway. Property to the north, west, and south is in agricultural production. The subject property is within close proximity to the Lawrence city limits. Residential zoning and a multi-dwelling residential development are located within the city of Lawrence, northwest of the subject property.

N 1250 Road is classified as a major collector on the Major Thoroughfares Map, but has been recently reclassified as a local road adjacent to the subject property due to changes being

made to accommodate the South Lawrence Trafficway through this area. The South Lawrence Trafficway will be constructed on the properties to the north of the subject property and N 1250 Road will terminate at the east property line of this parcel. (Figure 2)

Staff Finding – Nearby properties are zoned V-C (Valley Channel) and A (Agricultural) with F-F (Floodway Fringe) and F-W (Floodway) Overlay Districts. Agriculture and open space are the principal land uses in the area. The proposed development will add an educational component to the open space and will provide a storage and maintenance area for the equipment necessary to manage the wetlands.

II. CHARACTER OF THE AREA

The subject property is located east of the City of Lawrence within Service Area 4 of the Urban Growth Area. This is a rural area with agriculture and open space being the primary land uses. Natural features in the area include the Wakarusa River, which borders the area to the south; riparian woodlands along the Wakarusa River; floodplain; and wetlands. A major thoroughfare, the South Lawrence Trafficway, will be constructed north of the subject property; however, access from N 1250 Road will not be provided to the Trafficway.

Staff Finding -- The area contains primarily open space and agricultural land uses. The subject property is located near a future major transportation corridor within the Lawrence Urban Growth Area. The proposed use, a visitor center for the wetlands, would be compatible with the character of the area.

III. SUITABILITY OF SUBJECT PROPERTY FOR THE USES TO WHICH IT HAS BEEN RESTRICTED

Applicant's response:

> *"The surrounding floodplain has been restored to wetlands and only a small portion remains suitable for agriculture. All of it remains open space."*

The property is zoned V-C (Valley Channel) and A (Agricultural) Districts with floodplain overlay districts. Uses allowed in the V-C District include farms, truck gardens, orchards, nurseries, grazing, hunting and fishing, public or private commercial recreation facilities and structures, preserves, reservations and other similar open uses, and farm residences when located on a minimum of 5 acres. The A District permits many different agriculture-related uses in addition to animal hospitals, commercial dog kennels, residences, churches, and schools. The presence of the floodplain and the jurisdictional wetlands makes much of the land unsuitable for many of the uses permitted in these districts. *Non-profit educational institutions* are allowed in the A and V-C Districts with approval of a Conditional Use Permit. The proposed request will not revise the underlying zoning district.

Staff Finding –The property is well suited for use as a preserve, which is a permitted use in the V-C District. The property is not suited for many of the uses permitted n the A and V-C District due to the presence of wetlands and the floodway and floodway fringe. The proposed use, a visitor center and maintenance/storage facility, will enhance the open space and provide an educational component. The property is suitable for the proposed use as it will not be located within the floodplain.

IV. LENGTH OF TIME SUBJECT PROPERTY HAS REMAINED VACANT AS ZONED

Staff Finding – The property is currently developed with a residence and outbuildings.

V. EXTENT TO WHICH REMOVAL OF RESTRICTIONS WILL DETRIMENTALLY AFFECT NEARBY PROPERTY

Applicant's Response:

> *"There are no close neighbors. Construction of a visitor center will not significantly increase traffic, noise, or dust in the area."*

Nearby property is used for agricultural uses or contains the Baker Wetlands. The removal of restrictions will allow the construction of a visitor center which will enhance the visits to the wetlands and provide an educational component. The maintenance/storage facility will assist in the effective management of the wetlands. These changes may result in some increased traffic on N 1250 Road. N 1250 Road is classified as a major collector in the Major Thoroughfares Map up to the western edge of the subject property. The properties to the west are designated for auto-related commercial uses and multi-dwelling uses in the future land use plan for the area, *The Revised Southern Development Plan.* The enhancements to the Baker Wetlands being proposed with this CUP should provide an amenity to properties to the west as they develop. The amount of traffic anticipated should not create an issue for the agricultural lands to the west, or to the commercial or multi-dwelling land uses which may be established in the future.

Staff Finding – The proposed visitor center would be an amenity to the area and the proposed storage/maintenance facility would assist in the effective management of the wetlands. There should be no negative impacts from these improvements to nearby properties.

VI. RELATIVE GAIN TO THE PUBLIC HEALTH, SAFETY AND WELFARE BY THE DESTRUCTION OF THE VALUE OF THE PETITIONER'S PROPERTY AS COMPARED TO THE HARDSHIP IMPOSED UPON THE INDIVIDUAL LANDOWNERS

Applicant's Response:

> *"Construction of the visitor center would be a tremendous benefit to the public. Denial of the permit would deny Baker University the opportunity to educate the public about the value of wetlands. It would also deny KDOT the opportunity to fulfill its mitigation plan for the SLT."*

Evaluation of the relative gain weighs the benefits to the community-at-large vs. the benefit of the owners of the subject property. Denial of the request for a Conditional Use Permit would prohibit the creation of a visitor center, which was required as part of the KDOT mitigation plan for the South Lawrence Trafficway. Denial of the CUP request would not benefit the public health, safety, and welfare as the visitor center and storage/maintenance facility are not expected to have any negative impacts.

Approval of the CUP request would result in the construction of a visitor center, which would be an enhancement to the wetlands as well as a storage/maintenance facility for the effective management of the wetlands. This would benefit both the public at large and the applicant, Baker University who owns and manages the wetlands.

Staff Finding – There would be no public benefit from the denial of the request which would prohibit the development of the visitor center as required by the mitigation plan for the construction of the South Lawrence Trafficway in this area. The approval of the request would benefit both the public and the applicant by enhancing the visits to the wetlands and providing necessary facilities for the effective management of the wetlands.

VII. CONFORMANCE WITH THE COMPREHENSIVE PLAN

Applicant's Response:

> *"Horizon 2020 designates the area as open space. Our use will remain as open space indefinitely for the public to use for education and recreation."*

The subject property is located within Service Area 4 of the Lawrence Urban Growth Area and is zoned A (Agricultural) and V-C (Valley Channel). Pertinent sections of the Comprehensive Plan are provided below, followed by staff discussion:

The Comprehensive Plan identifies the Haskell and Baker Wetlands as one of the four cornerstone natural areas for the City of Lawrence. (Page 9-1, *Horizon 2020)* The Comprehensive Plan recommends that the existing open space system be maintained and improved in the future. (Page 9-2, *Horizon 2020)*

> --The changes being proposed would be an improvement to the existing open space and would assist in the maintenance of the open space.

Chapter 9 of the Comprehensive Plan, Parks Recreation and Open Space, recommends that linkages be provided to the open space system that improve community accessibility to such areas and that take into consideration the variety of linkage types available for active and passive recreational needs. (Page 9-19, *Horizon 2020*)

> ---The KDOT plans for the improvements associated with the Visitor Center include Bike/Hike Trails. These trails will provide an additional linkage to the wetlands beside the vehicular access along N 1250 Road.

Chapter 16 of the Comprehensive Plan, Environment, recommends that education and outreach programs be provided to inform citizens of the function and values of wetlands and the measures that protect them. (Policy 1.4(d), Page 16-6, *Horizon 2020)*

> ---The visitor center will contain educational materials and provide educational programs which will work toward meeting this policy.

Staff Finding – The proposed use is in conformance with the recommendations in the Comprehensive Plan related to the improvements to existing open space areas and the establishment of education and outreach programs pertaining to the function and values of wetlands.

STAFF REVIEW

A visitor center for the Baker Wetlands is being proposed with this CUP application. The CUP is for approximately 162 acres as it includes the adjacent wetlands; however, the proposed improvements will occur on a portion of the site that is approximately 139,200 sq ft in area (1.2 acres). The wetland manager's residence is currently located on the subject property along with an accessory shed and an info pavilion. The visitor center will have 3 wings, one will house a large classroom; the other will house the main display room, a gift shop, a small

classroom, a lab and work area and 3 offices; the third wing will house a shop and vehicle garage.

Vehicular access to the property will be limited to N 1250 Road from the west. N 1250 Road will terminate in a cul-de-sac past the subject property's access point. N 1250 Road will be discontinued beyond this point as the road it currently connects to will be removed with the changes to the area road system with the construction of the South Lawrence Trafficway. Pedestrian and bike access will be provided through Bike/Hike Trails that KDOT has proposed to the west along N 1250 Road and to the east, (see the CUP plans).

The property has been added to Rural Water District No. 2's service area and the Rural Water District indicated they would be able to serve this facility. The Wakarusa Fire Chief approved the layout of the site as shown on the CUP plan and indicated that fire hydrants would be preferred for fire protection. Water pressure in this area is not adequate for hydrants so the Fire Chief, the rural water district representatives, and the applicant met to discuss possible fire protection measures for this property. They agreed on the following measures: the supply line will be increased from 3" to 4" with a flush-out in front of the existing wetland manager's residence on N 1250 Rd. In addition to that the applicant will pay RWD#2 the cost of establishing a flush out/hydrant from their 10" line on the south side of N 1250 Rd approximately 2,200 ft west of the residence and visitor center. The Fire Chief indicated that these measures were satisfactory as long as the Water District was able to provide the type of hydrant and connections required. The Fire Chief's approval of the fire protection measures is necessary before the release of the CUP plans to the Zoning and Codes Office for building permits.

The Health Department approved the proposed on-site sewage management system subject to the condition that the CUP plan be revised to show the areas for the 2 septic systems drawn onto the approved final site plan and a back-up site for the visitor center septic system. These areas must be a minimum of 3 acres outside of the 100 year floodplain.

Adequate parking is being provided for the use and landscaping is being provided to define the parking area and to provide separation from E 1250 Road.

The visitor center itself will be a south facing earth-bermed structure. The design of the structure and the landscaping proposed should result in a development that is compatible with the area. The storage facility will be of more traditional design, but is similar to an agricultural outbuilding. The proposed development will maintain the rural character of the area.

Conclusion

Approval of a Conditional Use can be tailored to address specific issues such as intensity or frequency of use, include time limitations, and provide screening requirements. The visitor center, as proposed, should be compatible with nearby land uses. The recommended conditions are intended to document the areas set aside for septic systems and the measures taken for fire protection. The County Zoning Regulations do not contain requirements for bicycle parking; however, in this situation with the use being near the city limits and bike trails being provided to the site bicycle parking would be necessary. Staff recommends the installation of bicycle parking for a minimum of 5 bicycles to accommodate the bicycle traffic.

Hike/Bike Trail
by KDOT

Hike/Bike Trail
by KDOT

N 1250 Rd will terminate with cul-de-sac. Road to the east will be removed.

N 1250 Rd

838

White Pine 7"dbh

3 E. Red Cedar all 7"dbh

95'+/-

290'+/-

Residential
Septic System
1,800 sq ft.

4" schedule 40 PVC
septic leach lines

1,000 gallon
concrete septic tank

Siberian Elm 21"dbh

Living Space
1865 sq.ft
Single Story

14'6"x8' Garage

78' 4"

49'0"

836

Bald Cypress
8"dbh

One Way

One Way

834

36 spaces @9x18 ft.

Shop & temporary Office (1,196 sq. ft.) Single Story

40'0"

26' 0"

Black Walnut 9"dbh

Siberian Elm 12"dbh

Well

Existing Tree Row (50 Siberian Elms 3" to 14" dbh)

Earth berm - backfill

Overhead Door

39.5 ft.

58 ft.

45 ft.

40 ft.

Visitor Center Single Story – Total 11,700 sq.ft.

100 ft.

Truck Garage and Workshop (3,322 sq.ft.)

Storage 220 sq.ft.

Mech.

Lab

Small Classroom 374 sq.ft.

Gift Shop 374 sq.ft.

Stor.

Info.

Large Classroom (cap. 75) Can be divided by accordion wall. (1,777 sq.ft.)

Office

Office

Office

Main Display Hall (3,160 sq.ft.) Capacity 125

55 ft.

Storage Facility
30 x 100 ft.

Visitor Center
Septic System
1,200 sq ft.

1,000 gallon concrete tank with 4" schedule 40 PVC leach field

Infor. Pavilion

Cluster of ~50 trees. Mixed species of elm, hackberry, and oak.

500'+/- to west property line

Fence

302.5' +/- from storage bldg. to far end of visitor center.

1,856' +/- to east property line

826

828

822

824

820

830

818

0 25 50 100
Feet

N

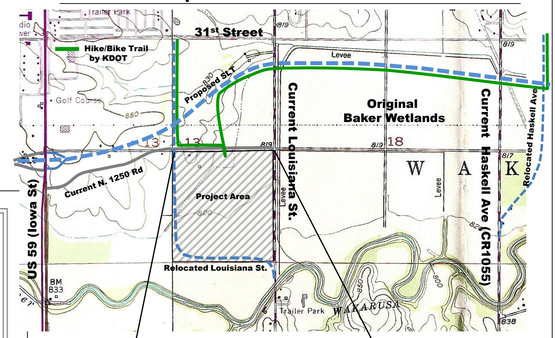
July 2012

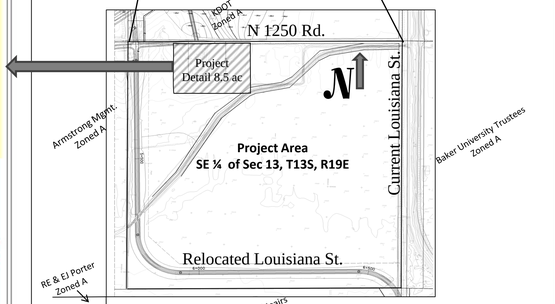
Legend

August 2010 FP
FLD_ZONE
- AH
- AE
- A
- 0.2 PCT ANNUAL CHANCE FLOOD HAZARD

Contours_2006
DISPLAY
- 10 ft
- 2 ft

Location Map





General Notes

1. Owner: Kansas Department of Transportation
   Eisenhower Bldg. 700 SW Harrison
   Topeka, Kansas 66603-3745
2. Applicant: Baker University
   618 Eighth St P.O. Box 65
   Baldwin City, KS 66006
3. Agent: Dr. Roger L. Boyd (785.424.0595)
4. Flood Plain map with elevatioons received from Douglas County Zoning Office
5. Existing Land Use: Agricultural with one residence
6. Proposed Land Use: Visitor Center and one residence
7. Existing Zoning: A (Agricultural) and VC (Valley Channel)
8. Proposed Zoning: A (Agricultural) and VC (Valley Channel)
9. No part of the construction on this site will be located within the floodplain per Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) #20045C0151D, dated 5 Aug. 2010.
10. This site is designed to comply with the provisions of the Americans with Disabilities Act Accessibility Guidelines (ADAAG) for public buildings, Appendix A to 28 CFR Part 36.
11. Any construction or renovation work must comply with applicable building codes in effect at the time of work.
12. A building permit shall not be issued without having first obtained from the Douglas County Health Department a permit to construct an on-site sewage management system.
13. Proposed buildings will not exceed 18 feet in height.

Keyed Notes

1	Existing Westar utility pole to remain
2	Proposed location of RWD#2 water meter
3	Existing AT&T telephone pedestal to remain
4	Existing Black Hills gas meter to remain
5	Proposed driveway of concrete or asphalt surface. Drainage to be determined by KDOT during SLT improvements.
6	Residence is for Refuge Manager and family
7	Raised bed to visually separate residence from parking lot
8	Existing wooden sign to be relocated. Six ft wide and eight ft tall
9	Two lamp poles, each with double shoe-box lamp design, 100 watt bulbs each. Height of poles to be 18 ft.
10	Proposed parking lot of concrete or asphalt surface. One-way circle drive with minimum 24 ft aisles
11	Hard surface run-off directed to one or more Rain Garden retention basins
12	Existing Westar transformer to remain

Legal Description

The Southeast Quarter of Section 13, Township 13 South, Range 19 East of the Sixth P.M., Douglas County, Kansas, more particularly described as follows: Beginning at the NW corner of said SE Quarter, thence N90°00'00"E assumed bearing, along the North line of said SE Quarter 2660.48 ft to the NE corner of said SE Quarter; thence S00°30'23" W along the East line of said SE Quarter 2655.90 ft to the SE corner of said SE Quarter; thence N89°58'22"W along the South line of said SE Quarter 2654.60 ft to the SW corner of said SE Quarter; thence N00°24'49"E along the West line of said SE Quarter 2654.60 ft to the Point of Beginning, containing 162.04 acres, more or less. Subject to easements of record and public rights-of-way.

Plantings

Symbol	Qty	Name	Symbol	Qty	Name	Symbol	Qty	Name
	12	Picea pungens Colorado Blue Spruce		5	Juniperus chinensis 'Armstrong' Armstrong Juniper		13	Panicum virgatum Switchgrass
	12	Picea abies Norway Spruce		3	Forsythia x intermedia 'Spring Glory'		16	Sorghastrum nutans Indiangrass
	12	Juniperus virginiana Eastern Red Cedar		11	Cercis canadensis Redbud		27	Echinacea purpurea Eastern Purple Coneflower

A CUP Site Plan for

BAKER WETLANDS VISITOR CENTER COMPLEX

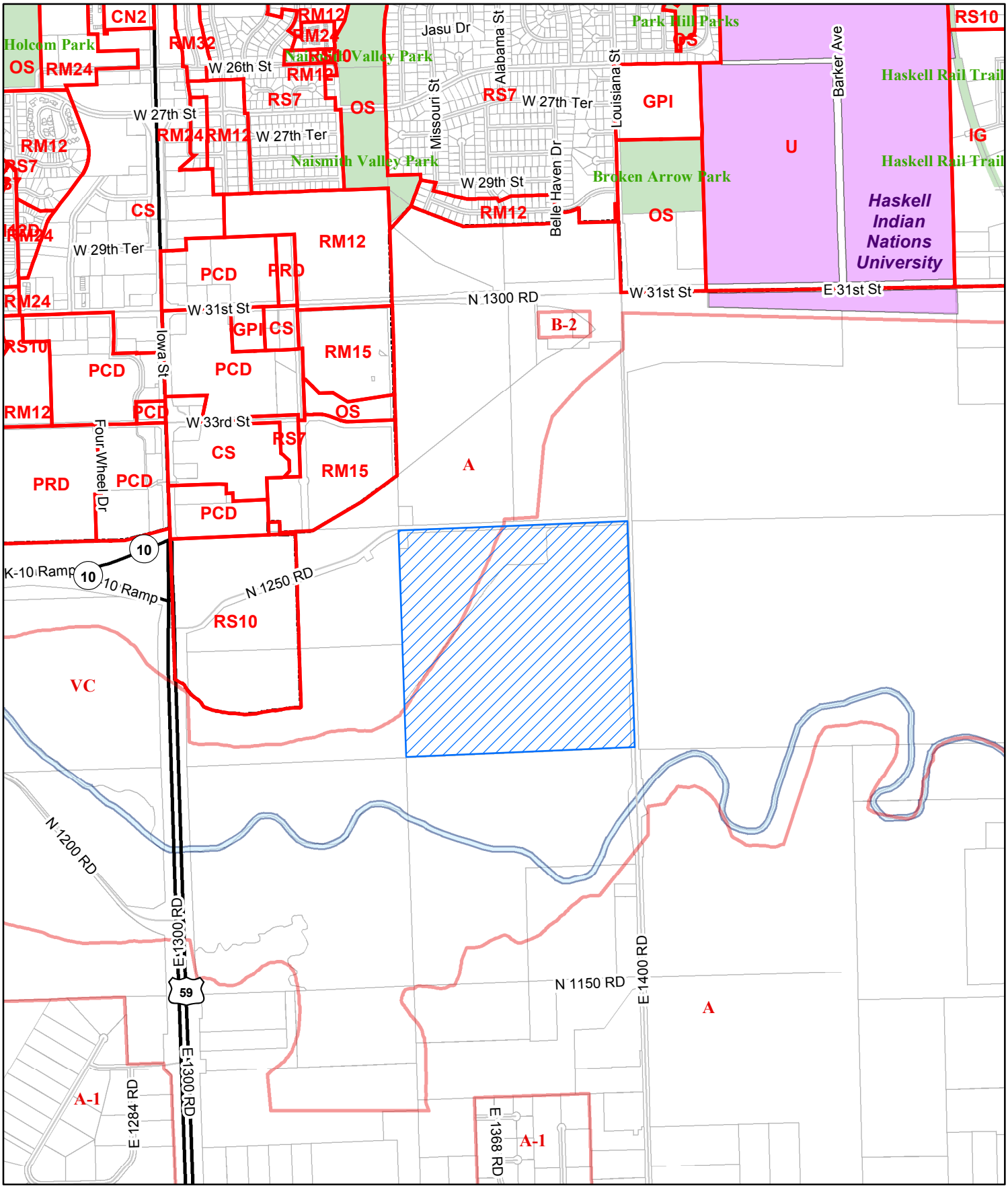
1365 N. 1250 Rd, Douglas County, Kansas

Baker University
618 Eighth Street
Baldwin City, Kansas 66006

Project: KDOT/Baker Wetlands Mitigation
Project No.: KDOT 10-23 K-8392-04
Designed By: Roger L. Boyd | Drawn By: Roger L. Boyd
Checked By: Jon Boyd | Date: 10/2012

REV	DATE	DESCRIPTION
1	26 Oct. 2012	Orig. Submission
2	10 Dec.2012	Per Dept. Comments

Baker Wetlands Visitor Center Complex
Conditional Use Permit
Site Plan
1365 N. 1250 Rd.



CUP-12-00248: Conditional Use Permit for Baker Wetlandds Visitor Center
1365 N 1250 Rd

Lawrence-Douglas County Planning Office

January 2013

N
W E
S

Area Requested

Scale: 1 Inch = 1500 Feet

Memorandum
City of Lawrence
Planning & Development Services

TO: **Lawrence-Douglas County Metropolitan Planning Commission**

FROM: **Mary Miller, Planner**

CC: **Scott McCullough, Director of Planning and Development Services**
Sheila Stogsdill, Assistant Director of Planning

Date: **For January 30, 2012 meeting**

RE: **ITEM NO. 11 INITIATE TEXT AMENDMENT; ZONING REGULATIONS; NANOBREWERY (MKM)**

Initiate a text amendment to Section 12-319-1 of the Zoning Regulations of the Unincorporated Territory of Douglas County to include *Nanobrewery* in the list of uses permitted as Conditional Uses and to establish any necessary standards for the use.

A nanobrewery is a small brewery operation, often culturally defined by a less than 4 US beer barrels (470 L) brew system. It is often referred to as a 'craft brewery'. While smaller in scale, a nanobrewery is considered a microbrewery by law and is subject to the same licensing requirements and regulations as a microbrewery.

Neil Hull, a property owner in Douglas County and president of Flint Hills Brewery, LLC,, contacted the Planning Office to discuss the possibility of operating a nanobrewery in Douglas County. As this use is not specifically identified in the Zoning Regulations, the use would fall into the most similar use classification available: the manufacturing of food and beverage product. This use is permitted in the industrial districts; therefore, it would be permitted if the property were rezoned to an industrial district. It would not be appropriate to rezone the property in question industrial, as its principal uses would remain residential and agriculture.

A nanobrewery could fit the definition of a value-added agricultural business. The *Value-added Agricultural Business* use is permitted with a CUP if standards are met. However, given the low-intensity nature of a nanobrewery, property which does not meet the standards for a *Value-added Agricultural Business* may be appropriate for the nanobrewery.

The property owner requested the initiation of a text amendment to establish *Nanobrewery* as a use which is permitted in the A District with a Conditional Use Permit. A definition and standards for the use would be included in the amended regulations.

ACTION REQUESTED: Initiate a text amendment for future public hearings to establish *Nanobrewery* as a use which is permitted in the A District with a CUP and to establish a definition and standards for the use.

Memorandum
City of Lawrence
Planning & Development Services

TO: **Lawrence-Douglas County Metropolitan Planning Commission**

FROM: **Mary Miller, Planner**

CC: **Scott McCullough, Director of Planning and Development Services**
Sheila Stogsdill, Assistant Director of Planning

Date: **For January 30, 2012 meeting**

RE: **MISC ITEM 2: VARIANCE FROM ROAD FRONTAGE REQUIREMENT; CLUSTER DEVELOPMENT (MKM)**

Variance from the road frontage requirement in the Subdivision Regulations for Cluster Development Land Divisions in the Urban Growth Area of 666 ft on minor arterials to permit a frontage of approximately 540 ft. This variance is associated with a Cluster Development Certificate of Survey, CSU-12-00271.

Attachment: CSU-12-00271; Certificate of Survey

Residential land divisions in the Urban Growth Area require a Certificate of Survey for a cluster development. Cluster developments are required in the Urban Growth Area as a means to reduce the number of access points to the adjacent roadways and to provide additional consideration about the future layout of the area into urban blocks and streets. The Certificate of Survey is attached with this memo for context; however, Certificates of Survey are processed administratively so no action is required on the Certificate of Survey.

Section 20-804(c)(x) [11-104(c)(x), County Code] states that: "The Cluster Development must meet the minimum frontage and entrance space requirements established in the County's Access Management Standards. The frontage and entrance spacing requirements are based on the classification of the road upon which the cross access easement is proposed to take access." The property included in the attached Certificate of Survey is unable to meet the frontage requirement and a variance has been requested.

Section 20-813(g) of the Subdivision Regulations [Section 11-113(g) of the County Code] allows the Planning Commission to grant variances if the following criteria are met:

1) Strict application of these regulations will create an unnecessary hardship upon the subdivider;
2) The proposed variance is in harmony with the intended purpose of these regulations; and
3) The public health, safety, and welfare will be protected.

The following is a review of this variance request with these criteria:

1) Strict application of these regulations will create an unnecessary hardship upon the subdivider.

Applicant's response:

"Dwight and Kim Purvis purchased the west-most 5.03 acre parcel (shown on the Cluster Development) in 2004 with the intent of eventually constructing their residence there. The subject parcel was created in 1996 by a Boundary Survey Certificate prepared by Landplan Engineering. Several years ago the Purvis's pursued obtaining a building permit only to find that the property had not been divided legally within the regulations at that time, leaving them with an unbuildable "land locked" tract of land with no road frontage. While an access agreement existed to allow them on to their land, a building permit was not obtainable. After pursuing numerous options to obtain the necessary road frontage with all possible alternatives explored and exhausted, the Purvis's approached the land owner to the east, whose property fronted E1200 Road (east most 21.25 acres shown on the Cluster Development). The frontage was required to obtain a building permit from Douglas County to build a home on a five-acre tract west of these 21 acres.

Prior to purchasing the 21 acres with 542 feet of frontage on E. 1200 Rd (660 feet of frontage required by the Access Management Standards), the Purvis's met with Douglas County staff to confirm that they would maintain vested access rights for Parcels Consolidation (Plat of Survey) and Certificate of Survey for a Cluster Development. The purchase of the 21 acres was quite expensive but was the only way to allow the Purvis's to build on the original 5 acre parcel. In order to recoup some of that cost for the additional land purchase, Grob Engineering Services drew up a clustered development plan for the entire parcel of 26 acres assuming that the vested road access rights would be maintained.

Since E 1200 Rd is a minor arterial the frontage requirement is 660 feet, or nearly 120 feet more than the total length of the Purvis property fronting E 1200 Rd. One option presented by the Douglas County Public Works Director/Engineer would be to obtain a 120 foot access restriction from one of the two adjoining properties. An access restriction agreement from either adjacent property owner is not obtainable at this point since both properties are in probate court or in a trust of a deceased person that has not been divided yet. In both cases, the time at which the property issues will be resolved are uncertain, but most likely not in the near future, thus the legal property owner of both parcels is uncertain.

The Purvis's respectfully request that 542 feet of frontage on E 1200 Rd be accepted as marginally fulfilling the frontage requirement for a minor arterial, and with a variance from Douglas County be allowed to continue with the subdivision of this property."

The strict application would require the property owner to acquire additional property along E 1200 Road in order to meet the frontage requirement or to execute an access

restriction agreement with one of the adjacent property owners. Neither option is available at this time, as the adjacent properties are in probate court or in an estate.

The County Engineer indicated he had no objection to the requested variance given the low probability that the property north of the Purvis property, i.e. Fayman property, will ever develop because of floodplain issues. (Figure 1) Based on the County Engineer's lack of objection to the requested variance, requiring the land division to wait until the status of the adjacent properties has been determined in court would be an unnecessary hardship.

2) **The proposed variance is in harmony with the intended purpose of these regulations**.

Applicant's response:

"The Purvis property has one road access off of E 1200 Rd at this time. The Cluster Development would use that same access point and would not increase the number of access points, but the access could serve 5 residences in lieu of only one. The property adjacent to the north is in the floodplain and cannot be developed without extensively raising the ground elevation and thus there will likely never be a residential driveway access requested for approximately 1200 feet of property adjacent to E. 1200 Rd."

The variance would not increase the number of access points on E 1200 Road. As development to the north is considered unlikely by the County Engineer, the additional frontage or access restriction agreement would be unnecessary.

3) The public health, safety, and welfare will be protected.

Applicant's response:

"County Road E 1200 runs straight with a gentle incline from CR 458 (N1200) to the south line of the property to the south of the Purvis property. Sight lines are long and clear. Strict adherence to Douglas County's guidelines for emergency vehicle access, evacuation planning and routes, and all matters pertaining to the public safety are protected and observed with this variance."

The number of access points on E 1200 Road will not be increased with the granting of this variance; however, the amount of traffic generated will increase as 5 residences will use the access point. E 1200 Road is a minor arterial which is designed to accommodate higher levels of traffic than a local road; therefore, there should be no negative impact to the public health, safety, and welfare with the granting of this variance.

STAFF RECOMMENDATION: Approve the variance requested from Section 20-804(c)(x) [11-104(c)(x), County Code] to allow the creation of a Cluster Development in the Urban Growth Area on a minor arterial with 542 ft of frontage rather than the 660 ft required in the Access Management Standards.

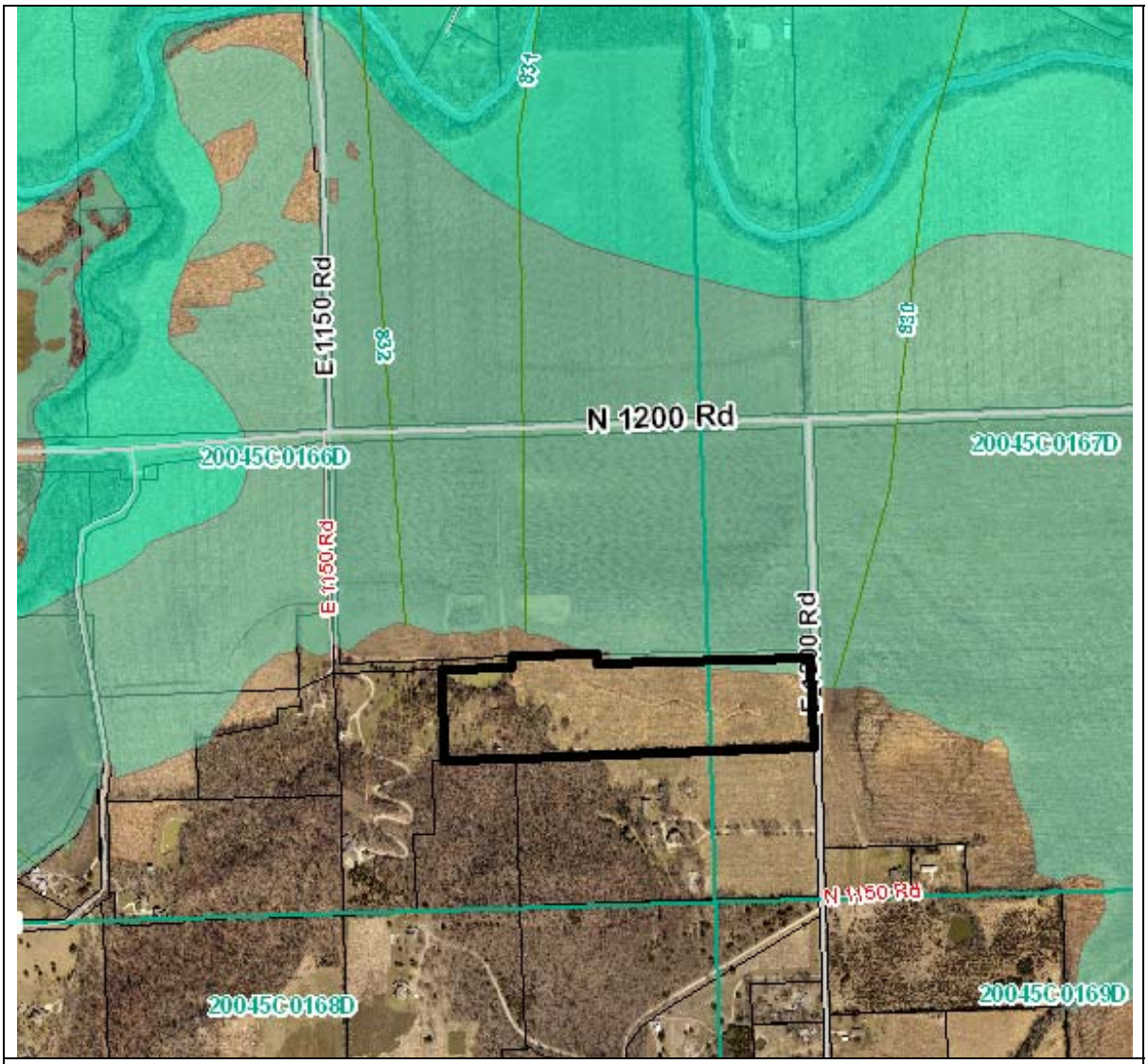
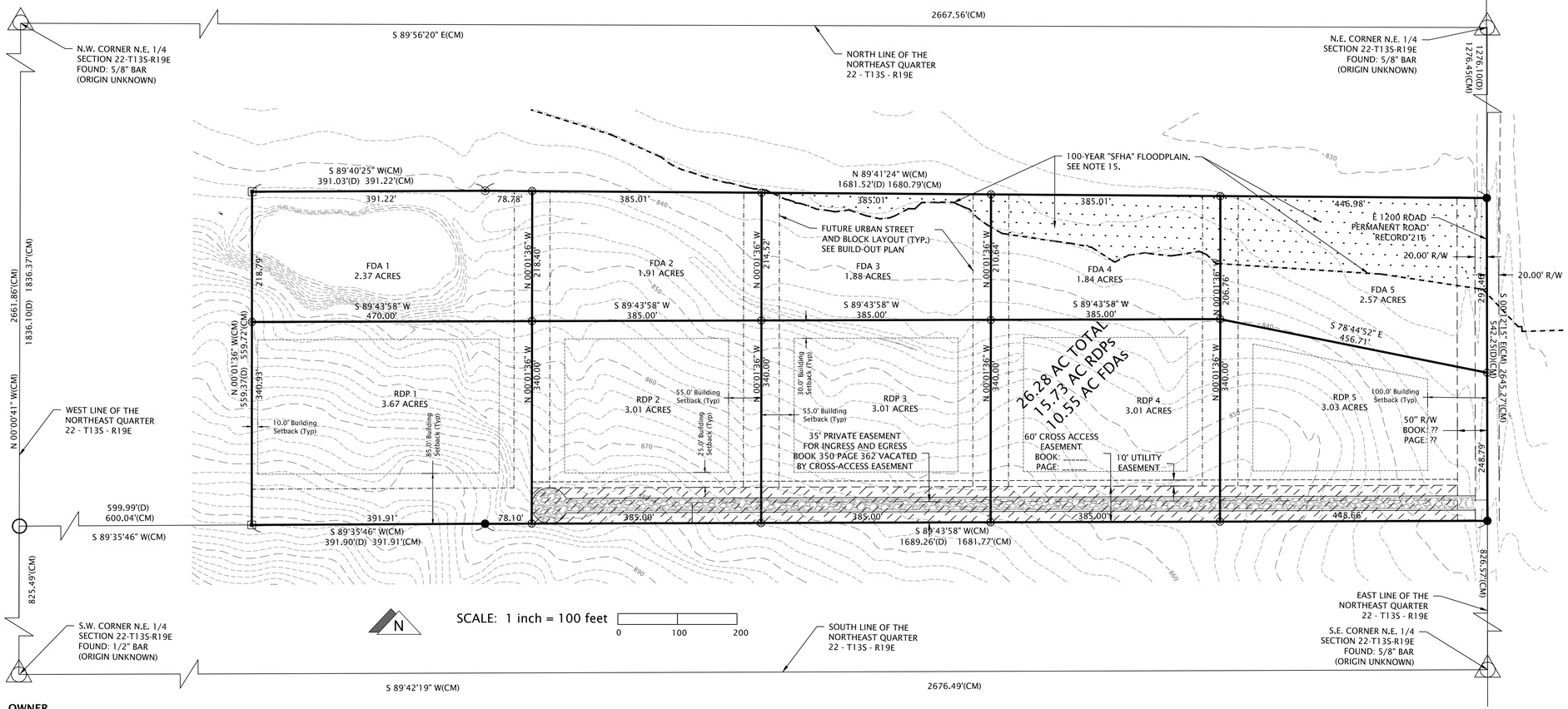


Figure 1. Wakarusa River and floodplain in the area. Subject property is outlined.



OWNER

Be it known to all men that I (we), the undersigned owner(s) of the described tract of land, have had cause for the same to be surveyed and a Certificate of Survey prepared, and have caused the same to be subdivided into subparcels. All easements shown on this Certificate of Survey and not heretofore dedicated are hereby so dedicated by separate instrument.

Dwight C. Purvis
1167 E 1200 Road
Lawrence, KS 66046

Kimberly S. Purvis
1167 E 1200 Road
Lawrence, KS 66046

ACKNOWLEDGEMENT

State of Kansas
County of Douglas

Be it remembered that on this _____ day of _____, 2012, before me, the undersigned, a notary public, in and for said county and state, came Dwight C. and Kimberly S. Purvis, who are personally known to me to be the same person(s) who executed the foregoing instrument of writing and duly acknowledge the execution of the same.

In witness whereof, I have hereunto set my hand and affixed my seal on the day and year last written above.

Notary Public — My commission expires

ENDORSEMENTS

Approved as a Certificate of Survey under the Subdivision Regulations of the City of Lawrence & the Unincorporated Area of Douglas County.

Reviewed in compliance with K.S.A. 58-2005.

Planning Director — Date

Michael D. Kelly, P.L.S. #869
Douglas County Surveyor

FILING RECORD

State of Kansas
County of Douglas

This is to certify that this instrument was filed for record in the office of the Douglas County Register of Deeds on this _____ day of _____, 2012, and is duly recorded at _____AM/PM, in book _____ page _____.

Register of Deeds
Kay Pesnell

LEGEND

- SECTION CORNER
- FOUND 1/2" REBAR W/CAP "PLS610"
- FOUND 1/2" REBAR ORIGIN UNKNOWN
- FOUND 5/8" REBAR ORIGIN UNKNOWN
- CALCULATED POSITION
- 1/2" X 24"REBAR W/CAP "APS 1391" (SET)
- FDA FUTURE DEVELOPMENT AREA
- RDP RESIDENTIAL DEVELOPMENT PARCEL
- (CM) CALCULATED FROM MEASUREMENTS
- (D) DEEDED
- ACCESS EASEMENT
- TEMPORARY SET ASIDE AREA

SURVEYOR'S CERTIFICATION

I hereby certify that the surveyed area shown hereon is the true and accurate result of a field survey performed under my direct supervision in the month of September, 2012 and that the survey is a closed traverse. Final parcels were pinned in January, 2013. This survey complies with the Kansas Minimum Standards for Boundary Surveys.

Steven D. Williams, P.L.S. #1391
P.O. Box 4444
Lawrence, KS 66046
(785)832-2121

ENGINEER'S CERTIFICATION

I hereby certify that the information and area map shown hereon are true and accurate to the best of my knowledge. Certificate of Survey prepared January, 2013.

John Dean Grob
Professional Engineer #12769
Grob Engineering Services
3210 Mesa Way, Suite A
Lawrence, KS 66044
(785)856-1900

GENERAL NOTES

1. Plat of Survey information provided by All Points Surveying, August, 2012 and recorded at the Douglas County Register of Deeds, Book 1090, Page 3674..
2. Basis for bearings for this Certificate of Survey is the East line of the Northeast Quarter of Section 22, Township 13 South, Range 19 East (S 00° 12'15"E Assumed).
3. Current Zoning: County - A (Agricultural)
4. Project Vertical Benchmark: Douglas County Public Works Charn ID #DG19 NAVD 88 Elevation = 1100.27 ft.
5. Typical Soil Types: Mc - Martin Silty Clay Loam, Oe - Oska Silty Clay Loam, Wh - Wabash Silty clay, and Vc - Vinland Complex.
6. This Certificate of Survey was not prepared for the purpose of the platting of land. No further divisions of the parcels created by this survey shall occur until the property is subdivided in accordance with all applicable Subdivision Regulations of Douglas County or the city into which it is annexed.
7. This property division was designed in accordance with Section 20-804 of the Subdivision Regulations (Cluster Developments in the Urban Growth Areas) for Lawrence and the Unincorporated Areas of Douglas County, Kansas.
8. The Cross-Access Easements shall become public right-of-way when property is annexed into the City of Lawrence. The Cross-Access Easement has been filed by separate instrument with the Douglas County Register of Deeds, Book _____, Page _____.
9. Sewage disposal will be provided by means of individual septic systems installed on each Residential Development Parcel. The septic systems will be abandoned upon annexation into the City of Lawrence, and concurrent connection to the City's sanitary sewer system.
10. Property boundaries for Residential Development Parcels shall be pinned prior to recording the Certificate of Survey.
11. All access shall be via the Cross-Access Easement. No RDP or FDA shall have direct access to E 1200 Road.
12. A Grant of Permanent Easement for Road Right-of-Way has been filed with the Douglas County Register of Deeds, Book _____, Page _____.
13. A letter has be provided from Douglas County Rural Water District #5 stating that water meters are immediately available for this Clustered Development. The Residential Development Parcels shall not be eligible for building permits until the Rural Water District issues a water meter and documentation that a water meter has been purchased by the owner is presented to the Lawrence-Douglas County Health Department and the Douglas County Zoning Office.
14. A portion of this property is located within a designated floodplain per FEMA Map # 20045C0166D Effective Date: August 5, 2010. Floodplain is designated as an environmentally sensitive land per Section 20-810(d). A Temporary Set Aside Agreement has be executed and recorded with the Register of Deeds, Book _____, Page _____.
15. Restrictive Covenants are recorded at the Douglas County Register of Deeds, Book _____, Page _____.
16. RDPs created by this Certificate of Survey shall not be eligible for a building permit until wastewater disposal will be provided by an on-site sewage management system approved by the Director of the Lawrence/Douglas County Health Department. A preliminary site evaluation for each septic system is required prior to a building permit being issued. The septic permit must be approved and purchased prior to the issuance of a building permit. On-site sewage management systems shall be constructed in accordance with 'Standards on Individual On-Site Sewage Management Systems for the Unincorporated Territory of Douglas County, Kansas' County Sanitation Code, Resolution 97-48, as amended.
17. Topographic data is provided for review purposes only and will not appear on the recorded Certificate of Survey.

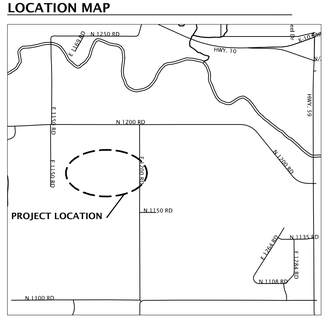
SITE SUMMARY

Total Site Acreage	26.28 Acres
Existing Permanent Right-of-Way Easement	0.25 Acres
Proposed Additional Permanent Right-of-Way Easement	0.37 Acres
Immediate Development Area	15.73 Acres
Residential Development Parcels	15.73 Acres
Future Development Areas	10.55 Acres

BUILD-OUT PLAN

1. A Build Out Plan was developed for this Certificate of Survey to illustrate future subdivision of the Immediate and Future Development Areas. The Build-Out Plan is on file at the Lawrence-Douglas County Metropolitan Planning Office.
2. The Build Out Plan was developed to illustrate future probalistic subdivision of the Immediate and Future Development Areas. The Build-Out Plan proposed future blocks consistent with the Comprehensive Land Use Plan and the Subdivision Design Standards for the City of Lawrence. The Build Out Plan allows for future easements for utilities and storm drainage for the purpose of extending public utilities for future subdivision after annexation.
3. Building envelopes are designed to prescribe proper siting of residences so that these residences within the Residential Development Parcel in the Immediate Development Phase will not conflict with logical future development of the area. Building envelopes are based on conformance to present Douglas County setback requirements and future City of Lawrence setback requirements for Residential District Zoning.

LOCATION MAP



LEGAL DESCRIPTION - FDA 2

A TRACT OF LAND SITUATED IN THE NORTHEAST QUARTER OF SECTION 22, TOWNSHIP 13 SOUTH, RANGE 19 EAST OF THE SIXTH PRINCIPAL MERIDIAN NOW DESCRIBED AS FOLLOWS;

COMMENCING AT A POINT ON THE EAST LINE OF SAID QUARTER SECTION, SAID POINT BEING 1276.45 FEET SOUTH OF THE NORTHEAST CORNER OF SAID QUARTER SECTION; THENCE NORTH 89°41'24" WEST, 1217.00 FEET TO THE POINT OF BEGINNING; THENCE NORTH 89°41'24" WEST, 385.01 FEET; THENCE SOUTH 00°01'36" EAST, 218.40 FEET; THENCE NORTH 89°43'58" EAST, 385.00 FEET; THENCE NORTH 00°01'36" WEST, 214.52 FEET TO THE POINT OF BEGINNING. THE ABOVE CONTAINS 1.91 ACRES, MORE OR LESS, SUBJECT TO EASEMENTS AND RESTRICTIONS ALL IN DOUGLAS COUNTY, KANSAS.

LEGAL DESCRIPTION - FDA 3

A TRACT OF LAND SITUATED IN THE NORTHEAST QUARTER OF SECTION 22, TOWNSHIP 13 SOUTH, RANGE 19 EAST OF THE SIXTH PRINCIPAL MERIDIAN NOW DESCRIBED AS FOLLOWS;

COMMENCING AT A POINT ON THE EAST LINE OF SAID QUARTER SECTION, SAID POINT BEING 1276.45 FEET SOUTH OF THE NORTHEAST CORNER OF SAID QUARTER SECTION; THENCE NORTH 89°41'24" WEST, 831.99 FEET TO THE POINT OF BEGINNING; THENCE NORTH 89°41'24" WEST, 385.01 FEET; THENCE SOUTH 00°01'36" EAST, 214.52 FEET; THENCE NORTH 89°43'58" EAST, 385.00 FEET; THENCE NORTH 00°01'36" WEST, 210.64 FEET TO THE POINT OF BEGINNING. THE ABOVE CONTAINS 1.88 ACRES, MORE OR LESS, SUBJECT TO EASEMENTS AND RESTRICTIONS ALL IN DOUGLAS COUNTY, KANSAS.

LEGAL DESCRIPTION - FDA 4

A TRACT OF LAND SITUATED IN THE NORTHEAST QUARTER OF SECTION 22, TOWNSHIP 13 SOUTH, RANGE 19 EAST OF THE SIXTH PRINCIPAL MERIDIAN NOW DESCRIBED AS FOLLOWS;

COMMENCING AT A POINT ON THE EAST LINE OF SAID QUARTER SECTION, SAID POINT BEING 1276.45 FEET SOUTH OF THE NORTHEAST CORNER OF SAID QUARTER SECTION; THENCE NORTH 89°41'24" WEST, 446.98 FEET TO THE POINT OF BEGINNING; THENCE NORTH 89°41'24" WEST, 385.01 FEET; THENCE SOUTH 00°01'36" EAST, 210.64 FEET; THENCE NORTH 89°43'58" EAST, 385.00 FEET; THENCE NORTH 00°01'36" WEST, 206.76 FEET TO THE POINT OF BEGINNING. THE ABOVE CONTAINS 1.84 ACRES, MORE OR LESS, SUBJECT TO EASEMENTS AND RESTRICTIONS ALL IN DOUGLAS COUNTY, KANSAS.

LEGAL DESCRIPTION - FDA 5

A TRACT OF LAND SITUATED IN THE NORTHEAST QUARTER OF SECTION 22, TOWNSHIP 13 SOUTH, RANGE 19 EAST OF THE SIXTH PRINCIPAL MERIDIAN NOW DESCRIBED AS FOLLOWS;

BEGINNING AT A POINT ON THE EAST LINE OF SAID QUARTER SECTION, SAID POINT BEING 1276.45 FEET SOUTH OF THE NORTHEAST CORNER OF SAID QUARTER SECTION; THENCE NORTH 89°41'24" WEST, 1217.00 FEET TO THE POINT OF BEGINNING; THENCE NORTH 89°41'24" WEST, 385.01 FEET; THENCE SOUTH 00°01'36" EAST, 218.40 FEET; THENCE NORTH 89°43'58" EAST, 385.00 FEET; THENCE NORTH 00°01'36" WEST, 214.52 FEET TO THE POINT OF BEGINNING. THE ABOVE CONTAINS 2.57 ACRES, MORE OR LESS, SUBJECT TO EASEMENTS, RESTRICTIONS AND ROAD RIGHTS-OF-WAY OF RECORD, ALL IN DOUGLAS COUNTY, KANSAS

LEGAL DESCRIPTION - ORIGINAL TRACT

A TRACT OF LAND LOCATED IN THE NORTHEAST QUARTER OF SECTION 22, TOWNSHIP 13 SOUTH, RANGE 19 EAST OF THE SIXTH PRINCIPAL MERIDIAN, DOUGLAS COUNTY, KANSAS, NOW DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE EAST LINE OF SAID QUARTER SECTION, SAID POINT BEING 1276.45 FEET SOUTH OF THE NORTHEAST CORNER OF SAID QUARTER SECTION; THENCE NORTH 89°41'24" WEST, 1680.79 FEET; THENCE SOUTH 89°40'25" WEST, 391.22 FEET; THENCE SOUTH 00°01'36" EAST, 559.72 FEET; THENCE NORTH 89°35'46" EAST, 391.91 FEET; THENCE NORTH 89°43'58" EAST, 1681.77 FEET TO A POINT ON THE EAST LINE OF SAID QUARTER SECTION; THENCE NORTH 00°12'15" WEST ALONG SAID EAST LINE, 542.25 FEET TO THE POINT OF BEGINNING, INCLUDING A PRIVATE EASEMENT FOR INGRESS AND EGRESS RECORDED JULY 7, 1981, IN BOOK 350, PAGE 362, IN THE OFFICE OF THE DOUGLAS COUNTY REGISTER OF DEEDS. THE ABOVE CONTAINS 26.28 ACRES, MORE OR LESS, SUBJECT TO EASEMENTS, RESTRICTIONS AND ROAD RIGHTS-OF-WAY OF RECORD ALL IN DOUGLAS COUNTY, KANSAS.

LEGAL DESCRIPTION - CROSS ACCESS EASMENT

A TRACT OF LAND LOCATED IN THE NORTHEAST QUARTER OF SECTION 22, TOWNSHIP 13 SOUTH, RANGE 19 EAST OF THE SIXTH PRINCIPAL MERIDIAN, DOUGLAS COUNTY, KANSAS BEING 60.00 FEET IN WIDTH, DESCRIBED AS FOLLOWS:

COMMENCING AT A POINT ON THE EAST LINE OF SAID QUARTER SECTION, SAID POINT BEING 1818.70 FEET SOUTH OF THE NORTHEAST CORNER OF SAID QUARTER SECTION; THENCE SOUTH 89°43'58" WEST, 50.00 FEET TO THE POINT OF BEGINNING; THENCE NORTH 00°12'15" WEST, 60.00 FEET; THENCE SOUTH 89°43'58" WEST, 1553.48 FEET; THENCE SOUTH 00°01'36" EAST, 60.00 FEET; THENCE NORTH 89°43'58" EAST, 1553.67 FEET TO THE POINT OF BEGINNING, INCLUDING A PRIVATE EASEMENT FOR INGRESS AND EGRESS RECORDED JULY 7, 1981, IN BOOK 350, PAGE 362, IN THE OFFICE OF THE DOUGLAS COUNTY REGISTER OF DEEDS. THE ABOVE CONTAINS 2.21 ACRES, MORE OR LESS ALL IN DOUGLAS COUNTY, KANSAS AND IS SUBJECT TO ANY RESTRICTIONS OF RECORD.

LEGAL DESCRIPTION - RDP 1

A TRACT OF LAND SITUATED IN THE NORTHEAST QUARTER OF SECTION 22, TOWNSHIP 13 SOUTH, RANGE 19 EAST OF THE SIXTH PRINCIPAL MERIDIAN NOW DESCRIBED AS FOLLOWS;

COMMENCING AT A POINT ON THE EAST LINE OF SAID QUARTER SECTION, SAID POINT BEING 1818.70 FEET SOUTH OF THE NORTHEAST CORNER OF SAID QUARTER SECTION; THENCE SOUTH 89°43'58" WEST, 1603.67 FEET TO THE POINT OF BEGINNING; THENCE NORTH 00°01'36" WEST, 340.00 FEET; THENCE SOUTH 89°43'58" WEST, 470.00 FEET; THENCE SOUTH 00°01'36" EAST, 340.93 FEET; THENCE NORTH 89°35'46" EAST, 391.91 FEET; THENCE NORTH 89°43'58" EAST, 78.10 FEET TO THE POINT OF BEGINNING. THE ABOVE CONTAINS 3.67 ACRES, MORE OR LESS ALL IN DOUGLAS COUNTY, KANSAS AND IS SUBJECT TO ANY RESTRICTIONS OF RECORD.

LEGAL DESCRIPTION - RDP 2

A TRACT OF LAND SITUATED IN THE NORTHEAST QUARTER OF SECTION 22, TOWNSHIP 13 SOUTH, RANGE 19 EAST OF THE SIXTH PRINCIPAL MERIDIAN NOW DESCRIBED AS FOLLOWS;

COMMENCING AT A POINT ON THE EAST LINE OF SAID QUARTER SECTION, SAID POINT BEING 1818.70 FEET SOUTH OF THE NORTHEAST CORNER OF SAID QUARTER SECTION; THENCE SOUTH 89°43'58" WEST, 1218.66 FEET TO THE POINT OF BEGINNING; THENCE NORTH 00°01'36" WEST, 340.00 FEET; THENCE SOUTH 89°43'58" WEST, 385.00 FEET; THENCE SOUTH 00°01'36" EAST, 340.00 FEET; THENCE NORTH 89°43'58" EAST, 385.00 FEET TO THE POINT OF BEGINNING, INCLUDING A PRIVATE EASEMENT FOR INGRESS AND EGRESS RECORDED JULY 7, 1981, IN BOOK 350, PAGE 362, IN THE OFFICE OF THE DOUGLAS COUNTY REGISTER OF DEEDS. THE ABOVE CONTAINS 3.01 ACRES, MORE OR LESS ALL IN DOUGLAS COUNTY, KANSAS AND IS SUBJECT TO ANY EASEMENTS AND RESTRICTIONS OF RECORD.

LEGAL DESCRIPTION - RDP 3

A TRACT OF LAND SITUATED IN THE NORTHEAST QUARTER OF SECTION 22, TOWNSHIP 13 SOUTH, RANGE 19 EAST OF THE SIXTH PRINCIPAL MERIDIAN NOW DESCRIBED AS FOLLOWS;

COMMENCING AT A POINT ON THE EAST LINE OF SAID QUARTER SECTION, SAID POINT BEING 1818.70 FEET SOUTH OF THE NORTHEAST CORNER OF SAID QUARTER SECTION; THENCE SOUTH 89°43'58" WEST, 833.66 FEET TO THE POINT OF BEGINNING; THENCE NORTH 00°01'36" WEST, 340.00 FEET; THENCE SOUTH 89°43'58" WEST, 385.00 FEET; THENCE SOUTH 00°01'36" EAST, 340.00 FEET; THENCE NORTH 89°43'58" EAST, 385.00 FEET TO THE POINT OF BEGINNING, INCLUDING A PRIVATE EASEMENT FOR INGRESS AND EGRESS RECORDED JULY 7, 1981, IN BOOK 350, PAGE 362, IN THE OFFICE OF THE DOUGLAS COUNTY REGISTER OF DEEDS. THE ABOVE CONTAINS 3.01 ACRES, MORE OR LESS ALL IN DOUGLAS COUNTY, KANSAS AND IS SUBJECT TO ANY EASEMENTS AND RESTRICTIONS OF RECORD.

LEGAL DESCRIPTION - RDP 4

A TRACT OF LAND SITUATED IN THE NORTHEAST QUARTER OF SECTION 22, TOWNSHIP 13 SOUTH, RANGE 19 EAST OF THE SIXTH PRINCIPAL MERIDIAN NOW DESCRIBED AS FOLLOWS;

COMMENCING AT A POINT ON THE EAST LINE OF SAID QUARTER SECTION, SAID POINT BEING 1818.70 FEET SOUTH OF THE NORTHEAST CORNER OF SAID QUARTER SECTION; THENCE SOUTH 89°43'58" WEST, 448.66 FEET TO THE POINT OF BEGINNING; THENCE NORTH 00°01'36" WEST, 340.00 FEET; THENCE SOUTH 89°43'58" WEST, 385.00 FEET; THENCE SOUTH 00°01'36" EAST, 340.00 FEET; THENCE NORTH 89°43'58" EAST, 385.00 FEET TO THE POINT OF BEGINNING, INCLUDING A PRIVATE EASEMENT FOR INGRESS AND EGRESS RECORDED JULY 7, 1981, IN BOOK 350, PAGE 362, IN THE OFFICE OF THE DOUGLAS COUNTY REGISTER OF DEEDS. THE ABOVE CONTAINS 3.01 ACRES, MORE OR LESS ALL IN DOUGLAS COUNTY, KANSAS AND IS SUBJECT TO ANY EASEMENTS AND RESTRICTIONS OF RECORD.

LEGAL DESCRIPTION - RDP 5

A TRACT OF LAND SITUATED IN THE NORTHEAST QUARTER OF SECTION 22, TOWNSHIP 13 SOUTH, RANGE 19 EAST OF THE SIXTH PRINCIPAL MERIDIAN NOW DESCRIBED AS FOLLOWS;

BEGINNING AT A POINT ON THE EAST LINE OF SAID QUARTER SECTION, SAID POINT BEING 1569.91 FEET SOUTH OF THE NORTHEAST CORNER OF SAID QUARTER SECTION; THENCE NORTH 78°44'52" WEST, 456.71 FEET; THENCE SOUTH 00°01'36" EAST, 340.00 FEET; THENCE NORTH 89°43'58" EAST, 448.66 FEET TO A POINT ON THE EAST LINE OF SAID QUARTER SECTION; THENCE NORTH 00°12'15" WEST, ALONG SAID EAST LINE, 248.79 FEET TO THE POINT OF BEGINNING, INCLUDING A PRIVATE EASEMENT FOR INGRESS AND EGRESS RECORDED JULY 7, 1981, IN BOOK 350, PAGE 362, IN THE OFFICE OF THE DOUGLAS COUNTY REGISTER OF DEEDS. THE ABOVE CONTAINS 3.03 ACRES, MORE OR LESS ALL IN DOUGLAS COUNTY, KANSAS AND IS SUBJECT TO ANY EASEMENTS, RESTRICTIONS AND ROAD RIGHTS-OF-WAY OF RECORD.

LEGAL DESCRIPTION - FDA 1

A TRACT OF LAND SITUATED IN THE NORTHEAST QUARTER OF SECTION 22, TOWNSHIP 13 SOUTH, RANGE 19 EAST OF THE SIXTH PRINCIPAL MERIDIAN NOW DESCRIBED AS FOLLOWS;

COMMENCING AT A POINT ON THE EAST LINE OF SAID QUARTER SECTION, SAID POINT BEING 1276.45 FEET SOUTH OF THE NORTHEAST CORNER OF SAID QUARTER SECTION; THENCE NORTH 89°41'24" WEST, 1602.01 FEET TO THE POINT OF BEGINNING; THENCE NORTH 89°41'24" WEST, 78.78 FEET; THENCE SOUTH 89°40'25" WEST, 391.22 FEET; THENCE SOUTH 00°01'36" EAST, 218.79 FEET; THENCE NORTH 89°43'58" EAST, 470.00 FEET; THENCE NORTH 00°01'36" WEST, 218.40 FEET TO THE POINT OF BEGINNING. THE ABOVE CONTAINS 2.37 ACRES, MORE OR LESS, SUBJECT TO EASEMENTS AND RESTRICTIONS ALL IN DOUGLAS COUNTY, KANSAS.

Certificate of Survey for

An unplatted tract of land in the NE¼ of Section 22, Township 13 South, Range 19 East, of the Sixth Principal Meridian in Douglas County, Kansas

Prepared January 16, 2013