City of Lawrence
Douglas County
PLANNING & DEVELOPMENT SERVICES

Updated:
9/26/11 @ 11:30am
Added communications for the following items:
Item 1 - Preliminary Plat; Fifth Street Bluff Subdivision; W 5th St
Item 2 - Conditional Use Permit; 768 E 661 Diagonal Rd
Item 3A - Rezoning of 3900 W 24th Place
Item 3B - Preliminary Plat; Inverness Park Plaza Addition; 3900 W 24th Place
Item 3C - Special Use Permit; 3900 W 24th Place
Item 6 - Text Amendment; Development Adjacent to Residential Districts

9/23/11 @ 3:30pm
Added the following items:
Item 3A - Rezoning of 3900 W 24th Place
Item 3B - Preliminary Plat; Inverness Park Plaza Addition; 3900 W 24th Place
Item 3C - Special Use Permit; 3900 W 24th Place
Added communications for Item 2 - Conditional Use Permit; 768 E 661 Diagonal Rd

9/21/11 @ 10:30am
The following items will be added when available:
Item 3A - Rezoning of 3900 W 24th Place
Item 3B - Preliminary Plat; Inverness Park Plaza Addition; 3900 W 24th Place
Item 3C - Special Use Permit; 3900 W 24th Place

****The Wednesday, September 28th Planning Commission meeting has been canceled****

LAWRENCE-DOUGLAS COUNTY METROPOLITAN PLANNING COMMISSION
CITY HALL, 6 EAST 6TH STREET, CITY COMMISSION MEETING ROOM
AGENDA FOR PUBLIC & NON-PUBLIC HEARING ITEMS
SEPTEMBER 26 ~~& 28~~, 2011 6:30 - 10:30 PM

GENERAL BUSINESS:

PLANNING COMMISSION MINUTES

Receive and amend or approve the minutes from the Planning Commission meeting of August 22 & 24, 2011.

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.

1) The City Engineer approved a waiver to the distance standards on a collector road from signalized and non-signalized intersections for the development project located at the southeast corner of Crossgate Drive and Clinton Parkway (HyVee gas station; A full report is included with SUP-7-4-11 – item no. 3C on this agenda)

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 (SEPTEMBER 26, 2011) MEETING
NON-PUBLIC HEARING ITEM:

ITEM NO. 1 PRELIMINARY PLAT; FIFTH STREET BLUFF SUBDIVISION; W 5TH ST (MKM)

PP-7-6-11: Consider a one lot Preliminary Plat and variances related to dedication of rights-of-way and frontage for Fifth Street Bluff Subdivision, approximately 0.29 acres, located on W 5th Street near the connection of Iowa Street and W 5th Street. Submitted by Paul Werner Architects, for JMC Construction, property owner of record.

PUBLIC HEARING ITEMS:

ITEM NO. 2 CONDITIONAL USE PERMIT FOR THE FRATERNAL ORDER OF POLICE SHOOTING RANGE; 768 E 661 DIAGONAL RD (MKM)

CUP-12-8-10: Consider a Conditional Use Permit for the Fraternal Order of Police shooting range, located at 768 E. 661 Diagonal Road. Submitted by Dan Affalter, for Fraternal Order of Police, property owner of record. *Deferred by Planning Commission on 4/25/11.*

ITEM NO. 3A RSO TO CN2; 3.3 ACRES; 3900 W 24TH PLACE (SLD)

Z-7-21-11: Consider a request to rezone approximately 3.3 acres from RSO (Single-Dwelling Residential-Office) to CN2 (Neighborhood Shopping Center), located at 3900 W. 24th Place. Submitted by Landplan Engineering, for Corporate Holdings II, LLC, property owner of record, and Hy-Vee, Inc. as contract purchaser.

NON-PUBLIC HEARING ITEM:

ITEM NO. 3B PRELIMINARY PLAT; INVERNESS PARK PLAZA ADDITION; 3900 W 24TH PLACE (SLD)

PP-7-7-11: Consider a Preliminary Plat of Inverness Park Plaza Addition No. 5, a Replat of Lot 1, Block 1, Inverness Park Plaza Addition No. 1, for a two lot commercial development, located at 3900 W 24th Place. Submitted by Landplan Engineering, for Corporate Holdings II, LLC, property owner of record, and Hy-Vee, Inc. as contract purchaser.

PUBLIC HEARING ITEMS:

ITEM NO. 3C SPECIAL USE PERMIT FOR GAS & FUEL SALES; 3900 W 24TH PLACE (SLD)

SUP-7-4-11: Consider a Special Use Permit for Gas and Fuel Sales and Cleaning (car wash), also known as a convenience store, on approximately 2.73 acres of vacant property located at 3900 W 24th Place. Submitted by Landplan Engineering, for Corporate Holdings II, LLC, property owner of record, and Hy-Vee, Inc. as contract purchaser.

ITEM NO. 4 TEXT AMENDMENT TO CITY OF LAWRENCE DEVELOPMENT CODE AND 8TH & PENNSYLVANIA URBAN CONSERVATION OVERLAY DISTRICT (SDM)

TA-8-13-11: Consider amendments to Article 3 of the Lawrence Land Development Code and to the 8th & Pennsylvania Urban Conservation Overlay District, including the *Design Guidelines 8th and Penn Neighborhood Redevelopment Zone*, in order to accommodate a residential proposal for property located at 619 E. 8th Street that exceeds the density limit currently noted in the guidelines. *Initiated by City Commission on 8/9/11.*

ITEM NO. 5A CS TO RM32; .56 ACRES; 619 E 8TH ST (MKM)

Z-8-22-11: Consider a request to rezone approximately .56 acres from CS (Strip Commercial) to RM32 (Multi-Dwelling Residential) within the 8th & Pennsylvania Urban Conservation Overlay District, located at 619 E 8th Street. Submitted by Bartlett & West, Inc., for Ohio Mortgage Investors, LLC property owner of record.

ITEM NO. 5B CS TO RM12D; .27 ACRES; 804-806 PENNSYLVANIA ST (MKM)

Z-8-23-11: Consider a request to rezone approximately .27 acres from CS (Strip Commercial) to RM12D (Multi-Dwelling Residential) within the 8th & Pennsylvania Urban Conservation Overlay District, located at 804-806 Pennsylvania Street. Submitted by Bartlett & West, Inc., for Ohio Mortgage Investors, LLC, property owner of record.

ITEM NO. 6 TEXT AMENDMENT TO CITY OF LAWRENCE DEVELOPMENT, CHP 20; DEVELOPMENT ADJACENT TO RESIDENTIAL DISTRICTS (MJL)

TA-8-12-11: Consider amendments to various sections of the City of Lawrence Land Development Code, Chapter 20, regarding revisions to the district criteria and development standards for development adjacent to R (Residential) Districts, clarify other density and dimensional standards, Section 20-1701 to clarify or add terms used in the density and dimensional standards table, and Sections 20-211 and 20-212 to make consistent with potential changes in Article 6. *Initiated by City Commission on 7/12/11.*

MISCELLANEOUS NEW OR OLD BUSINESS

Consideration of any other business to come before the Commission.

ADJOURN

CALENDAR

August						2011
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			

September						2011
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	

October						2011
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					

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
August 22 & 24, 2011
Meeting Minutes DRAFT

August 22, 2011 – 6:30 p.m.
Commissioners present: Belt, Blaser, Britton, Burger, Culver, Finkeldei, Hird, Liese, Singleton
Staff present: McCullough, Stogsdill, Day, Larkin, Warner, Ewert

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MINUTES

Receive and amend or approve the minutes from the Planning Commission meeting of July 25 & 27, 2011.

Motioned by Commissioner Finkeldei, seconded by Commissioner Liese, to approve the July 25 & 27, 2011 Planning Commission minutes.

Approved 8-1-0, with Commissioner Britton abstaining.

COMMITTEE REPORTS

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

No committee reports.

COMMUNICATIONS

Mr. Scott McCullough, Planning Director, reviewed new attachments and communications that were posted to the online Planning Commission agenda after the initial posting date.

EX PARTE / ABSTENTIONS / DEFERRAL REQUEST

- No ex parte.
- No abstentions.

PC Minutes 8/22/11 **DRAFT**

ITEM NO. 1 RM12D TO RM12; 8 ACRES; SW CORNER OF E 25TH TERRACE & FRANKLIN ROAD (SLD)

Z-6-16-11: Consider a request to rezone approximately 8 acres from RM12D (Multi-Dwelling Residential) to RM12 (Multi-Dwelling Residential), located at 25th Terrace and proposed Ellington Drive. The property is generally located at the SW corner of E 25th Terrace and Franklin Road. Submitted by Johnson Group LLC, for Fairfield Investors LLC, property owner of record.

STAFF PRESENTATION
Ms. Sandra Day presented the item.

APPLICANT PRESENTATION
Mr. Aaron Gaspers, Johnson Group, was present for questioning.

PUBLIC HEARING
No public comment.

COMMISSION DISCUSSION
Commissioner Finkeldei said he supported the staff recommendation. He felt this would be a nice transition into the Prairie Park neighborhood.

ACTION TAKEN
Motioned by Commissioner Finkeldei, seconded by Commissioner Liese, to approve the request to rezone approximately 8.0 acres, from RM12D (Multi-Dwelling Residential) District to RM12 (Multi-Dwelling Residential) District based on the findings presented in the staff report and forwarding it to the City Commission.

Commissioner Liese said he agreed with Commissioner Finkeldei's comments.

Commissioner Belt said it would be helpful to have some sort of metric report to determine if apartments, townhomes, and condos were reaching a peak.

Mr. McCullough said staff could try to put together some sort of report on what currently existed. He stated staff had not been directed to complete a comprehensive and market analysis of multi-dwelling structures in the city by the governing body. He said staff could pull together some data and mapping where the different types of housing developments were.

Commissioner Hird asked if it would front or back onto Franklin Road.

Ms. Day said it would back onto Franklin Road. She stated they would face the duplexes across the street and there would be some form of alley access to the rear of the buildings.

Commissioner Burger asked if this could open the door to multi-family.

Ms. Day said yes, it could be multi-family if the property was re-platted. She said the depth was controlled by the location of Franklin Road and other interior local streets. She said the overall gross density would not change but the total number of units could fluctuate by a few dozen units total if there were no side yard setbacks.

Commissioner Burger said she was excited about what was presented in the staff report and would like to see more around town. She hoped that the project would end up reflecting what was represented. She said she would support the motion.

Unanimously approved 9-0.

PC Minutes 8/22/11 **DRAFT**

ITEM NO. 2 TEXT AMENDMENT TO CITY OF LAWRENCE DEVELOPMENT CODE; CHP 20; DETENTION (SLD)

TA-6-9-11: Consider a Text Amendment to the City of Lawrence Land Development Code, Chapter 20, Article 4, Section 20-403 to allow detention facilities as a use in the GPI (General Public Institutional) District and delete "detention and correction institutions" from the definition of Major Utilities and Services in Article 17. *Initiated by Planning Commission on 3/28/11.*

STAFF PRESENTATION
Ms. Sandra Day presented the item.

PUBLIC HEARING
No public comment.

COMMISSION DISCUSSION
Commissioner Finkeldei said he did have some concerns when the issue first came up but felt that a Special Use Permit was probably the appropriate tool. He said he would support the text amendment.

ACTION TAKEN
Motioned by Commissioner Finkeldei, seconded by Commissioner Singleton, to approve Text Amendment, TA-6-9-11, to Section 20-403 of the Land Development Code to add "Detention Facilities" as a Special Use in the GPI (General Public and Institutional Use) District and to Section 20-1764 to revise the definition of Major Utilities and Services by deleting "detention and correction institutions". Instruct staff to change:

- the title of Section 20-1721 from "Detention" to Detention Facilities;
- to correct the use tables in Section 20-402 and 20-403 to list the use as "Detention Facilities";
- to list "Utility, Minor" as "Utilities, Minor"; and
- "Utilities Services, Major" as "Utilities and Services, Major"

to align with the terms in Article 17.

Unanimously approved 9-0.

PC Minutes 8/22/11 **DRAFT**

ITEM NO. 3 RM15 TO RM24; 15 ACRES; 4100 W 24th PLACE (SLD)

Z-8-12-10: Consider a request to rezone approximately 15 acres from RM15 (Multi-Dwelling Residential) to RM24 (Multi-Dwelling Residential), located at 4100 W. 24th Place. Submitted by BG Consultants, Inc., for Remington Square LC, property owner of record.

Item 3 was deferred prior to the meeting.

PC Minutes 8/22/11 **DRAFT**

ITEM NO. 4 COMPREHENSIVE PLAN AMENDMENT TO H2020 - CHP14; INVERNESS PARK DISTRICT PLAN (DDW)

CPA-3-1-11: Clarify approval of Comprehensive Plan Amendment to Horizon 2020 – Chapter 14 to include the Inverness Park District Plan. (PC Item 8; approved 7-1 on 7/27/11)

STAFF PRESENTATION

Mr. Dan Warner reviewed the plan that was approved by Planning Commission in August. The approval included a change that the properties along Clinton Parkway be required to utilize Planned Development Overlay Districts when seeking a rezoning. He asked Planning Commission to clarify which of the two options they intended to apply to the three properties along Clinton Parkway:

Option 1: A Planned Development Overlay District is required to develop the properties along Clinton Parkway.

Option 2: A public process for site planning the properties, such as rezoning with a Planned Development Overlay or rezoning with conditions that require site plan approval from the City Commission, is required.

PUBLIC HEARING

Mr. Matt Gough, Barber Emerson, said when the applicants considered the specific requirements associated with the PD Overlay it became apparent that it would not be a good fit. He said at the last Planning Commission meeting they discussed the need to have a governing body review the site plan because of the nature of the area. He said Option 2 would allow for either a PD Overlay or a stipulation that it be a public review, which would be the applicant's preference. He said they would not be using the PD Overlay to increase density.

Ms. Marci Francisco, League of Women Voters, expressed concern about there not being any regulations, suggestions, or recommendations for Planning Commission and City Commission to deal with conditions on zoning. The League felt that would be helpful. She said the League felt that these properties would be very appropriate for the Overlay District because of the stream that divides two properties, the flood hazard area, and the future Parks & Recreation facility to the south. She said it would be an appropriate place to identify a trail along the stream that could connect the park area and an appropriate opportunity for use of open space. She suggested the wording 'homeowners association' be replaced with 'owners association' for maintenance of jointly shared property.

COMMISSION DISCUSSION

Commissioner Burger asked if the 20% allowance for the set aside was for each individual parcel or if the parcels would become a congregate unit that would have a 20% requirement.

Mr. McCullough said it could be accomplished in different ways, depending on what type of project. He said for example, with a commercial development like Hy-Vee that, with a single use on one platted lot the open space may be contained on that lot. He stated an apartment complex could be on one lot with several buildings associated with it and the open space would be identified on the site plan. He said subdividing property for cluster housing projects would contain individual lots with a tract of open space that would be held in common with the owners association, and that there were enforcement methods for dealing with maintenance of open space. He said most apartment complexes were owned by one corporate entity so any issues would be dealt with through the management group at the complex.

Commissioner Finkeldei inquired about the provision regarding Planned Development Overlay District and if it had to be a homeowners association.

Mr. McCullough said it could also be held in land trust, conservation trust, or deeded to the city. He stated staff was seeking clarification on the intent of last month's discussion about site planning and the public process that allows that. He said there were other ways to get the same outcome and same values of sensitive land, maintenance, and open space.

Commissioner Liese said the letter from League of Women Voters dated August 15 referenced not including Option 2 in the Inverness Park District Plan. He asked Ms. Francisco if that was the intent. He also inquired about the multiple motions Planning Commission could make this evening.

Mr. McCullough said there were options with the plan.

Ms. Francisco said there was a follow up letter from the League of Women Voters expressing concern about Option 2 for Remington Square Apartments because they could be sold off at some point as condominiums.

Commissioner Hird said conditioning would allow the opportunity to be heard at the City Commission level where the League of Women Voters and other public members could provide input.

Ms. Francisco said at that point it would be a specific site plan and there would not be the same requirements for the 20% set aside and the homeowners association. She said the League of Women Voters thought there was a request for an increased zoning.

Commissioner Burger asked if the applicant for the residential area had an opposition to the 20%.

Mr. McCullough said they did not talk specifically about that. He said the Code had other requirements for recreational open space for apartment buildings as well, 50 square foot per unit required. He said he did not know if the Planned Development Overlay District gave greater authority to require trails. He said given the circumstances surrounding Remington Square there would be some authority to encourage trail development through the public process of site planning. He said in his opinion, seeking a Planned Development District does not give the city any greater authority to seek exactions on property.

Commissioner Finkeldei said he was leaning toward Option 2. He said the language was being put in the Southeast Area Plan and Option 2 would include some sort of public process, Planned Development Overlay or rezoning with conditions.

ACTION TAKEN

Motioned by Commissioner Finkeldei, seconded by Commissioner Culver, to clarify with Option 2:

> Option 2: A public process for site planning the properties, such as rezoning with a Planned Development Overlay or rezoning with conditions that require site plan approval from the City Commission, is required.

Commissioner Singleton said her intent last month was to insure a public process with site planning. She said her recollection was that it was unclear that the complications about the Planned Development Overlay District were not something they were aware of and with further investigation it does not work well in the area they put it in. She said she would support Option 2.

Commissioner Burger said she was concerned that going with Option 2 would allow for Planned Overlay or rezoning with conditions. She did not like the idea of conditional zoning. She said if the PD overlay was not the appropriate tool that was fine but she was not comfortable with Option 2 as

written. She was also concerned with the automatic 20% with the PD. She said she would be very favorable to only applying that to residential. She preferred Option 1. She inquired about the specifics of trails and green space being initiated by the public.

Mr. McCullough said Option 2 would not prevent Planning Commission from recommending conditions at rezoning or recommending a PD Overlay to City Commission once they see a request. He said it would broaden options about what the plan would support.

Commissioner Liese expressed concern about Option 2 and was not sure it was needed. He said he was leaning toward Option 1 and would vote against the motion.

Commissioner Finkeldei said Option 1 would make it very difficult to develop the commercial parcels. He said if the motion failed he would not support Option 1.

Mr. McCullough said staff felt the plan should be flexible enough to address any development proposals.

Commissioner Blaser asked if Option 2 would be a better option for lot one.

Mr. McCullough said it was designated commercial in the plan and PD may not be the most appropriate on commercial property.

Commissioner Burger inquired about the fourth parcel to the south.

Mr. McCullough said it was not applied to that parcel last month.

Commissioner Blaser said he would vote in favor of the motion for Option 2 because it was a broader statement of what could happen.

Commissioner Culver said the intention was to provide a public process for review. He felt Option 2 would make more sense.

Commissioner Britton asked if this was a public hearing item last month.

Mr. McCullough said yes.

Commissioner Britton asked if Option 1 would stand if they didn't take action.

Mr. McCullough said it was unique to bring back a Planning Commission decision for clarification. Staff wanted clarification on the intent. He said staff did not disagree that it could be appropriate for Remington Square but wanted flexibility for the future.

Commissioner Britton expressed concern about the process and that it sounded like asking the first question all over again as a non-public hearing item. He said he was leaning toward voting against Option 2 because it would preserve the decision made last month by Planning Commission.

Commissioner Hird said he came to the meeting convinced he would vote for Option 1. He said Option 2 does not lock in the PD but would preserve it and was appropriate for Remington Square but not the other parcels. He also liked that it would provide for a public process and would go to the governing body. He said this strip of land was a gateway into the city and the appearance was important so he liked the idea of having the most flexibility. He thought conditional zoning was a tool

that could effectively be used on occasion. He said Option 2 appeared to be more favorable in terms of flexibility. He was hesitant about the idea of one owners association because it would give the entity shelter from their civic responsibilities. He said he would support Option 2 but thought a PD was still on the table for part or all the properties.

Commissioner Burger asked who would decide whether it would be a Planned Development Overlay or rezoning with conditions.

Mr. McCullough said Planning Commission would make a recommendation to City Commission.

Commissioner Burger asked if Planning Commission would see it either way.

Mr. McCullough said yes. He said once it was zoned and if conditions were placed they may or may not see it after that.

Commissioner Burger asked if staff and the applicant would work together to determine the best tool.

Mr. McCullough said yes, staff would make a recommendation to Planning Commission.

Commissioner Liese asked Ms. Francisco why having more options was a bad thing.

Ms. Francisco said the League of Women Voter letter was specifically directed at Remington Square. She said they were concerned about development at a higher density. She said this now would include the Overlay District which was a good thing. She said the concern was that the applicant would decide what they want to do and the community would have to object. She said conditional zoning needed to be incorporated in the Development Code. She was concerned about the language in Option 2 and that it was very amorphous. She said there was not a public process for site planning, there was a public process for reviewing site plans.

Commissioner Belt asked if the League preferred a more proactive approach as opposed to a reactive plan.

Ms. Francisco said the applicant specifically requested an increase in zoning for Remington Square and the League was responding with an equally specific proposal that they felt was much better for the lot. She felt conditional zoning needed to be incorporated in the Development Code so developers would know the rules.

Commissioner Hird asked if the conditions were stated on the site plan.

Mr. McCullough said based on some comments from the League about a year ago, staff revised the mapping techniques to include a layer of conditional zoning.

Ms. Francisco said the change was not to the site plan but rather a change to the zoning.

Commissioner Britton asked if the League of Women Voters issue was related specifically to Remington Square.

Ms. Francisco said the League thought the PD Overlay would be a better option to increase the density and would give the public the opportunity for planning. She felt they should change the requirements for homeowners association.

Motion carried 5-4, with Commissioners Belt, Britton, Burger, and Liese voting in opposition. Commissioners Blaser, Culver, Finkeldei, Hird, Singleton voted in favor of the motion.

MISCELLANEOUS NEW OR OLD BUSINESS

Consideration of any other business to come before the Commission.

Recess at 7:55pm until 6:30pm on August 24, 2011.

PC Minutes 8/24/11 **DRAFT**

Reconvene August 24, 2011 – 6:30 p.m.

Commissioners present: Belt, Blaser, Britton, Burger, Culver, Finkeldei, Hird, Liese
Staff present: McCullough, Stogsdill, Leininger, M. Miller, Zollner, Ewert

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BEGIN PUBLIC HEARING (AUGUST 24, 2011):

COMMUNICATIONS
Mr. McCullough said information from the applicant regarding synthetic turf was added to the packet after the communications deadline due to technical difficulties.

EX PARTE / ABSTENTIONS / DEFERRAL REQUEST

- Ex parte:
  Commissioner Hird said he had a brief conversation with Ms. Jane Eldredge, Barber Emerson, regarding meeting procedures and how long she would be allowed to speak for the synthetic turf item.
- No abstentions.

PC Minutes 8/24/11 **DRAFT**

ITEM NO. 5A U-KU TO RM32-PD; .80 ACRES; 1043 INDIANA ST (LBZ)

Z-7-18-11: Consider a request to rezone approximately 0.80 acres from U-KU (University-Kansas University) to RM32-PD (Multi-Dwelling Residential-Planned Development), located at 1043 Indiana Street. Submitted by Paul Werner Architects, for Triple T LLC, property owner of record.

STAFF PRESENTATION
Ms. Lynne Braddock Zollner presented the item.

APPLICANT PRESENTATION
Mr. Paul Werner, Paul Werner Architects, was present for questioning.

PUBLIC HEARING
Mr. Stan Hernly spoke in favor of the rezoning.

ACTION TAKEN
Motioned by Commissioner Liese, seconded by Commissioner Finkeldei, to approve the request to rezone approximately 0.08 acres, from U-KU (University-Kansas University) District to RM32PD (Multi-Dwelling Residential) District Planned Development based on the findings presented in the staff report and forwarding it to the City Commission.

Commissioner Finkeldei said it was consistent with the Oread Plan and he supported the motion.

Commissioner Hird said he would also vote in favor of the motion for the same reason stated by Commissioner Finkeldei.

Unanimously approved 8-0.

PC Minutes 8/24/11 **DRAFT**

ITEM NO. 5B PRELIMINARY DEVELOPMENT PLAN; .80 ACRES; 1043 INDIANA ST (LBZ)

PDP-7-1-11: Consider a Preliminary Development Plan to relocate the Varsity House and development of a Multi-Dwelling Structure, located at 1043 Indiana Street. Submitted by Paul Werner Architects, for Triple T LLC, property owner of record.

STAFF PRESENTATION
Ms. Lynne Braddock Zollner presented the item.

Mr. McCullough said the new PD Overlay District standards permits variances to setbacks but only if the adjacent zoning was greater. He stated the revisions were solvable and could be resolved before it went to City Commission.

APPLICANT PRESENTATION
Mr. Paul Werner, Paul Werner Architects, said this was a land use issue, not a Historic Resources Commission issue. He said he would like condition 2 to be reworded regarding the submission of public improvement plans being submitted prior to the final development plan. He said it would take at least a year to build, maybe longer. He said the public improvement plans would include the alley, stormwater improvement, and the entrance to the garage on Indiana Street. He said they would want the building to be built before doing work in the alley. He stated regarding condition 3G they would like to use some of the bricks on the front patio. He felt they were good with the height and setbacks for condition 4. He showed drawings on the overhead.

Commissioner Finkeldei asked if he did not want to have to build or submit plans prior to the submission of the final development plan.

Mr. Werner said they did not want to have to submit plans prior to the final development plan. He said public improvement plans were detailed and a lengthy process. He said they would not build the alley until the building was already up.

Mr. McCullough said the language could be worked on. He said the public improvement plans would need to be known prior to issuing a building permit.

Commissioner Hird asked if the applicant was willing to live with that condition.

Mr. Werner said he would have to think about the timing.

Commissioner Finkeldei thought it was odd that the language said the submission of a public improvement plan instead of the approval of a public improvement plan.

Mr. McCullough said the intent was to have approval before permits would be issued.

Mr. Werner said he preferred liked the word submission instead of approval.

PUBLIC HEARING
Mr. Stan Hernly was astounded that this was not deferred. He stated condition 6 glosses over Historic Resources Commission hearing the item. He said there was a spirited debate with the Historic Resources Commission regarding moving the house. He stated it was by no means a done deal that the house could be approved for moving. He said it was unfortunate there wasn't a Historic

Resources Commission meeting last week. He felt it was a procedural and legal standpoint if the plan was showing the house moved and Historic Resources Commission did not approve it. He felt very strongly that the issue needed to be deferred and Historic Resources Commission needed to hear the item before Planning Commission took action. He said ending up with an approved plan that hadn't been approved by Historic Resources Commission was a bad place to be.

Mr. Dennis Brown, Lawrence Preservation Alliance, quoted language from the staff report. He expressed concerns with compatibility. He felt the applicant should work harder to preserve the structure.

COMMISSION DISCUSSION

Commissioner Liese asked staff to comment on whether Planning Commission should be considering this prior to Historic Resources Commission.

Mr. McCullough said the Planning Commission review was limited to other land use elements as outlined in the staff report and Development Code. He said Planning Commission was a recommending body and that City Commission would determine it. He said Historic Resources Commission was a decision making body for their part of the process. He said from a legal standpoint staff felt Planning Commission was within their scope of review and authority to hear the item and recommend as they desire. He said ultimately City Commission would determine all of this.

Commissioner Liese said Planning Commission and Historic Resources Commissioner were separate bodies but he was not sure he could personally separate what Historic Resources Commission thought about this. He asked if there was a downside to deferral.

Mr. McCullough said it may cause delay for the developer. He said Historic Resources Commission meets next week and they may want to hear what Planning Commission thinks. He said staff would prefer to have Planning Commission define their scope, operate under that scope, and make a recommendation to City Commission. He said there may be so many changes occur through the Historic Resources Commission process that City Commission may send back to Planning Commission for further review and consideration. He said staff was advising Planning Commission to keep their scope at the land use element and let Historic Resources Commission do their job with the historic values and review.

Commissioner Hird asked Mr. Brown about the importance of the house location.

Mr. Brown said relocation was a better alternative than demolition but some preservationists would see no difference between moving a structure from its original location and demolition. He said the house was on a prominent corner lot with two lots and green space around it. He expressed concern about the site plan saying relocation or replication of the house.

Commissioner Liese asked if Planning Commission would see the item again after Historic Resources Commission.

Mr. McCullough said if Planning Commission took action tonight the recommendation would then go to City Commission.

Commissioner Finkeldei asked if Historic Resources Commission had met last week and denied it, would Planning Commission still have had this on the agenda.

Mr. McCullough said staff would have had to talk to the applicant and it could have been heard by Planning Commission.

Commissioner Finkeldei said in the past Planning Commission has heard items that had a negative Historic Resources Commission recommendation, such as the Oread Hotel.

Commissioner Burger asked if Planning Commission needed to do something with condition 6 in their recommendation to address Historic Resources Commission approval.

Mr. McCullough said if the Historic Resources Commission process was ultimately denied and an appeal was upheld then the preliminary development plan would not exist. He said the entire request was contingent upon approval of the Historic Resources Commission element as well.

Commissioner Liese said from his perspective a deferral would not be necessary. He said he was comfortable making a decision tonight and letting Historic Resources Commission do their job.

Commissioner Belt asked what the likelihood was that they would see this again.

Mr. McCullough said that was tough to predict. He said they would have to get through the Historic Resources Commission process and there are so many variables with that. He said this was the application the applicant wanted to present to the governing bodies.

Commissioner Belt said Planning Commission unanimously approved the rezoning so that should give the Historic Resources Commission an indication of how Planning Commission was leaning zoning wise.

APPLICANT CLOSING COMMENTS

Mr. Werner said the perception was that they were going to lose at Historic Resources Commission and he did not feel that was the case. He said it was a 3-3 tie vote last time Historic Resources Commission saw it and the building has been changed since then. He said he felt pretty good about where the project was going. He stated it was an environs review, not a listed structure. He said the reason for moving it to the north was so they would only have to move it once and put it on a new foundation.

Commissioner Liese asked if Mr. Werner was saying that Planning Commission implied that it would be denied by Historic Resources Commission.

Mr. Werner said no, it was implied by public comment. He said regarding the public improvement plans he could submit the public improvement plans prior to the issuance of building permits.

Commissioner Finkeldei said he took their job as the Planning Commission seriously and what they recommend. He said they had a narrow function. He said Historic Resources Commission has its own important function and that Historic Resources Commission should fully consider and make their decision. He said the Planning Commission point of view was that the plan had high density and it was an appropriate place for high density development. He said he would defer to Historic Resources Commission to decide whether it was the right design.

Commissioner Blaser inquired about the approval of the setbacks.

Mr. McCullough said the report was in error, Planning Commission would not have authority to grant waivers.

Commissioner Culver inquired about condition 2 regarding the public improvement plans being submitted before any building permits. He asked if that was in alignment with what staff would like to see.

Mr. McCullough said staff preferred the word 'approved' rather than 'submitted' before building permit issuance. He said there was a direct link to fire code issues, lane width, utilities, etc. He said typically staff and applicant would work on it as it moves forward.

Commissioner Liese thanked Mr. Hernly and Mr. Brown for voicing their concerns. He said he was glad they were raising these issues and he was sure Historic Resources Commission would make a smart decision.

ACTION TAKEN

Motioned by Commissioner Liese, seconded by Commissioner Blaser, to approve the Preliminary Development Plan for 1043 Indiana Street 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. The applicant submit a drainage study to be reviewed and approved by the City prior to submission of a Final Development Plan.
2. The approval of public improvement plans prior to issuance of building permits.
3. Submission of a revised Preliminary Development Plan to include the following:
    a) A note identifying the 18' front yard setback is based on average setbacks on the block as permitted by Section 20-602(e)(i);
    b) Correction of plans noted in staff review comments dated 08/08/11;
    c) Correction of total units on 4th floor in the Detailed Project Summary and identification of Varsity House as a Congregate Living unit;
    d) A note identifying the height of the retaining walls along all sides of the property;
    e) A note indicating this planned development is restricted to the uses allowed in the RM32 district; and
    f) Removal of the note that identifies the project will utilize removed brick from the alley to landscape on the site. If the alley is reconstructed, the historic brick must be gently removed and placed on pallets for delivery to the City.
4. The submission and approval of building elevations and floor plans that identify: height, setbacks, common open space, and recreational space for Planning Staff to determine Development Code compliance.
5. The applicant verify the entire development site is under unified control.
6. Completion of Historic Resources Commission conditions of approval.

Commissioner Finkeldei said regarding condition 3(f) he hoped the city would consider selling some of the bricks back to be used in the development.

Unanimously approved 8-0.

PC Minutes 8/24/11 **DRAFT**

ITEM NO. 6 TEXT AMENDMENT TO CITY OF LAWRENCE DEVELOPMENT CODE; CHP 20; SYNTHETIC TURF AS LANDSCAPING MATERIAL (MKM)

TA-4-6-11: Consider Text Amendments to the City of Lawrence Land Development Code, Chapter 20, Articles 10 and 17, regarding synthetic turf as landscaping material. *Initiated by City Commission on 5/3/11. Deferred by Planning Commission on 6/22/11.*

STAFF PRESENTATION
Ms. Mary Miller presented the item.

APPLICANT PRESENTATION
Ms. Jane Eldredge, Barber Emerson, introduced two national experts on synthetic turf, Mr. Rusty Abell from Lubbock, Texas and Mr. Joe Di Geronimo from Sturbridge, Massachusetts. She stated they were not sellers or vendors of any products. She said they were consultants to the FIFA (International Federation of Association Football) and the NFL (National Football League). She said the synthetic turf products used over the years were developed for athletic purposes. As the products have improved they have become more viable and attractive as landscape materials. She displayed some turf examples.

Mr. Abell and Mr. Di Geronimo provided their credentials and presented the history of synthetic turf with a PowerPoint presentation and pictures of turf used in other cities.

Ms. Eldredge said there were inconsistencies in the Development Code regarding the definition of landscape material. She stated in section 20-1701 landscape material was described as living and non-living. Under the non-living category it includes rocks, pebbles, sand, bark, brick pavers, urban mounds, or other items of a decorative or embellishing nature. She said synthetic grass was more attractive than a yard full of pebbles, sand, or bricks and that fundamentally this was a question of aesthetics. She suggested a text amendment be initiated for section 20-1701 to make it clear that synthetic that turf was just as good, if not better, than rocks, pebbles, sand, and bark. She said rubber mulch was now available and nothing prohibited it. She asked that natural or synthetic turf language be added to section 20-1003(e) and the definition in section 20-1009(b) be clarified that no artificial plants or vegetation, other than synthetic turf, may be used. She asked that the standards be compatible with the product used at Frontier Apartments and proposed quality standards for turf. She did not think many people would use synthetic turf due to its upfront cost.

PUBLIC HEARING
Mr. Dan Dannenberg felt it was not fair the public could only speak for 3 minutes when the applicant had 35 minutes. He said he has used low maintenance natural landscaping at his residence to mitigate and prevent erosion. He said he has not watered it since it was installed four years ago. He expressed concerns about heat generation. He stated athletic fields were not the same as an apartment complex. He urged Planning Commission not to approve any changes that would lead to the use of synthetic surfaces in any area of the community.

Ms. Gwen Klingenberg, Lawrence Association of Neighborhoods, said if approved a lot of questions needed to be answered first. She wondered what costs were associated with installing turf and expressed concern about applicants asking for incentives in order to be able to afford the installation. She wondered what kind of condition the soil would be in after the turf was removed. She felt the applicant should have applied for the text amendment before installing the turf if it was so important to Lawrence. She wondered to what level they would accept synthetic turf.

Ms. Jeanne Pees, Sunset Hills Neighborhood Association, said the neighborhood association was not in favor of it and agreed with the staff recommendation of denial. She said the landscape architects in Lawrence had done a wonderful job of landscaping sites within the boundaries of the Development Code.

APPLICANT CLOSING COMMENTS

Ms. Jane Eldredge said the developer believed he had the authority to install synthetic turf based on a previously approved installation of turf at The Oread Hotel and the unclear definition in the Development Code. She felt the Development Code needed clarification.

COMMISSION DISCUSSION

Commissioner Hird inquired about synthetic turf being used in a limited manor.

Mr. McCullough said synthetic turf had only used at The Oread Hotel. Alternative compliance was used for Dillons on Massachusetts Street and Tractor Supply.

Commissioner Hird asked if their discussion was about the text amendment, not a specific project.

Mr. McCullough said there were implications for Frontier Apartments because they were currently not code compliant by staff's interpretation. He said the developer agreed to come into compliance with the outcome of this amendment.

Commissioner Hird asked if with a text amendment they were not talking about a specific project.

Mr. McCullough said the text amendment would be city wide and would be applied to anything that gained site plan approval.

Commissioner Liese thanked Mr. Dannenberg and assured him that everything he said was of importance and that his perspective was important. He asked Mr. Dannenberg if he had anything else he would like to say.

Mr. Dannenberg said he would not make any further statements but would be sending a letter to the Planning Commission Chair regarding turf and proceedings so that opposing opinions could get a fair and adequate opinion.

Commissioner Blaser said he visited Frontier Apartments and was underwhelmed by the synthetic turf. He said there were cigarette butts folded under the turf. He also stated that after rain there were waves in the turf that looked like old carpet that needed to be stretched. He said one of the seams was very obvious like it was about to come apart.

ACTION TAKEN

Motioned by Commissioner Blaser, seconded by Commissioner Belt, to deny amendments to Articles 10 and 17 of the Land Development Code to add synthetic turf as landscaping material based on the analysis provided in the Staff Report.

Commissioner Finkeldei agreed with Commissioner Blaser that he was not impressed with what the synthetic turf at Frontier Apartments looked like, however he did think the turf at The Oread worked well. He said he would probably support the use as alternative compliance.

Commissioner Belt inquired how staff determined the 18" border width language under option B of the staff memo.

Mr. McCullough said it was a reasonable border to a landscape island.

Commissioner Liese inquired about the approval criteria for alternative compliance.

Ms. Miller read from the Development Code:

> *To be approved, an alternative compliance landscape plan shall be equal to or exceed traditional compliance in terms of quality of materials and visual effect, effectiveness in meeting the purpose established in Section 20-1001, and material durability and hardiness. Alternative compliance is limited to the specific site under consideration and does not establish precedent for acceptance of alternative compliance plans on other sites.*

Commissioner Hird asked if under the alternative compliance provisions artificial turf could be used in limited applications.

Mr. McCullough said staff made that interpretation with The Oread Hotel. He said the Development Code language was strong about the use of living materials.

Commissioner Liese said he visited the Frontier Apartment site and had the same visual experience that other Commissioners had commented on. He said the color of the turf did not look like grass. He said he would be okay with approving some synthetic turf as alternative compliance but the visual effect of the Frontier Apartments made him sure he would not vote for a text amendment.

Commissioner Burger said she had a similar reaction to the aesthetics of the turf at the Frontier Apartments. She said the turf at The Oread was done well. She wondered about the impact of turf to wildlife. She also wondered how the space between the sidewalk and curb, where there was natural grass still growing, would be maintained to look similar to the turf. She said this was not a locally manufactured product, unlike the sod that could be purchased within Douglas County. She wondered how trees would grow when surrounded by turf material. She said the research that staff and the applicant did was very informative. She said this was so different from athletic fields that it was not an issue. She thanked public members for their comments.

Commissioner Britton said there was no clear benefit to this kind of change, environmentally or aesthetically. He said he would support the motion.

Commissioner Culver said he could support limited use of synthetic turf under alternative compliance. He stated he would be interested in knowing the quality of turf used at The Oread versus Frontier Apartments.

Commissioner Hird said in January he attended the Bowl Championship Series (BCS) in Arizona and the University of Phoenix rolls their entire football field outside the stadium to grow natural grass and then they roll it back in for games. He said the application of synthetic turf to athletic facilities was a far different issue. He said Ms. Eldredge was correct by saying it was largely an issue of aesthetics. He said he visited Frontier Apartments and if it was an example of the best that could be done with artificial turf then he would vote no. He said the developer of the project had done some outstanding landscaping in Lawrence. He wondered what would happen when the property was sold to the next owner and how it would be maintained. He stated he read every page of the documents that Ms. Eldredge submitted. He said he had no problem allowing a certain amount of synthetic turf as an alternative compliance tool. He did not think the text amendment proposed should be passed. He stated he would support the motion.

Ms. Eldredge said the applicant would be happy to withdraw the request and submit an alternative compliance request.

Commissioner Liese said it was important to vote on the motion and express to the community whatever the outcome was.

Commissioner Hird asked staff if it was appropriate to withdraw the request and if the applicant could come back with another suggestion.

Mr. McCullough said the process for text amendments was a little different. He stated City Commission would initiate any text amendments. His advice was to go ahead and vote on the motion and the applicant could send a letter of withdraw to City Commission.

Commissioner Hird asked Ms. Eldredge if that was her understanding as well.

Ms. Eldredge said that was not her understanding but she did not want to take the time to debate it. She said there were 20 people around Frontier Apartments that liked the synthetic turf and felt it enhanced the neighborhood.

Motion carried 6-2, with Commissioners Culver and Finkeldei voting against the motion.

PC Minutes 8/24/11 **DRAFT**

ITEM NO. 7 COMPREHENSIVE PLAN AMENDMENT TO CHP14; SOUTHEAST AREA PLAN (MJL)

CPA-10-8-10: Consider Comprehensive Plan Amendment to Chapter 14 – Southeast Area Plan, to reference and reflect the accepted Preliminary Alignment Study for 31st Street and to update the plan to reflect changes since adoption. Authorize the chair of the Planning Commission to sign Planning Commission Resolution PCR-8-3-11 regarding the amendment to *Horizon* 2020 – Chapter 14-Southeat Area Plan (CPA-10-8-10) updating the Southeast Area Plan, if appropriate.

STAFF PRESENTATION
Ms. Michelle Leininger presented the item.

PUBLIC HEARING
No public comment.

ACTION TAKEN
Motioned by Commissioner Finkeldei, seconded by Commissioner Blaser, to approve:

1. Amendments to Chapter 14 – Specific Plans; Southeast Area Plan to update the reference to the adopted Preliminary Alignment Study for Preliminary Alignment Study for 31st Street (North 1300 Road) East of 1600 Road to County Road 1057 and the Future Land Use Map to reflect the 31st Street alignment identified in this study and to generally update the plan.
2. Authorize the chair of the Planning Commission to sign Planning Commission Resolution PCR-8-3-11 regarding the amendment to Horizon 2020 – Chapter 14-Southeast Area Plan (CPA-10-8-10) updating the Southeast Area Plan, if appropriate.

Unanimously approved 8-0.

PC Minutes 8/24/11 **DRAFT**

MISCELLANEOUS NEW OR OLD BUSINESS

MISC NO. 1 INITIATE TEXT AMENDMENTS TO CLARIFY DENSITY & DIMENSIONAL STANDARDS (MJL)

Consider initiation of text amendments to the *Land Development Code,* Section 20-601 to clarify the density and dimensional standards and potentially to Section 20-1701 if definitions of terms are determined to be needed.

STAFF PRESENTATION

Ms. Michelle Leininger presented the item.

ACTION TAKEN

Motioned by Commissioner Finkeldei, seconded by Commissioner Blaser, to initiate text amendments to the Land Development Code, Section 20-601 to clarify the density and dimensional standards and potentially to Section 20-1701 if definitions of terms are determined to be needed.

Unanimously approved 8-0.

PUBLIC COMMENT SECTION

ADJOURN 9:32pm

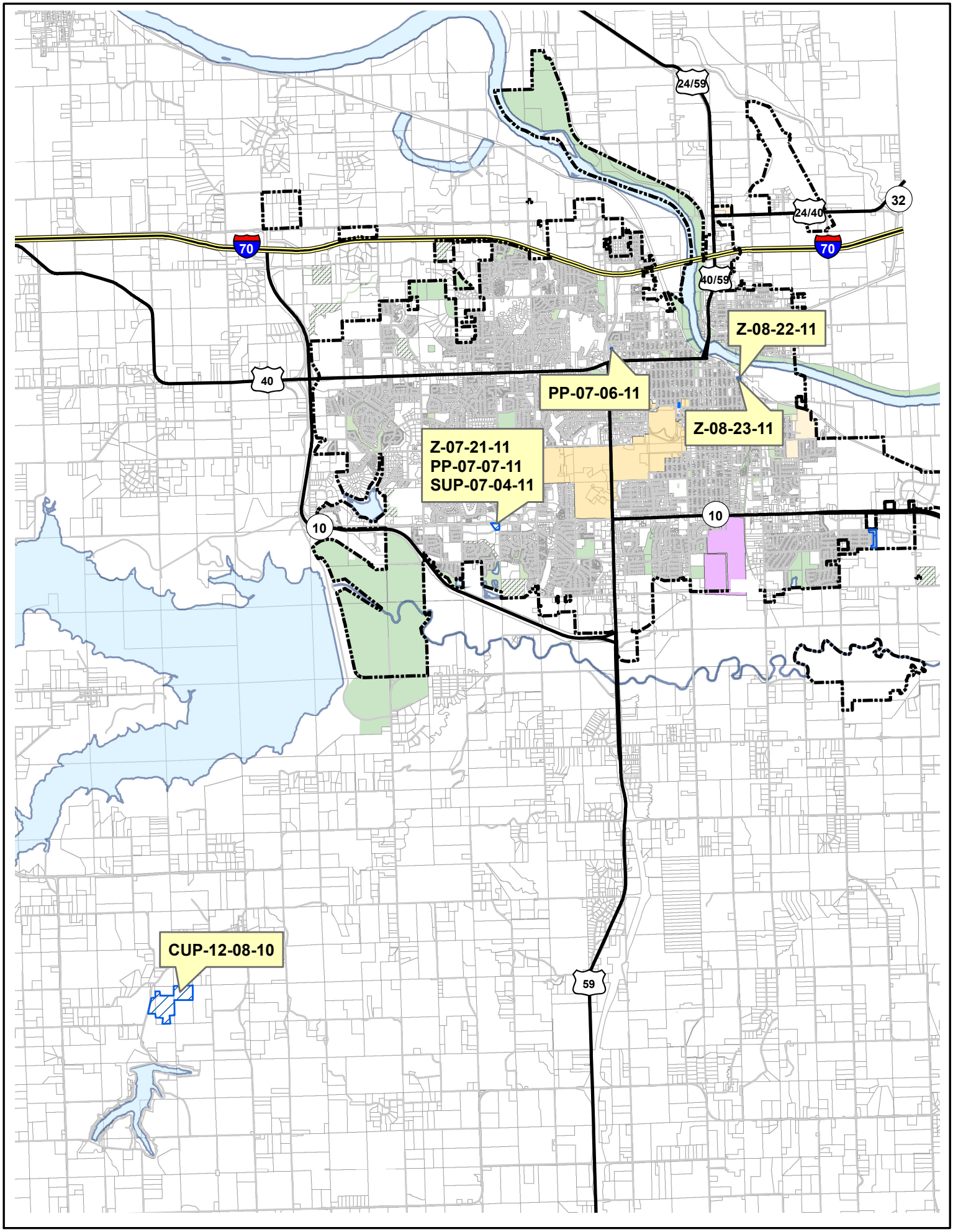
2011
LAWRENCE-DOUGLAS COUNTY METROPOLITAN PLANNING COMMISSION
MID-MONTH & REGULAR MEETING DATES

Mid-Month Meetings, Wednesdays 7:30 – 9:00 AM	**Mid-Month Topics**		**Planning Commission Meetings 6:30 PM, Mon & Wed**	
Jan 12	Housing Trends	Future Topics	Jan 24	Jan 26
Feb 9	Complete Streets		---	Feb 23
Mar 16 **- 8AM start**	Historic Preservation & H2020 – Chapter 11 Update		Mar 28	Mar 30
~~Apr 13~~	*Canceled*		Apr 25	Apr 27
May 11 **- 8AM start**	APA Conference follow-up		May 23	May 25
~~Jun 8~~	*Canceled*		Jun 20	Jun 22
Jul 15 ***Fri***	*PC Training – all day Friday*		Jul 25	Jul 27
Aug 10	Continue 'How Meetings Are Run' Discussion from Orientation Schedule remainder of 2011 Topics		Aug 22	Aug 24
Sep 14	Overlay Districts & Conditional Zoning	PC– General Process Questions	Sep 26	Sep 28
Oct 12	Density Exercise		Oct 24	Oct 26
Nov 2			Nov 14	Nov 16
Nov 30			Dec 12	Dec 14

	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 (examples from other states)* *TDRs* *Library Expansion Update* *Joint meeting with other Cities' Planning Commissions* *Joint meeting with other Cities and Townships – UGA potential revisions* *Presentation from KC-metro Planning Directors* *Tour City/County Facilities* *2010 Census Data*
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 8/16/11


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PLANNING COMMISSION REPORT
REGULAR AGENDA --NON-PUBLIC HEARING ITEM
Public hearing on Variance Requests

PC Staff Report
09/26/2011

ITEM NO. 1: PRELIMINARY PLAT; FIFTH STREET BLUFF SUBDIVISION; W 5TH ST (MKM)

PP-07-06-11: Consider a one lot Preliminary Plat and variances related to dedication of rights-of-way and frontage for Fifth Street Bluff Subdivision, approximately 0.29 acres, located on W 5th Street near the connection of Iowa Street and W 5th Street. Submitted by Paul Werner Architects, for JMC Construction, property owner of record

STAFF RECOMMENDATION ON VARIANCES:
Staff recommends approval of the following variances:

1) From Section 20-810(d)(4)(i) which requires 60 ft of right-of-way for local streets to permit the right-of-way to remain at 50 ft in this location.

2) From Section 20-810(a)(2)(i) which requires that lots be designed to comply with all applicable zoning district regulations to permit the creation of a lot with 37.35 ft of frontage in the RS10 Zoning District, rather than the required 40 ft.

STAFF RECOMMENDATION ON PRELMINARY PLAT:
Staff recommends approval of the Preliminary Plat of the Fifth Street Bluff Subdivision and referring it to the City Commission for acceptance of dedication of easements and rights-of-way subject to the following conditions of approval:

1) The preliminary plat shall be revised with the following changes:
   a. Add the following note and include on the final plat: "The driveway shall be located as far to the northeast as possible and the property owner shall remove all obstructions within the sight triangle of the driveway."
   b. Show the sight distance triangle for the driveway.
   c. Show the Blackhills Energy gas line on the north side of W 5th Street.
   d. Revise the existing trees shown on the plat to reflect the current site condition.
   e. Provide 10 ft wide utility easements along the east and south sides of the lot.
   f. Revise the floodplain note to reference the August 5, 2010 FEMA map and panel.
   g. Remove the note regarding the changes made in June 2009 to eliminate the right-of-way.
   h. Revise the information shown for the lot to the north to remove JMC as owner and to provide subdivision information for this lot.

Applicant's Reason for Request: Subdivision required prior to development of property.

ATTACHMENTS

Attachment A: Previously approved preliminary plat.
Attachment B: Sight distance study.
Attachment C: Planning and City Commission minutes.

KEY POINTS

- This plat is being submitted following the expiration of the previously approved preliminary plat. The Planning Commission approved the plat and variances at their July 22, 2009 meeting. The City Commission accepted the dedications and upheld the Planning Commission's approval of the variances at their August 25, 2009 meeting. The applicant did not submit a final plat within the 18 month time limit provided in Section 20-809(j); therefore, the approval of the preliminary plat expired. The plat that is being considered with this application contains the same lot and variances as the previously approved plat.

SUBDIVISION CITATIONS TO CONSIDER

- This application is being reviewed under the Subdivision Regulations for Lawrence and Unincorporated Douglas County, effective Jan 1, 2007.
- Section 20-813 states that building permits will not be issued for unplatted property.
- Section 20-810(4)(i) contains the right-of-way requirements for City streets. Inadequate right-of-way is currently provided for W 5th Street adjacent to the subject property.
- Section 20-810(2)(i) requires that lots conform to all applicable zoning district regulations. If the required right-of-way is dedicated, the lot conforms with the frontage requirement; however, if the required right-of-way is not dedicated, 37.35 ft of frontage is provided rather than the 40 ft required for the RS10 District.

ASSOCIATED CASES/OTHER ACTION REQUIRED

- Submittal of the preliminary plat to the City Commission for acceptance of dedication of rights-of-way and easements.
- Submittal, administrative approval, and recordation of the final plat.

PLANS AND STUDIES REQUIRED

- *Traffic Study* – Not required for project.
- *Downstream Sanitary Sewer Analysis* – The City Utility Engineer indicated that a DSSA is not required.
- *Drainage Study* – Per the City Stormwater Ordinance, drainage studies are not required for sites of less than .5 acre.
- *Retail Market Study* – Not applicable to project.
- *Sight Distance Study* – With the previous preliminary plat application, the City Engineer required a sight distance study to determine if a driveway could be safely located on this property. The City Engineer reviewed the study and determined that a driveway could be safely located on the proposed lot with the following conditions:

  (1) Move the driveway to the northeast as much as possible; this will bring the available sight distance to the left and right a little closer.

  (2) Remove all obstructions within the sight triangle.

PUBLIC COMMENT RECEIVED PRIOR TO PRINTING

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

Site Summary

Gross Area:	12,127 sq. ft. (.28 acres)
Rights of Way:	0
Net Area:	12,127 sq. ft. (.28 acres)
Number of Lots:	1

GENERAL INFORMATION

Current Zoning and Land Use:	RS10 (Single-Dwelling Residential) District; undeveloped.
Surrounding Zoning and Land Use:	RS10 (Single-Dwelling Residential) District; detached dwellings with the exception of the lot to the west, which is undeveloped.



Figure 1. Surrounding land use and zoning. Subject property outlined.

STAFF REVIEW

History

- **April 2008** -- An application for the 5th Street Bluffs preliminary plat [PP-04-01-08] was submitted in April of 2008. During the review process, staff informed the applicant of the requirement to dedicate an additional 5 ft of right-of-way based on the requirement to provide 70 ft right-of-way for a local street in [Section 20-810(d)(4)(i)]. The applicant revised the plat to dedicate the right-of-way and, due to the shape of the lot, the amount of lot frontage then complied with the regulation in the RS10 District of a minimum of 40 ft.

  Planning received public comment regarding the safety of adding another driveway to E 5th Street in this location and the City Engineer required a sight distance study and placed the following conditions on the plat to insure the safety of the driveway: the driveway be located as far to the northeast as possible, the sight distance triangle would be shown for

the driveway, and the property owner would remove all obstructions within the sight triangle of the driveway.

- **May 18, 2009 --** The Planning Commission voted 7 to 0 to approve the preliminary plat at their May 18, 2009 meeting and forwarded it to the City Commission for acceptance of dedications of easements and rights-of-way.

- **June 17, 2009 --** Per Section 20-813(f)(3) of the Subdivision Regulations, a person aggrieved by a decision of the Planning Commission under these Subdivision Regulations may appeal the decision to the City Commission. An appeal from the Planning Commission's decision was filed with the Planning Office on June 17, 2009.

- **June 23, 2009 --** The City Commission voted to not accept the dedication of right-of-way, based on the concern that right-of-way was being dedicated for which the City may have no future plans to utilize. The City Commission returned the plat to the Planning Commission and instructed the applicant to seek variances from the right-of-way and frontage requirements.

- **July 22, 2009 --** The Planning Commission heard the request and took public comment at their July 22, 2009 meeting. The Commission voted 7 to 0 to grant the variances and approve the preliminary plat and forward it to the City Commission.

- **August 3, 2009 --** An appeal from the Planning Commission's decision was filed with the Planning Office on August 3, 2009.

- **August 25, 2009 --** The City Commission accepted the appeal at their August 25, 2009 meeting and upheld the decision of the Planning Commission regarding the approval of the preliminary plat, approved the variances to the right-of-way requirement and accepted the dedications of easements.

- **February 25, 2011 --** A final plat was not submitted within the 18 month approval period provided in Section 20-809(j) of the Subdivision Regulations and no request for an extension was made; therefore, the approval expired and a new application is required.

Current Application

The Fifth Street Bluffs Preliminary Plat before the Commission at this time [PP-7-6-11] is the plat as previously approved by the City Commission, without the required right-of-way. Variances are being requested from the requirement to provide additional right-of-way and to provide 40 ft of street frontage. Based on the past action on this plat, continuing with the most recently approved plat was determined to be the appropriate process. The applicant has no objections to dedicating the required right-of-way and providing the required frontage; however, this was not the action approved by the City Commission earlier.

Zoning and Land Use

The subject property is zoned RS10 (Single-Dwelling Residential) District which permits lots with a minimum area of 10,000 sq. ft. The property is located within an established neighborhood, also zoned RS10, which has been developed with single-dwelling residences with the exception of one unplatted parcel west of the subject property which is also undeveloped.

Streets and Access
The property is adjacent to, and will take access from W 5th Street. W 5th Street is classified as a 'local street'. Per Section 20-810(4)(i), local streets require 60 ft of right-of-way. With the previously submitted Fifth Street Bluffs Subdivision, the City Engineer indicated that 5 ft of right-of-way should be dedicated. As mentioned earlier, the City Commission did not accept this dedication.

The public comment received related primarily to safety concerns. The City Engineer required a sight distance study to determine if a driveway could be safely located on W 5th Street in this location. The City Engineer determined that a driveway could be safely located on the subject property provided the driveway was located to the northeast as much as possible and all obstructions within the sight triangle are removed. The City Horticulture Manager had no concerns with the removal of the vegetation within the sight triangle. These discussions occurred during the previous review of the plat. As there have been no changes to the plat or the area, there have been no additional review comments.

Utilities and Infrastructure
Water and sanitary sewer lines are available to serve this development and are located within the right-of-way of W 5th Street. With the previous review, the City Utility Engineer indicated that if any grade changes are made with this development that affect the sewer manholes, the sewer manholes must be adjusted to final grade. Blackhills Energy has a 2" high pressure steel gas main on the north side of W. 5th St. at this subdivision which must be shown on the plat. This requirement was noted in the previous staff report but was not included in the conditions. It has been added to the list of conditions.

Easements and Rights-of-way
Utility easements are located on the side lot lines of the adjacent lots and a 7.5 ft utility easement on the side lot is proposed with this plat. The Westar representative indicated a 10 ft wide utility easement would be preferable; therefore, the plat will be revised to provide 10 ft wide utility easements. As sanitary sewer is located in the right-of-way of W 5th St., a utility easement along the rear property line is not needed.

W 5th Street, a local street, contains 50 ft of right-of-way. Per Section 20-810(d)(4)(i) of the Subdivision Regulations, 60 ft of right-of-way is required for local streets. The City Engineer indicated that an additional 5' of right-of-way would be required with this plat. The applicant provided this right-of-way originally, but the City Commission returned the plat to the Planning Commission and directed the applicant to seek a variance from this requirement.

Plat Contents
Since the previous plat was submitted and approved, tree removal has occurred on the site. The boundaries of the tree stands should be revised on the plat to reflect current site conditions. The plat notes that the property is not within the floodplain, but references out-of-date FEMA maps. The plat should be revised to reference the August 5, 2010 FEMA maps. The plat contains a note regarding the changes made in June 2009 to eliminate the right-of-way. This note should be removed as the change occurred prior to the submittal date of this plat application. Information should be added under the heading 'Variances Previously Approved' to note the date the Planning Commission approved these variances (July 22, 2009) for a previous preliminary plat of this property (PP-04-01-08). The lot to the north of the subject property is

no longer owned by JMC Construction. As this is a platted lot, the subdivision information should be included on the plat.

VARIANCES

The property owner is requesting variances from Section 20-810(d)(4)(i) which requires 60 ft of right-of-way for local streets and from Section 20-810(a)(2)(i) which requires that lots be designed to comply with all applicable zoning district regulations.

Section 20-813(g) states that the Planning Commission may grant a variance from the design standards of these regulations with the exception of the standards of the wastewater disposal system standards only if the following three criteria are met: that the strict application of these regulations will create an unnecessary hardship upon the Subdivider, that the proposed variance is in harmony with the intended purpose of these regulations and that the public health, safety and welfare will be protected. Below is a review of the variance request in relation to these criteria.

Criteria 1: Strict application of these regulations will create an unnecessary hardship upon the Subdivider.

Right-of-Way: Strict application of these regulations would require the dedication of additional right-of-way for W 5th Street in this area. The area contains established single dwelling residences and the street right-of-way of 50 ft was established with the platting of the surrounding properties in the 1950s. As it is unlikely that all of the platted properties would replat, it is unlikely that the width of the street would be increased throughout the length of the block. It would be possible to dedicate the additional right-of-way; however, the City Commission indicated they did not wish to accept the dedication of right-of-way for which there were no plans to utilize. If the City Commission does not accept the dedication of the additional right-of-way, the strict application of these regulations would prevent the property owner from platting the property and would result in an unbuildable lot.

Minimum Lot Frontage: The lot, as configured without the additional right-of-way, contains inadequate lot frontage. The Grandview Heights Subdivision platted the properties along W 5th Street; however, the subject property was not included in the plat. As a result, the amount of lot frontage available is restricted by the previous plat. As this is an 'infill' development, the applicant has no other avenue through which to obtain additional frontage for this property. Strict application of these regulations would prevent the property owner from platting the property and would result in an unbuildable lot.

Criteria 2: The proposed variance is in harmony with the intended purpose of these regulations.

Per Section 20-801(a) of the Subdivision Regulations, these regulations are intended to ensure that the division of land will serve the public interest and general welfare as well as to provide for the conservation of existing neighborhoods.

Right-of-Way: The City Engineer stated that he has no concern with the additional right-of-way not being provided with this plat. The majority of the surrounding area is developed and it is unlikely that the additional right-of-way along W 5th Street would be dedicated to the City. The street would continue to function in the same manner without the dedication of the additional

right-of-way. The variance is in harmony with the intended purpose of the Subdivision Regulations.

Minimum Lot Frontage: The proposed lot frontage, 37.35 ft, is 2.65 ft less than the minimum 40 ft of frontage which is required for the RS10 Zoning District. (Figure 3) The variance will allow for infill development which is compatible with the existing neighborhood. The variance is in harmony with the intended purpose of the Subdivision Regulations.

Criteria 3: The public health, safety and welfare will be protected.

Right-of-Way: The variance would allow the street right-of-way to remain 50 ft throughout the length of the block, which would have no negative impact on the public health, safety and welfare.

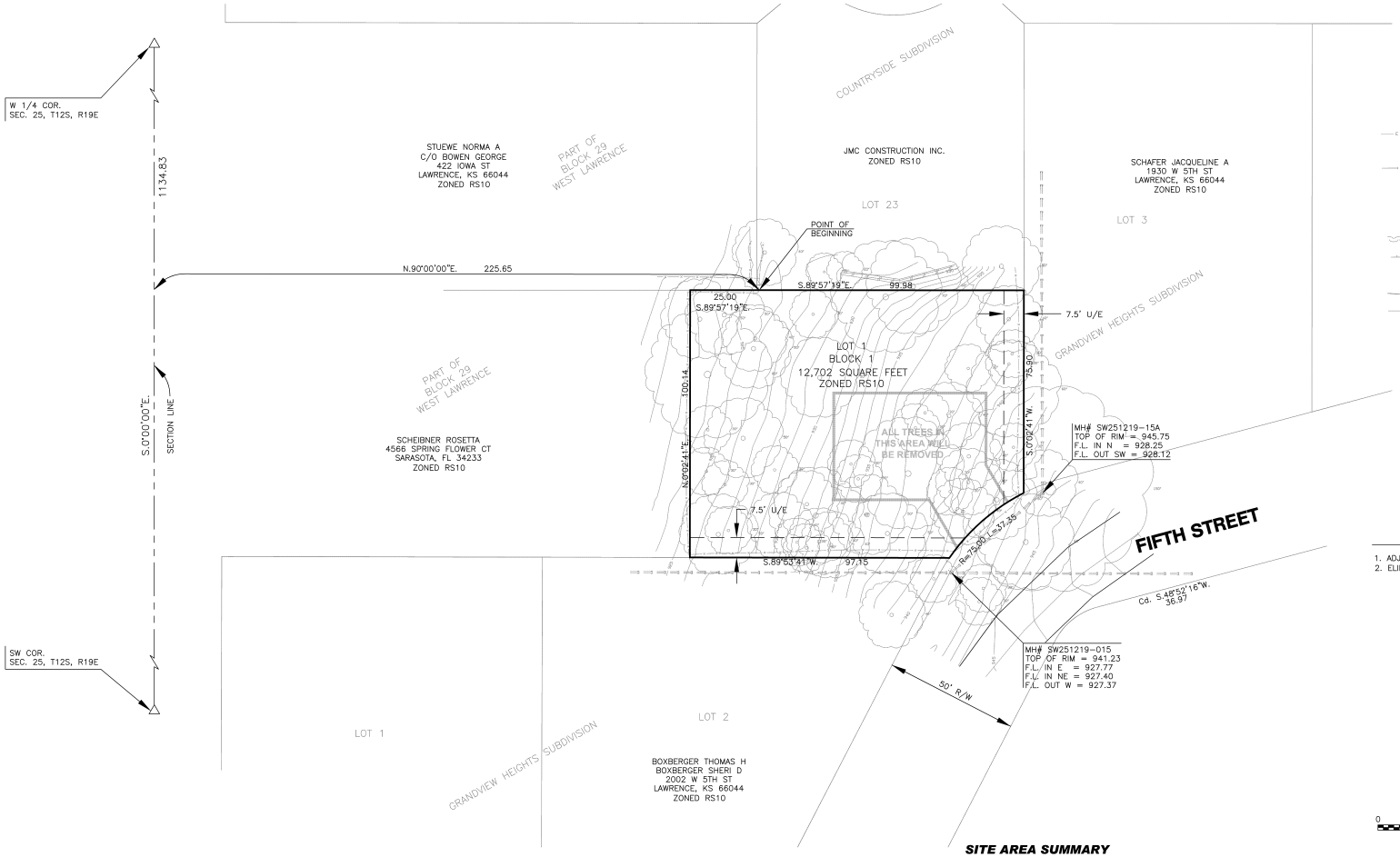
Minimum Lot Frontage: The variance would allow the creation of one lot on an established block with a lot frontage that is 2.65 ft less than permitted by Code. This amount of variation would have no negative impact on the public health, safety and welfare.

Summary

The criteria for the granting a variance have been met and staff recommends approval of the variances. This plat will create one buildable residential lot. The plat conforms to the most recently approved preliminary plat for this property, which expired on February 25, 2011. *Horizon 2020* recommends that the character and appearance of existing low-density residential neighborhoods be protected through compatible infill development. This plat creates a 12,702 sq. ft. lot. Nearby lots are within the 10,700 sq. ft. to 17,194 sq. ft. range. (See Figure 2) The lot being created with this plat is compatible with the existing lots in the neighborhood. **The preliminary plat, as conditioned and with the variances requested, conforms with the Subdivision Regulations and with the recommendations in the Comprehensive Plan for infill development.**



Figure 2. The proposed lot, outlined, is compatible with the size and shape of existing lots in the area.



LEGEND

- SECTION CORNER
- U/E — UTILITY EASEMENT
- EXISTING OVERHEAD ELECTRIC LINE
- EXISTING POWER POLE
- EXISTING WATER LINE
- EXISTING FIRE HYDRANT
- EXISTING WATER METER
- EXISTING TREE
- EXISTING HEDGE
- EXISTING UNDERGROUND TELEPHONE LINE
- EXISTING TELEPHONE PEDESTAL
- 885 — EXISTING CONTOUR
- EXISTING FENCE
- EXISTING STORM SEWER PIPE
- EXISTING SANITARY SEWER PIPE
- EXISTING SANITARY SEWER MANHOLE

REVISIONS 6-25-09

1. ADJUSTED BOUNDARY AND LEGAL
2. ELIMINATED ADDITIONAL 5' RIGHT-OF-WAY

N

0 20' 40' 60'

Scale: 1"= 20'

SITE AREA SUMMARY

GROSS AREA IN THE SUBDIVISION	12,127

LEGAL DESCRIPTION

A TRACT OF LAND IN BLOCK 29, IN WEST LAWRENCE, PLATTED IN THE SOUTHWEST QUARTER OF SECTION 25, TOWNSHIP 12 SOUTH, RANGE 19 EAST OF THE 6TH PM IN THE CITY OF LAWRENCE, DOUGLAS COUNTY, KANSAS, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF LOT 23, IN COUNTRYSIDE SUBDIVISION, SAID POINT OF BEGINNING BEING 1134.83 S.0°00'00"E. AND 225.65 FEET N.90°00'00"E. OF THE WEST QUARTER CORNER OF SAID SECTION 25; THENCE ALONG THE SOUTH LINE OF SAID LOT 23 S.89°57'19"E. 99.98 FEET TO THE SOUTHEAST CORNER OF SAID LOT 23 AND THE WEST LINE OF LOT 3 IN GRANDVIEW HEIGHTS SUBDIVISION; THENCE ALONG THE WEST LIE OF SAID LOT 3 S.0°02'41"W. 75.90 FEET TO THE SOUTHWEST CORNER OF SAID LOT 3 AND THE NORTH RIGHT-OF-WAY LINE OF FIFTH STREET; THENCE ALONG THE NORTH RIGHT-OF-WAY LINE OF SAID FIFTH STREET ON A CURVE TO THE LEFT WITH A RADIUS OF 75.00 FEET AN ARC LENGTH OF 37.35 FEET (CHORD OF SAID CURVE BEARS: S.48°52'16"W. 56.97 FEET) TO THE NORTHEAST CORNER OF LOT 2 IN SAID GRANDVIEW HEIGHTS SUBDIVISION; THENCE ALONG THE NORTH LINE OF SAID LOT 2 S.89°53'41"W. 97.13 FEET; THENCE N.0°02'41"E. 100.14 FEET; THENCE S.89°57'19"E. 25.00 FEET TO THE POINT OF BEGINNING, CONTAINING 12,127 SQUARE FEET

SURVEYOR

AL DIEBALL, R.L.S. (KS #758)
BG CONSULTANTS, INC.
1405 WAKARUSA DRIVE
LAWRENCE, KS 66049
785.749.4474

OWNER / SUBDIVIDER

JMC CONSTRUCTION INC.
1032 ELDRIGE
LAWRENCE KS, 66049
(785)423-0840

GENERAL NOTES

1. THERE ARE NO IMPROVEMENTS ON THIS PROPERTY
2. THE SOIL SURVEY FOR DOUGLAS COUNTY INDICATES THAT THE SOIL TYPE IS PAWNEE-WOODSON-MORRILL ASSOCIATION: DEEP, NEARLY LEVEL TO STRONGLY SLOPING, WELL DRAINED TO SOMEWHAT POORLY DRAINED SOILS; ON UPLANDS

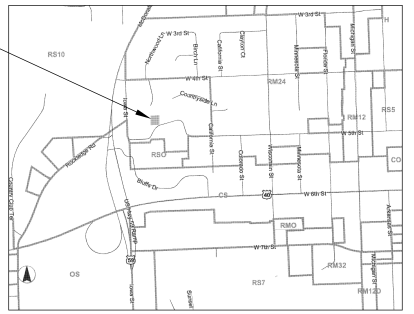
FLOODPLAIN DATA

THE SUBJECT PROPERTY IS NOT LOCATED WITHIN THE 100 YEAR FLOODPLAIN. RE: THE FEDERAL EMERGENCY MANAGEMENT AGENCY FEDERAL INSURANCE ADMINISTRATION PUBLICATIONS: FLOOD INSURANCE RATE MAP, MAP NUMBER 20045C0036C, EFFECTIVE DATE NOVEMBER 7, 2001.

BENCHMARK

D-371 NGS BENCH MARK AT 6TH AND COLORADO ELEVATION = 905.41

PROJECT LOCATION



LOCATION AND ZONING MAP

FIFTH STREET BLUFF SUBDIVISION

PRELIMINARY PLAT
REVISED
SEE: REVISIONS

BG CONSULTANTS
planning, engineering, surveying

Project No. 08-123L
Date: June 27, 2008

SHEET NO.
1

Taylor Design Group, P.A.
Surveyors • Engineers

March 31, 2009

Shoeb Uddin
City of Lawrence, City Hall
6 E. 6th Street
P.O. Box 708
Lawrence, Kansas 66044-0708

suddin@ci.lawrence.ks.us

Re: Sight Distance Study for Proposed Driveway
John Chaney Property on W. 5th Street

Dear Shoeb:

Per our previous phone conversation, we are submitting a sight distance study for John Chaney. As we discussed, he is proposing to construct a new driveway at his property on W. 5th Street in Lawrence, as shown on the enclosed Sight Distance Exhibit.

Taylor Design Group, P.A. (TDG) completed a survey of the area to determine the road centerline profile and the existing topography in the area. The Sight Distance Exhibit contains the calculations and information related to the sight distance triangles for this study, which are based on the applicable AASHTO guidelines.

This study indicates that the controlling sight distance is that of the road profile. The available sight distance left of the driveway is approximately 225', and to the right of the driveway is approximately 160'. The corresponding sight triangles have been shown on the exhibit. Most of the obstacles contained within the sight triangles are trees, which appear to be located within the road right-of-way, although TDG did not verify the right-of-way location in the area as part of this study.

Please review the exhibit, and contact me should there be any questions, or if you need additional information.

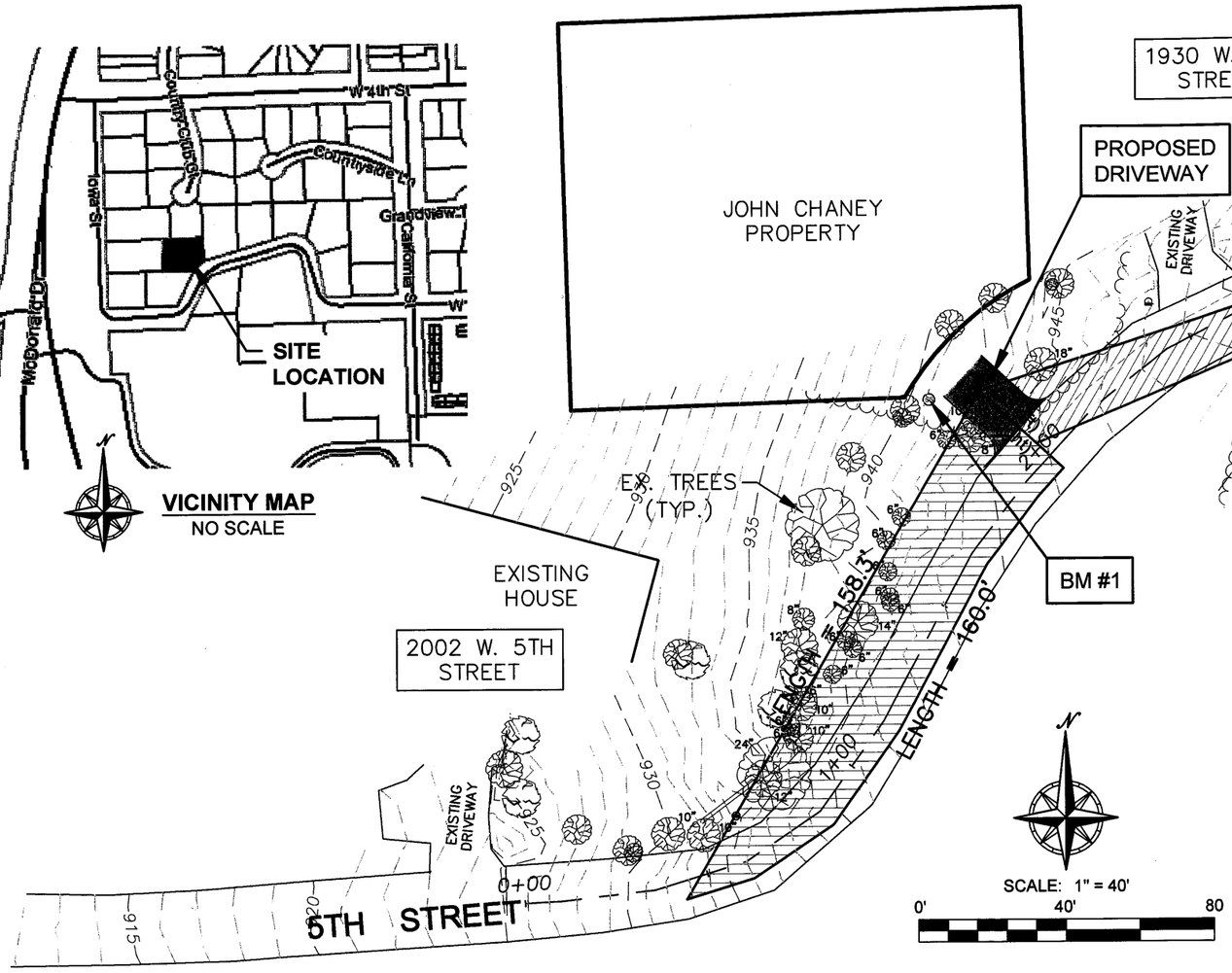
Respectfully Submitted,

Cara C. Hendricks

Cara C. Hendricks, P.E.
Project Manager

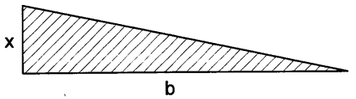
pc: John Chaney

VICINITY MAP
NO SCALE



CALCULATION FOR SIGHT DISTANCE TRIANGLE LENGTHS

NOTES & ASSUMPTIONS:



1. Lane width = 10'
2. Location of proposed driveway is shown as directed by property owner.
3. Speed limit through area = 10 MPH
4. The size of the individual trees shown have been designated (i.e. 24" trunk diameter).

*Calculations are based on applicable AASHTO guidelines.

CALCULATIONS:

a = 15' (from edge of asphalt) + x

x (left) = 5' (1/2 lane width for vehicles approaching from the left)
x (right) = 15' (1-1/2 lane width for vehicles approaching from the right)

b = available sight distance length along centerline (for left sight triangle, the leg was straightened out due to the existing curve of the road in the area) - see profile view for distances. The sight lines were determined assuming a 3.5' high line from point to point along the centerline of the existing road.

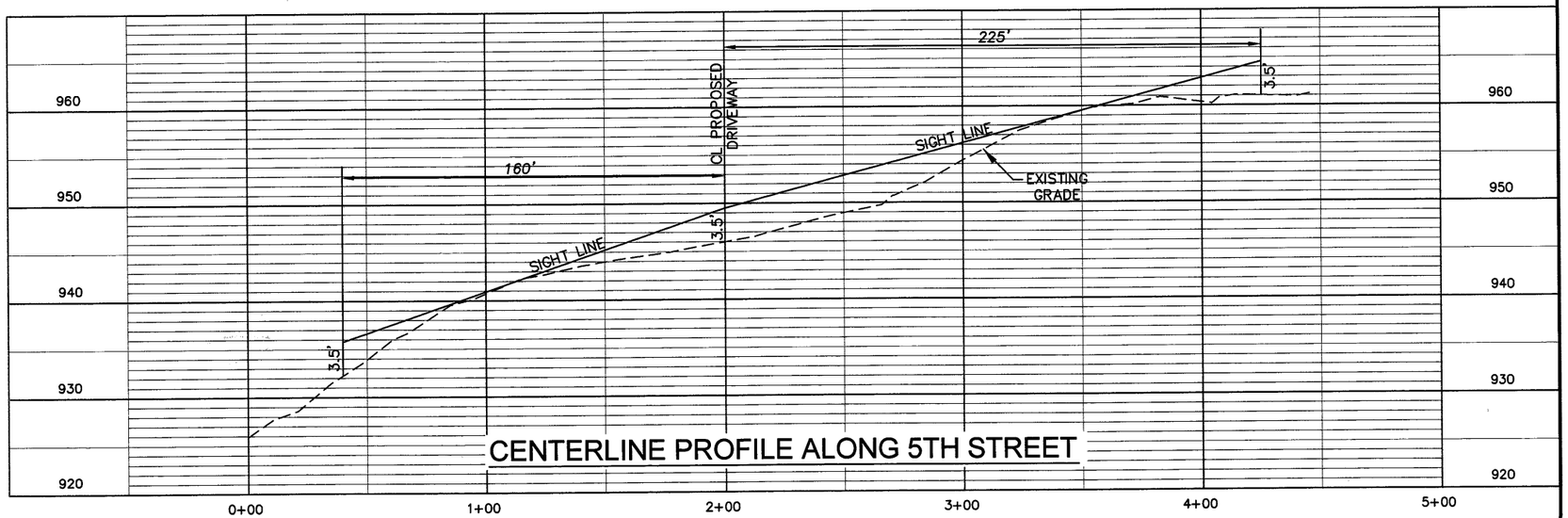
CARA C. HENDRICKS
LICENSED
17925
3·31·09
KANSAS
PROFESSIONAL ENGINEER

BENCHMARK INFORMATION:

BM #1 - TOP OF MANHOLE RIM
ELEV. = 941.23

HORIZONTAL
SCALE: 1" = 60'
0' 60' 120'

VERTICAL
SCALE: 1" = 15'
0' 15' 30'



CENTERLINE PROFILE ALONG 5TH STREET

NO.	DATE	REVISIONS:	BY:
A	3/31/09	INITIAL SUBMITTAL	CCH

SIGHT DISTANCE EXHIBIT
JOHN CHANEY PROPERTY
LAWRENCE, KANSAS

Taylor Design Group, P.A.
Surveyors • Engineers
1220 East Logan • Ottawa, KS 66067
785-242-8845 • Fax: 785-242-8852

DRAWN:	CCH
DESIGNED:	CCH
CHECKED:	CAS
DATE:	3/31/09
PROJECT:	17356
SHEET NO.	1 OF 1 SHEET

PC Minutes 5/18/09

ITEM NO. 1 PRELIMINARY PLAT; FIFTH STREET BLUFF SUBDIVISION; .29 ACRES; 427 COUNTRY CLUB CT (MKM)

PP-04-01-08: Consider the Preliminary Plat for Fifth Street Bluff Subdivision, a 0.29 acre subdivision consisting of one lot, located at 427 Country Club Court. Submitted by JMC Construction, Inc., property owner of record.

STAFF PRESENTATION
Ms. Mary Miller presented the item.

Commissioner Dominguez asked if the City Engineer gave any indication that safety would improve for all the properties located within the curve.

Ms. Miller said the City Engineer reviewed the applicant's consultant study by Taylor Design Group and determined that a driveway could be safely located but recommended the vegetation be removed.

Commissioner Finkeldei inquired about the 40' frontage that was mentioned in a few letters.

Ms. Miller said originally the applicant asked for a waiver for the 40' frontage. When staff reviewed the plat, the additional 5' of ROW that is required to be dedicated showed the arc farther back which gave more than 40' of frontage so the waiver was not necessary.

APPLICANT PRESENTATION
Mr. John Chaney was present for questioning.

PUBLIC COMMENTS TAKEN *(the item was not a public hearing item)*
Mr. Chris Caldwell, said the City has no additional plans for the ROW and there was no foreseeable use for the ROW. He felt the shape of the arc was problematic. He wondered about the policy and practice of acceptance of additional ROW. He inquired about the definition of frontage. He appreciated the courtesy of the public comments.

Mr. McCullough said the Code requires an exaction of ROW when property is platted and sometimes that is not always square lines but it is important for future road projects. In terms of the frontage staff are complying with the Subdivision Regulation definition on how frontage is measured.

COMMISSION DISCUSSION
Commissioner Dominguez inquired about the site study.

Mr. Shoeb Uddin, City Engineer, said the removal of the vegetation within the site triangle was his recommendation because it would obstruct the view.

Commissioner Dominguez asked if the speed limit is 10 mph.

Mr. Uddin said that was correct, posted speed limit is 10 mph for both directions. The study showed the sight distance is adequate for 15 mph. Generally speaking the posted speed is 5 miles below the design speed, so in this case it is in compliance.

Commissioner Dominguez inquired if the removal of the vegetation increased the safety of the street.

Mr. Uddin said he could not state that it improved the overall safety of the whole segment but by removing the vegetation it improved the safety of the driveway in question.

Commissioner Dominguez asked about accidents or injuries.

Mr. Uddin said staff did not look into the accident report but the city recently did a citywide study of high accident prone locations and compiled a list of top 20 and this site is not within that top 20.

APPLICANT CLOSING COMMENTS
None.

Commissioner Harris inquired if they could require adding speed humps to the development plan.

Mr. McCullough said not in a specific property request, but could within a bigger development plan with higher traffic impacts.

Mr. Uddin said typically, with the procedure in place today, the neighborhood would make a request and then it would go to the Traffic Safety Commission and City Commission. He stated that 70% of the residents would have to sign off on the measure.

Commissioner Dominguez inquired about lighting on the corner.

Mr. Uddin said that lighting was not addressed. He said typically it would be requested by the residents and the request would go to Westar through the City.

Commissioner Finkeldei said he drove the site and did not see any lights.

Mr. Tom Boxberger said that the street may not fall into the top 20 sites of accidents that Mr. Uddin referred to, but neighbors are constantly helping people out of the ditch and these accidents never get reported. He asked if removal of vegetation meant that it could be removed as far back as possible to allow safer side lines even on private property. He said he thought there was one street light.

Mr. Uddin said the City has no way of keeping track of unreported accidents. He stated the site distance study done by Taylor Design Group shows that most of the vegetation within the site triangle are within the city ROW. He said his recommendation would be that if there is vegetation or other obstructions within the site triangle but not in the city ROW he would still recommend to remove them.

Commissioner Finkeldei asked if some of the vegetation is in the City ROW but in front of someone else's property.

Mr. Uddin said the City has the right to remove the vegetation within the ROW.

Commissioner Finkeldei asked if discussions would take place with the neighbors before vegetation is cut.

Mr. McCullough said there is no ability for the applicant to remove vegetation from neighboring property. The applicant will have to satisfy any site distance issues from their property and public ROW.

Mr. Uddin said the City has a procedure in place where the applicant can obtain a permit to remove trees from the City ROW. He said the neighbors could talk to the City first if they are concerned about certain

trees being removed. They can stake the ROW in the field by hiring a land surveyor to verify if a certain tree is in the public ROW.

Commissioner Dominguez inquired about the amount of traffic on this road.

Mr. Uddin said it is a local road so traffic volume data was not collected.

Commissioner Hird said it seems like the street is a lightly traveled street and he did not think the addition of one driveway which goes to a single family residence would increase traffic substantially. He felt that Mr. Caldwell's questions about the use of ROW and frontage definition were well taken. He understood the confusion about someone using a dictionary definition. The definitions in the Code are very specific and have specific meanings. He said he hoped Mr. Boxberger's questions about vegetation were answered. He said he would support the Preliminary Plat.

Commissioner Blaser said speed bumps might be more dangerous than good because someone would come over the hill and hit a speed bump. He inquired about drainage issues.

Mr. McCullough said the permitting of a single family home will be taken up at the building permit stage. There is no trigger such as size and use for a stormwater drainage study to be done for this particular subdivision.

Mr. Uddin said a certain level of development triggers a traffic impact study and this development does not meet the criteria for a traffic impact study to be required.

Commissioner Harris asked if it was possible to get to the site planning stage and find that they cannot build a structure because of drainage.

Mr. McCullough said the ability to construct a single family home and any accessory structures is the same process, so it would be reviewed similar to a 2-3 car garage on an existing lot would be reviewed. It is incumbent upon the owner to make sure that the drainage substantially leaves the site before it did before the construction of the structure. He said there is nothing unique about this plat that would make staff look at it differently than any other neighboring property.

Commissioner Harris asked if it was possible for the applicant find out they cannot build there because of drainage issues. She asked if there were ways to make it happen that will protect the property and the properties around it from drainage issues.

Mr. Uddin said he has not looked at the drainage pattern of this site in great detail, but generally speaking, measures could be taken to address the drainage issues to not increase the runoff that is happening today.

ACTION TAKEN
Motioned by Commissioner Hird, seconded by Commissioner Blaser, to approve the Preliminary Plat of the Fifth Street Bluff Subdivision and referring it to the City Commission for consideration of dedication of easements and rights-of-way subject to the following conditions of approval:

1) The preliminary plat shall be revised with the following changes:
    a. The following note shall be added to the preliminary plat and included on the final plat: "The driveway shall be located as far to the northeast as possible and the property owner shall remove all obstructions within the sight triangle of the driveway."
    b. The plat shall be revised to show the sight distance triangle for the driveway.

Commissioner Harris said she would vote in favor of the motion but felt the neighbors brought up good concerns. She believed the traffic issues could be addressed by vegetation clearing and perhaps traffic calming if necessary. She said the regulations allow this development and there is not a reason to say no.

Motion carried 7-0-1, with Commissioner Chaney abstaining.

Consider an appeal of the Planning Commission's approval of a Preliminary Plat for Fifth Street Bluff Subdivision, a 0.29 acre subdivision consisting of one lot, located at 427 Country Club Court and accept dedication of easements and rights-of-way for PP-04-01-08.

Vice Mayor Amyx said that he would be abstaining from discussion and vote on this item because it involved his mother-in-law and acquisition of her property from the buyer, to avoid any type of potential conflict of interest issues.

Mary Miller, Planner, presented the staff report. She said this item was a preliminary plat for a one lot subdivision of approximately .29 acres located on 5th Street, just east of Iowa Street and in an area zoned RS10. With the plat, five feet of right-of-way was being dedicated as required by Section 20-810(d)(4)(i) to provide one-half of the necessary required 60 feet of right-of-way as the development code required for local streets.

Early in the review process, a neighbor called with the concerns about the safety of adding additional access in this area and the City engineer required the applicant to provide a sight distance study so staff could determine if it would be safe. The City engineer indicated that based on the result of the study, a driveway could be safely located on this property, subject to the two conditions that were listed in the staff report, which were 1) all vegetation in the sight distance triangle, which was in the right-of-way, be removed and; 2) the driveway be located as far to the northeast as possible. Those notes would be required to be added to the plat.

The Planning Department received several comments from the general public and arranged a meeting to discuss those concerns. The City engineer and City traffic engineer attended the meeting as well. The primary concern was safety of the driveway and there were suggested options of improving safety in that area. The principle suggestion was the installation of speed humps on West 5th Street to ensure the current posted speed limit of 10 mph was observed. The neighbors also suggested a guard rail in certain areas to prevent cars from

driving off of the street and the traffic engineer encouraged the neighbors to make their requests to the Traffic Safety Commission.

She said another issue of concern that was raised was the plat document itself. An error was identified on the legal description and a surveyor of the plat confirmed the error and correction were made. As the plat complied with the subdivision regulations and with the density and dimensional requirements of the development code, staff recommended approval of the preliminary plat and the Planning Commission voted 7-0 at their May 18th meeting to approve the plat and forward it to the City commission for acceptance of dedications of easements and rights-of-way.

She said per the provisions in Section 20-813(f)(3), an appeal from the Planning Commission's approval of the plat had been filed by Jerry Wells, Attorney, representing the property owners in the area. She said she summarized the points in the appeal, which included the exact specifications of the existing right-of-way could not be verified at this time because of unresolved physical data discrepancies. Another was that BG Consultants, who prepared the plat, reviewed the survey and found that an incorrect PIN had been used, the plat had been revised, and hand written in the correct figures. The appeal indicated that the dedication of right-of-way was a fix intended to resolve the inadequate frontage. When the applicant came in and provided their plat application, the applicant also submitted a request for variance for required frontage, which was a result of a pre application meeting with Planning Staff, as staff used their GIS information and on the GIS, the existing frontage was inadequate. Through a review of the plat, it was determined that with the additional right-of-way that was required the additional frontage would be provided and therefore the variance was not necessary.

She said the appeal brought up several definitions. The definition of frontage was defined in the subdivision regulations as a boundary of a lot or residential development parcel that abutted a street or a road. Street was defined as any vehicular way or ways which 1) was an existing state, county or municipal roadway; or 2) shown up on a plat pursuant to law or; 3)

was approved by other official action. The street right-of-way was all land located between the street lines, whether improved or unimproved, and street width was defined as the amount of street right-of-way abutting a lot's property lines. As pointed out in the appeal letter, the word "abut" was not defined, and staff used the standard definition meaning to touch upon.

In summary, the dedication of right-of-way was required by code and the result of that dedication that adequate frontage, the portion of the lot which abuts the street, which was described as land within the street right-of-way, was provided. The appeal indicated that selecting a single property for dedication of additional right-of-way thwarts the purpose of a right-of-way. Dedication of right-of-way was required by code and in order to not dedicate right-of-way, it was necessary for the applicant to request a variance from that requirement.

Another item brought up was that the destruction of trees on the property conflicted with the purpose and intent of the subdivision regulations, which were to contribute to the safety and aesthetics and to conserve and protect natural resources. The appeal letter mentioned that trees were required to be placed on abutting street right-of-way. Those were street trees and the subdivision regulations required street trees, however, the sight study indicated the landscaping would not be permitted in the right-of-way sight distance study triangle area. The City horticultural manager had no objections to having no landscaping in that area. Street trees would still be required, but they would not be located in the right-of-way. The Master Street Tree Plan was provided along with the final plat. The subject property had quite a bit of tree cover and the applicant intended to maintain most of that area.

Safety was raised in the appeal letter. There was a 0 point set slope on one property and low or fairly level sloped adjacent to that property. Two properties had about 10% slope. The property adjacent on both sides had a little over 11% slopes. There was a 12% slope on the far east and a small area of about 18% slope.

She said through the review of the plat, it was determined the driveway could be safely accommodated on this property. The proposed development was conserving many trees on

site, more than what remained on the other developed sites in the area. The proposed lot conformed to the density and dimensionally requirements of the development code, including the minimum amount of frontage required. Based on those facts, Planning staff would recommend the City Commission uphold the Planning Commission's approval and accept the dedications of easements and rights-of-way.

Commissioner Dever said the notes indicated the City engineer dictated 5 foot right-of-way added.

Miller said whenever a new lot was dedicated, one half of whatever deficiency of right-of-way was required by code and it needed 60 feet, but 50 feet was available so ½ of the required 10 feet would be the 5 feet.

Commissioner Dever said he additional right-of-way being taken over, moved into the property, thus creating a larger arch of the frontage.

Shoeb Uddin, City Engineer, said that was correct. The additional right-of-way was not a requirement he requested, but was a requirement by the code. The classification of the road was a local street and the current right-of-way was 50 feet. The current code required 60 feet of right-of-way for a road of this classification, so the normal City practice was when this kind of situation or case came to the City, if the right-of-way was not adequate based on the current classification of the road, the City would require additional right-of-way. This was a fairly typical and standard practice that he had seen in the last two years.

Commission Dever said by adhering to that new code, the benefit to the property owner was an increase frontage on the road which allowed the use of this property for what was being requested.

Uddin said it made the property satisfy the frontage requirement to have a driveway. If the additional right-of-way was not required, then the available frontage was just a little bit short. An alternate route would be for the applicant to apply for a variance from the Board of Zoning

Appeal and based on its closeness to the required frontage, it seemed like it would not be a difficult situation for a variance to be granted.

Commissioner Cromwell said he had a question about water drainage and single family homes. He asked if the City had any retention/detention requirements.

Uddin said any issues related to stormwater drainage were typically handled through a site plan or if it was a large subdivision, a drainage study was required. This was a small lot of 12,000 square feet and there was no requirement for a drainage study to be submitted in terms of the retention or how additional run off would be handled. In discussion with the residents, he had expressed the willingness that if that was required to make people feel safe or more comfortable about the drainage situation, City staff would be available to take on that task and make sure the drainage would be handled appropriately.

Mayor Chestnut called for public comment.

Jerry Wells, Attorney, representing a group of area homeowners, said he was going to speak to the legalities of this issue. He said in the winter time, 5th Street could be a dangerous street since it came off of a hill and curved. There were some safety concerns about this street and an ingress/egress. It was important to note that at this point, the area was triangulated. The definition of frontage in the code was that it must abut a street or touch this street. What staff was recommending was removing the frontage by back this up through the triangle to meet the 40 foot requirement.

He said the developer, when this property was acquired, had ingress and egress on County Club Court and it would have been wiser to construct a joint use driveway facilitated up to this point and, with some good planning, locate one or two residences on that large piece of property. They were with a less than 40 foot required frontage as set out in the code. The code was strictly construed and directly said it was 40 feet. It was their position that going back up the triangulated piece of property, to acquire enough space, by the use of right-of-way as frontage, went against the purpose and meaning of frontage in the code.

He said their concerns from a legal standpoint were two fold. One he already elaborated upon, which was the frontage. To raise that frontage by 5 feet or so by use of right-of-way in their view, did not meet the standards of the code.

Secondly, they had great concern about whether a right-of-way could be used in a fashion in which it was used here. He had done some research subsequent to submitting his letter of appeal. He was interesting in the definition of right-of-way as it related to land use, which he thought was important in this issue. He came across an attorney general's opinion numbered 2003-28, which meant it was written in 2003. Interestingly enough, it involved the City of Lawrence and in this particular opinion, Senator Brownlee from Kansas City wrote the attorney general and wanted a question answered. The question was if a utility easement that had been dedicated to a City was not a public right-of-way as it was defined in statutes and in the case law. The facts did not equate to the particular issue on land use, but the interesting part of that opinion was they took great pains to define what a right-of-way was. The second interesting thing was that the code did not define right-of-way. It defined almost every term, but not right-of-way, which he did not understand.

He said in addition to Senator Brownlee inquiring about what the meaning of right-of-way was, the League of Municipalities also weighed into this and had their own agenda, but they were interested in a definition of right-of-way. In the opinion written by the Attorney General as to the issue of the definition of right-of-way, the League of Municipalities maintained that the right-of-way was the term of art that meant public thoroughfare. This interpretation was born out by the second sentence of the definition of one of the statutes that referred to streets, alleys, avenues, roads, highways, parkways and boulevards. There were also Kansas appellate decisions that use the term right-of-way to refer to property that was used for public travel. In the end of their opinion they referred to a specific statute that Senator Brownlee wanted incorporated into the opinion. It was a definition as used in that particular statute, but provided the summation, in light of the legislative history of KSA 2002-17-1902 and the fact that the

definition of public right-of-way appeared to be limited to public thoroughfares. That was the conclusion of the Attorney General. He urged the City Commission to find that this right-of-way that was placed in here in a very artificial way so the developer could meet the code requirements was not a public thoroughfare. It was an isolated attempt of dedication of right-of-way to make up for the inconsistencies and inadequacies of his frontage, which required 40 feet and it was not 40 feet. He said not only was a misuse of right-of-way, but it might be illegal to use a right-of-way in this particular way.

One of the cases cited in the attorney general's opinion was State V. Dines, which was a case that came out of the Supreme Court of the State of Kansas. One interesting observation in that particular opinion they quoted with approval a case called Stauber V. City of Elwood, Kansas. They quoted the Stauber case this way, "The Stauber court observed that before city may authorize the use of a public right-of-way for private purposes, there must be a clear showing that the primary use of the right-of-way would benefit the public and any private use must be incidental to the public purpose."

In summary, it was their position that this was not an appropriate use of right-of-way. It was not a right-of-way that was condemned up and down 5th Street and dedicated. It was an isolated piece of property to allow this developer to overcome the lack of planning because if he had investigated anything at all, he had to know the frontage was less than 40 feet.

Jacqueline Shafer, property owner adjacent to the proposed plat, said she was opposed to this plat for a number of reasons. First, there was inadequate frontage. The plat of the Grandview Heights Neighborhood showed actual frontage at 36 or 37 feet, depending if measuring as a straight line or a curve. Frontage, as Wells and Miller explained, was defined in the City Codes as the boundary of a lot of residential development parcel that abuts a street or road. She said she wanted to emphasize the right-of-way for all of Grandview Heights was 50 feet, not 60 feet. To increase right-of-way at this one spot was absurd and had no other use than providing adequate frontage and as such, was a misuse of the purpose of right-of-way.

Secondly, allowing a driveway at this location would create a collision course with her driveway. Given the slope of the two properties, the curve of the street at the location of where the new driveway would be placed, and the mature trees that were a part of the existing landscape, anyone backing out of either driveway would not be able to see another driver until reaching the street, at which time it would be too late. The sight distance study, which was paid for by the developer, totally ignored that fact. The study suggested that the driveway be placed as close to her property as possible, thereby increasing the probability of collision in her opinion.

Thirdly, this plat flew in the face of the policies laid out in Horizon 2020, most specifically maintaining the physical form and patterns of existing neighborhoods. She said regarding encouraging compatible infill development, Horizon 2020 stated that open space patterns and front side and rear yard characteristic of the neighborhood should be maintained. This would not be the case if a house were allowed on this parcel. All of the houses in Grandview Heights had broad frontage that abuts the street. Frontage for the existing homes ranged from 60 feet to 160 feet with average frontage falling at almost 109 feet. If a house were allowed on this property, its street frontage would still be 36 feet, which was not in character with the rest of the neighborhood.

She said regarding land fill development, Horizon 2020 encouraged the participation and organized involvement of neighborhoods in the planning and development process of their neighborhoods. She did not mean to be rude, but found this policy almost laughable given the experience their neighborhood had with the Planning staff. Their participation had been given lip service only. All of the concerns they had raised from safety to drainage to discrepancies in plat numbers were swept under the carpet. Residents on Iowa and Country Club Court have relayed major problems with drainage from this location and those problems were simply being ignored. Such behavior did not encourage participation, nor did it address the problems that remained.

She said Horizon 2020 also stipulated that the natural environmental features within residential areas should be preserved and protected. Natural vegetation and large mature trees in residential areas added greatly to the appearance of the community as a whole and should be maintained. Changes to the natural topography should be minimal. The property in question had been a heavily wooded lot for many years. A great many, large, mature trees have already been cut down in anticipation of this plat. She imagined a great many more would need to be removed before construction could take place. The change to the topography was already massive. In addition, she feared that the change in topography would only exacerbate the drainage problems for their neighbors on Iowa and Country Club Court.

She said she wanted to quote Scott McCullough, the Planning Director. In an article that ran in the Lawrence Journal World last week, McCullough was quoted in saying that the City tried to, "ask for enough information to ensure that a project was not going to have an adverse impact on an area." In addition, he said, "Our code does recognize that not all development was good development. You need enough time and information to study the project to know it was good for the community." She submitted that this was a bad project for the community because the plat had been pushed through and important concerns brushed aside. She asked the City Commission reject the additional right-of-way that was being requested.

Lance Antle, resident in the neighborhood, said there were nine homes represented around this particular property. Meetings were held about why they did not want the home to be constructed at that location and one issue was aesthetics. People liked living at that location because of the country feel, the distance between neighbors, and the well established landscaping and neighborhood.

He said he understood there had not been any proof of automobile accidents, but he had seen the remnants of two car accidents in his driveway and in the street in front of his driveway in the 10 years he lived at that location. Both accidents occurred at night because in the

morning he could find automobile parts in the driveway and in front of his driveway. There were also skid marks in his grass where a car had avoided something.

He said another issue he had concern for was drainage. It was his understanding that a drainage study was only needed for a certain square footage of the property, but made sense if there was a certain slope and how much water that particular geography would absorb was another issue and if the City would want to conduct such a study.

He said the last issue was the legal issues concerning frontage which others would discuss.

Chris Caldwell, Lawrence, said he had served from time to time as Jackie Schaffer's agent as she was his fiancée. He said this entire bluff proposal was improper evasion of minimum frontage requirements and death trap driveway were no laughing matters.

Instead of acting in response to the numerous safety issues cited in materials presented to the planning staff and Planning Commission, the City handed the neighbors a form of attempted appeasement in the form of the sight distance study. Not only was the study an insult to the neighbors, but it would reduce the existing safety for the immediate neighbors. The existing barriers of trees shielding the Boxburger residence to the left would be weakened or destroyed. The study's recommendation to shift or move the death trap driveway as far as possible to the northeast would not only place it dangerously close to Schaffer's driveway, it would move the point of impact further uphill for any sliding driver, reducing his time to react, brake, escape or stand a prayer of getting out of an accident.

The City Engineer did state at the Planning Commission meeting that the study recommendations would only improve the possible safety for the proposed driveway, not for the remaining segment of the street which the City Engineer specifically excluded in his remarks. As stated in earlier submissions, children were unacquainted with sight distance triangles. Children were expected to roam without regard to sight distance triangles. Sight distance triangles did not provide quick reaction times or increase sobriety for someone coming over the

hill from the many apartment complexes on the other side. It was a shortcut to the Turnpike from dense housing. He went over that road from both sides several times a day every season. In severe winter conditions, the steep hill street section became snow packed, ice covered, and acutely treacherous. Cars sliding off the road and retreating backwards downhill were a common occurrence.

He said the City could not restore the destruction that had already been done as a consequence to this project with respect to trees that had been removed and were only cut down to waste level which was an unappealing sight. The Commission could call the bluff and put to rest the taunting insult of this subdivisions name by letting it die by not letting this item go forward.

Richard Hernandez, neighbor of the proposed platted property, said everyone had times when they had to comply with the strict interpretation of the City Code. He said this particular lot should stand on its own when it was considered for this offer. It was only fair to everyone that it be considered in the same manner the others had been considered. Because of that, they thought it should meet the same strict standard that was applied elsewhere and to that end the use of right-of-way to gain this frontage was a misuse of right-of-way.

He said he had the privilege of working around the State of Kansas and meeting with many county and city commissions discussing all types of issues. For the most part, he had come to understand right-of-way to be something to provide benefit to a jurisdiction because of some outstanding purpose or need, like a street. In this particular case, they already had a street. He did not see in the foreseeable future that their street would become a large street. He saw this as a singular event with no foreseeable future need which would require the acquisition of the remaining right-of-way to do anything with the offer being made to the City Commission tonight. If there was no need, he asked if there would be any benefit to the jurisdiction overall. There was none the neighbors could see. The only thing that could be seen was the City was being offered a pie shape piece of property that was pinched off by the

adjacent lots which were pretty much unusable. It appeared that the only reason for the offer of dedication was to gain frontage in order to avoid application for variance. Gaining frontage was clearly not the intent for use of right-of-way and was clearly not intended for this type of use. Consequently, he had to come before the City Commission and ask them to consider all the facts that were presented, and as a result of that asked the City Commission to decline the offer of right-of-way because it was a misuse and misapplication of right-of-way.

John Chaney, JMC Construction and developer, said the right-of-way was a requirement by the City and it was not to gain the footage because he was originally going to apply for a variance. Right-of-way could be used for future sidewalks or any public improvement. He said it was always required to give the maximum right-of-way.

Also, those trees were cut at 4 feet high for the bulldozer to pick those trees up instead of needing to dig deep. He said with the rest of the lot, those trees would remain and there were no plans to take out any more trees other than what was required in the sight distance study.

He said there was no grass in that area because of the trees and any rain that fell on that lot would go downhill and with the lot being partially cleared and sodded, it would probably reduce the amount of flow off that lot.

Mayor Chestnut said staff to go through how right-of-way was dedicated and how it would process on every plat.

Scott McCullough, Planning/Development Services Director, said the exaction of right-of-way as Uddin explained, was consistent with code standard for any plat that came into the City. The typical process they had seen were waivers not to have to dedicate the right-of-way. The applicant for this property requested a waiver from the code provision to the lot frontage. It was only after the requirement to get another 5 feet that they realized as a consequence of that, that standard was met. Sometimes they had one code standard that either satisfied or put in jeopardy another code standard. That was part of their analysis and review. One of the

purposes for getting those plats as they came in was building the proper amount of right-of-way for future improvements and helped in cost of the City to acquire land, which was one of the hindrances to the improvements of streets, was land cost. As properties redeveloped or replatted, often times the code required exaction. This would likely be a candidate to receive a waiver to 5 foot of additional right-of-way because of the development on the road, but it was not asked for. The applicant provided that code standard.

Commissioner Dever said the applicant would have received a waiver for the length of the frontage.

McCullough said what was more typical in a scenario like this where there was a developed road and there was one lot left to develop on a certain corridor, staff had seen in the past the request to waive the standard to dedication the additional right-of-way. Staff had accepted those waivers because there were no imminent improvements in the planning. Because the road functioned appropriately, there was no recognized need for sidewalks, improvements, or drainage. It was less typical to receive a waiver that would ask the City to not dedicate the land. There was another waiver for the frontage requirement. If going with the 37.35 feet without dedicating the right-of-way and a wavier would have been requested, he could not say what the Planning Commission would have done, but in his opinion it was not an extraordinary waiver to ask for, in a situation where there was an infill property that otherwise met the code and a study had been accepted for the driveway access and fully complied with the code. He said he could envision staff supporting that waiver to the Planning Commission.

Commissioner Dever said why the additional 5 feet of right-of-way was asked for if everywhere else was narrower and were unlikely to request or purchase the additional right-of-way to make the improvements that might be necessary to take advantage of the additional five foot of right-of-way.

McCullough said staff never analyzed that because staff never received a request to not dedicate the right-of-way. There was an argument that there would not be a lot of replatting in

the area so they would not receive five feet from everyone along the road. It might sit as a notch of 5 feet of right-of-way for some time before beginning to complete the right-of-way of this road to get a whole 60 feet of right-of-way. Staff had not analyzed that issue to determine whether or not it would be of value to the City or not.

Uddin said the important point was that the additional right-of-way was asked for as part of the process, not to acquire additional frontage. Without the additional right-of-way, the frontage was 37.35 feet, so it had to go through the waiver, but agreed with McCullough in saying it was not an extraordinary waiver because those were not exact decisions. They were numbers to stick to, but if there were circumstances where it was a little short, you look into the overall scenario and situation. Based on that situation, it was a property and a sight distance study had been prepared. There were posted speed limit signs of 10 mph and had adequate sight distance for the speed limit. A driveway was feasible and would disagree that the additional right-of-way was asked for so that they would satisfy the department.

Mayor Chestnut said there were a number of other items brought up. One was drainage and he thought also the driveway. He drove the street several times and noticed there was a driveway on the Schaffer property that was pretty close and adjacent to that. If this moved forward going through a process of development, he was assuming that there would not be a drainage study per se, but a lot of those considerations were looked at in submission of a plan and secondly, what where the requirements for distance between driveways. He assumed it would be based on zoning and was sure they had other regulation there.

McCullough said the next step in processing this as a single lot subdivision, based on the size and did not require a study, based on the area. The next step was a building permit. It was not site planned in the sense that a commercial property was site planned, so the applicant would come in with their building permit application, provide a plot plan of where the home was to make sure that it met setbacks, there might be engineering studies to analyze soil and those sorts of things for the structure itself. Part of the building permit and plot plan to look at the

building would include the driveway location at the site. Staff's expectation was that the driveway conformed to the analysis with the plat in terms of the location, which was included and issued with the building permit, inspections were made, and the construction commenced.

Mayor Chestnut said with the building permit were there any requirements on the distance between the driveway and property line.

Uddin said the code had minimum spacing between driveways along different streets, so it would meet that criteria. One thing he suggested was to move the driveway a little bit further to the north because there was a little bit of discrepancy in the available sight distance. There was more sight distance to the east than to the west, so if the moving the driveway further to the east, it would be somewhat balanced out. If there was objection from the neighbor, that did not need to be done because there was still adequate sight distance to the west, but there was just more sight distance to the east.

Commissioner Johnson said staff was willing to look at the drainage. On a 12,000 square foot lot, there was probably some drainage in relation to the lot, but did not see how this size of lot would cause a drainage problem for the entire neighborhood and there might be bigger issues happening. He asked if there had been any preliminary investigation.

Uddin said no, but if directed by the City Commission, staff could investigate that area.

Commissioner Cromwell asked if this lot was a platted lot that was unbuildable because it did not have the minimum frontage required.

McCullough said no, this was unplatted property where the code required that property to be platted to gain the building permit to develop the home. The properties surround this parcel were part of a plat, but this was one of the unplatted parcels of property within this area and the code required it to be platted to be eligible to receive building permits. Their contention was that the lot complied with all applicable standards of the subdivision and zoning codes.

Commissioner Dever said the arguments he heard from the neighbors revolved around the questionable process that City staff arrived at this lack of a need for a waiver for the actual

building. Some of the arguments put forth were questionable and the definition of right-of-way was questionable. There were no near plans and it was not common for them to use this extra right-of-way. It would be better from a process standpoint to listen to that feedback and then ask for the variance they were planning to ask for all along and go through that process. It seemed to be the major concern other than the run off. There was severe slope in the neighborhood and was more concerned about the appearance. He said the Commission needed to make sure they were good with the process issue.

Commissioner Johnson said the City Commission was getting caught up in a technicality with the right-of-way question. He said the 2.5 feet was not the issue and it was the City's practice, in the past, for right-of-way on new projects. He said the questions about drainage, safety, and sight distance were valid questions. At the end of the day 2.5 feet would not be noticed, but the sight distance type things would be noticed. He said he thought the process was followed and the sight distance, at that location, was good and confirmed by a third party and City staff. The plat complied with the code and the Planning Commission and City staff recommended it. He said he did not see how a 12,000 square foot lot could cause a drainage problem for an entire neighborhood. There might be other issues going on and commended staff for stepping up and offering to look at it because it was not required. He said the sight distance with the removal of those trees might help the situation. He said he fully supported staff and the recommendation of moving forward.

Commissioner Cromwell said he had an issue with process and wanted to keep things in their proper places. He said he was glad staff was willing to take a look at the drainage and other issues that were important. The character of the neighborhood was always important and it was critical to maintain because of the uniqueness of the neighborhood in Lawrence. He said he had an issue with the appearance of trying to scoot the easement back somewhat on this lot which would enable things to move forward.

Commissioner Dever said if there was a more obvious process to try and make the neighbors more comfortable, the process more clear, and evaluate whether or not the Commission wanted to discuss taking 5 foot sections of right-of-way.

Mayor Chestnut said the committed policy was to continue to acquire right-of-way at its maximum size in order to accomplish some things over time as a community, like sidewalk grids and other such things. Whether or not that would be applicable in the situation, the policy in general was completely in compliance with state statute. The idea was that transportation included roads, sidewalks, bicycle paths, and other transportation needs. One of the things the community suffered from was stretches, especially in places like 19th Street and neighborhood streets, where there was no room to do what they wanted to do. That was the intent and he thought it was appropriate. A lot of residential people had been established at that location for a long time and it was a unique area.

He said if the Commission were to send this item back to the Planning Commission, they could have the option to send it back to through the process of the Board of Zoning Appeals.

McCullough said what they were waiving would dictate the process the City took whether it was a waiver that required a hearing at the Planning Commission or a meeting of the Board of Zoning Appeals to look at a lot standard. The City Commission's role was to uphold or not uphold the Planning Commission's approval of this plat and either accept or not accept the dedications of the right-of-way easement. If they did not accept the dedications of easements and rights-of-way then it would fall to the owner of the property to determine what type of decision or request to be made on this property with some direction from the Commission.

Commissioner Dever asked if the process for the BZA difficult to explain to the City Commission on the length of time it would take and/or what type of effort needed to be put forth by the property owner so the Commission could evaluate whether that might be the most suitable alternative, given some of the questions and the current landowner indicated that was his plan all along.

John Miller, Staff Attorney, said the subdivision regulations indicated that if the governing body rejected part or all of the proposed dedication, the developer (subdivider), in this case could amend the preliminary plat and resubmit the plat for consideration by the Planning Commission without the rejected dedication. If the subdivider took no action within 60 days of the rejection of the proposed dedication, it should constitute a failure of material condition of the approval of the preliminary plat and a preliminary plat should be deemed to be rejected. The plat could not be filed with the Register of Deeds if rejected. The code and the statute required that if the governing body rejected the dedications, to advise the Planning Commission for the reason of that rejection and the developer (subdivider) gave that individual or property owner the ability to resubmit to the Planning Commission for their consideration a revised plan. If the Commission rejected it, they could not file a preliminary plat and needed to go back to the Planning Commission for reconsideration without the rejected dedication.

Commissioner Dever said there was no BZA involvement.

Miller said he was not sure what body would hear that appeal process. He said this indicated it had to go to the Planning Commission, but had to confirm with staff on how the variance was addressed by either the Planning Commission or Board of Zoning Appeals.

McCullough said staff was drafting legal ads for the July Planning Commission tomorrow and were talking about a July or August timeframe to bring the plat back for acceptance and dedications to the City Commission.

Mayor Chestnut said if the Commission chose not to uphold, they needed to provide discussion on why they were not accepting those dedication of easements according to council.

Commissioner Dever said if the diagram presented by Wells was inferring the right-of-way drawn would also impact the neighboring properties.

Hernandez said it would potentially impact the neighboring properties. A lot of times under normal circumstances in dealing with right-of-way in other places, right-of-way was taken

at a right angle and in this case, it was not. So if they were going to use this for any reason, they would have to take from the others.

Wells said in speaking in a third party perspective, there was a case that was settled between the City and Vangard. He said there were stipulations and commitments coming out of the settlement of that case and suggested that case be looked at carefully to see if any agreements coming out of that settlement would affect this because the City owned property in the neighborhood and a federal complex was in that area.

Commissioner Cromwell said if the City Commission sent this item back, they would have to have a variance for not having the 60 feet and now they would have to ask for the distance which seemed ironic.

Mayor Chestnut said given the fact the neighborhood had retained council which was very much within their rights this issue would become a contention that could possibly hold up this preliminary plat for a while.

Commissioner Dever said the justification for not taking the right-of-way was that this was an unimproved area and there were no future plans for development. The terrain, let alone the slope and nature of the road, was going to make it not be a high priority and one they would not be considering improvements on for a long time, or until there had been a redevelopment and at that point and time, they would be able to gain right-of-ways and take care of some of the problems. He understood the need to get it now, but did not know how the City would gain from that single sliver of land. He said if that was a bone of contention from a legal standpoint and there were relatively straight forward means for the developer to achieve his goal which was to develop this property in a reasonable fashion, then this was simply a matter of following a different path rather than the one was created by the desire to take the right-of-way.

Mayor Chestnut said it was a path the applicant wanted to do in the first place

Commissioner Dever said less than 3 foot seemed relatively straight forward. He said the adjacent landowners could present themselves and argue for the other reasons, infill, side

lines, and the difficult roadway, run-off and destruction of trees would impact their lifestyle and that body needed to make that decision again.

Commissioner Johnson said how the Commission would answer the question of going against City policy in acquiring right-of-way.

Mayor Chestnut said there were always exceptions. The one thing that swayed him about process was this was not an item for public hearing at the Planning Commission level, which was surprising given the amount of neighborhood dialogue.

McCullough said there was public comment asked for and received at the Planning Commission. It was not technically a hearing item, per code.

Mayor Chestnut said he wondered if some of the neighborhood dialogue was received late in the game and there was some momentum created at that point, which he had some concern. At this point, it was appropriate to entertain a motion to uphold and see where they ended up.

Mayor Chestnut said he would entertain a motion to concur with the Planning Commission's recommendations to approve the Preliminary Plat (PP-04-01-08) for Fifth Street Bluff Subdivision, a 0.29 acre subdivision consisting of one lot, located at 427 Country Club Court; and, accept the dedication of easements and rights-of-way. Moved by Johnson. Motion failed due to lack of a second.

Commissioner Dever said in deference to Commissioner Cromwell's comment about policy, he said if this item could be tabled for a week to receive information of the infill projects, how many had suitable right-of-way. He said if it was a policy the Commission would be changing by this measure then he wanted to be considering whether that was a major shift in policy that they were affecting. He said he did not want create a precedent that would put the Commission in a legal bind in the future.

Mayor Chestnut said he recommended Uddin get the City's Traffic Engineer involved and initiate from this body an item for the Traffic Safety Commission to look at traffic control

going west bound on 5th Street from the density of that neighborhood going up that hill. He said the TSC should consider some recommendation on what they might be able to do for some kind of speed control.

Moved by Cromwell, seconded by Dever, to refuse the dedication of land for public purposes for Preliminary Plat (PP-04-01-08) for Fifth Street Bluff Subdivision; and to refer the item back to the Planning Commission for consideration of variances to dedication and frontage requirements. Aye: Chestnut, Cromwell, and Dever. Nay: Johnson. Abstain: Amyx. Motion carried. **(15)**

Conduct a public hearing on a request by Steve Mason for a waiver of the restriction of the sale and serving of alcoholic liquor within 400 feet of a school or church, pursuant to Section 4-113(a) of the Code of the City of Lawrence, Kansas regarding the temporary sale of alcoholic beverages at the Americana Music Festival at South Park on Saturday, July 18, 2009 from Noon – 10 p.m.; and consider the adoption on first reading Ordinance No. 8410, authorizing the temporary sale, possession and consumption of alcoholic beverages at South Park related to the event.

Jonathan Douglass, Assistant to the City Manager, presented the staff report. He said the Americana Music Festival would take place at South Park on July 18th and were proposing to sell beer and wine from noon to 10 p.m. as part of the festival in the park. City Code prohibited the sale and serving of alcoholic beverages within 400 feet of a church of school, but provided the City Commission with authority to approve an exemption to that distance restriction, provided that a public hearing was held and the Commission found the proximity of the temporary sale, possession and consumption was not adverse to the public welfare or safety.

He said staff notified the pastor of Trinity Lutheran Church of this hearing, which was the church within that distance restriction. The pastor indicated that the church did not object to the sale and consumption of alcohol at the event and no other public comment had been received. Staff recommended that the City Commission hold the public hearing, find the proximity of the

ITEM NO. 7 PRELIMINARY PLAT FOR FIFTH STREET BLUFF SUBDIVISION (MKM)

PP-04-01-08: Consider the Preliminary Plat and variances related to dedication of rights-of-way and frontage for Fifth Street Bluff Subdivision, 0.29-acre subdivision consisting of one lot, located at 427 Country Club Court (W. 5th St east of Iowa St.). Submitted by JMC Construction, Inc., property owner of record. *City Commission referred back to the Planning Commission on 6/23/09 for consideration of variances to dedication and frontage requirements.*

STAFF PRESENTATION

Ms. Mary Miller presented the item.

Commissioner Harris inquired about the compatibility of the neighborhood. She asked about one of the neighbors saying the house would have to be built closer to the road due to the configuration of the lot.

Ms. Miller said the applicant could probably speak more about that. She said it could be built farther back on the lot but then more trees would have to be removed. She stated the lot has the setback requirement.

APPLICANT PRESENTATION

Mr. Paul Werner, Paul Werner Architects, said the property owner has the right to build a house on the property. He stated the owner is more than willing to give the 5' R-O-W. He said a one lot plat is usually off the radar and does not typically stir concerns but he would like to solve any concerns the neighbors have. He stated the only reason for the variances is because the City Commission requested that path for this property. He said they were willing to meet with neighbors about drainage concerns. He stated the house has not been designed yet. He said the lot fits in with the neighborhood. He asked for support on both variances.

Commissioner Carter asked if the applicant plans to reside at the house.

Mr. Werner said no, the applicant is the home builder, the house is being built for someone else.

PUBLIC HEARING ON VARIANCE

Mr. Jerry Wells, attorney representing a number of home owners/property owners adjacent to the property. He felt this was not good planning with this piece of property and that access could have easily been from Country Club Court. He stated the proposed driveway puts the neighbors in some danger. He said there is a history of accidents in the area and history of the road being difficult during icy conditions. He stated that the waiver must meet the criteria that it will create an unnecessary hardship. He felt the hardship was self inflicted and that it was more of an issue of money for the developer. He said the developer offered to sell the property to the adjoining property owners. He said he has heard nothing about the safety concerns expressed by neighbors.

Commissioner Hird asked for an example of a hardship.

Mr. Wells said an example of a hardship would be if a family could not move into a house because it could not comply and the family would be out of a place to live. He felt that if it is about money or lost profits then it is not a hardship.

Commissioner Hird asked if Mr. Wells was saying that it should be owner occupied.

Mr. Wells replied, no.

Commissioner Hird said he could not think of an example where it did not come down to money and that he was struggling with the concept.

Mr. Wells said he was struggling with it too but he did not write the regulations and that it is a difficult concept.

Commissioner Finkeldei asked if the two safety concerns that Mr. Wells had were steepness and icy conditions and if he had looked at the site study.

Mr. Wells said he does not feel any of the safety concerns were met. He said he did not look at the details of the site study but that accidents happen on the street frequently.

Mr. Tom Boxberger, 2002 W 5th, said the applicant stated they were willing to work with the neighbors but he has never been contacted about the development of the property. He expressed concerns about trees being removed and stated the applicant has clearcut many trees. He said that in order to get the site distance necessary the plan is to remove an enormous amount of trees on his property.

Commissioner Finkeldei asked if trees were being removed from his property or from the R-O-W adjacent to the property.

Mr. Boxberger said the R-O-W in front of his property.

Commissioner Finkeldei inquired about the safety of the street, regardless if the house is built.

Mr. Boxberger said there is already a 10 mile speed limit but nobody abides by it.

Commissioner Carter asked Mr. Boxberger if he attempted to contact the applicant.

Mr. Boxberger replied no, not me personally but neighbors have attempted to contact Mr. Chaney.

Mr. Chris Caldwell, said the street is dangerous. He stated that he repeatedly attempted to speak with Mr. Chaney last year about purchasing the property and he never returned the calls. He said it is a dangerous street, especially during icy conditions. He did not agree with the applicants hardship and said the applicant did not answer the criteria requirements for a variance. He said that infill development suggests something is missing and nothing is missing from the neighborhood. He stated the trees protect Mr. Boxberger house. He stated 'where the frontage does not fit the platting must quit.'

Ms. Jackie Schaefer, 1930 W 5th Street, said the site distance study that was conducted had a recommendation of placing the driveway as close to her lot as possible. Anybody backing out of either driveway would not be able to see a car coming. She felt the solution was to enforce the Subdivision Regulations and deny the variance. She felt the criteria for granting the variance have not been met and that denying the variance is the only legal action. She stated city staff is responsible for creating this situation by asking the developer to ask for a variance. She suggested the city buy the lot and make it an unbuildable lot, comparable to West Hills Parkway.

Commissioner Finkeldei inquired about a possible shared driveway.

Ms. Schaefer said she did not want to share a driveway and that it would create safety issues.

Mr. Lance Antle, 1908 W 5th Street, inquired how 40' road frontage was figured.

Mr. Scott McCullough said the former Development Code stated 35' road frontage requirement. The road frontage has to do with the development pattern in Lawrence and how cul-de-sac access is derived and what is reasonable for a lot to have on a curve on a cul-de-sac. The community has settled on 40' as being a reasonable amount of frontage to provide access to the road and variances are considered for different aspects of unique properties.

Mr. Antle asked if there is an error rate.

Mr. McCullough said a site study was required of the site distance to know that there will be an acceptable measure of safety. There is some objectivity to it where you look at existing development pattern.

Commissioner Moore said he lives on a cul-de-sac on a 40' lot and his thought process was that you get 20' of driveway and 20' of green space.

Mr. Shoeb Uddin said if it is less than 40' then how much less is too less. Would another variance be supported if it is 5' off. He stated it is a hypothetical case because 2 1/2' short is not the only thing taken into consideration. The overall scenario is taken into consideration such as site distance, proximity to the next driveway, the safety record of the road, slope of road, type of surface. There are numerous other factors that come into play. It is difficult to compare those two different cases because each comes with their unique characteristics and circumstances.

Mr. Antle asked if 18' would be allowed.

Mr. McCullough said that no other scenario has been analyzed than what is in front of us. 40' is what is required.

APPLICANT CLOSING COMMENTS

Mr. Werner said the 40' used to be measured at the building line but this lot is unique and the width at the building line is much greater than required, whereas on some cul-de-sacs builders were going too narrow and their solution was to push the house way back. He said that scenario is not here which is an important factor. The big underlying theme is that the Subdivision Regulations can be met. The question is if someone dedicates the R-O-W as required by the Subdivision Regulations would they have the frontage and our answer is yes. He said he could not go to the Board of Zoning Appeals and say that they do not want to put in curbs or gutters in. He said that is a question about money, but that he did get a variance for a church in North Lawrence for no curb and gutters. It was in the floodplain and rarely used and all the curb and guttering did was concentrate the water. That was about a better plan, not money. He said it is one house going on the street but that maybe it needs a curb or gutter to stop a car from going into the ditch. He said he talked to the mayor who recommended the neighbors go before the Traffic Safety Commission to discuss their concerns. This house is not going to make the safety worse on the street. He suggested the option of a hammerhead driveway so that cars could pull out forward instead of backing out. He did not call the neighbors but did contact their attorney. He said the house has not been designed yet so he did not want to put the cart in front of the horse. He did not see the concept of coming off of Country Club Court as an answer and that it would add more pavement and remove more trees.

Commissioner Hird inquired about the dedicated R-O-W. He asked if the Development Code requires 60', the neighbors all have 50', and the applicant agreed to do 50' which now requires a variance.

Mr. Werner said that was correct.

Commissioner Carter asked Mr. Werner to discuss drainage concerns.

Mr. Werner said the applicant has not gotten far enough along in the process to look at drainage yet but they are willing to do what they can.

Commissioner Hird asked if the City Commission required the R-O-W dedication be 50' instead of 60'.

Mr. McCullough said the Subdivision Regulations required an additional 5' of R-O-W for this plat, 60' total, there is 50' there now so that is 10' additional feet that is typically split on each side, that gave 5' additional feet that is basically an exaction of when a plat comes in that is required by the Code to be dedicated. The original plat showed 5' dedicated to the City. The City Commission has to accept the dedication. When Planning Commission approved the Preliminary Plat in May, at that time staff's position was that the plat fully complied with the Code. After public comment and consideration, the City Commission made a motion not to accept the dedication of 5'. That left the applicant with the option to request a variance because the City Commission did not accept the 5'. The consequences of not dedicating 5' means that the frontage remains at it's current 37.35' which is under 3' of variance of the 40'. It is staffs position that the original proposal after dedication of 5' that the 40' frontage was met. The consequence of meeting the Code with dedicating the 5' placed the lot in a situation where the other Code requirement of 40' frontage was met so there was no need for a variance. When the governing body did not accept the additional 5' it placed the property in a predicament where the 40' road frontage cannot be met.

Commissioner Carter inquired about the tress and asked if at least 75% of the tress on the lot would be saved.

Mr. Werner said that was correct.

COMMISSION DISCUSSION

Commissioner Harris asked if the public would have the opportunity to have input during the development stage.

Mr. McCullough said there would not be a site plan, only a building permit. That is not to say that staff does not get involved with issues during construction. He gave the example of a rezoning on Illinois Street where there was testimony regarding building issues. Staff met onsite with both parties and mitigated and discussed some issues.

Commissioner Carter inquired about the impact of one additional driveway.

Mr. Uddin said that when an additional driveway is added an additional conflict point is added. Conflict points always have the potential for accidents. He stated the site distance study that was submitted appears based on the posted speed limit has adequate safety.

Commissioner Carter asked if a hammerhead driveway would help.

Mr. Uddin replied, yes. He said City Commission directed staff to look at the safety and potential safety measures for the overall neighborhood. He said he initiated getting it on the Traffic Safety Commission agenda.

Commissioner Finkeldei asked if the Traffic Safety Commission looks at the steepness and condition of the road.

Mr. Uddin said those are collected in the data collection stage and presented in a staff report to the Traffic Safety Commission, but in a general manner it does not come into play.

Commissioner Finkeldei said his parents live in Arkansas on a steep road and they have grooves in the pavement. He asked if Lawrence ever did the same thing.

Mr. Uddin said not that he was aware of. He said there are no records of any reported accidents in the past 5 years on that road.

Commissioner Carter said that the project has brought to light the safety concerns of the neighbors and hoped they could be addressed by the Traffic Safety Commission.

Commissioner Dominguez said he understood the neighbors concerns but that he did not see how one driveway would make such a big difference in safety. He said he would vote in favor of the variances. He felt that all the issues have been looked at that the neighbors just do not want another house on the street. He said it is the property owners right to build a house.

Commissioner Carter said he would also vote in favor of the variance. Said the neighbors testimony regarding safety concerns on the street will bring to light issues that need to be looked at. He stated the developer sounds willing to put in a hammerhead driveway and the City Engineer is looking into the safety issues due to the neighbors input. He stated Planning Commission relies on the City Engineer survey and he says the drainage is fine. As bad as the drainage is there it could potentially improve the drainage. The owner ought to be able to put a single family home on the lot.

Commissioner Harris said she would also vote in favor. She suggested making a change to the condition about the driveway and say something like 'the driveway shall allow for headfirst egress and/or be located as far to the northeast.'

Commissioner Finkeldei asked if the hammerhead driveway could be moved slightly away from Ms. Schaefer's driveway.

Mr. Uddin said that would be fine. He suggested to move the driveway a little closer to the northeast because the available site distance was more to the east side than the west side. He stated that was just a suggestion, not a requirement.

Mr. Werner said he did not have a problem with the condition but he would rather have the condition say that the driveway configuration be subject to the City Engineer approval.

Commissioner Finkeldei said Planning Commission saw this item last month and did not have to grant a variance because they have significant R-O-W and road frontage. City Commission chose not to accept the R-O-W because they did not expect to use it because there were no plans to expand the street. He felt the strict application of the regulations would create an unnecessary hardship because the City put the applicant in the situation by not accepting the 60' of R-O-W that they normally would. He stated that Horizon 2020 suggests infill development and creating an infill lot that is not developable over 3' of frontage goes to the public health safety and welfare. In his opinion the intended purpose of the frontage is to protect the character of the neighborhood. He felt that by granting 2.65' variance it is in harmony with the intended purpose of the regulations. Said he felt the applicant met the three criteria set forth so he will support the variance request. As for the plat itself he believed the major issue is safety and it is clear this is an unsafe road for the people that live there. The City Commission initiated it to have it looked at. He felt it was not an argument that adding one more house would make an unsafe street more unsafe. If it is unsafe it needs to be fixed.

Commissioner Harris restated her previous condition suggestion 'the driveway shall allow for headfirst egress and/or be located as far to the northeast as possible and the property owner shall remove all obstructions within the site triangle of the driveway.' She asked if slightly different wording was wanted after Mr. Werner spoke.

Commissioner Finkeldei suggested something worded like 'should have head first access and the driveway location determined by the City Engineer or the driveway shall be located as far northeast as possible on the property.'

Mr. McCullough expanded on the suggested condition saying 'the driveway shall be designed with sufficient turnaround to allow for head first egress.'

Commissioner Harris stated the condition as 'the driveway shall be designed with sufficient turnaround to allow for headfirst egress and be located in consultation with the City Engineer or be located as far northeast as possible and the property owner shall remove all obstructions within the site triangle of the driveway.'

ACTION TAKEN
Motioned by Commissioner Finkeldei, seconded by Commissioner Carter, to approve the following variances:

1) *From Section 20-810(d)(4)(i) which requires 60 ft of right-of-way for local streets to permit the right-of-way to remain at 50 ft in this location.*
2) *From Section 20-810(a)(2)(i) which requires that lots be designed to comply with all applicable zoning district regulations to permit the creation of a lot with 37.35 ft of frontage in the RS10 Zoning District.*

Unanimously approved 7-0.

Motioned by Commissioner Finkeldei, seconded by Commissioner Carter, to approve the Preliminary Plat of the Fifth Street Bluff Subdivision and returning it to the City Commission for consideration of dedication of easements ~~and right-of-way~~ subject to the following conditions of approval:

1) The preliminary plat shall be revised with the following changes:
   a. The following note shall be added to the preliminary plat and included on the final plat: "The driveway shall be ~~located~~ *designed with sufficient turnaround to allow for headfirst egress and be located in consultation with the City Engineer or to be located* as far to the northeast as possible and the property owner shall remove all obstructions within the sight triangle of the driveway."
   b. The plat shall be revised to show the sight distance triangle for the driveway.

Unanimously approved 7-0.

Consider an appeal of the Planning Commission's approval of a Preliminary Plat for Fifth Street Bluff Subdivision, including variances related to dedication of rights-of-way and frontage, a 0.29 acre subdivision consisting of one lot, located at 427 Country Club Court and accept dedication of easements for PP-04-01-08.

Vice Mayor Amyx said due to potential conflicts of interest regarding this Preliminary Plat, he needed to be excused.

Mary Miller, Planner, presented the staff report. She presented the Preliminary Plat for Fifth Street Bluff Subdivisions as well as an appeal from the Planning Commission's decision. The one lot subdivision was a little less than 13,000 square feet, located on West 5th Street, east of Iowa.

She said the plat was originally considered by the Planning Commission at their May meeting, with a 7-0 vote to approve the Plat and forwarded the plat to the City Commission for acceptance and dedications.

An appeal from the Planning Commission's decision was filed and the City Commission considered the appeal and dedication of easements and rights-of-way their June 23rd meeting. At that meeting, the City Commission voted to not accept the dedication of right-of-way and returned the plat to the Planning Commission.

Based on the City Commission's decision to not accept the dedication of right-of-way, the proposed lot did not have the required frontage for the RS-10 zoning district. The applicant requested a variance from the requirement to dedicate right-of-way and requested a variance to permit a lot to be created with fewer frontages than required in the zoning district. The lot had 37.35 feet of frontage, which was 2.65 feet less than the 40 feet required by the code

The Planning Commission considered the variance requests at their July meeting and determined the necessary criteria had been met and voted 7-0 to grant the variances and approve the plat and forward it to the City Commission for acceptance of dedication of easement. An appeal was filed from the Planning Commission's actions on the variances and

plat based on the opinion that the criteria for variance were not met and the plat and the appeal were before the Commission tonight.

In Section 20-813(g)(2) of the subdivisions regulations contained the necessary three criteria which must be met for a variance to be granted. T

The first criteria stated that strict application of those regulations created an unnecessary hardship upon the subdivider.

The lot frontage was limited by the Grandview Heights Subdivision built in the 1950's. The plat omitted the subject property. Current practice was to plat only contiguous properties so those types of situation were not created. The amount of lot frontage available was caused by the platting of Grandview Heights Subdivision.

Alternate ingress/egress was suggested from other lots, from Country Club Court through the platted lot to the north, which was owned by the applicant at the time the plat was submitted or from Iowa Street through the unplatted properties to the west. Section 20-810(b)(2) prohibited joint use driveways for residential uses. Joint use approach areas (area within the right-of-way, or behind the sidewalk) might be used, but "individual driveways which were separately maintained were required beyond the street right-of-way line." In order to utilize the alternate ingress/egress it would be necessary to obtain a variance from this standard. It was important to note that even with alternate ingress/egress, the amount of frontage would not be adequate and a variance would be necessary.

The hardship was not a 'mere financial' hardship, in that it would not simply cost more to provide the additional frontage, but it was not possible to provide the additional 2.65 feet of frontage and the lot was undeveloped without the variance.

The second criteria stated that the proposed variance was in harmony with the intended purpose of those regulations.

The granting of the variance of the right-of-way requirements met the purpose of the regulations as the City Engineer indicated that it was unlikely that this portion of West 6th Street would be widened.

The granting of a variance from the frontage requirement to permit a frontage of 36.35 feet rather than 40 feet met the criteria, in that the reduced frontage would not negatively impact the area.

The appeal stated the criteria was not met because of the safety issues that would be caused with the platting of this lot and the resulting driveway onto West 6th Street and because the aesthetics were being damaged, due to the trees which were being removed with this development.

The safety of the driveway had been evaluated to the sight distance study which indicated there was adequate sight distance for a driveway in this location. The Planning Commission placed a condition on the plat that the driveway be designed to permit head first egress. The Traffic Safety Commission reviewed the safety of this section of West 6th Street and felt that traffic calming or other measures were warranted. There was no evidence presented which showed this driveway had a negative impact on the safety of the street.

She said regarding the aesthetics of this area, there was a lot of tree cover in the area. The plat showed the area where trees were proposed to be removed.

The third criteria were the public health, safety and welfare would be protected. As mentioned earlier, there was no evidence received which indicated that the driveway would have a negative impact on the safety of the area. The site distance study indicated there was adequate sight distance for this driveway and the head-first egress would increase the safety of this driveway. The City Stormwater Engineer would review the drainage issues when a building permit was applied for.

Staff recommended the City Commission uphold the Planning Commission's decision and accept the dedication of easements based on the findings in the staff report, or Planning

Commission meeting minutes of July 22, 2009. If the City Commission would vote to not uphold the Planning Commission's decision and not accept the dedications of easements, staff recommended the City Commission develop a set of findings for the record.

Mayor Chestnut called for public comment.

Paul Werner, Paul Werner Architects, representing the owner of the property, said it was good the preliminary plat did go back to the Planning Commission. The head first egress out of the driveway was a good point because they could design a house and the footprint showed a hammerhead to turn the car around so the cars left head first on that street.

He said they agreed to submit a grading plan to the Stormwater Engineer when the building permit went forward which was not normally required.

Some neighbors asked when the variance was too much and how it was decided. He said the client could dedicate the five foot of right-of-way that was required by the subdivision regulations and then had the 40 feet mark. The only reason the variance was needed because they were not allowed to meet the subdivision regulations.

Jerry Wells, Attorney, representing a group of adjacent property owners to the lot in question, said his clients wanted to speak about the various aspects of this application and concentrate on the definition of "unnecessary hardship" as defined in section 20-815 of the Subdivisions Regulations. It was important because when analyzing and deciphering regulations, every word had a meaning. With that in mind, there were two important parts in the definition of "unnecessary hardship." The applicant had to show that he was a victim of "unnecessary hardship", in order to be granted a variance to the regulations. The first sentence stated that the applicant had the burden to prove the application of those regulations were so unreasonable that they become "arbitrary and capricious" interference with his right to do whatever he wanted to with that property.

He said Section 20-815 also stated that, "mere financial loss or the loss of potential financial advantage does not constitute unnecessary hardship". He said in the language

"arbitrary and capricious" was not defined in the regulations and therefore, needed to use the ordinary dictionary meaning of those two words. The last sentence stated that "mere financial loss or the loss of a potential financial advantage was not sufficient. In effect there had to be more than that financial loss in order to succeed. He said there was a piece of property that was going to be developed by the applicant to build a house to sell for profit and potential financial advantage, in that profit which met the definition. He said this was about the applicant who came forward, wanted a variance from the regulations to build a house on this lot for profit which was prohibited under this regulation unless the applicant could show more than potential financial advantage.

Wells said the definition of arbitrary was "selected at random and without reason." There was nothing to indicate in the progress of this application that anything was done unreasonably or at random when the regulations were applied. The applicant knew or should have known what was required. The applicant knew there was a certain amount of frontage feet that was required and there was nothing hidden. He was not misled by the planning staff, he did not misunderstand the regulation or that a new regulation was brought up by Planning Staff and it was not a surprise. He said it was his clients positions the applicant had not met the explicit definition in order to meet the requirements of that particular section because clearly the applicant was in this for profit. If it was just financial gain, a person would not meet the requirements of this regulation.

The unnecessary hardship criteria, as defined in the zoning regulations, stated, "The variance request arises from such conditions which are unique to the property in question and not ordinarily found in the same zoning district and are not created by actions of the property owner or applicant." In other words, in the zoning definition, it underscored what their position. The applicant knew what regulations he was facing by the regulations and there was nothing hidden. Yet, the applicant bought the property for the purpose of development. He said there was nothing wrong with buying the property, but the applicant had to adhere to the rules and

regulations. He said if this matter ended up in the district court and a judge took a look at the regulations and definitions, the judge would take a look at those facts and apply the law of strict construction to those regulations and determine that the applicant did not meet the definition.

Jacqueline Schafer, Lawrence, said the 5th Street Bluffs Subdivision was in her side yard. First of all, she said trying to participate as an informed citizen was a full time job. In order to understand the planning staff's position on this issue, she had tried to read the City's subdivision regulations, land use code and Horizon 2020. Together, those documents comprised more than 725 single spaced pages and their language was very complex. The idea of reading and understanding those documents was a mind numbing proposition for people that had jobs and families.

Second, she said she learned that, in order to be taken seriously by the Government, the average citizen must hire an attorney. A person did not stand a chance of being taken seriously without an attorney. You will be listened to, patted on your head and sent on your way while the people you spoke to do exactly what they wanted in the first place. In their case, she found this especially appalling because they were just asking that the City enforced the regulation they had written.

Third, it appeared that unless a person agreed with the position advocated by the powers in charge, that person's input into an issue was not welcomed. She said she understood the expediency behind that position, but found it insulting and contrary to democratic principles.

Four, she had learned the Planning Staff existed for the sole purpose of facilitating the desires of the town's developers. If the written regulations were contrary to the developer's desires than the planning staff would find a way around those regulations. She said as a tax payer, she found this as criminal. If the planning staff was going to exist for the benefit of special interest group then that group should pay their salaries.

Finally, she had learned that one could not trust all of the written records produced by City Hall. Specifically, the written transcript of the July meeting of the Traffic and Safety

Commission contained a major error. Traffic Safety Commissioner Ziegelmeyer did not say that a traffic calming device made no sense. He said that putting a drive way at this location made absolutely no sense. Three members of the neighborhood heard him say this and others could hear him say it too if the meeting was audio taped.

She said that she grew up believing that the government worked for the people it served. However, the experience she had over the past few months had shattered this belief. It appeared to her that rules existed for some groups of people, but not for others. The neighborhood believed that a rule was a rule and should be enforced in an unbiased manner. She said they were hopeful that the City Commission believed that too and would act accordingly.

Chris Caldwell said that he has had many good experiences with City employees over the years. He said that was why his experience in this matter was so disconcerting. It stood in such stark contrast. Bluntly, the process reeked of due process denial, tax payers concerns trivialized to the vanishing point, and blatant disregard of repeated pleas for simple enforcement of the City's own rules. Tonight the process also reeked of something more ominous. The information given internally that was inaccurate, incomplete and often completely one sided. The City's internal reporting to the Commission had strayed widely from key facts essential to decision making. For a snap shot example, consider just a few facts arising from the July Traffic Safety Commission meeting. As Schafer mentioned, one Traffic Safety Commissioner stated that putting a driveway at the proposed death trap location made no sense at all. He said tonight's packets material misquoted and misrepresented the statements entire meaning. Further, the Traffic Safety Commission minutes failed to mention that his request to put the Commissioners sincere "made no sense" in writing was immediately squelched by another Commissioner's follow up remarks. The Commissioner shushed the other Commissioner that had the audacity to make an honest, independent and objective opinion on a matter of traffic safety. Presumably, the death trap driveway matter was steered to the TSC out of the City

Commission's concern for safety. Presumably, the City Commission would have valued an honest, open, and meaningful opinion from the TSC meeting. He said they were denied this input and given an erroneous report and a slanted public record.

The capable City engineer already stated that the proposed driveway introduced new conflict points on West 5th Street. He said how additional opportunities for crashes could not reduce the safety of the street. He said how could a staff letter be trusted that contradicted engineering expertise three times in bold face inaccurate assertions.

Elsewhere, the City engineer reported the speed data, collected by City staff on the subject hill showed that 85th percentile speed was much higher than the recommended speed limit of 10 miles per hour. However, staff failed to connect the dots clearly for the City Commission and include that the earlier site distance study was originally based on the posted 10 miles per hour speed limit. He said if the studies calculations could be relied on for accuracy at 20 miles per hour, 25 or 30.

He asked the Commissioners to not approve the flawed bluff proposal, to become an approved hoax. He asked the Commissioner to restore some public trust in the City's government and planning process. He said to put an end to City's resources to oppose and thwart tax payer's legitimate request for code compliance. He said to continue to lead, not submit.

Werner said their hope would be to make the impact on the neighbors as minimal as possible. He said hopefully there were no negative impacts however his client had the right to build on the property. He struggled with the ideas that they did not meet the regulations. He said the applicant could dedicate the right-of-way and have the frontage to meet the subdivisions regulations.

If, by chance, this owner had been the person who had done those previous plats, then the owner would have created this problem. He said the plats were built in 1955 so the owner did not create this problem. He said some of the information the City Commission received did

not apply but he thought they could work through this issue and make it as little impact on the neighbors as possible.

Commissioner Dever said he would like clarification about the hardship. He said if someone willingly and knowingly bought a parcel that did not conform to the subdivision regulations, tried to give the City right-of-way which the City did not accept, and asked for a variance to the Subdivision Regulations, the argument was whether or not there was a hardship and financial was enough. He said he needed clarification on the term "hardship" and the strict legal definition and where the City stood with that interpretation.

Scott McCullough, Planning and Development Services Director, said hardship could mean various things depending on the site specific circumstances. It could be a topographic hardship that prevented one from accessing or dedicated right-of-way. It was also a decision that was ultimately made by the Planning Commission, or if appealed, the City Commission. In this set of circumstances, it was the action of not accepting the dedication for the right-of-way that created the need for the variances which the applicant pursued and there was a decision by the Planning Commission that it was a unique situation capable of meeting the definition of hardship. However, the definition could take various forms.

Commissioner Dever said there was some question as to whether or not it was legal and/or if the decision would stand based on this plat. He said he had a concern about how often the City did not accept right-of-way. It did not make sense, but it was one way to get around the subdivision regulation which was to give the City five feet and then the owner would be compliant. He did not know where the City stood on this issue.

McCullough said it was important to review that coming into compliance with the code sometimes placed a person out of compliance with sections of the code. Therefore, there was a need for variances. Fulfilling the code requirements, which in this case was dedicating the right-of-way, actually brought the property into compliance with the frontage requirement. It was not about loopholes or getting around certain sections of the codes, but from staff's prospective, it

was about consequences of meeting codes and what impact it had on other section of the code from their perspective. He said he agreed the code was complex, but in platting, it was fairly straight forward. There was an action, but there might be a reaction or a consequence of meeting certain sections of the code that place the plat outside of the code. In those instances, staff saw variances.

Staff tried to provide findings to the Planning Commission and the Planning Commission accepted those findings. It was now before the City Commission to look at those findings and agree whether there was an unnecessary hardship in this instance.

Mayor Chestnut said if the property was recently acquired or was the property owned for a while.

Werner said it was acquired in 2008.

Mayor Chestnut said in talking about compliance with the entire development code, there was public comment about Horizon 2020 and this area was RS-10 zoning and the structure that was proposed would be in compliance with RS-10 regulations. He said that area was planned for low density housing. Therefore, the residential use was not an issue. As far as the dedication of right-of-way, he remembered the discussion the City was violating State law by dedicating the right-of-way. However, the conclusion which seemed reasonable, that everyone agreed, based on the street, that there was not going to be need for that right-of-way because a sidewalk would not be practical.

He said that there were two variances. The question was the frontage and was the only thing in this particular plan that would be considered a variance.

McCullough said technically there were two variances because not accepting the dedication of the right-of-way was a variance. He said development of the lot was hinged upon whether or not the plat was approved.

John Miller, Staff Attorney, said the request was an appeal from the Planning Commission which was coming before the City Commission. He said the City Commission, on

the record, needed to find those three elements of the variance had been met if that was the direction of the City Commission in going forward. He said the City needed to be clear under the 20-813(g)(2), that the Commission made findings on the record for all three of those items.

Mayor Chestnut said if anyone else attended the Planning Commission meeting from staff. He said he read the Planning Commission minutes, but wanted to note that the Planning Commission made a 5-0 vote. He said he was not sure about the Traffic Safety Commission minutes, but Commissioner Zigglemeier did vote. The issue at hand was the traffic calming device so he wanted to go back and look at the minutes if those minute were in error.

Commissioner Johnson said he would stand behind the Planning Commission unanimous recommendation. As far as process, for one lot, he did not know how much more process the City Commission could go through.

He said he was trying to be respectful of the comments, but this proposal was addressed and Staff did a good job. Again, he said he would uphold the Planning Commission decision and wanted to move this proposal forward.

Commissioner Cromwell said public input was valued and important. This was the second City Commission meeting held concerning this proposal and which had taken up a good majority of the of this City Commission meeting.

The mistake in the minutes of the TSC needed to be taken up with that Commission. However, there was no dispute of the 5-0 vote. The discussion led to the decision that the traffic calming device was unnecessary so it upheld the public health, safety and welfare clause.

He said he was not an attorney and could not clarify “unnecessary hardship.” All of the Commissions, including Planning, Traffic, and the City, had examined the plat. He said he upheld the Planning Commission’s decision.

Commissioner Dever said it was important to consider everyone’s interests in this matter, but this was a legal use. Although it seemed like a loophole, by denying the acceptance

of the five foot right-of-way, it was not. It was difficult to know how it would impact the neighborhood.

He said he was concerned about people's opinion of the process and the City. A number of committees and commissions gave their time freely to the City and were not paid by the City. He said he would like to move forward and was important to know the City Commission was complying with the rules.

Mayor Chestnut said that he appreciated the comments. He said when talking about the strict application of regulation creating an unnecessary hardship, there had not been one in-fill development project that had not had some degree of variances. That was part of the issue with trying to create density in the community or the City would continue to expand their footprint because green-field development was easier than in-fill development. He said the majority of time lots were a non-conforming use. He said if the use was different from the intent, he would have a lot more concern, but for RS10 zoning, the house was a conforming use and when talking about that one variance, it did not seem to be a significant issue. He said to hold the line he believed that strict application was an unnecessary hardship. It was important to have clearance but did not know if the distance of two and a half feet would make that much difference in the development. He said he was most concerned if the extra driveway created a significant issue with public health, safety and welfare. He said there was a significant issue, regardless of the driveway because of the topography.

He said regardless of the ruling, he wanted to continue to pursue traffic safety to look at that area again because they were chartered with very narrow criteria. He said he upheld the Planning Commission's recommendation, but wanted the City Staff and the Traffic Safety Commission to look at that area.

Relative to the public comments, he was sorry some of the citizens felt that way. He said he intervened in half a dozen issues every week and about 1% of those involved an attorney. He said he received a constant stream of emails about curbs and gutters and he tried

address every email, as well as getting staff engaged. He said he agreed with Commissioner Dever that there were a lot of people that work on a volunteer basis to serve the community. He said City Staff did not exist for the developers and developers would not agree with that assessment. The whole safety issue needed to be studied further, regardless of the driveway and the Traffic Safety Commission and Public Works needed to be involved in looking at the design and suggested digging into the street maintenance budget, next year, to try and mitigate the issue. He said he wanted to get the vote right from a legal standpoint.

David Corliss, City Manager, said the Planning Commission made a determination that was based on the Staff report. He said the Staff Attorney was emphasizing wanting it to be based on certain criteria.

Miller said that he believed the City Commission could uphold the Planning Commission's decision. However, this was an appeal to the City Commission of the variance.

Mayor Chestnut asked what the statute was specifically.

Miller said it was section 20-813(g)(2) in the subdivision regulations of the Code of the City of Lawrence. He said he also felt it was important the City Commission made a determination in upholding the Planning Commission's recommendation and a determination on the variance based on those three criteria. It was not only the approval of the variance, but also the dedication of the easements for the plat.

Moved by Johnson, seconded by Dever, to grant variances related to dedication of rights-of-way and frontage, making a finding pursuant to Section 20-813(g)(2) that strict application of these regulations will create an unnecessary hardship upon the subdivider; that the proposed variance is in harmony with the intended purpose of these regulations; and that the public health, safety and welfare will be protected; and to accept dedication of easements. Aye: Chestnut, Cromwell, Dever and Johnson. Nay: None. Abstain: Amyx. Motion carried.

Moved by Cromwell, seconded by Johnson, to uphold the Planning Commission's approval of the Preliminary Plat (PP-04-01-08) for Fifth Street Bluff Subdivision, a 0.29 acre

subdivision consisting of one lot, located at 427 Country Club Court. Aye: Chestnut, Cromwell, Dever and Johnson. Nay: None. Abstain: Amyx. Motion carried. **(18)**

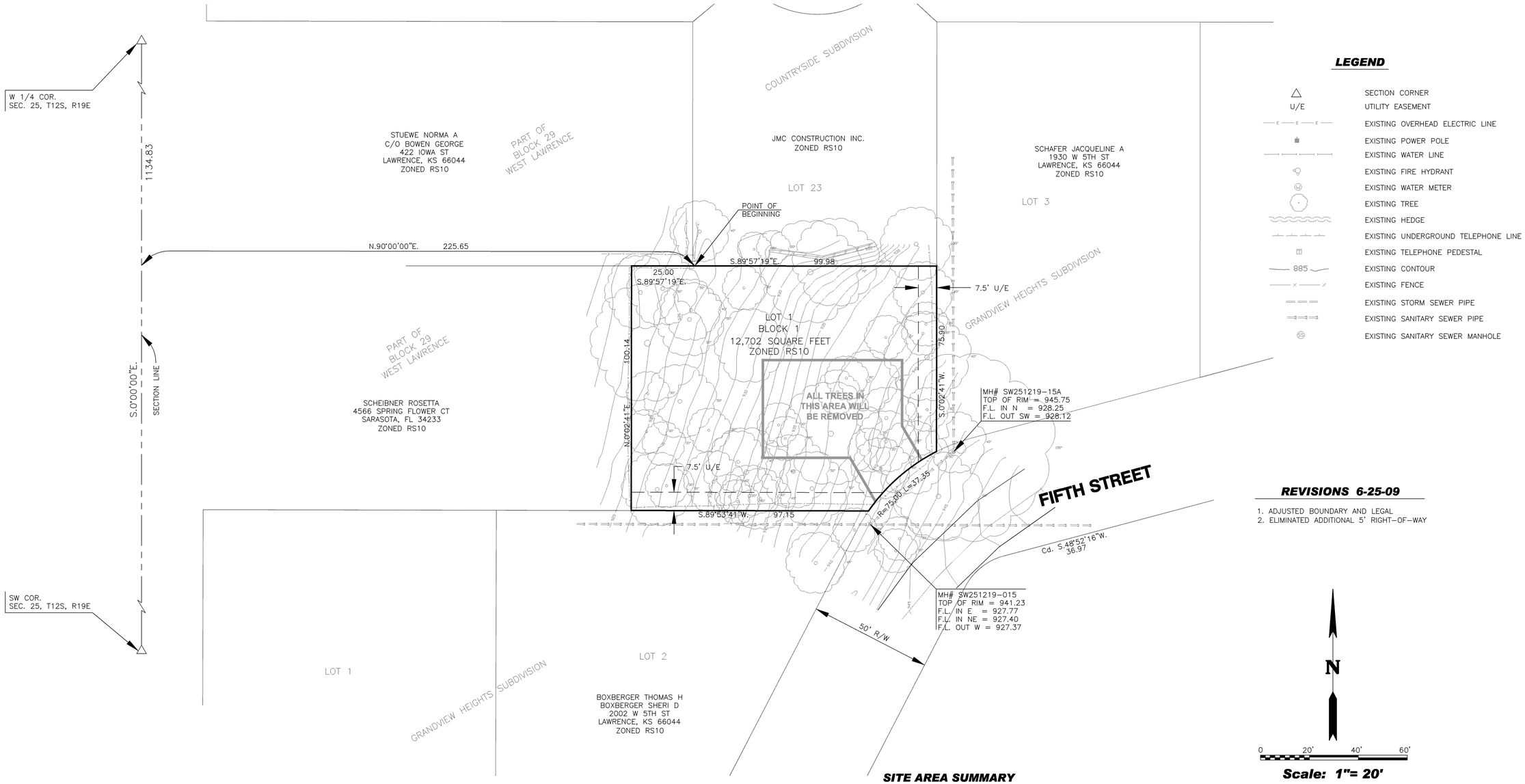
Review staff report concerning City policies for the selection of professional service contracts for the City.

Diane Stoddard, Assistant City Manager, presented the staff report. She said the report was a follow-up to a study session held in May regarding the selection of professional services. The discussion particularly focused on the selection of architectural or engineering types of services. The City Commission, at that meeting, had requested some staff follow-up related to some specific procedures of various cities as well as some follow up to Federal regulatory requirements that dealt with Federal funds that were utilized in design contracts.

She said the City had purchasing procedures that were outlined for the contracting of professional services. It was important to note the procedures related broadly to professional services. It included a variety of professional services in addition to engineering and architectural services, including financial and banking services.

The policy indicated that award would be made to the vendor that was best qualified based on demonstrated competence and qualification for the type of service required and at fair and reasonable prices. The policy called for a request for a breakdown of estimated project costs. However, costs were not routinely provided, related to the acquisition of engineering services. Typically, Staff requested a summary of estimated required effort related to a project and standard billing rates. The primary reason the total cost was not provided by vendors was because, in most cases, the specifics of the scope of work had not yet been defined. In the City's process, negotiation of scope and fees occurred once the best qualified vendor was selected and the City entered into negotiations phase where the scope was discussed in more detail and a fee negotiated related that scope. The idea was that it allowed the selected consultant the opportunity to help shape the scope and bring their specific ideas related to the project.

FIFTH STREET BLUFF SUBDIVISION



LEGEND

- SECTION CORNER
- U/E — UTILITY EASEMENT
- EXISTING OVERHEAD ELECTRIC LINE
- EXISTING POWER POLE
- EXISTING WATER LINE
- EXISTING FIRE HYDRANT
- EXISTING WATER METER
- EXISTING TREE
- EXISTING HEDGE
- EXISTING UNDERGROUND TELEPHONE LINE
- EXISTING TELEPHONE PEDESTAL
- 885 — EXISTING CONTOUR
- EXISTING FENCE
- EXISTING STORM SEWER PIPE
- EXISTING SANITARY SEWER PIPE
- EXISTING SANITARY SEWER MANHOLE

REVISIONS 6-25-09

1. ADJUSTED BOUNDARY AND LEGAL
2. ELIMINATED ADDITIONAL 5' RIGHT-OF-WAY

N

0 20' 40' 60'

Scale: 1"= 20'

SITE AREA SUMMARY

GROSS AREA IN THE SUBDIVISION 12,127

LEGAL DESCRIPTION

A TRACT OF LAND IN BLOCK 29, IN WEST LAWRENCE, PLATTED IN THE SOUTHWEST QUARTER OF SECTION 25, TOWNSHIP 12 SOUTH, RANGE 19 EAST OF THE 6TH PM IN THE CITY OF LAWRENCE, DOUGLAS COUNTY, KANSAS, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF LOT 23, IN COUNTRYSIDE SUBDIVISION, SAID POINT OF BEGINNING BEING 1134.83 S.0°00'00"E. AND 225.65 FEET N.90°00'00"E. OF THE WEST QUARTER CORNER OF SAID SECTION 25; THENCE ALONG THE SOUTH LINE OF SAID LOT 23
S.89°57'19"E. 99.98 FEET TO THE SOUTHEAST CORNER OF SAID LOT 23 AND THE WEST LINE OF LOT 3 IN GRANDVIEW HEIGHTS SUBDIVISION; THENCE ALONG THE WEST LIE OF SAID LOT 3
S.0°02'41"W. 75.90 FEET TO THE SOUTHWEST CORNER OF SAID LOT 3 AND THE NORTH RIGHT-OF-WAY LINE OF FIFTH STREET; THENCE ALONG THE NORTH RIGHT-OF-WAY LINE OF SAID FIFTH STREET
ON A CURVE TO THE LEFT WITH A RADIUS OF 75.00 FEET AN ARC LENGTH OF 37.35 FEET (CHORD OF SAID CURVE BEARS: S.48°52'16"W. 56.97 FEET) TO THE NORTHEAST CORNER OF LOT 2 IN SAID GRANDVIEW HEIGHTS SUBDIVISION; THENCE ALONG THE NORTH LINE OF SAID LOT 2
S.89°53'41"W. 97.13 FEET; THENCE
N.0°02'41"E. 100.14 FEET; THENCE
S.89°57'19"E. 25.00 FEET TO THE POINT OF BEGINNING, CONTAINING 12,127 SQUARE FEET

SURVEYOR

AL DIEBALL, R.L.S. (KS #758)
BG CONSULTANTS, INC.
1405 WAKARUSA DRIVE
LAWRENCE, KS 66049
785.749.4474

OWNER / SUBDIVIDER

JMC CONSTRUCTION INC.
1032 ELDRIGE
LAWRENCE KS, 66049
(785)423-0840

VARIANCES PREVIOUSLY APPROVED

1. FROM SECTION 20-810(d)(4)(i) WHICH REQUIRES 60 FT OF RIGHT-OF-WAY FOR LOCAL STREETS TO PERMIT THE RIGHT-OF-WAY TO REMAIN AT 50 FT IN THIS LOCATION.
2. FROM SECTION 20-810(a)(2)(i) WHICH REQUIRES THAT LOTS BE DESIGNED TO COMPLY WITH ALL APPLICABLE ZONING DISTRICT REGULATIONS TO PERMIT THE CREATION OF A LOT WITH 37.35 FT OF FRONTAGE IN THE RS10 ZONING DISTRICT.

FLOODPLAIN DATA

THE SUBJECT PROPERTY IS NOT LOCATED WITHIN THE 100 YEAR FLOODPLAIN. RE: THE FEDERAL EMERGENCY MANAGEMENT AGENCY FEDERAL INSURANCE ADMINISTRATION PUBLICATIONS: FLOOD INSURANCE RATE MAP, MAP NUMBER 20045C0036C, EFFECTIVE DATE NOVEMBER 7, 2001.

GENERAL NOTES

1. THERE ARE NO IMPROVEMENTS ON THIS PROPERTY
2. THE SOIL SURVEY FOR DOUGLAS COUNTY INDICATES THAT THE SOIL TYPE IS PAWNEE-WOODSON-MORRILL ASSOCIATION: DEEP, NEARLY LEVEL TO STRONGLY SLOPING, WELL DRAINED TO SOMEWHAT POORLY DRAINED SOILS; ON UPLANDS
3. THE DRIVEWAY SHALL BE DESIGNED WITH SUFFICIENT TURNAROUND ON-SITE TO PROVIDE FOR HEAD-FIRST EGRESS AND DRIVEWAY LOCATION SHALL BE APPROVED BY THE CITY ENGINEER. THE PROPERTY OWNER SHALL REMOVE ALL OBSTRUCTIONS WITHIN THE SIGHT TRIANGLE OF THE DRIVEWAY.

BENCHMARK

D-371 NGS BENCH MARK AT 6TH AND COLORADO ELEVATION = 905.41

PROJECT LOCATION



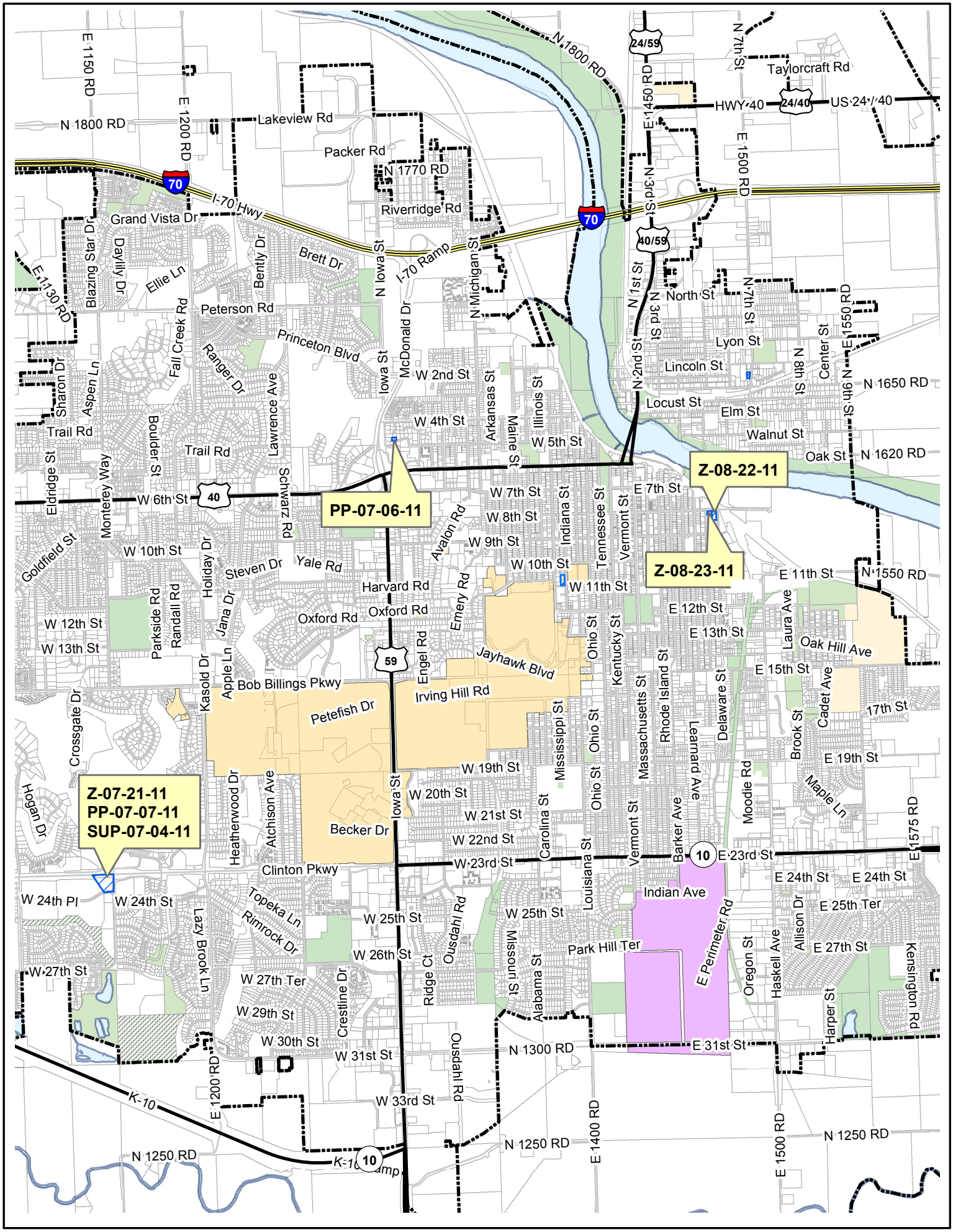
LOCATION AND ZONING MAP

PRELIMINARY PLAT
REVISED
SEE: REVISIONS

BG CONSULTANTS
engineers surveyors planners

Project No. 08-123L
Date: June 27, 2008

SHEET NO.
1


Z-08-22-11
Z-08-23-11
PP-07-06-11
Z-07-21-11
PP-07-07-11
SUP-07-04-11
N 1800 RD
Lakeview Rd
Packer Rd
N 1770 RD
Riverridge Rd
I-70 Hwy
I-70 Ramp
Grand Vista Dr
Brett Dr
Bently Dr
Ellie Ln
Peterson Rd
Princeton Blvd
Fall Creek Rd
Ranger Dr
Lawrence Ave
Schwarz Rd
Boulder St
Trail Rd
Sharon Dr
Aspen Ln
Eldridge St
Monterey Way
Goldfield St
W 6th St
W 7th St
W 8th St
W 9th St
W 10th St
W 11th St
W 12th St
W 13th St
Steven Dr
Yale Rd
Holiday Dr
Parkside Rd
Randall Rd
Jana Dr
Harvard Rd
Oxford Rd
Avalon Rd
Emery Rd
Engel Rd
Jayhawk Blvd
Irving Hill Rd
Bob Billings Pkwy
Petefish Dr
Apple Ln
Kasold Dr
Crossgate Dr
Hogan Dr
Heatherwood Dr
Atchison Ave
Becker Dr
Clinton Pkwy
W 19th St
W 20th St
W 21st St
W 22nd St
W 23rd St
W 24th Pl
W 24th St
W 25th St
W 26th St
W 27th St
W 27th Ter
W 29th St
W 30th St
W 31st St
W 33rd St
Topeka Ln
Rimrock Dr
Lazy Brook Ln
Crestline Dr
Ridge Ct
Ousdahl Rd
Oskahl Rd
N 1300 RD
N 1250 RD
E 1200 RD
E 1400 RD
E 1500 RD
E 1575 RD
K-10
K-10 Ramp
N Iowa St
McDonald Dr
N Michigan St
Arkansas St
Maine St
Illinois St
Indiana St
Tennessee St
Vermont St
Ohio St
Kentucky St
Mississippi St
Carolina St
Louisiana St
Massachusetts St
Rhode Island St
Delaware St
Leonard Ave
Barker Ave
Moodie Rd
Brook St
Cadet Ave
Laura Ave
Oak Hill Ave
Maple Ln
Indian Ave
E Perimeter Rd
Park Hill Ter
Allison Dr
Haskell Ave
Oregon St
Harper St
Kensington Rd
E 23rd St
E 24th St
E 25th Ter
E 27th St
E 31st St
E 1130 RD
E 1150 RD
E 1200 RD
E 1450 RD
E 1500 RD
E 1550 RD
N 1620 RD
N 1650 RD
N 1st St
N 2nd St
N 3rd St
N 7th St
N 8th St
N 9th St
North St
Lyon St
Lincoln St
Locust St
Elm St
Walnut St
Oak St
Center St
E 7th St
E 10th St
E 11th St
E 12th St
E 13th St
E 15th St
17th St
E 19th St
Taylorcraft Rd
HWY 40
US 24/40
24/59
40/59
70
59
40
10

RECEIVED
SEP 26 2011
City County Planning Office
Lawrence, Kansas

Date: September 26, 2011
RE: PP-7-6-11 (Fifth Street Bluff Subdivision) Plat & Variances

Honorable Commissioners:

The property owners and other residents of Grandview Heights have expressed unanimous opposition to approval of these variances. Those code departures would authorize and encourage unsafe, contrived access to West 5th Street at a point where common sense would prohibit it.

Sustained neighborhood opposition has grown stronger with steady increases in traffic volume, speed, and vehicle mix. Local road construction has diverted many truck drivers, motorcyclists, nearby apartment dwellers, and others onto West 5th Street. It has become an established, alternate route for impatient drivers rapidly headed elsewhere -- a familiar detour for traffic avoiding a congested 6th Street.

Newly posted signage appearing last week will not alter the above facts. Nor will these signs reduce the increased risks. (West 5th Street's curving hill has been posted on the east side at 10 mph for years. That signage has been, and is, disregarded routinely -- now by more drivers than ever.)

Before commissioners reach any decision on the variances, please consider the following measures:
1. Direct that a traffic study be conducted to reassess the risks now posed by the increased, rapid flow of diverse traffic transiting the subject curvy hillside.
2. Request that the findings of that study be reviewed by the Traffic Safety Commission in a public hearing with comment allowed.
3. Open any commission meetings on these variances, and the PP, to public comment.

We would welcome the chance to offer verbal comments and alternative solutions to the commissioners at tonight's meeting.

Respectfully,
Jackie Schafer & Chris Caldwell

Jacqueline Schafer & Chris Caldwell

ADDENDA (8 PAGES): OBJECTIONS TO "FIFTH STREET BLUFF" PROPOSAL

A/8

May 9. 2009

Mary Miller
P O Box 708
Lawrence, Ks. 66044

Dear Ms Miller:

I need to add my objestions to allowing another access to 5th Street in the west 1900 block. I have lived at 1912 for over 30 years.

Previous problems with traffic on this hilly, curvey area resulted in the city placing 10 miles per mile signs on both sides of the street at the bottom of the hill which are completely ignored. My drive is on a curve and my mailbox had been damaged at least 3 times and several times when entering my driveway I've had to slam on the brakes to miss being hit.

For some reason traffic on 5th has greatly increased. This proposed added access is also on a curve and adds a great hazard especially in winter ice and snow.

Very truly yours,
Mrs. H. Penfield Jones

Mrs. H. Penfield Jones
1912 W. 5rh St
Lawrence, Ks. 66044

RECEIVED
MAY 18 2009
City County Planning Office
Lawrence, Kansas

427 Country Club Ct
Lawrence KS 66044
785-691-9402

Dear committee members,

As the new owner of 427 Country Club Ct, (original lot, developed by JMC construction, the connecting and down hill lot to the proposed lot) I adamantly request that the drainage and erosion controls this plan be highly scrutinized and properly addressed. Even without the addition structure and removal of vegetation the drainage onto and from my lot and the neighborhood for that matter is terrible. After 6months of ownership I am still making correction to in an attempt to get the property to drain properly. Additionally, several of my neighbors have complained about having similar problems. New structures in the neighborhood can only make these matters worse.

Furthermore, based on my experience with this property I would highly suggest that the condition and capabilities of existing sewer system be looked at closely.

Thank you for the opportunity to comment on this project.

Sincerely,

Mark Wilson
Property owner

communicati...doc (103 KB)

neighborhoo....pdf (1.9 MB) Section 20-8...df (50.6 KB)

TO: Lawrence City Planning Staff
Lawrence-Douglas County Planning Commission

FROM: **ALL PROPERTY OWNERS** of Grandview Heights Subdivision
(includes all Salllie Mae Hill W. 5th St. Residents)

SUBJECT: **Safety Tipping Point Overloaded**:
"Sight Distance Study" & Proposed Plat
for "5th Street Bluffs Subdivision"

DATE: April 20, 2009

RECEIVED
APR 20 2009
City County Planning Office
Lawrence, Kansas

We want to call planners' immediate attention to certain facts that may be unknown to nonresidents of the street and neighborhood directly impacted by the subject proposal. To foster understanding among those unfamiliar with this segment of West 5th Street, here is a common-sense description of what's being proposed at the outset:

ACCESS IS BEING SOUGHT ALONG A NARROW, RESTRICTING, UNLIGHTED CURVE ON A STEEP, TWISTING, OLDER STREET WITH NO SHOULDERS, OTHER SAFETY MARGINS, OR WIDTH TO PASS. Visualize a short, tight "chicane" with soft ditches, no direct street lighting, and no inviting escape path from any imminent collision.

The specific point of proposed access is inherently and especially dangerous for additional reasons including the following:

- **Young children** reside in adjacent property on 5th St. They have friends who visit. These children are unacquainted with "sight distance triangles" and may be expected to roam without regard to them. Their safety **must not be compromised.** Nor should that of other children, grandchildren, guest playmates, elderly pedestrians, or bicyclists who may visit or transit this sidewalk-free neighborhood.

- At present, no existing hillside driveway is closer than 80 feet to the next on the same side of this immediate, sloping section of West 5th St. Slashing that safe distance to under 40 feet at the location of the proposed driveway **would introduce added, near-certain collision probability over time** for drivers exiting the now two, too-close driveways. Further: Transiting traffic arriving westbound from above may not see cars with drivers hesitantly exiting either driveway in time to brake or evade collision. Darkness would increase probability of collision and the considerable likelihood of serious injury. "Sight distance triangles" do not provide nighttime illumination or quicker reaction times.

- In **severe winter conditions**, this steep hilllside street section becomes snow-packed, ice-covered, and **acutely treacherous**. Cars sliding off-road, slipping into ditches and retreating backwards downhill (particularly from the point of proposed

access) have been common occurrences in recent years. Residents' consistent experience has been that this steep street is generally one of the last in its area to be plowed and cleared. "Sight distance triangles" do not provide traction or untangle wreckage.

Further: The existing plat for Grandview Heights omits the subject unplatted parcel entirely from its intended neighborhood planning. No stated intent for access is indicated. Indeed, the block-form "PLATE" appearing lower left on that subdivision plat **EXCLUDES** any access point whatsoever to the subject parcel along 5th Street. This suggests that the **exclusion from 5th Street was quite intentional and made visibly explicit by safety-minded, thoughtful planners of the past.**

It is reasonable to conclude that common-sense considerations prevailed during earlier, historic decisions to exclude the landlocked parcel from hazardous, narrow, alley-like access intruding between broad-frontage lots on 5th Street. Departing from these recorded precedents seems unwarranted, unwise, and manifestly unsafe. **Why diminish or endanger life in Lawrence?**

Please do not allow this proposed dangerous, intrusive access or undesirable plat proposal to proceed toward approval. Thank you for your serious review, your time, and your commitment to preserve and protect.

Jacqueline Schafer
1930 W. 5th St.
Georgette Yost
1924 W. 5th Street
[illegible]
1924 W. 5th
Mrs. H.P. Jones
1912 W. 5th
L.O. Radcliffe
1921 W 5th.
Dee D. Radcliffe
1921 W 5th St.
Nancy M. Hernandez - 2008 W. 5th
[illegible] 2008 W. 5th
Nicholas Davis
1930 W 5th St

Deborah K. Johnston
1918 W. 5th Street
Dotty Harris
1918 W. 5th Street
Tom Boxberger
2002 W. 5th St.
Sheri Boxberger
2002 W. 5th St
Gretchen Boxberger
2002 west 5th St
Elyse Boxberger
2002 W. 5th St.
Lonnie Antle
1908 W. 5th St

TO: LDC Metro Planning Commission
(for 5/18/09 meeting inclusion)
DATE: May 15, 2009
RE: Inherent NONCONFORMANCE
of "5th Street Bluff Subdivision"

RECEIVED
MAY 18 2009
City County Planning Office
Lawrence, Kansas

Commissioners:

Even with added right-of-way as proposed, this preliminary plat remains nonconforming. The plat does not and cannot provide required minimum "frontage," as defined in the Subdivision Regulations (pp. 88-89):

> "Lot Frontage ... (is) That portion of the Lot or Residential Development Parcel which lies between the side lot lines and is adjacent to the Street or Road serving the Lot or Residential Development Parcel."

That definition states the specific requirements in clear, explicit language, underlined above. To be defined as "frontage," the subject "portion" MUST be ADJACENT to the street. The arc that is adjacent to the street is under 40 feet. It is therefore insufficient to meet the city's stated minimum 40' requirement for defined frontage. The plat is thus nonconforming.

(Note: ANY similar arc located farther back into the property cannot be physically ADJACENT to the street. Hence, such a repositioned arc cannot, under the city's definitive standard, be called "frontage." The ONLY adjacent frontage in the instance at hand is at the pinch point, or narrowest point, between the two side lot lines. Only this measurement can determine conformance with the city's stated requirements, as set forth by the definition. Adding right-of-way here does not add frontage, only square footage to designated right-of-way behind it.)

To repeat: This is a nonconforming plat. It calls for direct denial on grounds of insufficient frontage, on a curve where any added driveway would elevate risk from hazardous to dangerous.

Respectfully,

Jacqueline Schafer

Jacqueline Schafer, adjacent homeowner (1930 W. 5th)

Dear Commision, I am writing in regard to this plat PP-04-01-08 at 427 Country Club Court. I live at 422 Iowa which is down hill from this property. Ive lived here since 1984 and have always had problems with water draining down the hill and causing erosion on my property. I fear another house uphill would add to my drainage problems. Also, if the driveway entrance to this property is on 5th Street, that section is very steep and is right on a curve.

Thanks for your consideration,

George Bowen

RECEIVED
MAY 14 2009
City County Planning Office
Lawrence, Kansas

A7/8

RECEIVED
MAY 18 2009
City County Planning Office
Lawrence, Kansas

TO: LDC Metro Planning Commission
(for 5/18/09 meeting inclusion)
DATE: May 17, 2009
RE: Deviant Character & NONCOMPLIANCE
of "Fifth Street Bluff Subdivision"

Commissioners:

Is this what Horizon 2020 intends? This plat deviates from the long-established character, appearance, and flavor of the ENTIRE West 5th Street neighborhood on both sides within Grandview Heights. The jarring contrasts the plat represents are starkly clear to all neighbors.

First, the existing Grandview Heights neighborhood is characterized by broad-frontage lots with well-tended, visible yards and individualized, attractive landscaping. For emphasis: The homes are characterized at the street by their broad-frontage lots -- NOT the narrow, constricting, wedged-in intrusion this plat proposes, with its ambiguous entry. How could such a substandard, dangerous streetside approach possibly be considered "compatible" in any sense?

Second, existing homes along this section of West 5th Street are a unique blend of older architectural styles, typified by open, inviting facades directly facing the street. How can the prospects for an off-street, sublevel, declining, afterthought "lot" be considered compatible in such a well-designed and established subdivision of coherent properties?

Third, the plat indicates but cannot show the visible disregard for the neighborhood already demonstrated by the massive, violent slashing and removal of trees from this parcel. Extensive destruction of tree canopy, with its loss likely to worsen existing downhill drainage conditions, is already evident. How is this compatible with a neighborhood that values ornamental and naturalized plantings, and preservation? At present, the lot could be a poster portrait for "Green Be Gone." (Drive-by viewing of this travesty has increased traffic markedly.)

Fourth, in all respects important to the neighbors, this plat deviates to such any extent that it can only further degrade and devalue all nearby homeowners' quality of life, while likely diminishing the appeal, marketability, safety, and market value of their homes. The incompatible, intrusive, dangerous nature of this proposal fuels vigorous opposition from neighboring property owners. We wonder how commissioners would feel about such a deviant intrusion into their neighborhoods.

Finally, This plat proposes deviant, spot development of an island parcel that has served as a fenced-in back yard for a Country Club Court 'parent' lot for decades. The fact that this parcel has been untethered from a separate subdivision (Countryside) underscores its separate character, origin, history, and flavor.

If the Commissioners believe in Horizon 2020's recommendations to protect "the character and appearance of existing low-density residential neighborhoods," they will deny approval to this plat for NONCOMPLIANCE on all significant grounds of importance to existing Grandview Heights homeowners. The mere square footage of the platted property matters little, in terms of the preceding.

Respectfully,

Jacqueline Schafer Tom & Sheri Boxberger

Jacqueline Schafer and Mr. and Mrs. Tom Boxberger,
adjacent homeowners

Memorandum
City of Lawrence
Planning & Development Services

TO: **Planning Commission**

FROM: **Mary Miller, Planning Staff**

CC: **Scott McCullough, Planning and Development Services Director**
Sheila Stogsdill, Assistant Planning Director

Date: **For September 26, 2011 meeting**

RE: **Agenda Item No. 2: Conditional Use Permit for Fraternal Order of Police Shooting Range; 768 E 661 Diagonal Road**

Attachments:
Attachment A**:** Conditions proposed by the Fraternal Order of Police Board
Attachment B: Condition Comparison Chart

The Planning Commission considered the CUP referenced above at their April meeting and voted to defer it to allow staff and the applicant time to work together on the conditions. The conditions below have been revised following several discussions with the Fraternal Order of Police representative, Dan Affalter and his counsel, Mike Riling. The Fraternal Order of Police Board considered the conditions noted below and provided a set of conditions which are included as Attachment A with this memo. A comparison chart is included as Attachment B, which compares the conditions originally recommended by staff, staff's revised conditions, and those proposed by the Fraternal Order of Police Board.

REVISED CONDITIONS: Deleted text is shown as ~~struckthrough~~ and new text is in **bold** print. The conditions follow with all changes incorporated.

STAFF RECOMMENDATION: Staff recommends approval of the Conditional Use Permit for the FOP shooting range subject to the following conditions:

1) The provision of a revised site plan with the following changes:
   a) Show and label the backdrops for each firing range. The trap shooting range and shooting house are not required to have backdrops
   b) Add a note that the CUP is subject to conditions approved by the Board of County Commissioners.
2) Uses which are approved with this CUP include ~~the use of the firing ranges and military and other training on the site that does not involve the firing of weapons~~. **the following:**
   a) **Use of firing ranges for training exercises for law enforcement personnel, hunter safety courses and other similar events.**

b) **Training exercises that utilize the remainder of the property as well as the firing ranges, such as orienteering.**

c) **The use of the firing ranges by the Fraternal Order of Police members and their guests.**

~~3) Noise abatement measures shall be utilized in order to achieve an 'acceptable' sound level at the property boundary of 65 dB(A) for up to 8 hours out of 24.~~

~~a) Proposed abatement measures must be submitted and approved prior to release of the CUP to Douglas County Zoning and Codes Office.~~

~~b) Noise levels shall be measured at the property boundaries following the approval of the CUP and noise abatement measures shall be installed within 3 months of the approval of this CUP.~~

3) **The Fraternal Order of the Police shall contract with a noise specialist to measure the noise level at the receiving points during a typical training event. If the noise levels are above an acceptable level, noise abatement measures shall be utilized to reduce the noise level to an acceptable level. The FOP shall develop a noise abatement plan within 6 months of the noise measurements, if abatement is found to be necessary. The plan shall include measures for abatement as well as a proposed time frame and shall be provided to the County Commission for approval.**

4) Noise levels shall be measured at the ~~property boundary~~ **receiving points** ~~yearly~~ **annually during typical training events** and **the sound management plan revised with** additional noise abatement measures **and time frame** ~~implemented~~, if necessary. A record of the yearly noise levels shall be kept on file for review by the Douglas County Zoning and Codes Office.

~~5) In addition to 'no trespassing', the signs posted around the perimeter of the range area shall also note that this is a 'firing range'. The colors of the sign shall be bold so as to be very visible in the wooded areas and they shall be placed at 100 ft intervals around the range perimeter.~~

~~6) Signs shall be posted at all ranges with the following safety information:~~

~~a) Range-master must be present when there is firing on the range.~~

~~b) Noise protection must be worn when firing.~~

~~c) Alcoholic beverages are prohibited on the firing ranges.~~

~~7) A sign shall be posted on the main gate which identifies the area as a Fraternal Order of Police Firing Range and state that no admittance is restricted to FOP members and their guests. A contact number for a representative of the FOP who is available to respond during the hours of operation of the firing ranges shall be included on the sign.~~

(*CONDITIONS 5 THROUGH 7 HAVE BEEN REVISED AND COMBINED INTO CONDITION 5)*

5) **SIGNAGE:**

a) 'No trespassing' signs shall be posted around the perimeter of the property at reasonable points of ingress. The plan shall identify the approximate location of these signs.

b) Signs shall be posted at all ranges with the following safety information:

- **Organized group or training activities must have a designated range safety officer on site**
- **Eye and ear protection must be worn when firing.**

- **Alcoholic beverages are prohibited on the firing ranges.**

c) A sign shall be posted on the main gate which identifies the area as a firing range, or as a high noise area approved with Conditional Use Permit, CUP-12-8-10. A contact number for a representative of the Fraternal Order of Police who is available to respond during the hours of operation of the firing ranges shall be included on the sign. The police dispatch or 911 number may be included for emergencies.

6) Hours of Operation: The range shall not be in operation for any of the following holidays (or the days on which such holidays are observed by Kansas state government) New Year's Day, Easter, Thanksgiving Day, Christmas Eve and Christmas Day. The range may operate at the following times:
   - 8 AM to 8 PM Monday through ~~Thursday~~ **Friday**;
   - ~~8:00 AM to 5:00 PM on Friday; and~~
   - 10:00 AM to 6:00 PM on Saturday and Sundays.
   - Night shooting events may occur up to ~~3~~ **10** times a year, with a time limit of 10:00 PM. Neighbors within 1 mile must be notified of night shooting events at least 3 days in advance through either email, letter or phone call.

   --FOP PROPOSED HOURS:
   Group use:
   Monday – Friday 7:30 AM to 8:00 PM
   Saturday 9 AM to 7 PM
   Sunday 11:30 AM to 7 PM
   10 night shooting events a year with notification.

   FOP individual use:
   8:00 AM to 9:30 PM everyday but holidays

7) When there are training exercises ~~at~~ **involving** the firing ranges, ~~no other *outdoor* events may occur on the property~~ **the range safety officer shall determine if any other activities may occur.**

8) The 94 acres included in this CUP shall remain in the Fraternal Order of Police's ownership to serve as a buffer area. Any reduction in area shall require an amended CUP.

~~9) The following note shall be added to the CUP "*The CUP requires the retention of the 94 acres included in the approval. The wooded areas included in the parcels surrounding the range areas are to remain intact to serve as buffers. The only removal of trees that may occur are to remove dead or diseased trees, or to create trails through the wooded areas. Any other removal or reduction of trees shall require an amendment to the CUP."*~~

9) Trees may be selectively harvested, or removed to create trails provided the wooded areas included in the parcels surrounding the range areas remain intact to serve as buffers.

~~10) Military training is restricted to the use of weapons similar to those used by law enforcement agencies. A list of these weapons shall be provided for the file.~~

10) **A lead management program shall be put into place which includes soil testing and amendments and lead removal when necessary.**

a) **The property owner shall have the soil tested at the pistol range berm area, in the area between the pistol range area and the nearest downgrade surface water, and in the trap shotfall area at annual intervals to insure proper pH levels and to monitor any changes. Copies of the soil tests shall be kept on file in the FOP office for review by Zoning and Codes staff.**

b) **Lime or other soil amendments shall be added as recommended by the Douglas County Extension Office or as recommended in the EPA Best Management Practices for Lead at Outdoor Shooting Ranges to maintain a proper pH balance.**

c) **If it is not possible to manage the pH level effectively with soil amendments, a professional lead recovery firm shall be contacted to remove lead from the site. A report shall be submitted to the Douglas County Zoning and Codes Office indicating who did the lead reclamation, how much lead was recovered and what was the final disposition of the lead.** ~~A lead recycling program shall be put into place. Lead will be reclaimed and recycled when the estimate of rounds fired reaches 100,000 or every 7 years, whichever comes first. If lead has not been reclaimed within the past 7 years, it will be necessary to reclaim the lead within 3 months of the approval of the CUP. Lead reclamation and clean-up will be done by a professional lead recovery company and a report shall be submitted to the Douglas County Zoning and Codes Office.~~

11) Soil pH levels shall be monitored on an annual basis to insure that the lead management plan is effective. The records shall be kept on file at the FOP office for review by staff of the Douglas County Zoning and Codes Office. ~~Lime shall be added to the soil annually, if necessary, to maintain the correct pH levels per the following ratios:~~
   - ~~50 pounds (for sandy soils) or 100 lbs (for clayey soils) per 1000 sq ft of range will raise the pH approximately one pH unit. The ideal pH should be between 6.5 and 8.5.~~
   - ~~Do not add lime if the pH is above 8.5~~

12) Crushed limestone shall be spread, and maintained, in front of all backstops **per the recommendations in the EPA Best Management Practices for Lead at Outdoor Shooting Ranges**.

13) Documentation in the form of reports at each range will be kept as to ~~the number of rounds fired and the type of ammunition used as well as~~ the management activities used to prevent lead migration. It will be the responsibility of the range master or property owner to compile this information and keep it on hand for review by the Douglas County Zoning and Codes Office personnel.

~~All shooting activities at the range will be documented as to usage as follows:~~

1. ~~Type of firearm used~~
2. ~~Type of ammunition used~~
3. ~~Number of rounds fired~~

All lead management activities shall be documented as follows:

1. Type of management activity
2. Date and time of activity
3. If lead was removed note the quantity, the company that removed the lead, where the lead was taken and what was done with it.

REVISED CONDITIONS WITH CHANGES INCORPORATED:

1) The provision of a revised site plan with the following changes:
   a) Show and label the backdrops for each firing range. The trap shooting range and shooting house are not required to have backdrops
   b) Add a note that the CUP is subject to conditions approved by the Board of County Commissioners.

2) Uses which are approved with this CUP include the following:
   d) Use of firing ranges for training exercises for law enforcement personnel, hunter safety courses and other similar events.
   e) Training exercises that utilize the remainder of the property as well as the firing ranges, such as orienteering.
   f) The use of the firing ranges by the Fraternal Order of Police members and their guests.

3) The Fraternal Order of the Police shall contract with a noise specialist to measure the noise level at the receiving points during a typical training event. If the noise levels are above an acceptable level, noise abatement measures shall be utilized to reduce the noise level to an acceptable level. The FOP shall develop a noise abatement plan within 6 months of the noise measurements, if abatement is found to be necessary. The plan shall include measures for abatement as well as a proposed time frame and shall be provided to the County Commission for approval.

4) Noise levels shall be measured at the receiving points annually during typical training events and the sound management plan revised with additional noise abatement measures and time frame, if necessary. A record of the yearly noise levels shall be kept on file for review by the Douglas County Zoning and Codes Office.

5) SIGNAGE:
   a) 'No trespassing' signs shall be posted around the perimeter of the property at reasonable points of ingress. The plan shall identify the approximate location of these signs.
   b) Signs shall be posted at all ranges with the following safety information:
      - Organized group or training activities must have a designated range safety officer on site
      - Eye and ear protection must be worn when firing.
      - Alcoholic beverages are prohibited on the firing ranges.
   c) A sign shall be posted on the main gate which identifies the area as a firing range, or as a high noise area approved with Conditional Use Permit, CUP-12-8-10. A contact number for a representative of the Fraternal Order of Police who is available to respond during the hours of operation of the firing ranges shall be included on the sign. The police dispatch or 911 number may be included for emergencies.

6) Hours of Operation: The range shall not be in operation for any of the following holidays (or the days on which such holidays are observed by Kansas state government) New Year's Day, Easter, Thanksgiving Day, Christmas Eve and Christmas Day. The range may operate at the following times:
   - 8 AM to 8 PM Monday through Friday;
   - 10:00 AM to 6:00 PM on Saturday and Sundays.

- Night shooting events may occur up to 10 times a year, with a time limit of 10:00 PM. Neighbors within 1 mile must be notified of night shooting events at least 3 days in advance through either email, letter or phone call.

7) When there are training exercises involving the firing ranges, the range safety officer shall determine if any other activities may occur.

8) The 94 acres included in this CUP shall remain in the Fraternal Order of Police's ownership to serve as a buffer area. Any reduction in area shall require an amended CUP.

9) Trees may be selectively harvested, or removed to create trails provided the wooded areas included in the parcels surrounding the range areas remain intact to serve as buffers.

10) A lead management program shall be put into place which includes soil testing and amendments and lead removal when necessary.

    d) The property owner shall have the soil tested at the pistol range berm area, in the area between the pistol range area and the nearest downgrade surface water, and in the trap shotfall area at annual intervals to insure proper pH levels and to monitor any changes. Copies of the soil tests shall be kept on file in the FOP office for review by Zoning and Codes staff.

    e) Lime or other soil amendments shall be added as recommended by the Douglas County Extension Office or as recommended in the EPA Best Management Practices for Lead at Outdoor Shooting Ranges to maintain a proper pH balance.

    f) If it is not possible to manage the pH level effectively with soil amendments, a professional lead recovery firm shall be contacted to remove lead from the site. A report shall be submitted to the Douglas County Zoning and Codes Office indicating who did the lead reclamation, how much lead was recovered and what was the final disposition of the lead.

11) Soil pH levels shall be monitored on an annual basis to insure that the lead management plan is effective. The records shall be kept on file at the FOP office for review by staff of the Douglas County Zoning and Codes Office.

12) Crushed limestone shall be spread, and maintained, in front of all backstops per the recommendations in the EPA Best Management Practices for Lead at Outdoor Shooting Ranges.

13) Documentation in the form of reports at each range will be kept as to the management activities used to prevent lead migration. It will be the responsibility of the range master or property owner to compile this information and keep it on hand for review by the Douglas County Zoning and Codes Office personnel.

    All lead management activities shall be documented as follows:

    - Type of management activity
    - Date and time of activity
    - If lead was removed note the quantity, the company that removed the lead, where the lead was taken and what was done with it.

FOP CONDITIONAL USE PERMIT FOR OPERATION OF FIRING RANGES

1. The FOP shall submit a revised site plan showing the backdrops for the pistol and rifle firing ranges. The trap shooting range and the shooting house do not need to have backdrops.

2. The FOP will cooperate with the county and the city to try and obtain a reduced noise level from the ranges.

3. The FOP shall post no trespassing signs on any boundary area where it could reasonably be expected that persons might enter the property.

4. The FOP will place three signs in close proximity to each other at the main gate off county road E-661. Those signs will read: "Keep Out!, High Noise Area! And Dangerous Area!"

5. The FOP shall not allow range operations on New Year's Day, Easter, Thanksgiving, Christmas Eve, and Christmas Day.

6. Restriction on hours of operation for the Firing Ranges.

Law Enforcement, Military Training and other groups on firing ranges.

The FOP shall limit use of shooting on its ranges by Law Enforcement, Military Training, Hunter Safety and other similar activities to Monday thru Friday 7:00 a.m. to 7:00 p.m., Saturday 9:00 a.m. to 7:00 p.m., Sunday 11:30 a.m. to 7:00 p.m.

Law enforcement and the Military shall be entitled to use the range 25 days per year for extended shooting to 10:15 p.m. The FOP shall provide a reasonable method neighbors can sign up for email notification of extended shooting hours. The FOP will send an email to the neighbors who have signed up for such notification at least five days before the use of extended shooting hours is going to occur. The Chief of the Lawrence Police Department or the Sheriff of Douglas County may modify the number of days per year and the amount of time notice is to be given when in their judgement such modification is necessary for the proper training of Law

Enforcement officers who have jurisdiction in Douglas County. When reasonably possible the Sheriff or Chief shall notify the Douglas County Zoning and Codes department in writing of this Decision.

Individual use of the ranges by FOP members

Individual use by FOP members. Shooting shall be limited to 8:00 a.m. to 9:30 p.m. every day of the week except for the holidays listed above.

7. The 94 acres included in the CUP shall remain in the FOP ownership to serve as a buffer area. Any reduction in the area will require an Amended CUP.

8. The CUP is subject to conditions approval of the Board of County Commissioners.

COMPARISON OF CONDITIONS RECOMMENDED BY STAFF WITH THOSE PROPOSED BY THE FRATERNAL ORDER OF POLICE

ORIGINAL RECOMMENDED CONDITIONS	REVISED RECOMMENDED CONDITIONS	FOP PROPOSED CONDITIONS	STAFF COMMENTS
1) The provision of a revised site plan with the following changes: a) Show and label the backdrops for each firing range. The trap shooting range and shooting house are not required to have backdrops. b) Add a note that the CUP is subject to conditions approved by the Board of County Commissioners.	1) The provision of a revised site plan with the following changes: a) Show and label the backdrops for each firing range. The trap shooting range and shooting house are not required to have backdrops. b) Add a note that the CUP is subject to conditions approved by the Board of County Commissioners.	1) The FOP shall submit a revised site plan showing the backdrops for the pistol and rifle firing ranges. The trap shooting range and the shooting house do not need to have backdrops. 8) The CUP is subject to conditions of approval of the Board of County Commissioners.	These conditions are very similar. Staff recommends that the note regarding the conditions of approval be placed on the plan as notification that the shooting range is subject to conditions which are listed elsewhere.
2) Uses which are approved with this CUP include the use of the firing ranges and military and other training on the site that does not involve the firing of weapons.	2) Uses which are approved with this CUP include the following: g) Use of firing ranges for training exercises for law enforcement personnel, hunter safety courses and other similar events. h) Training exercises that utilize the remainder of the property as well as the firing ranges, such as orienteering. i) The use of the firing ranges by the Fraternal Order of Police members and their guests.	--Omitted--	Many uses currently exist on this property, and this condition is intended to clarify the uses that are being approved or regulated with this CUP. Military training was not included with the staff recommendation as this is a very vague category. If military training is to occur on the site, more information on the type of training should be provided and limitations on the types of weapons established.
3) Noise abatement measures shall be utilized in order to achieve an 'acceptable' sound level at the property boundary of 65 dB(A) for up to 8 hours out of 24. a) Proposed abatement measures must be submitted and approved prior to release of the CUP to Douglas County Zoning and Codes Office. b) Noise levels shall be measured at the property boundaries following the approval of the CUP and noise abatement measures shall be installed within 3 months of the approval of this CUP.	3) The Fraternal Order of the Police shall contract with a noise specialist to measure the noise level at the receiving points* during a typical training event. If the noise levels are above a certain level, noise abatement measures shall be utilized to reduce the noise level to an acceptable level. The FOP shall develop a noise abatement plan within 6 months of the noise measurements, if abatement is found to be necessary. The plan shall include measures for abatement as well as a proposed time frame and shall be provided to the County Commission for approval.	2. The FOP will cooperate with the county and the city to try and obtain a reduced noise level from the ranges.	Noise is the principal impact upon the neighboring properties. The first step to dealing with the impact is to measure the noise levels that currently exist and determining what noise abatement measures would be necessary and feasible. If it is determined that no abatement measures are feasible, it may be necessary to reduce the hours to minimize the negative impact. *The Commission recommended measuring the sound levels at the receiving points, but measuring at the property boundary provides a set location for measurements. Acceptable noise levels could be established for the boundary.
4) Noise levels at the property boundary shall be measured yearly and additional noise abatement measures implemented, if necessary. A record of the yearly noise levels shall be kept on file for review by the Douglas County Zoning and Codes Office.	4) Noise levels at the receiving point* shall be measured annually during typical training events and additional noise abatement measures implemented, if necessary. A record of the yearly noise levels shall be kept on file for review by the Douglas County Zoning and Codes Office.	--Omitted--	This condition insures that acceptable noise levels will be maintained if the use at the range intensifies or different weapons are used.

COMPARISON OF CONDITIONS RECOMMENDED BY STAFF WITH THOSE PROPOSED BY THE FRATERNAL ORDER OF POLICE

ORIGINAL RECOMMENDED CONDITIONS	REVISED RECOMMENDED CONDITIONS	FOP PROPOSED CONDITIONS	STAFF COMMENTS
5) In addition to 'no trespassing', the signs posted around the perimeter of the range area shall also note that this is a 'firing range'. The colors of the sign shall be bold so as to be very visible in the wooded areas and they shall be placed at 100 ft intervals around the range perimeter.	5) SIGNAGE: a) 'No trespassing' signs shall be posted around the perimeter of the property at reasonable points of ingress. The plan shall identify the approximate location of these signs. b) Signs shall be posted at all ranges with the following safety information: • Organized group or training activities must have a designated range safety officer on site • Eye and ear protection must be worn when firing. • Alcoholic beverages are prohibited on the firing ranges. c) A sign shall be posted on the main gate which identifies the area as a firing range, or as a high noise area approved with Conditional Use Permit, CUP-12-8-10. A contact number for a representative of the Fraternal Order of Police who is available to respond during the hours of operation of the firing ranges shall be included on the sign. The police dispatch or 911 number may be included for emergencies. (Conditions 5-7 combined)	3. The FOP shall post no trespassing signs on any boundary area where it could reasonably be expected that persons might enter the property. Safety signage --- omitted 4. The FOP will place three signs in close proximity to each other at the main gate off county road E - 661. Those signs will read: "Keep Out!, High Noise Area! And Dangerous Area!"	Staff recommends noting the location of the 'no trespassing' signs on the plan to assist in the enforcement of this requirement. (5a) Safety signage is recommended to insure that safety precautions are taken by all users of the range. (5b) Signage is recommended on the main gate along with the CUP number so interested parties can contact the planning office for more information on the use. The FOP contact number is provided in the case of non-compliant activities or emergencies. (5c)
6) Signs shall be posted at all ranges with the following safety information: a) Range-master must be present when there is firing on the range. b) Noise protection must be worn when firing. c) Alcoholic beverages are prohibited on the firing ranges.			
7) A sign shall be posted on the main gate which identifies the area as a Fraternal Order of Police Firing Range and state that no admittance is restricted to FOP members and their guests. A contact number for a representative of the FOP who is available to respond during the hours of operation of the firing ranges shall be included on the sign.			
8) Hours of Operation*: The range shall not be in operation for any of the following holidays (or the days on which such holidays are observed by Kansas state government) New Year's Day, Easter, Thanksgiving Day, Christmas Eve and Christmas Day. The range may operate at the following times: • 8 AM to 8 PM Monday through Thursday; • 8:00 AM to 5:00 PM on Friday; and • 10:00 AM to 6:00 PM on Saturday and Sundays. • Night shooting events may occur up to 3 times	6) Hours of Operation*: The range shall not be in operation for any of the following holidays (or the days on which such holidays are observed by Kansas state government) New Year's Day, Easter, Thanksgiving Day, Christmas Eve and Christmas Day. The range may operate at the following times: • 8 AM to 8 PM Monday through Friday; • 10:00 AM to 6:00 PM on Saturday and Sundays. • Night shooting events may occur up to 10 times a year, with a time limit of 10:00 PM. Neighbors within 1 mile must be notified of night shooting events at least 3 days in advance through either email, letter	5. *The FOP shall not allow range operations on New Year's Day, Easter, Thanksgiving, Christmas Eve, and Christmas Day. 6. Restriction on hours of operation for the Firing Ranges. **Law Enforcement, Military Training and other groups on firing ranges.** The FOP shall limit use of shooting on its ranges by Law Enforcement, Military Training, Hunter Safety and other similar activities to Monday thru Friday 7:00 a.m. to 7:00 p.m., Saturday 9:00 a.m. to 7:00	* For clarity, the operating hours are provided in a table following this chart. Staff recommends one set of operating hours, as the noise from shooting is dependent on the activity, not the user (whether it be the FOP or a training event). Enforcement would be very difficult with 2 different operating hours.

COMPARISON OF CONDITIONS RECOMMENDED BY STAFF WITH THOSE PROPOSED BY THE FRATERNAL ORDER OF POLICE

ORIGINAL RECOMMENDED CONDITIONS	REVISED RECOMMENDED CONDITIONS	FOP PROPOSED CONDITIONS	STAFF COMMENTS
a year, with a time limit of 10:00 PM. Neighbors within 1 mile must be notified of night shooting events at least 3 days in advance through either email, letter or phone call.	or phone call.	p.m., Sunday 11:30 a.m. to 7:00 p.m. Law enforcement and the Military shall be entitled to use the range 25 days per year for extended shooting to 10:15 p.m. The FOP shall provide a reasonable method neighbors can sign up for email notification of extended shooting hours. The FOP will send an email to the neighbors who have signed up for such notification at least five days before the use of extended shooting hours is going to occur. The Chief of the Lawrence Police Department or the Sheriff of Douglas County may modify the number of days per year and the amount of time notice is to be given when in their judgment such modification is necessary for the proper training of Law Enforcement officers who have jurisdiction in Douglas county. When reasonably possible the Sheriff or chief shall notify the Douglas county Zoning and Codes department in writing of this decision. **Individual use of the ranges by FOP members** Individual use by FOP members. Shooting shall be limited to 8:00 a.m. to 9:30 p.m. every day of the week except for the holidays listed above.	
9) When there are training exercises at the firing ranges, no other *outdoor* events may occur on the property.	7) When there are training exercises ~~a~~ involving the firing ranges, the range safety officer shall determine if any other activities may occur.	--Omitted--	This condition is intended to assign responsibility for insuring safety when scheduling other events on the property when the firing range is in use. The FOP indicated that the range safety officer is currently responsible for the scheduling, so the condition was revised to reflect the current practice.
10) The 94 acres included in this CUP shall remain in the Fraternal Order of Police's ownership to serve as a buffer area. Any reduction in area shall require an amended CUP.	8) The 94 acres included in this CUP shall remain in the Fraternal Order of Police's ownership to serve as a buffer area. Any reduction in area shall require an amended CUP.	7. The 94 acres included in the CUP shall remain in the FOP ownership to serve as a buffer area. Any reduction in the area will require an Amended CUP.	Same conditions
11) The following note shall be added to the CUP "*The CUP requires the retention of the 94 acres included in the approval. The wooded areas included in the parcels surrounding the range areas are to remain intact to serve as buffers. The only removal of trees that may occur are to*	9) Trees may be selectively harvested, or removed to create trails provided the wooded areas included in the parcels surrounding the range areas remain intact to serve as buffers.	--Omitted--	Vegetation is a principal sound deadening component, so the limited cutting of trees in the buffer area is an important condition.

COMPARISON OF CONDITIONS RECOMMENDED BY STAFF WITH THOSE PROPOSED BY THE FRATERNAL ORDER OF POLICE

ORIGINAL RECOMMENDED CONDITIONS	REVISED RECOMMENDED CONDITIONS	FOP PROPOSED CONDITIONS	STAFF COMMENTS
remove dead or diseased trees, or to create trails through the wooded areas. Any other removal or reduction of trees shall require an amendment to the CUP."			
12) Military training is restricted to the use of weapons similar to those used by law enforcement agencies. A list of these weapons shall be provided for the file.	--Omitted--	--Omitted--	If military training is to occur on this property, it would be important to add this note or to limit military training events as military training could have different noise impacts than local law-enforcement
13) A lead recycling program shall be put into place. Lead will be reclaimed and recycled when the estimate of rounds fired reaches 100,000 or every 7 years, whichever comes first. If lead has not been reclaimed within the past 7 years, it will be necessary to reclaim the lead within 3 months of the approval of the CUP. Lead reclamation and clean-up will be done by a professional lead recovery company and a report shall be submitted to the Douglas County Zoning and Codes Office.	10) A lead management program shall be put into place which includes soil testing and amendments and lead removal when necessary. a) The property owner shall have the soil tested at the pistol range berm area, **in the area between the pistol range area and the nearest downgrade surface water,** and in the trap shotfall area at annual intervals to insure property pH levels and to monitor any changes. Copies of the soil tests shall be kept on file in the FOP office for review by Zoning and Codes Staff. b) Lime or other amendments shall be added as recommended by the Douglas County Extension Office, **or as recommended in the EPA Best Management Practices for Lead at Outdoor Shooting Ranges** to maintain a proper pH balance. c) If it is not possible to manage the pH level effectively with soil amendments, a professional lead recovery firm shall be contacted to remove lead from the site. A report shall be submitted to the Douglas County Zoning and Codes Office indicating who did the lead reclamation, how much lead was recovered and what was the final disposition of the lead.	--Omitted--	This condition was revised so that lead recovery is conducted only when soil tests indicate it is necessary. When enough lead has accumulated in the ground, the lead recovery should be low cost, or even profitable, to the property owner. The language in bold print in paragraph a was added to address the issue of runoff to nearby surface waters. Language was added to the condition in paragraph b to allow the EPA recommendations to be used as well as the recommendations of the Douglas County Extension Office.
14) Soil pH levels shall be monitored on an annual basis to insure that the lead management plan is effective. The records shall be kept on file at the FOP office for review by staff of the Douglas County Zoning and Codes Office. Lime shall be added to the soil annually, if necessary, to maintain the correct pH levels per the following ratios: • 50 pounds (for sandy soils) or 100 lbs (for clayey soils) per 1000 sq ft of range will raise the pH approximately one pH unit.	11) Soil pH levels shall be monitored on an annual basis to insure that the lead management plan is effective. The records shall be kept on file at the FOP office for review by staff of the Douglas County Zoning and Codes Office.	--Omitted--	The soil tests are important to document the impact the lead from the firing range is having on the soil. The Douglas County Extension Office will provide 10 free soil tests for any property.

COMPARISON OF CONDITIONS RECOMMENDED BY STAFF WITH THOSE PROPOSED BY THE FRATERNAL ORDER OF POLICE

ORIGINAL RECOMMENDED CONDITIONS	REVISED RECOMMENDED CONDITIONS	FOP PROPOSED CONDITIONS	STAFF COMMENTS
The ideal pH should be between 6.5 and 8.5. • Do not add lime if the pH is above 8.5			
15) Crushed limestone shall be spread, and maintained, in front of all backstops	12) Crushed limestone shall be spread, and maintained, in front of all backstops **per the recommendations in the EPA Best Management Practices for Lead at Outdoor Shooting Ranges.**	--Omitted--	The Commission requested more specific guidance as to the amount and location of limestone that should be added to the site to maintain the property pH. This is provided in the EPA Best Management document.
16) Documentation in the form of reports at each range will be kept as to the number of rounds fired and the type of ammunition used as well as the management activities used to prevent lead migration. It will be the responsibility of the range master or property owner to compile this information and keep it on hand for review by the Douglas County Zoning and Codes Office personnel. All shooting activities at the range will be documented as to usage as follows: 1. Type of firearm used 2. Type of ammunition used 3. Number of rounds fired All lead management activities shall be documented as follows: 1. Type of management activity 2. Date and time of activity. 3. If lead was removed note the quantity, the company that removed the lead, where the lead was taken and what was done with it.	13) Documentation in the form of reports at each range will be kept as to management activities used to prevent lead migration. It will be the responsibility of the range master or property owner to compile this information and keep it on hand for review by the Douglas County Zoning and Codes Office personnel. All lead management activities shall be documented as follows: 1. Type of management activity 2. Date and time of activity 3. If lead was removed note the quantity, the company that removed the lead, where the lead was taken and what was done with it.	--Omitted-- --Omitted--	Enforcement of the lead management program would be difficult. The documentation provides the information needed to determine that lead is being managed in accordance with the CUP.

FOP CONDITIONAL USE PERMIT FOR OPERATION OF FIRING RANGES

1. The FOP shall submit a revised site plan showing the backdrops for the pistol and rifle firing ranges. The trap shooting range and the shooting house do not need to have backdrops.

2. The FOP will cooperate with the county and the city to try and obtain a reduced noise level from the ranges.

3. The FOP shall post no trespassing signs on any boundary area where it could reasonably be expected that persons might enter the property.

4. The FOP will place three signs in close proximity to each other at the main gate off county road E-661. Those signs will read: "Keep Out!, High Noise Area! and Dangerous Area!"

5. The FOP shall not allow range operations on New Year's Day, Easter, Thanksgiving, Christmas Eve, and Christmas Day.

6. Restriction on hours of operation for the Firing Ranges.

Law Enforcement, Military Training and other groups on firing ranges.

The FOP shall limit use of shooting on its ranges by Law Enforcement, Military Training, Hunter Safety and other similar activities to Monday thru Friday 7:00 a.m. to 7:00 p.m., Saturday 9:00 a.m. to 7:00 p.m., Sunday 11:30 a.m. to 7:00 p.m.

Law enforcement and the Military shall be entitled to use the range 25 days per year for extended shooting to 10:15 p.m. The FOP shall provide a reasonable method neighbors can sign up for email notification of extended shooting hours. The FOP will send an email to the neighbors who have signed up for such notification at least five days before the use of extended shooting hours is going to occur. The Chief of the Lawrence Police Department or the Sheriff of Douglas County may modify the number of days per year and the amount of time notice is to be given when in their judgement such modification is necessary for the proper training of Law

Enforcement officers who have jurisdiction in Douglas County. When reasonably possible the Sheriff or Chief shall notify the Douglas County Zoning and Codes department in writing of this decision.

Individual use of the ranges by FOP members

Individual use by FOP members. Shooting shall be limited to 8:00 a.m. to 9:30 p.m. every day of the week except for the holidays listed above.

7. The 94 acres included in the CUP shall remain in the FOP ownership to serve as a buffer area. Any reduction in the area will require an Amended CUP.

8. The CUP is subject to conditions approval of the Board of County Commissioners.

PLANNING COMMISSION REPORT
Regular Agenda

PC Staff Report
04/25/11

ITEM NO.2 : CONDITIONAL USE PERMIT FOR FRATERNAL ORDER OF P0LICE SHOOTING RANGE; 768 E 661 DIAGONAL RD (MKM)

CUP-12-8-10: Consider a Conditional Use Permit for the Fraternal Order of Police shooting range, located at 768 E 661 Diagonal Road. Submitted by Dan Affalter, for Fraternal Order of Police, property owner of record.

STAFF RECOMMENDATION: Staff recommends approval of the Conditional Use Permit for the FOP shooting range subject to the following conditions:

1) The provision of a revised site plan with the following changes:
   a) Show and label the backdrops for each firing range. The trap shooting range and shooting house are not required to have backdrops
   b) Add a note that the CUP is subject to conditions approved by the Board of County Commissioners.
2) Uses which are approved with this CUP include the use of the firing ranges and military and other training on the site that does not involve the firing of weapons.
3) Noise abatement measures shall be utilized in order to achieve an 'acceptable' sound level at the property boundary of 65 dB(A) for up to 8 hours out of 24.
   a) Proposed abatement measures must be submitted and approved prior to release of the CUP to Douglas County Zoning and Codes Office.
   b) Noise levels shall be measured at the property boundaries following the approval of the CUP and noise abatement measures shall be installed within 3 months of the approval of this CUP.
4) Noise levels at the property boundary shall be measured yearly and additional noise abatement measures implemented, if necessary. A record of the yearly noise levels shall be kept on file for review by the Douglas County Zoning and Codes Office.
5) In addition to 'no trespassing', the signs posted around the perimeter of the range area shall also note that this is a 'firing range'. The colors of the sign shall be bold so as to be very visible in the wooded areas and they shall be placed at 100 ft intervals around the range perimeter.
6) Signs shall be posted at all ranges with the following safety information:
   a) Range-master must be present when there is firing on the range.
   b) Noise protection must be worn when firing.
   c) Alcoholic beverages are prohibited on the firing ranges.
7) A sign shall be posted on the main gate which identifies the area as a Fraternal Order of Police Firing Range and state that no admittance is restricted to FOP members and their guests. A contact number for a representative of the FOP who is available to respond during the hours of operation of the firing ranges shall be included on the sign.
8) Hours of Operation: The range shall not be in operation for any of the following holidays (or the days on which such holidays are observed by Kansas state government) New Year's Day, Easter, Thanksgiving Day, Christmas Eve and Christmas Day. The range may operate at the following times:
   - 8 AM to 8 PM Monday through Thursday;
   - 8:00 AM to 5:00 PM on Friday; and

- 10:00 AM to 6:00 PM on Saturday and Sundays.
- Night shooting events may occur up to 3 times a year, with a time limit of 10:00 PM. Neighbors within 1 mile must be notified of night shooting events at least 3 days in advance through either email, letter or phone call.

9) When there are training exercises at the firing ranges, no other *outdoor* events may occur on the property.

10) The 94 acres included in this CUP shall remain in the Fraternal Order of Police's ownership to serve as a buffer area. Any reduction in area shall require an amended CUP.

11) The following note shall be added to the CUP "*The CUP requires the retention of the 94 acres included in the approval. The wooded areas included in the parcels surrounding the range areas are to remain intact to serve as buffers. The only removal of trees that may occur are to remove dead or diseased trees, or to create trails through the wooded areas. Any other removal or reduction of trees shall require an amendment to the CUP."*

12) . Military training is restricted to the use of weapons similar to those used by law enforcement agencies. A list of these weapons shall be provided for the file.

13) A lead recycling program shall be put into place. Lead will be reclaimed and recycled when the estimate of rounds fired reaches 100,000 or every 7 years, whichever comes first. If lead has not been reclaimed within the past 7 years, it will be necessary to reclaim the lead within 3 months of the approval of the CUP. Lead reclamation and clean-up will be done by a professional lead recovery company and a report shall be submitted to the Douglas County Zoning and Codes Office.

14) Soil pH levels shall be monitored on an annual basis to insure that the lead management plan is effective. The records shall be kept on file at the FOP office for review by staff of the Douglas County Zoning and Codes Office. Lime shall be added to the soil annually, if necessary, to maintain the correct pH levels per the following ratios:
    - 50 pounds (for sandy soils) or 100 lbs (for clayey soils) per 1000 sq ft of range will raise the pH approximately one pH unit. The ideal pH should be between 6.5 and 8.5.
    - Do not add lime if the pH is above 8.5

15) Crushed limestone shall be spread, and maintained, in front of all backstops

16) Documentation in the form of reports at each range will be kept as to the number of rounds fired and the type of ammunition used as well as the management activities used to prevent lead migration. It will be the responsibility of the range master or property owner to compile this information and keep it on hand for review by the Douglas County Zoning and Codes Office personnel.

    All shooting activities at the range will be documented as to usage as follows:
    1. Type of firearm used
    2. Type of ammunition used
    3. Number of rounds fired

    All lead management activities shall be documented as follows:
    1. Type of management activity
    2. Date and time of activity
    3. If lead was removed note the quantity, the company that removed the lead, where the lead was taken and what was done with it.

Reason for Request: *"To gain compliance for a shooting range which has been in existence for over 40 years."*

KEY POINTS

- Per Section 12-319-4.11 of the Zoning Regulations for the Unincorporated Territory of Douglas County, a shooting range requires approval through a Conditional Use Permit.
- The shooting range is existing but does not have an approved Conditional Use Permit; therefore, this application has been submitted to bring the range into compliance with the Douglas County Zoning Regulations.
- The area is encumbered with the floodplain, including the regulatory floodway and floodway fringe of Washington Creek.

ATTACHMENTS

A – Public Communications received prior to printing of this staff report.
B – Applicant information regarding history of the shooting range
C – Plans

DESCRIPTION OF USE

Property is owned by the Fraternal Order of Police and contains a lodge and an office building for their use. This CUP has been submitted for approval of the following firing ranges:

- A rifle range with one shooter station that can accommodate multiple shooters;
- A trap range with 5 shooter stations;
- A pistol/rifle range with 8 shooter stations; and
- A 'shoot house', a wooden structure that is located within the woods and is used for urban training.
  (The location of these ranges is noted in the plan and Figure)

The ranges are used primarily for training of law enforcement personnel and conducting hunter safety courses. Occasionally, the range will be used for training of military personnel but the applicant indicated that these do not usually involve the firing ranges. The property owner, the Fraternal Order of Police members, and their guests also use the ranges.

ASSOCIATED CASES/OTHER ACTION REQUIRED

- Approval by Board of County Commissioners.
- Noise abatement measures approved and implemented.
- Conditional Use Permit Plan released to the Zoning and Codes Office for CUP permit.
- Lead recycling program initiated and carried out per schedule.

PUBLIC COMMENT RECEIVED PRIOR TO PRINTING

- Copy of letter sent to landowners in the area by Bill Roth notifying them of the CUP application and providing background information. (Nov 1, 2010)
- Email from nearby property owner, Scott Mesler, recommending restricted hours and expressing concern with the noise generated. (Jan 6, 2011)
- Email from nearby property owner, Lorel Lewis, indicating no concerns with the shooting range operations or the CUP application. (Jan 7, 2011)
- Letter from Bill Roth with list of recommendations for the CUP. (Jan 10, 2011)
- Email from Jim Lock in support of the shooting range.

GENERAL INFORMATION

Current Zoning and Land Use:	A (Agricultural), F-W (Floodway Overlay) and F-F (Floodway Fringe Overlay) Districts; shooting range with lodge.

Surrounding Zoning and Land Use:	A (County Agricultural) District in all directions. Agriculture, woodlands, and rural residences. F-W (Floodway Overlay) and F-F (Floodway Fringe Overlay) Districts to the north and south, along the Washington Creek; agriculture and woodlands.

Site Summary:	
Subject Property:	94 acres
Proposed Buildings:	No new buildings are being proposed.
Off Street Parking Required:	1 space per 5 attendees, Section 12-316-1 requirement for recreational area without fixed seating
Off Street Parking Provided:	30 parking spaces available in the graveled parking lot and overflow parking area on the adjacent grassed area.

I. ZONING AND USES OF PROPERTY NEARBY

Staff Finding – The subject property is located in the northeast quarter of Section 11 in Township 14 South, Range 18 East of Douglas County (southeast of the intersection of N 775 Road and E 661 Diagonal Road). The property is located on the east of, and takes access from, E 661 Diagonal Road approximately 1/2 mile north of Lone Star Lake. The property is within the A (Agriculture) and floodplain overlay zoning districts. The surrounding area is zoned for agricultural uses with floodplain overlay zoning following the path of the Washington Creek to the lake. Agriculture, open space, and rural residences are the principal land uses in the area. The nearest residences are located approximately 1/4 mile from the firing ranges. A map showing the approximate locations of residences in the area is included in Figure 5. A recreational area, Lone Star Lake is located approximately one-half mile to the south. (Figure 1)

II. CHARACTER OF THE AREA

The Fraternal Order of Police owns approximately 94 acres which is being included in this CUP request. The property contains the Washington Creek and its associated floodplain. (Figure 2)The parcel containing the shooting ranges slopes from the east to the west. The buffer areas contain very steep grades, which are used as backdrops. (Figure 3) The property is developed with a Fraternal Order of Police lodge and office building and is used for lodge activities as well as a shooting range used primarily for law enforcement training. The remainder of the property consists primarily of wooded hills and open space. The surrounding area consists of woodlands, agricultural uses with scattered rural residences. A recreational area, Lone Star Lake, is located approximately one-half mile to the south.

Staff Finding – This is an agricultural area which also contains rural residences and woodlands as well as a recreational area. This range has been in existence for over 40 years and contributes to the character of the area; however, the noise generated by the shooting range could negatively impact the nearby residences. It will be necessary to regulate the hours and provide noise abatement measures to minimize any negative impacts.

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

Applicant's response:
"The property is ideally suited and has been improved for over 40 years to accommodate the shooting range."

While this use has been in place for over 40 years, it is not a 'grandfathered' or 'non-conforming' use as it was installed after the adoption of the 1966 Zoning Regulations for unincorporated Douglas County and a CUP was required for a shooting range at that time. In 2006, it came to Zoning and Code's attention that the shooting range did not have a CUP and was not a grandfathered use. This CUP was submitted to bring the shooting range into compliance with the Code. All the shooting ranges discussed in this report are existing ranges. No new construction is being proposed. Any new construction would require either a site plan or an amendment to the CUP depending on the degree of change.

Staff Finding – A Conditional Use Permit (CUP) does not change the base, underlying zoning; therefore, the suitability of the property for agricultural uses will not be altered. The 52 acre parcel is developed with a lodge and shooting ranges which are used primarily for law-enforcement training exercises and hunter safety courses. The property owner also owns 3 other adjacent parcels totally approximately 49 acres which are intended to buffer surrounding areas from the shooting range. A 'shoot house' is located within this buffering acreage, and is used occasionally for specialized training operations. The property is heavily wooded and has significant grade changes (Figure 3). These features may limit the agricultural options for the property.

The large acreage available for this use and the wooded areas serve as a buffer which makes the property suitable for a use of this type. The topography provides hillsides to use as backstops for the shooting ranges. The bullets used at the ranges contain lead, and the fact that some of the shooting occurs within the regulatory floodway or regulatory floodway fringe could present environmental hazards. Best management practices should be utilized to minimize the potential for ground or water pollution from the lead. With proper noise and lead management, the property is suited to the proposed (existing) use.

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

Staff Finding – The property is not vacant. The applicant indicated that the lodge and shooting ranges were instituted in the 1960s and have been in use since that time.

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

Applicant's Response:
"The condition already exists; however, there have been complaints about the noise."

Section 19-01 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."* The proposed use falls under Use 11: Recreation Facility listed in Section 12-319-4.11 Conditional Uses Enumerated, of the Zoning Regulations for the Unincorporated Territory of Douglas

County. This shooting range will not be used as a recreational facility but a shooting range is permitted under this use category. While the purpose of this shooting range is training rather than recreation, the impact would be the same as for a recreational shooting area. The limited scope of this shooting range should provide more compatibility with the surrounding properties as the activity can be more controlled, since the general public is not permitted, and training sessions are usually scheduled in advance.

Approval of the CUP will allow the applicant to continue the current use of the firing ranges. Conditions shall be applied with the Conditional Use Permit to limit the intensity of the use, mitigate the impact of the noise on the neighbors, and address environmental concerns such as lead pollution located within the floodplain and the Washington Creek.

The property is located on a paved road and has access from a continuous network of paved roads. (Figure 4) Dust generated by traffic to this site is not an issue.

Public comment has been provided to the Planning Office and is included with this staff report. Some neighbors indicated they had no issues with the noise generated or the activity itself while others indicated concern with noise, hours of operation, safety (particularly signage), and lead pollution to the Washington Creek.

Staff Finding – The shooting range currently negatively impacts nearby properties through noise and possible lead-pollution of the Washington Creek or groundwater. Proper noise abatement measures, restrictions on hours of use and an effective lead management program should minimize these impacts. These measures are discussed in detail in the 'Staff Review' portion of this report.

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:
"The taxpayers of Douglas County are relieved of the financial burden of buying and developing property to be used as a firing range."

Evaluation of the relative gain weighs the benefits to the community-at-large vs. the benefit of the owners of the subject property. In Staff's opinion, denial of the request for a Conditional Use Permit would affect the individual landowner by prohibiting the use of the property for the shooting range which would then create the need for Douglas County law enforcement agencies to find another site for their training. Denial of the CUP request may benefit the area property owners by eliminating the use and the associated noise.

Staff Finding – Approval of the Conditional Use Permit would benefit the community by maintaining a training facility for the County's law enforcement personnel. With safeguards to prevent water pollution, it should not harm the public health, safety and welfare; however the noise associated with the shooting facility may have a negative impact on the surrounding residents. Restrictions on the hours and number of the events and appropriate noise mitigation measures should be implemented to minimize any negative impact.

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.

Horizon *2020* does not address Conditional Use Permits as a tool to achieve specific policies.

Staff Finding – The Comprehensive Plan encourages uses which provide incentives to retain agricultural land in production in the rural area of the county (outside any Urban Growth Area). A Conditional Use Permit allows development to occur in harmony with the surrounding area. The subject property is not well-suited for agricultural production, given the woodlands and steep slopes, but the CUP will encourage the retention of the natural features and protect the rural character of the area. The shooting range, as conditioned, is consistent with the Comprehensive Plan.

STAFF REVIEW

The shooting range provides a valuable community function, the training of law enforcement personnel and hunter safety courses. While this is a necessary and valuable service to the community, the range can create negative impacts on surrounding properties and the environment. The Zoning Regulations are intended to promote the safety, order, convenience, prosperity, and general welfare of the citizens of Douglas County; therefore, the CUP has been reviewed with consideration for the safety of the facility as well as minimizing negative off-site impacts.

The property contains a lodge which has 2 bathrooms and a kitchen. A septic system which was approved when the building was constructed is utilized for wastewater management. Other structures on the property include a garage, five-bay barn, shelter house, trap house, footbridge, low-water bridge, and obstacle course containing 12 obstacles in an approximate one-quarter mile loop. There is also a structure called a 'shoot house' that is used for an urban range. The structures and the ranges are shown on the plan. Figures 8 through 14 illustrate the areas of the range.

The applicant indicated that they allow simultaneous use of the shooting ranges and lodge facilities for other activities as long as no safety issues are raised. Staff has concerns that the concurrent use of the facilities for shooting and other activities could result in accidents and recommends that no other outdoor activities occur when the shooting range is in operation.

PARKING

A 16,200 sq ft gravel parking area is located adjacent to the garage and lodge building. The applicant indicated that the parking area could accommodate 30 cars and an additional row of vehicles can park in the middle if needed. There is also a grass overflow parking area. The NRA recommends 1.5 parking spaces per firing point. The applicant's information indicates that the pistol range is limited to 8 persons at a time, the rifle range to 8, trap area to 5 and the urban shooting area to 10. This would equal 31 firing points, or 47 parking spaces. This is not a parking requirement of the Zoning Regulations, but it does appear that the gravel area would be able to accommodate 47 parking spaces. The Zoning Regulations require 1 parking space per 5 seats, or persons, in assembly or amusement type uses without fixed seats or 7 parking spaces (31/5). The location and amount of parking provided is compliant with the Zoning Regulations and recommendations of the NRA.

SAFETY

The National Rifle Association Range Source Book contains information on planning and implementing shooting ranges. The book makes the following recommendations:

- Range caution signs should be posted at 100 ft intervals around the range perimeter. Colors should be highly visible.
- A contact number for a representative of the FOP who is available to respond during the hours of operation of the firing ranges should be provided for file and posted on the fence/gate to the FOP facility.
- Natural hill backstop should have a slope of at least 1.5 to 1 (33-34 degrees) and the height should be at least the same as for a manmade backstop
- NRA recommends 1.5 parking space per firing point
- OSHA – the Occupational Safety and Health Administration – has determined that a sound level of 90 dBA is the threshold for hearing conservation programs. Because firearms easily exceed this level of sound, users must wear hearing protection. Hearing protection should be a requirement for all users who are within 50 ft of the firing line. (NRA Range Source Book, Section 3.0-3.10.1)

In addition, no alcohol should be allowed on the firing ranges. Signs prohibiting alcoholic beverages should be posted on each range,

BUFFER

The FOP owns several parcels surrounding the main shooting area that they utilize as buffers. In order to insure that these remain effective buffers, a note should be added to the CUP that the wooded areas on the site are to remain intact to serve as buffers. The only removal of trees that may occur are to remove dead or diseased trees, or to create trails through the wooded areas. Any other removal or reduction of trees would require an amendment to the CUP.

LIGHTING

The applicant's information indicates that there are 5 lights on power poles that are approximately 27 ft high. These lights are located within the interior of the site. Any changes to the existing lights would require a revised site plan which would note the location, wattage and steps taken to prevent glare onto neighboring properties.

USES

The property is owned by the Fraternal Order of Police (FOP) and is used for lodge meetings and various FOP activities that are not related to this CUP such as gatherings, social events and other activities for the members of the FOP. These uses are not being considered with this CUP application. The only uses for which approval has been requested are the activities associated with the shooting ranges. The military training which makes use of the open space areas, but does not involve the firing of weapons is also being considered with this CUP. Uses which are permitted in the A (Agricultural) District may occur on the site; however, it is important that no other outdoor uses occur when the shooting ranges are in operation, for safety considerations. Uses which are not permitted in the A District and are not included in this CUP require approval through the CUP process.

According to information provided by the applicant, Attachment B, the shooting ranges are used for various law enforcement agencies including the Douglas County Sheriff and the Lawrence Police Department, Hunter Safety Courses, as well as training for military, civilian or other groups of individuals with or without the use of the firing ranges. Military training is usually limited to orienteering, map and compass and other activities which require a type of outdoor terrain and facilities which are available at this site. A note should be added to the plan which restricts military training to the use of weapons similar to those used by law enforcement agencies. A list of these

weapons should be provided for the file. The training uses associated with the firing ranges are the only uses which are being considered with this CUP.

ACCESS
The shooting facility is located on a hard-surfaced road which is classified as a collector and has good access from the collector/arterial road network. Traffic to and from the site should not create any negative impacts on surrounding properties.

NOISE
The noise generated by the shooting activities may negatively impact nearby properties. The following information, taken from the National Rifle Association Source Book, explains how to measure the noise level, what levels of noise are acceptable and suggests several noise abatement measures:

"*Range owners/operators should implement sound abatement programs into their yearly planning. These noise plans must actively pursue the goal of a sound abatement plan: preventing conflict before it occurs*." (NRA Range Source Book, Section 1.02.3)

Many of the recommendations in the Range Source Book are geared toward new sites. I reviewed the information for recommendations which are applicable to an existing site. The first step would be to determine the level of sound which is created by the range.

1. **Measuring the sound level at the property line during a typical firing event** Section 3.03.5 of the Range Book provides the following guidance for a sound measurement:
   a. Take the measurement at the property line and in direct line with the receiver
   b. Select measuring points that are clear of interfering objects (other than naturally occurring ones).
   c. Describe the surface area over which the sound travels. Certain surface area configurations, such as a good grass cover affects the rate of decay for sound.
   d. Intervening distance between a point source and a receiver is also an attenuating factor. As a rule, each time the distance is doubled the sound pressure level is reduced by one-half, or reduced by about 6 dB.
   e. Terrain features are also important, for example a noise source in a depression is provided barriers that will redirect sound and is not as serious as one at a higher elevation. Therefore, a range located in a valley presents less of a problem than one at the same general elevation as the surrounding area. Ranges that are elevated above a receiver will have the advantage of atmospheric attenuation, with addition components attenuated via wind. Wind tends to cause sound waves traveling with the wind to appear louder, and those traveling against the wind to appear quieter. (noise would be less in areas to the south and louder in areas to the north, as a rule given our southern prevailing winds)

Section 3.03.3.1 of the NRA Range Source Book provides the following information as a general guide for noise levels:

A. **Unacceptable:** If the sound level exceeds 90 dB(A) for 1 hour out of 24 or exceeds 85 dB(A) for 8 hours out of 24 and the receiver is less than ¼ mile from the sound source.
B. **Discretionary:** Normally acceptable if the level exceeds 80 dB(A) for 8 hours out of 24 or if there are 'loud' impulsive sounds (referring to sonic booms, artillery, etc) on site and the distance from the property boundary and the receiver is one mile or more.
C. **Discretionary:** Normally acceptable if the level does not exceed 75 dB(A) at the property boundary more than 6 hours out of 24 hours and distance from the boundary and the receiver is over 2 miles.

D. **Acceptable:** If the sound levels at the receiver do not exceed 65 dB(A) more than 8 hours out of 24 or activities do not extend into the nighttime hours of 10 pm through 7 am. **Note:** Law Enforcement activities may have exemptions to the above recommendations. Live fire night exercises may be required to maintain the proficiency and update training of police officers.

The map in Figure 5 shows the locations and distances of the nearby residences. It appears there are 2 residences within ¼ mile of the sound source. Figure 6 shows the general elevations of the range and nearby residences.

Noise levels should be taken during a normal firing event to determine if the amount of noise generated is considered acceptable per the info in the Range Book. Given the distance to the nearby residences an acceptable noise level for this range would be: "**If the level does not exceed 65 dB(A) at the property boundary more than 8 hours out of 24 hours**."

3.03.10.2 Sound abatement shields or barriers should be installed on ranges where neighbors are within ¼ mile of the facility unless significant natural barriers exist. Any fixtures or terrain features must serve either to redirect or capture sound. There are a few neighbors just within the ¼ mile area.

Lead Management

Lead pollution is an issue with shooting ranges as the lead can leach into the soil and percolate through to the ground water or flow through runoff into nearby streams. In this case, the proximity of the regulatory floodplain and Washington Creek, which flows to Lone Star Lake, makes proper lead management even more important. Figure 7 shows the general location of each shooting range and the direction of fire.

The Kansas Department of Health and Environment had responded to a complaint regarding the shooting activity within the floodway and determined that if the EPA Best Management Practices are followed, lead pollution should not be an issue with this range (Attachment C). Based on this information, the shooting ranges may remain in their current locations; however, if any new ranges are proposed in the future, staff recommends locating them outside of the floodway to prevent future pollution issues. The following information and recommendations for an effective lead management program were taken from the EPA's Best Management Practices for Lead at Outdoor Shooting Ranges and the NRA Range Source Book:

1) Control and contain lead bullets and fragments
2) Prevent migration of lead to the subsurface and surrounding surface water bodies
3) Remove the lead from the range and recycle
4) Documenting activities and keeping records

1) Control and Contain Lead Bullets and Fragments

Earthen berms and backstops, such as are used at this range, are one recommendation for controlling and containing bullets. These should be shown and noted on the plan. They should be between 15 and 20 ft high with as steep a slope as possible. The layer (to a depth of one to 2 ft) exposed to the shooting activity should be free of rock and debris. (ricochets and bullet fragmentation)

2) Prevent Lead Migration

Soil treatment

- Soil pH levels will be monitored on an annual basis. Lead migration increases in acidic conditions since the acid of the soil contributes to the lead break down. The ideal soil pH level should be between 6.5 and 8.5. Spread lime around the earthen backstops, sand traps, trap and skeet shotfall zones, and any other areas where the bullets/shots or lead fragments/dust accumulate.
- Spreading bags of 50 pounds (at ranges with sandy soils) or 100 lbs (at ranges with clayey soils) per 1000 sq ft of range will raise the pH approximately one pH unit for a period of between 1 and 4 years.
- If the soil pH range is 4.5 or less addition of lime may only raise the pH to about 5. In this case additional measures should be used. If soil pH range is above 8.5 do NOT add lime.

- Also, to avoid lead mobilization from rainwater, crushed limestone will be spread in front of all backstops. The crushed limestone will help trap any lead particles that may migrate from the berm. The spreading of limestone in front of the shooting area and the spreading of lime over the berm area are easy and low cost methods of controlling the migration of lead. It is also a very easy and cost effective method of minimizing the potential for the lead to degrade.

3) Removal of lead

Implementation of a regular lead reclamation program is very important. Ranges with acidic soils or high precipitation may require more frequent reclamation. To insure that lead is not considered 'discarded' or 'abandoned' on the range (within the meaning of the RCRA statute, i.e. a hazardous waste) periodic lead removal activities should be planned for and conducted.

- Lead will be reclaimed and recycled when the estimate of rounds fired reaches 100,000 or every 7 years, whichever comes first. If lead has not been reclaimed within the past 7 years, it will be necessary to reclaim the lead within 3 months of the approval of the CUP. Lead reclamation and clean up will be done by a professional lead recovery company.

4) Documentation

Documentation in the form of reports at each range will be kept as to the number of rounds fired and the type of ammunition used as well as the management activities used to prevent lead migration. It will be the responsibility of the range master or property owner to compile this information and keep it on hand for review by the Douglas County Zoning and Codes Office personnel.

All shooting activities at the range will be documented as to usage as follows:

4. Name of individual who used the range
5. Date and time of use
6. Type of firearm used
7. Type of ammunition used
8. Number of rounds fired

All lead management activities shall be documented as follows:

4. Type of management activity (lime, phosphate, etc)
5. Date and time of activity
6. If lead was removed and if so, in what quantity
7. Who removed the lead
8. Where was the lead taken and what was done with the lead

HOURS

The applicant proposes the following hours for the shooting range:

Training and Education:

- 7:30 AM to 8:00 PM Monday through Friday,
- 9:00 AM to 7:00 PM on Saturday,
- 11:30 AM to 7:00 PM on Sunday for use by organized groups including Law Enforcement agencies

Individual use by FOP members:

- to operate from 8:00 AM to 9:30 PM every day of the week except for the following holidays: Christmas Eve, Christmas, Thanksgiving, and Easter

Based on concerns from the neighboring property owners, staff recommends one set of hours for the operation of the shooting range. The range should not be in operation for any of the following holidays (or the days on which such holidays are observed by Kansas state government) New Year's Day, Easter, Thanksgiving Day, Christmas Eve and Christmas Day. Times of operation should be limited to the following hours:

The hours should range from 8 AM to 8 PM Monday through Thursday; 8:00 AM to 5:00 PM on Friday; and 10:00 AM to 6:00 PM on Saturday and Sundays. Night shooting events may occur up to 3 times a year, with a time limit of 10:00 PM. Neighbors within 1 mile must be notified of night shooting events at least 3 days in advance through either email, letter or phone call.

Conclusion

Approval of a CUP 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. With the conditions regarding hours of operation, sound abatement and lead management, the shooting range should be compatible with the nearby land uses.

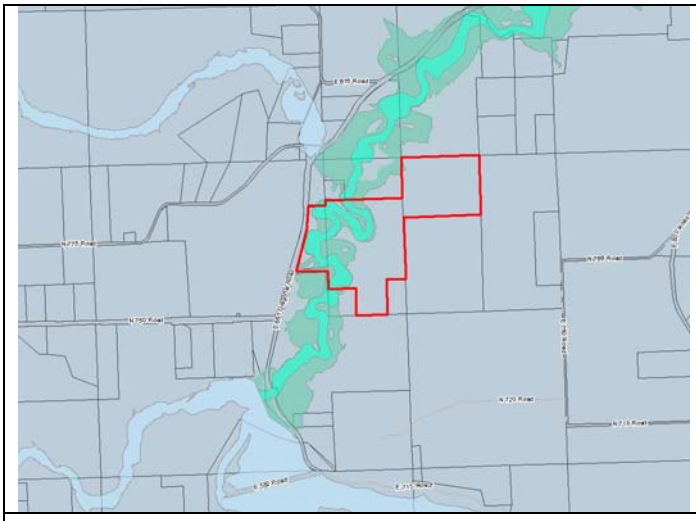
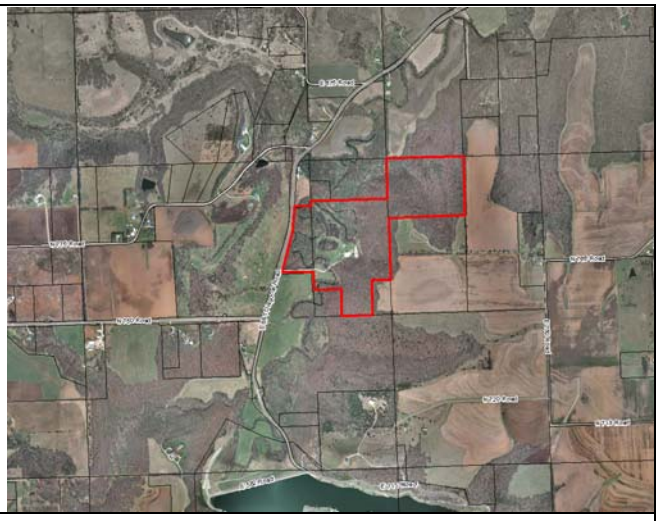
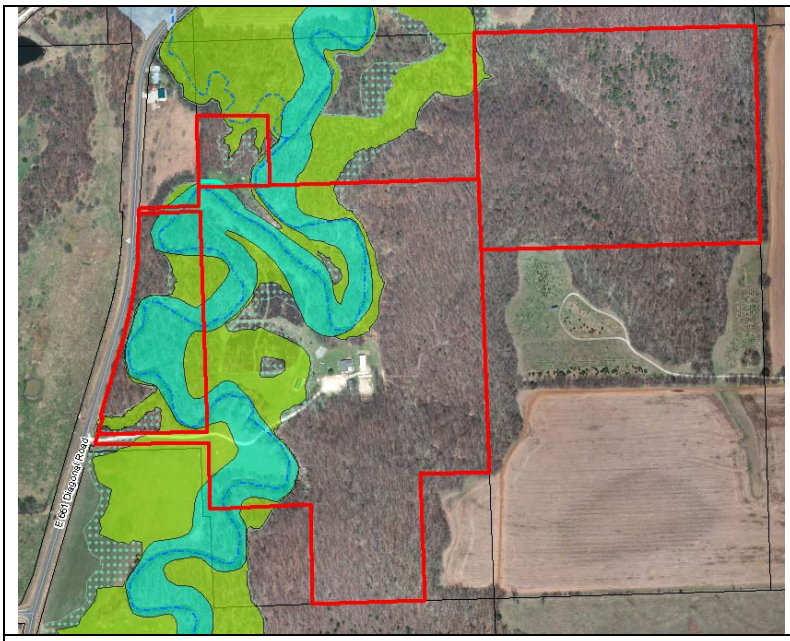


Figure 1. Zoning in the area.
(subject property outlined in red)

- Blue: A (Agricultural),
- Bright turquoise: Regulatory Floodway
- Light turquoise and light blue: Regulatory Floodway Fringe



Land Use in the Area
(subject property outlined in red)
Woodland, agriculture and rural residential
Recreation area (Lone Star Lake) to the south



- The subject property is outlined in red.
- Regulatory floodway is shown in blue
- Regulatory floodway fringe is shown in green.
- Washington Creek is marked with a dashed line within the floodway.

Figure 2. Location of floodplain on the subject property.

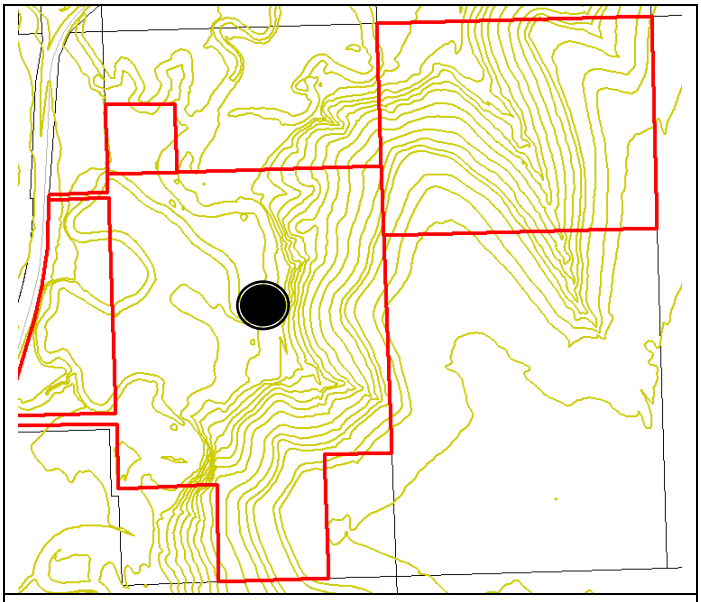
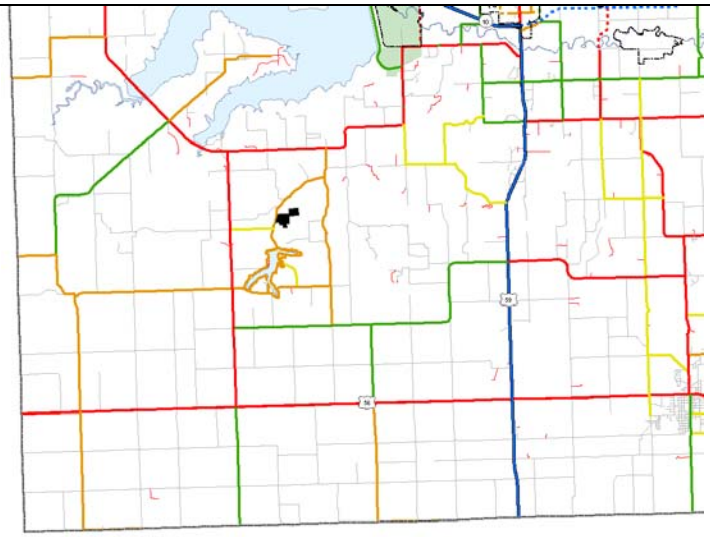


Figure 3. Topography
Parcel where the majority of the shooting occurs is marked with a●.



- Subject property shown in black
- Blue: Principal arterial/freeway
- Red: Principal arterials
- Green: Minor arterials
- Orange: Collector
- Yellow: Minor Collector

Figure 4. Road Network

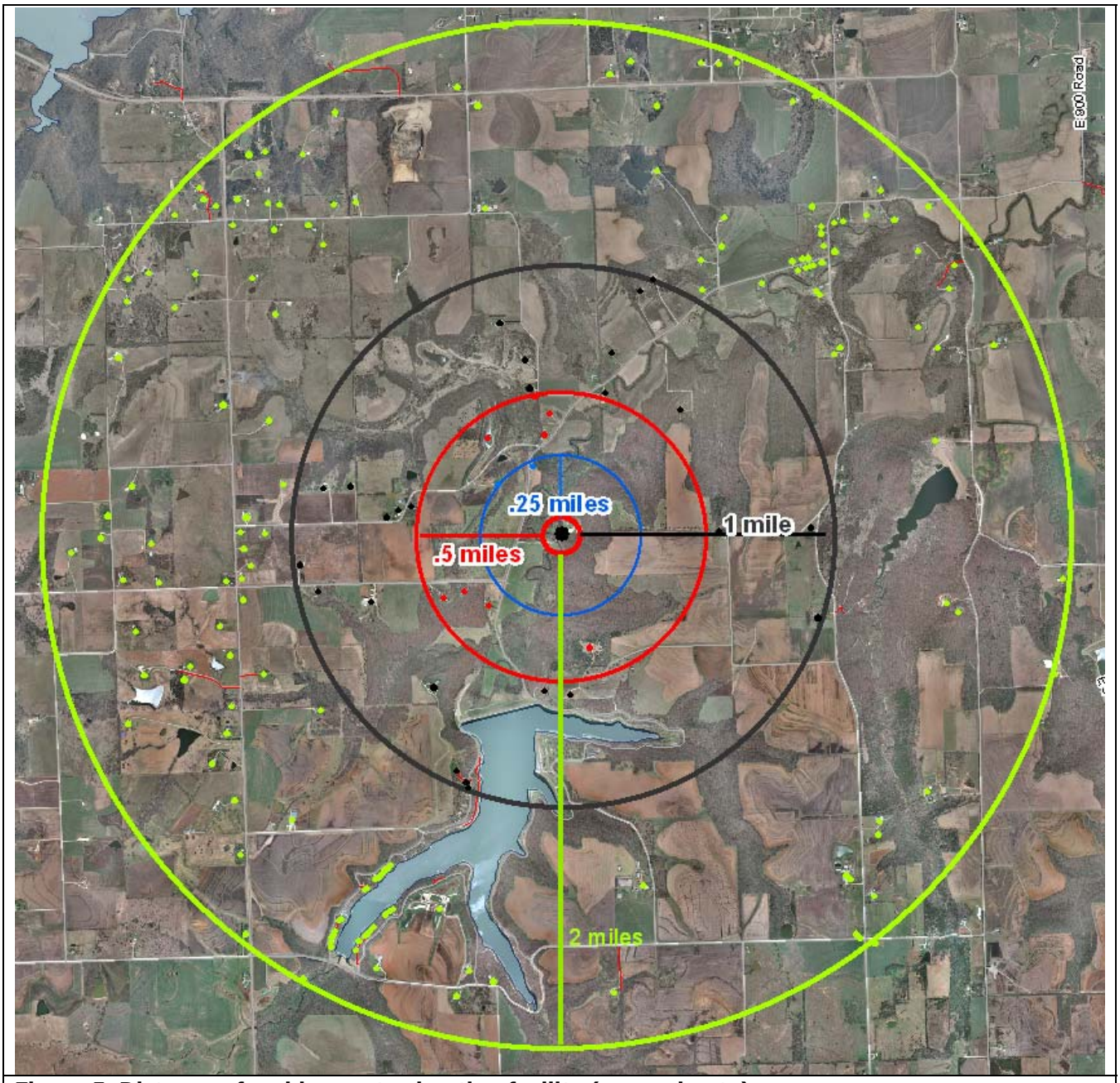


Figure 5. Distance of residences to shooting facility (approximate)
Blue ring is .25 mile radius: 2 residences
Red ring is .5 mile radius: 6 residences (+2 in .25 radius)=8 residences total
Black ring 1 mile radius: 25 residences (+ 8)=33 residences total
Green ring 2 mile radius: >125 (+33)=>158 residences total

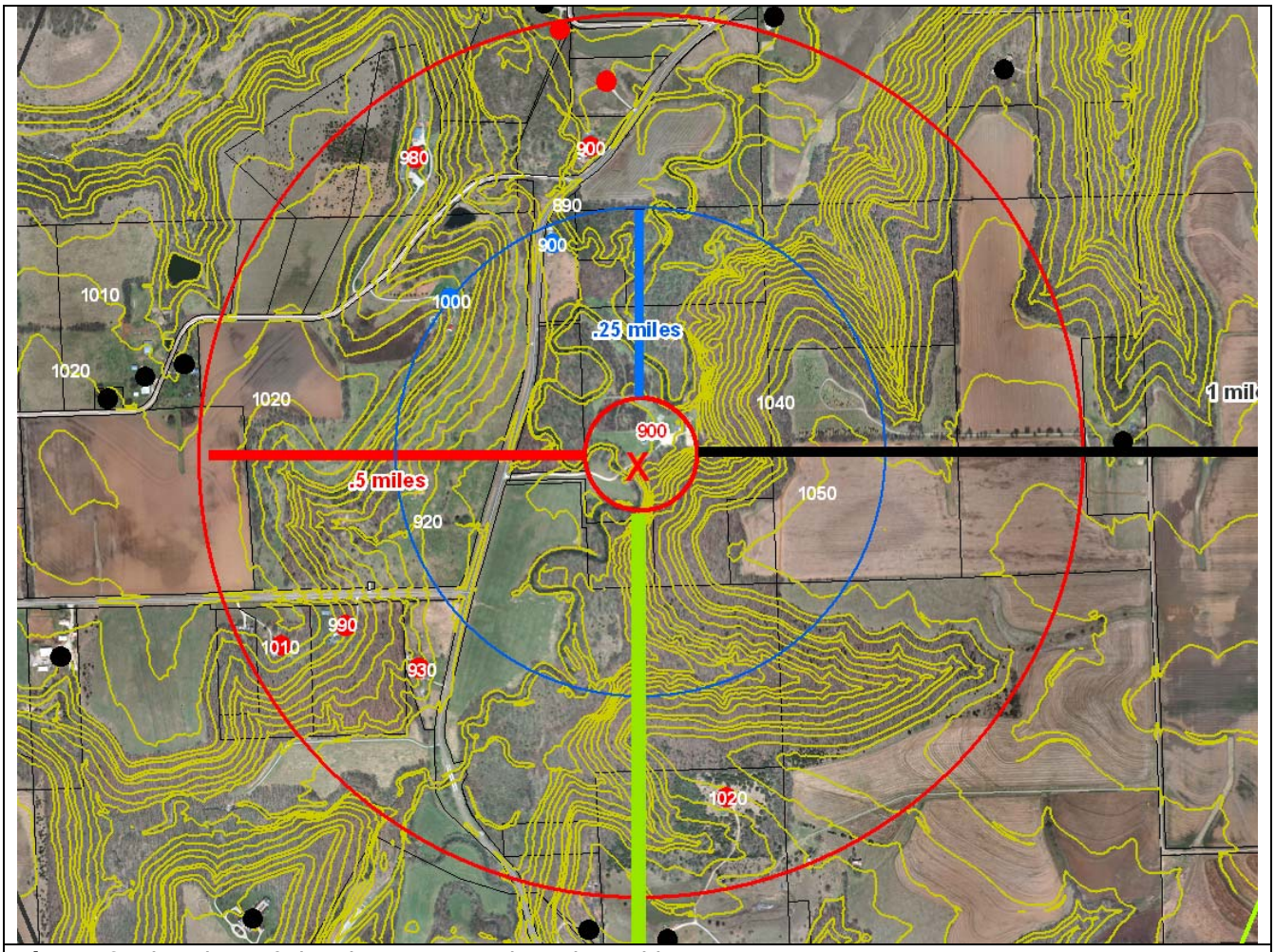


Figure 6. Elevations of shooting ranges and nearby residences

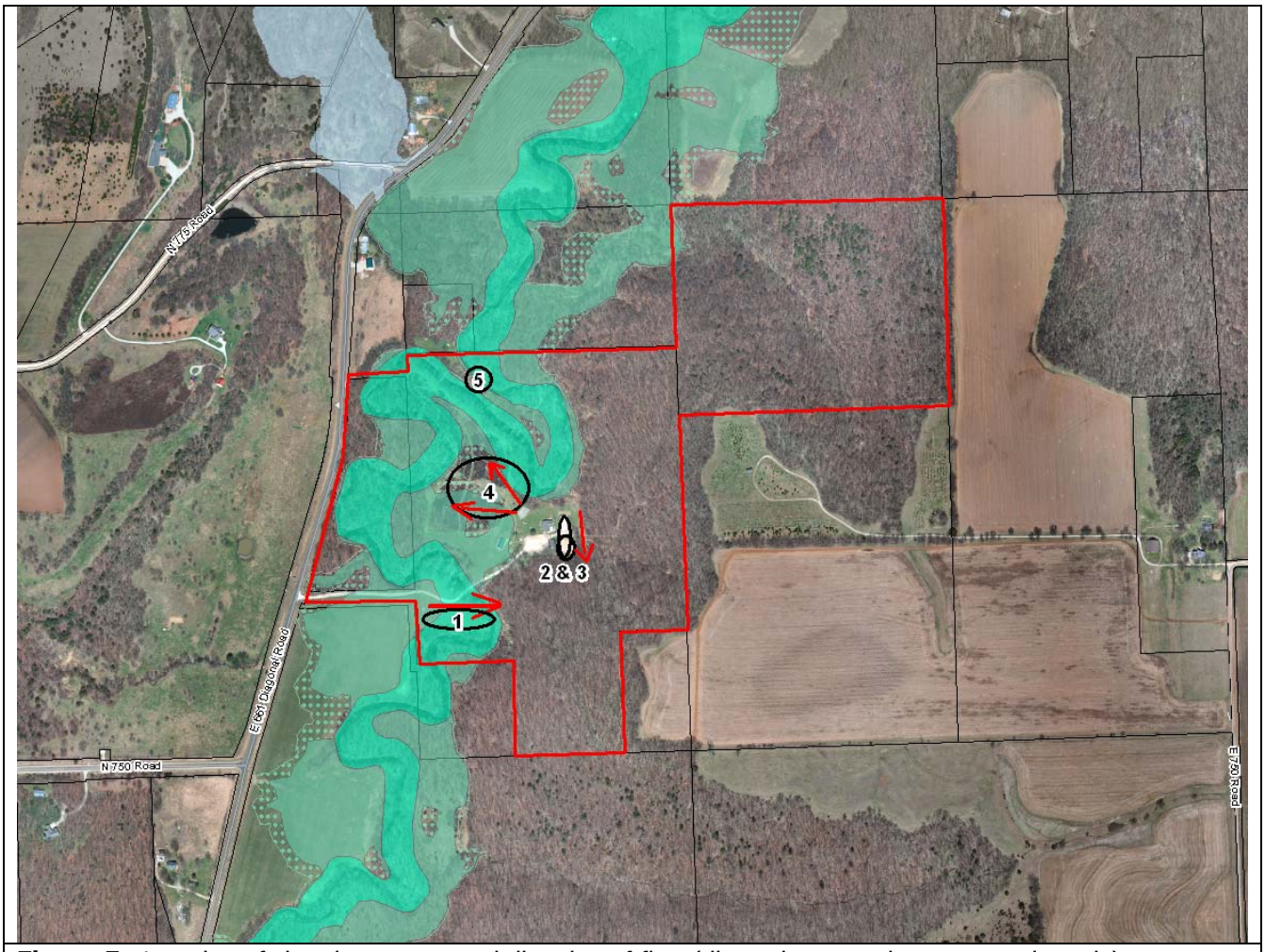


Figure 7. Location of shooting ranges and direction of fire, (dimensions are shown approximately)

1. 100 yard rifle range. Shooting to the east into wooded bank. 8 shooters.
2. 30 yard pistol range. Shooting to the south into wooded bank. 8 shooters.
3. 80 yard rifle/pistol range. Shooting to the north into wooded bank. Extended range '2'..no addtl shooters.
4. Trap range. Shooting to the northwest with a 150 yard safe fall zone. 5 shooters—shotgun only
5. 100 yard urban shooting range. Shooting within or into the structure. 10 shooters.



Figure 8 Entrance from E 661 Diagonal Road



Figure 9 Rifle range near road…target in front of very steep hill used as backdrop.



Figure 10 Drive up to the lodge buildings



Figure 11 Trap shooting area.



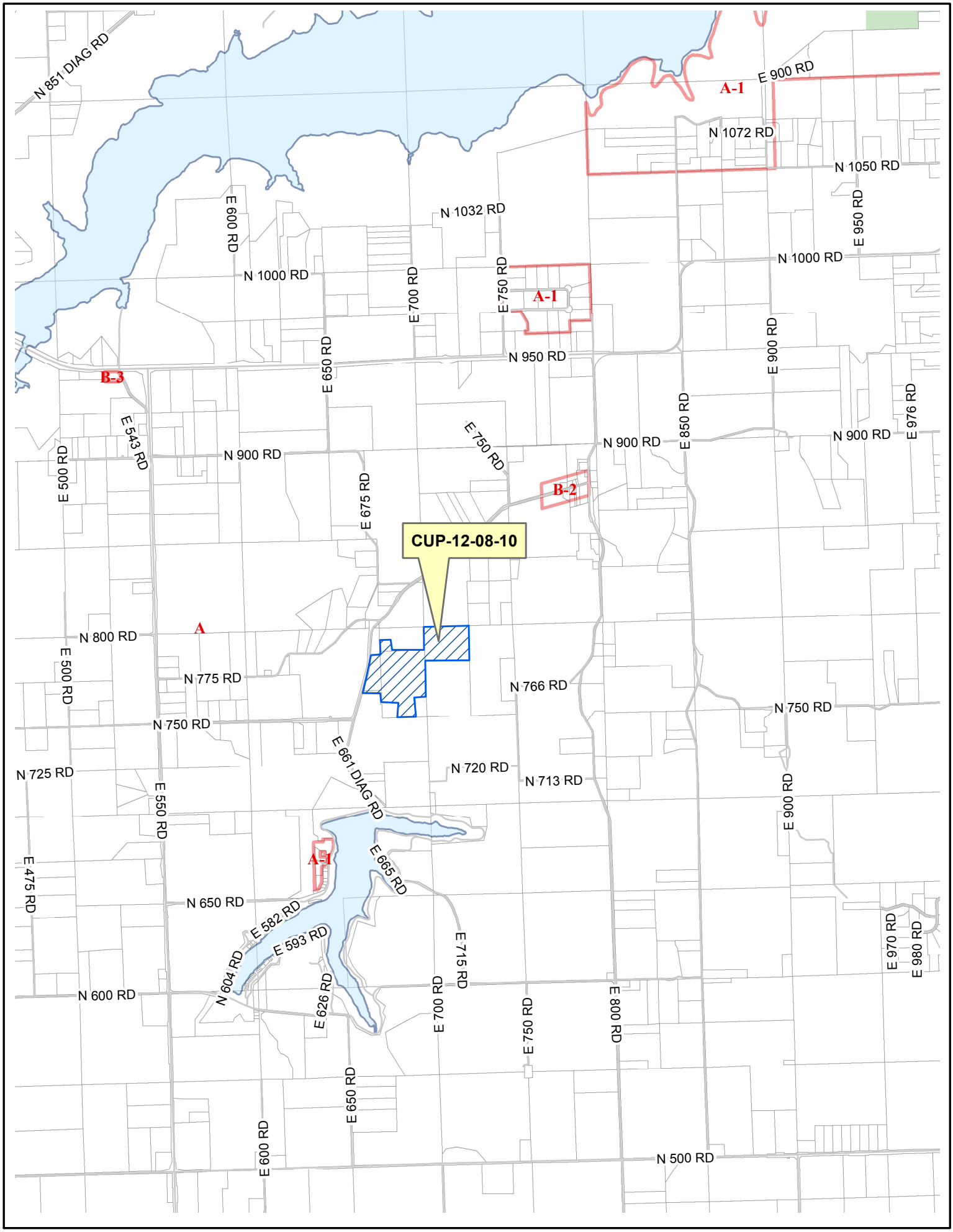
Figure 12 Shoot house. Firing is usually within the house, or occasionally into the house



Figure 13 Shoot house detail



Figure 14 Pistol/rifle range. This range can be 30 or 80 yards. Hill provides backdrop


CUP-12-08-10
A-1
A-1
A-1
B-3
B-2
A
N 851 DIAG RD
E 900 RD
N 1072 RD
N 1050 RD
E 950 RD
N 1032 RD
E 600 RD
N 1000 RD
E 700 RD
E 750 RD
N 1000 RD
E 650 RD
N 950 RD
E 900 RD
E 543 RD
E 850 RD
E 976 RD
E 500 RD
N 900 RD
E 750 RD
N 900 RD
N 900 RD
E 675 RD
N 800 RD
E 500 RD
N 775 RD
N 766 RD
N 750 RD
N 750 RD
E 661 DIAG RD
N 725 RD
N 720 RD
N 713 RD
E 550 RD
E 900 RD
E 475 RD
E 665 RD
N 650 RD
E 582 RD
E 593 RD
N 604 RD
E 715 RD
E 970 RD
E 980 RD
N 600 RD
E 626 RD
E 700 RD
E 750 RD
E 800 RD
E 650 RD
E 600 RD
N 500 RD

Mary Miller

From: Bill Roth [wroth@hughes.net]
Sent: Sunday, July 24, 2011 11:28 PM
To: Mary Miller
Subject: FOP CUP

Mary-

There has not been enough time for me to review the FOP's latest revision to their CUP, however, I would offer a few cursory comments.

If the Sheriff's Department and the Lawrence Police Department have a jointly agreed to set of requirements, they should make them available to the public. In that way the FOP can determine if they can meet them. If they can't then it will be necessary for the County/City purchasing department to make a request for bids to see who can meet the specifications. As it now stands we have an incestuous situation where the requirers are the providers and it is not possible to make a proper selection, as there do not appear to be any any definitive requirements, other than we want our Club House and we'll run it for ourselves as we see fit.

My comments on the FOP's submittal are:

1. There were distinct operating hours for; the law enforcement training, what I assume was non law enforcement training (group) and members recreational shooting. This is not appropriate as shooting is shooting and the neighbors can not be expected to call 911 and inquire who is shooting. The times specified must be the same for everyone, as it is not the neighbors responsibility to monitor range operations.

   a. 08:00 am til 9:00 pm on weekdays.
   b. 09:00 am til 7:00pm on Saturdays
   c. 12:00 pm til 5:00 pm on Sundays

2. The noise decibel level is be not more that 65db per the NRA Acceptable level stipulated in NRA Range Source Book Section one, Chapter Six, Section I-6-10, para 3.03.3.1. The FOP must make a firm commitment that they will construct sound deadening devices to ameliorate the noise which emanates from the pistol range.

3. No helicopter operations.

4. Signage is to be stipulated as every 50 feet on the perimeter and the sign on the front gate is to state that this is the FOP firing range.

5. A nit, para 13) should read reports "for" each range.

6. In addition to soil testing for lead, Washington Creek must be monitored to assure that lead is not leaching from the watershed into the creek.

Please advise me if you intend to have the meeting on Wednesday night. There are several of us that will have to cancel other commitments that we had made.

Thank you for your diligence in pursuing this effort. i hope that my comments have been constructive.

Bill Roth

Record of Meeting of Lone Star Neighbors April 29, 2006

A meeting of neighbors interested in the operation of the FOP was held on Saturday April 29th, 2006 in Steve Lewis's garage.

In attendance were:

Steve Lewis resident of 625 N 775 Rd.

Scott Mesler resident of 657 N 775 Rd.

Bill Roth resident of 640 N 775 Rd.

Karl Birns resident of 809 E 661 Diagonal Rd.

Charlotte and Harry Knoche resident of 798 E 661 Diagonal Rd.

Bryan Young resident of 813 E 661 Diagonal Rd.

Jim Lock resident of 643 N 750 Rd.

Tim Coldsnow owner of property west of E675 Rd.

Bryan Young, Harry Knoche, and Jim Lock attended the later portion of the meeting.

Besides being an opportunity for neighbors to meet, share, and discuss the concerns we have regarding the activities at the Fraternal Order of Police Lodge, the main goal of this meeting was to develop a list of suggested changes to the operation of the FOP lodge. This list could then be presented to the county administrator, and possibly other parties, as the issue is further considered.

Here are the recommendations.

1. Discontinue use of the lodge and grounds by the military. We agree there must be other locations the military can use for helicopter landings, detonation of ordnance, rifle practice and other such training.

2. Prohibit the detonation of any ordnance at the lodge and grounds.

3. Limit the hours of shooting guns. Here there was diversity of opinion as to what the hours of shooting should be, but all were agreed that a limited schedule of firing weapons is needed.

One recommended schedule was: Weekdays from 8 am to 8 pm, Saturdays from 9 am to 6pm, and Sundays from 10 am to 6 pm. This schedule was supported by the majority in attendance. Several variations were

suggested: no shooting on Sundays at all, later starting times and earlier ending times for both weekdays and Saturdays, and scheduling one night a week for shooting that could extend until 9 pm.

4. We request that the FOP inform the neighbors when any special training events will take place, such as night shooting, emergency vehicle operation on the grounds, or other notable special training.

The closer the neighbor lives, the stronger the support for this issue.

These were the specific items we agreed on at the end of our meeting.

Many issues were discussed and will no doubt be resolved during the application for a conditional use permit. But this is the list that we felt could be presented to the county administrator when the time is right.

If I missed anything or have some of it wrong, let me know.

Steve Lewis

Mary Miller

From: BNGWilson@aol.com
Sent: Friday, July 22, 2011 9:01 PM
To: Mary Miller
Subject: planning commision meeting

I find it unacceptable that you plan to tell us after the 25th whether or not a meeting on the 27th will include consideration of the FOP CUP. All other such notices have been received in writing at least a couple of weeks in advance of the meeting. There is no possibility of such advance notice in writing to people affected by the FOP's behavior in this case. I would like to object formally. I have made other plans for the 27th and will not be able to be there. Submitting comments in writing in advance does not permit responses to comments made that evening by planners or other speakers. I waited on April 25 from 6:30 until 10:30pm for an opportunity to speak, which came sometime around 11:30pm. I don't enjoy walking the downtown streets to my can at midnight and driving home to the Lone Star area, but I will do that again if I am given reasonable notice of the meeting. Why can't the FOP get its act together? It was suggested to them by the planners last time that they meet with the neighbors to work something out that is mutually agreeable. They have made NO effort to meet with those of us who live close enough to be affected by their activities, and I would suggest that they have no intention of trying to work with us at all. Your allowing a meeting to include their request for CUP to be scheduled with less than 48 hours notice to neighbors is UNACCEPTABLE.

Beverley Wilson 625 N 750 Road 66047

765 E. 750 Road
Lawrence, KS 66047
July 25, 2011

Mary Miller
City/County Planner
6 East 6th Street
Lawrence, KS 66044

Hand Delivered

To Whom It May Concern:

This comment relates to CUP request No. 12-8-10 submitted by the FOP. The FOP property shares well over 1/2 mile of common boundary with our farm which is located at 765 E. 750 Rd.

Our focus is safety. Naturally we expect the range to be designed, constructed and operated in a manner consistent with the highest generally accepted standards established for such facilities.

Very truly yours,

Jeffrey O. Heeb

Mary Miller

From: Karl Birns [kbirns@gmail.com]
Sent: Sunday, July 24, 2011 5:55 PM
To: Mary Miller
Cc: 'Terry Shistar'; 'Bill Roth'
Subject: FOP CUP Comments 7-24-11
Attachments: Record of Meeting of Lone Star Neighbors April 29.docx

Importance: High

The following are the comments of Karl Birns and Terry Shistar, residing at 809 East 661 Diagonal Road

Mary:

We received your revised draft CUP for the FOP shooting range on Friday, 7/22. You'd sent it to Bill Roth at close to 2PM with a requirement that comments be submitted in writing to you by 10AM on the following Monday. That gave us just 4 business hours to reply to a document that has taken you and the FOP months to prepare. Therefore, we request that this item be postponed at least until the August commission meeting to give the citizens sufficient time to review and comment. Further, we request that you freeze your document revision discussions with the FOP so that the document that we review is not changing behind closed doors while we review a prior draft.

General Comments:

1. Training of law enforcement officers is a responsibility of the county and municipal law enforcement agencies. Therefore, the FOP is not the group that should build and operate a shooting range for this purpose. A long range plan should be adopted for the public law enforcement agencies in the area to build a state-of-the-art range that meets accepted standards for noise, safety and environmental control. Continued use of the FOP for this purpose should be allowed only as a -out during transition to a government-operated training facility. If such were the case, then there may be justification for relaxed standards in the interim at the FOP. Otherwise, the FOP should be required to meet those design and operation standards as contained in documents previously submitted to you by Mr. Roth, the NRA The Range Source Book, A Guide to Planning and Construction, revised January 2004. Regardless, standards should have enforceable criteria and limits, rather than vague statements that are left up to the operators to interpret.
2. The CUP recognizes that lead used in shot and ammunition represents a potential problem. Lead ammunition should be replaced with other materials (e.g. steel shot for shot guns), wherever available. The county Health Dept should be required to monitor the site for lead run off and soil contamination, and standards set to trigger mandatory mitigation and clean up if contamination is found.
3. The Lone Star Neighbors Association has meet with both county officials and the FOP. A document was prepared with recommended practices for the range. This represents a fair consideration to the concerns of local residents. Attached is a record of that meeting. Besides being an opportunity for neighbors to meet, share, and discuss the concerns we have regarding the activities at the Fraternal Order of Police Lodge, the main goal of this meeting was to develop a list of suggested changes to the operation of the FOP lodge to present to the county administrator, and possibly other parties, as the issue is further considered.

Here are the recommendations.

a. Discontinue use of the lodge and grounds by the military. We agree there must be other locations the military can use for helicopter landings, detonation of ordnance, rifle practice and other such training.

b. Prohibit the detonation of any ordnance at the lodge and grounds.

c. Limit the hours of shooting guns. Here there was diversity of opinion as to what the hours of shooting should be, but all were agreed that a limited schedule of firing weapons is needed.

One recommended schedule was: Weekdays from 8 am to 8 pm, Saturdays from 9 am to 6pm, and Sundays from 10 am to 6 pm. This schedule was supported by the majority in attendance. Several variations were suggested: no shooting on Sundays at all, later starting times and earlier ending times for both weekdays and Saturdays, and scheduling one night a week for shooting that could extend until 9 pm.

d. We request that the FOP inform the neighbors when any special training events will take place, such as night shooting, emergency vehicle operation on the grounds, or other notable special training.

4. The public should have access to the lead abatement and noise abatement reports including testing results, mitigation activities and lead disposal.

Detailed Comments on proposed CUP

In the short time available for review, it appears that the CUP is more of a list of recommendations rather than a requirement with enforceable standards for operation of the facility. This is an abrogation of the county's responsibility to its citizens to protect their health and welfare. The CUP should address health, noise and environmental impacts. It must contain specific sound standards, emissions standards and action levels, with pre-designated mitigation measures triggered by exceedance of these standards. The local Health and Environmental regulatory agency is the appropriate party to monitor these aspects of the facility's operations and require implementation of the mitigation plans. I did not see them referenced in the document nor am I aware whether they were consulted as part of the CUP document development process.

Examples of the abrogation of the county's responsibility can be found in the revised language of the CUP, which has become more permissive and vague regarding the maintenance of the tree buffer areas and the site lead control activities. The buffer areas are not designated with any regard for actual plat location or standards for arboreal control such as tree density, type or height. Even the standard for tree harvest was removed. Further, the lead abatement language doesn't even address ground water contamination or surface water runoff from lead collection sites.

Given additional time, we would have liked to research and compare these permit requirements to those on shooting ranges used in other jurisdictions. This FOP range must have similarities to other ranges in our state and around the county. The county should have done this research. How has permitting been addressed by local governments elsewhere?

Submitted Karl Birns and Terry Shistar, July 24, 2011

From: Mary Miller <mmiller@lawrenceks.org>
Date: July 22, 2011 1:47:25 PM CDT
To: 'Bill Roth' <wroth@hughes.net>
Subject: RE: FOP cup

Bill,
The FOP CUP is scheduled for the July 27th meeting, at the Commission room in City Hall (6 East 6th Street). The FOP board is reviewing the proposed conditions and hopes to have their comments in by Monday the 25th. If not, it may be necessary to defer this item to another month to allow the board time to review the conditions and propose alternatives, where necessary.

I've attached a copy of the revised conditions. The PC agenda is available on the Planning Website at http://www.lawrenceks.org/planning/documents/pcagendaJulyFull11.pdf If a deferral is necessary, the request will be submitted to the Planning Commission for their consideration.

The deadline for written communications on this item is Monday, July 25th, at 10:00 AM. If you provide comments in writing (fax, mail or email) before that deadline they will be placed on the agenda for the Commissioners consideration.

(One item was placed on the agenda erroneously. It is titled 'develop an environmental stewardship plan for the shooting range'. This is a draft document that I was using for notes and it will be removed from the agenda as soon as possible.)

Please let me know if you have any questions. The website will update the agenda occasionally with new materials.
Thanks,
Mary

Mary K Miller, AICP, City/County Planner- mmiller@lawrenceks.org
Planning Division | www.lawrenceks.org/pds
P.O. Box 708, Lawrence,KS 66044
Office (785) 832-3147 | Fax (785) 832-3160

-----Original Message-----
From: Bill Roth [mailto:wroth@hughes.net]
Sent: Friday, July 22, 2011 1:32 PM
To: Mary Miller
Subject: FOP cup

For Mary Miller-

Considerations which the revisions to the FOP's CUP must address are-

Committment to take positive actions to abate the noise produced by training sessions
Sunday hours are to be from Noon till 5:00 (a sociable time to allow neighbors to enjoy a Sunday evening with friends)

Night time shooting is to cease at 9:30

When you have the final ideas on the positions in the revised CUP, will you please forward them to me so that our neighborhood can assess the situation?

Again Thanx for your diligence.

Bill Roth

Mary Miller

From: Jim Lock [jim.lock@sas-midwest.com]
Sent: Tuesday, September 13, 2011 2:11 PM
To: Mary Miller
Cc: Sheila Stogsdill; jim.lock@sas-midwest.com
Subject: Community Support for FOP, 9-11-2011

Follow Up Flag: Follow up
Due By: Wednesday, September 14, 2011 8:00 AM
Flag Status: Flagged

Dear Mary Miller:

Thank you for your Sept. 1, 2011 letter informing us of the Sept 26, Planning Commission meeting where the Conditional Use Permit for the FOP will be discussed. I will not be able to be at the Planning Commission meeting Monday, Sept. 26, however I wanted to send you a brief message letting you know that our family supports the FOP being in our community.

My wife and I have lived in our home at 643 N 750 Rd, raising our five kids, since 8-15-1984, over 27 years, and have loved living in this beautiful part of our county and state. I think our home is one of the 3 or 4 closest homes to the FOP Lodge. We can see the FOP directly east of our home.

I can truthfully tell you that we have never been bothered by gun shot noise that comes from the FOP. We know that it is necessary for our police forces to get their training, and we greatly appreciate the work and protection the police from the city, county and state provide for all of us. We feel that their presence in our Lone Star community provides us added security, and we want to give them our support.

I believe that there are many other families living in our area who feel the same way that we feel, however we have not tried to organize our response; we just want to be good neighbors with all other families who live out here and also with the FOP.

Since the FOP had its lodge and practice area out here long before most of us who live out here, I think it inappropriate for us to put undue pressure or demands on them. We knew the FOP was here when we chose to move our here. I would like to recommend that the city/county regulation bodies move to give the FOP all the legal standing they need to continue their work in our community. And I would like to see all who live in our area out here have a good living relationship with the FOP and each other.

Please feel free to use the above letter as you see fit, and let me know if there is anything further I can do to help promote the above solution.

Thank you for your help in this area.

Sincerely,

Jim Lock
643 N 750 Rd.
Lawrence, KS 66047
785-748-0809

September 15, 2011

To: Chairman
Douglas County Planning Committee

The Conditional Use Permit which has been offered by the Fraternal Order of Police for a shooting range operation is fraught with errors, omissions, and red herrings. It would appear that the CUP as written by the FOP Executive Committee would have little chance of being approved and it is therefore suggested that the planning committee utilize its time on more fruitful efforts.

Examples of a few of the problems in their document; there is no commitment by the FOP to take any action to mitigate - any of the issues previously identified as environmental concerns (lead and noise pollution), safety, and accommodation of the neighbors' stated issues with hours of operation and use by non-county personnel.

The allusion to use by the Military is a total red herring. If the applicants will check the Department of Defense Regulations regarding the use of non DOD ranges (see Army Regulation 385-63 para. 2-6. page 7, Use of non-DOD property) they will realize that approval by the MACOM (Major Command) is a prerequisite and that SDZs (Surface Danger Zones) must meet the requirements of the regulation and be updated and prepared according to DA Pam 385-63. The obvious conclusion is that the range does not comply with DOD requirements. Any commander who had his troops conduct firing operations at this range would be court-martialed.

In the past when there have been proposals to establish shooting facilities in the county, they have been disapproved based upon neighbor's objections and safety and environmental concerns. If this request had been made by a company that wanted to establish a club as a for profit business to provide a range for customers to discharge firearms, have social events which included the consumption of alcohol, and be open for business to anyone who wanted to use the shooting facility, to include hunting for game, the Planning Board would listen to the neighbors, hear the opinions and recommend to the County Commissioners that the CUP be disapproved. This is exactly what happened to the request for a country shooting club that was proposed in the northwest part of the county. That proposal was withdrawn because the applicant saw that the chances for it to be approved were almost non existent, even though he had offered several operational constraints to mitigate the neighbors concerns as well as the environmental impact.

Had the professional Law enforcement community stipulated their requirements to the City and County Commissioners, the current situation would not exist. Funding for design, construction, and maintenance would have been identified and proper planning would have provided professional training facilities. This actually was done, except that the facility could not meet OSHA requirements, and was therefore never used. Instead the law enforcement personnel took a coures of action which had few obstacles, and they have never forced themselves to address the need to establish a proper training

facility. To do so would have required manpower and funding resources which the departments chose to utilized in other areas.

As there has been a stated need by the Chief of Police and the Sheriff's Department to have a facility to conduct firearms training, the neighbors suggest that the Planning Department conduct a meeting with representatives from the Lawrence Police Department, the Sheriff's Office and several of the local landowners who live in the impacted area surrounding the FOP shooting facility. The purpose of the meeting would be to determine if a plan can be developed which would allow training activities to continue to be conducted at this site until a suitable facility can be constructed. If an arrangement can be made which is tolerable to both parties, then the FOP could submit a CUP which had procedures and commitments which meet the Law Enforcement training requirements. Specifically, this is envisioned to mean that sound mitigation techniques would be incorporated to meet NRA standards, the hours of operation would be no more that those required for law enforcement training, and the usage would be limited to FOP membership and their defined guests. Of course the FOP Executive Committee could add any other requests they desired, so long as they did not exceed the Law Enforcement requirements.

Should an agreement between the Law Enforcement agencies and the landowners not be reached, then the FOP and the County would be placing themselves in jeopardy of not meeting the court order and subjecting themselves to state and federal investigations into strict compliance with environmental regulations..

Sincerely,

/s/ William E. Roth

Mary Miller

From: Bill Roth [wroth@hughes.net]
Sent: Tuesday, September 20, 2011 3:25 PM
To: Mary Miller
Subject: Re: Letter concerning the FOP CUP

Mary-

Apparently my letter was not clear enough. What I feel is the situation, is that that the FOP has a flawed CUP which will prevent it from being approved. Their appears to be a concern that if this CUP is not approved a training facility for our law enforcement personnel will not be locally available. A way to provide a facility where our law enforcement personnel can train, is to find a way for the FOP to present an acceptable CUP.

The purpose of my letter was to try to determine what the Law enforcement personnel need to fulfill their training requirements. The intent of my proposed meeting is to try to determine if there is a way for those requirements to be met within parameters which the neighbors feel they can tolerate. Once these parameters are defined then the FOP can make their request within those parameters, and the neighbors cognizant of the training needs of our law enforcement personnel would be willing to make the civic sacrifice to accommodate the need.

At the present time the manner in which the CUP has been written makes it appear that the CUP is some type of group which has no consideration for any requirements other than a country club to suit themselves. The neighbors feel no need to agree to this non conforming requirement.

If the FOP desired to include in their CUP additional areas of usage within the Law enforcement defined parameters, they could them be addressed as possible areas for consideration.

There are several neighbors who would be willing to see if their are operating parameters that meet the law enforcement needs and could be tolerated until such future time when a proper training facility can be constructed..

Bill Roth

On Sep 15, 2011, at 2:10 PM, Mary Miller wrote:

> Bill,
> I don't believe we could arrange a meeting before the Planning Commission meeting. You suggested meeting to discuss relocating the range, and up to this point relocation hasn't been considered necessary. You've suggested relocating the range in your letter, and you could bring it up at the Commission meeting. If the Planning Commission votes to recommend relocation, we would start working in that direction.
> Thanks,
> Mary
>
> Mary K Miller, AICP, City/County Planner- mmiller@lawrenceks.org
> Planning Division | www.lawrenceks.org/pds P.O. Box 708, Lawrence,KS
> 66044 Office (785) 832-3147 | Fax (785) 832-3160
>
>
> -----Original Message-----
> From: Bill Roth [mailto:wroth@hughes.net]

Mary Miller

From: Karl Birns [kbirns@gmail.com]
Sent: Wednesday, August 03, 2011 9:29 AM
To: Mary Miller
Cc: 'Bill Roth'; 'Terry Shistar'
Subject: Comments on FOP CUP, addendum
Attachments: bmp3_7.pdf; bmp4_7.pdf; bmp5_7.pdf; bmp6_7.pdf; bmp7_7.pdf; Range_Design_Criteria.pdf; range-manual.pdf; sabsstd.pdf; shootingrangeregulationsoct4.pdf; SMART-2.pdf; 2011_year_for_Troy_Acoustics.pdf; bmp2_7.pdf

To: mmiller@lawrenceks.org

Addendum to comments on the FOP CUP

From Karl Birns and Terry Shistar, Residents

809 East 661 Diagonal Road

This is a follow-up to our letter to you of last month commenting on the proposed CUP for the FOP. Consideration of the CUP at the July meeting of the County Commission was postponed allowing more time for research. We did a simple internet search and found hundreds of documents relation to shooting ranges: design, operation, regulation, health impacts, etc. We have attached some of the more relevant ones to this document for your information. These include design manuals from US DOE, Canada, New Zealand; a county ordinance from North Carolina that regulates range design and operation and includes enforceable standards; a survey of state statutes done by Connecticut and a couple of documents on health and environmental effects from range operations prepared by EPA and the US Air Force. Of course there was also the NRA design document, but you already have that.

The ease with which this information was obtained leads us to believe that we're not dealing here with questions of technology, but rather with public policy. The FOP ranges do not come near meeting current design standards. The shot gun range shoots in the direction of County Road 1; the long rifle range shoots over a creek and the hand gun range is beside it. There are occupied residences bordering the property and less than 100 yards from the drop zone for shot. It seems that there are a number of policy issues here:

1. Does the commission (along with the Lawrence City commission) believe that they have a responsibility to provide local law enforcement officers with a facility that meets current best practices for design and operation procedures that ensure the safety and health of the officers and surrounding citizens and environment?

22 2. If so, both governing bodies should start the process to secure such a facility in the future. Concurrently, an interim permit with limited conditions would be warranted at the FOP as a transition to a new facility.

3. If not, than the FOP facility should be required to upgrade to meet current best design standards and a CUP issued that incorporates these standards and practices. We recognize that because of the current manner in which the FOP has arranged their shooting facility, this would be extremely difficult to do. It should be noted that to fire rifles at distances greater than 100 yards, the shooter must fire either over or very close to the edge of the FOP property. This is at the entry way on the south west corner, an inherently risky practice. Noise abatement when conducting eight station pistol training and simulated house to house firing is far in excess of what is customary when individuals are shooting on their property for private recreational shooting, or when what sounds like the FOP members are doing recreational shooting.

The fact that there has been no limit on who can use the range is open ended. There seems to be no specified limit to the number of "guest " who can be invited. Does this mean the Wyandotte Muzzle Loaders who are friends of some of members or is this limited to family members?

4. Further, the CUP should be written in such a way that the standards are enforceable and with pre-designation of monitoring and triggers for implementation of remedial action if the standards are contravened. There should be a public agency (health department?) charged with this function.

4. 5. The county should consider adopting an ordinance for future range development by private parties that clearly sets out design and operational standards (similar to Vance County, NC).

The conflict between the neighbors and the FOP goes back over six years. At that time some of the area residents approached the FOP regarding excessive noise and operating hours. The FOP has greatly increased its shooting activities over the years since it was first operating and now even includes military operations with helicopters, and out-of-county officers and private shooters as well as local law enforcement. A list of requests was prepared and submitted to the FOP, but it met a stone wall. The dispute escalated and eventually the county and the question of zoning arose. At this point the lawyers were brought in and posturing began. In particular, the issue of the authority of the county to require a CUP at the facility came into question. We're now in the comment period of the variance process and more posturing is occurring to protect future positions if litigation is necessary. This reflects a shift in societal values from cooperation for the common good, to concern only for ego and power. If this appears as a microcosm of the Capital budget debate in Washington, it is.

We would welcome the opportunity to sit down with the FOP and again try to work out our differences in a cooperative manner. Perhaps, the county could broker such a meeting and temporarily put the CUP on hold? Enough muscle has been flexed. It's time to use our heads. If the FOP would agree to incorporate our original list of requests into the CUP while the county pursues options for an up-to-date facilities, we would consider any further action unnecessary.

Chapter I: Environmental and Regulatory Concerns at the Shooting Range

1.0 Background

Outdoor shooting ranges provide recreational facilities for millions of shooting sports enthusiasts in the United States. Recently, there has been a growing public concern about the potential negative environmental and health effects of range operations. In particular, the public is concerned about potential risks associated with the historical and continued use of lead shot and bullets at outdoor ranges.

This concern is not unfounded. An estimated 9,000 non-military outdoor ranges exist in the United States, collectively shooting millions of pounds of lead annually. Some ranges have operated for as long as several generations. Historical operations at ranges involved leaving expended lead bullets and shot uncollected on ranges. Many of these ranges continue to operate in the same manner as in the past.

It is estimated that approximately four percent (4%) (80,000 tons/year) of all the lead produced in the United States in the late 1990's (about 2 million tons/year), is made into bullets and shot. Taking into account rounds used off-range, and rounds used at indoor ranges, it is clear that much of this 160,000,000 pounds of lead shot/ bullets finds its way into the environment at ranges.

Since the mid-1980's, citizen groups have brought several lawsuits against range owners and have urged federal and state agencies to take action against owners and operators of outdoor shooting ranges. The citizen groups argued that range owners improperly managed discharged lead bullets and shot. Federal courts have supported parts of these suits, requiring range owners/operators to clean up lead-contaminated areas. Concurrent with the increased citizen suit activity, the federal EPA, the Centers for Disease Control and Prevention (CDCP), and a large number of states have identified human exposure to all forms of lead as a major health concern in the United States.

Lead management practices at ranges across the United States remain inconsistent. Some range owners/operators have examined the impact of range operations on human health and the environment and have implemented procedures to manage and/or remove accumulated lead from ranges. Other range owners/operators are just beginning to characterize and investigate their ranges in order to design an environmental risk prevention and/or remediation program(s) specific to their sites. A third group of ranges has adopted a "wait and see" policy – taking no action until specifically required to do so by law or clear guidance is in place. Finally, a fourth, small, but important group of range owners/operators remain unaware of lead's potential to harm human health and the environment, and of existing federal and state laws.

To manage lead, many owners and operators have successfully implemented Best Management Practices (BMPs) at their ranges. These range owners and operators have realized many benefits from sound lead management including:

- stewardship of the environment, natural resources and wildlife,
- improved community relations,
- improved aesthetics of the range/good business practices,
- increased profitability through recovery/ recycling lead, a valuable and finite resource, and
- reduced public scrutiny.

Shooting sports organizations [e.g., National Rifle Association (NRA) and the National Shooting Sports Foundation (NSSF)] promote lead management throughout the United States. These organizations have researched different methods to effectively address potential and actual lead mobility and exposure without detracting from the enjoyment of the sport. The NRA, NSSF, and a number of other shooting sports organizations strongly encourage range

owners/operators to develop a BMP program that contains elements discussed later in this manual. Contact the NRA and NSSF for additional guidance materials available on lead management practices.

By implementing appropriate lead management at outdoor shooting ranges, range owners and operators can reduce the environmental and health risks associated with lead deposition, meet legal requirements and realize quantifiable benefits.

1.1 Lead Contamination's Impact on Human Health and the Environment

Exposure Routes

Historically, the three major sources for human exposure to lead are lead-based paint, lead in dust and soil and lead in drinking water. Typically, human exposure occurs through ingestion, which is the consumption of lead or lead-contaminated materials, or by inhalation. The main human exposure to lead associated with shooting ranges is through lead-contaminated soil. However, other pathways are discussed below, along with lead's detrimental effects on humans and animals.

Lead can be introduced into the environment at shooting ranges in one or more of the following ways. Each of these pathways is site-specific and may or may not occur at each individual range:

- Lead oxidizes when exposed to air and dissolves when exposed to acidic water or soil.
- Lead bullets, bullet particles, or dissolved lead can be moved by storm water runoff.
- Dissolved lead can migrate through soils to groundwater.

<u>Lead oxidizes when exposed to air and dissolves when exposed to acidic water or soil</u>

When lead is exposed to acidic water and/or soil, it breaks down by weathering into lead oxides, carbonates, and other soluble compounds. With each rainfall, these compounds may be dissolved, and the lead may move in solution in the storm runoff waters. Decreases in water acidity (i.e., increases in its pH) will cause dissolved lead to precipitate out of solution. Lead concentrations in solution are reduced by this precipitation. At pHs above 7.5, very little lead remains in solution. Increased time of contact between lead and acidic water generally results in an increase in the amount of dissolved lead in the storm runoff water. The five factors which most influence the dissolving of lead in water are summarized below:

Annual Precipitation Rate - The higher the annual precipitation rate, the faster the lead weathers. Also, during prolonged rains, the contact time between water and lead is increased. In general, the higher the precipitation rate, the higher the potential risk of lead migration off-site in solution.

pH of Rain and Surface Water - The acidity of the rainwater decreases as basic (alkaline) minerals in the soil are dissolved. If sufficient minerals such as calcium, magnesium, and iron are present in local soils, then the lead may quickly precipitate out of solution entirely as these other minerals are dissolved. The pH of shallow surface water is an indicator of the presence or absence of basic minerals in the local soil and in gravel within the stream beds through which the water has moved. The water in deeper streams and lakes is more likely to be composed of acidic rainwater that is not neutralized.

Contact Time - The contact time between acidic surface water and lead is a factor in the amount of lead that is dissolved. For example, lead shot deposited directly into a lake has a longer contact time then lead shot deposited in upland areas.

Soil Cover - Organic material will absorb lead and remove it from a water solution. The thicker the organic leaf and peat cover on the soil, the lower the lead content in solution in water leaving the shot area. Organic material has a strong

ability to extract lead out of solution in water.

pH of Groundwater - During periods of no rainfall, the water flowing within most streams comes from groundwater discharging into the stream channel. Therefore, the acidity of the groundwater affects the acidity of the surface water, and hence, affects the solubility of any lead particles carried into the stream during storm runoff.

Lead bullets, bullet particles or dissolved lead can be moved by storm water runoff

The ability of water to transport lead is influenced by two factors: velocity of the water and weight or size of the lead fragment. Water's capacity to carry small particles is proportional to the square of the water's velocity. Clear water moving at a velocity of 100 feet per minute can carry a lead particle 10,000 times heavier than water moving at a velocity of 10 feet per minute. Muddy water can carry even larger particles. The five factors that most influence velocity of runoff are described below:

Rainfall Intensity - The greater the volume of rainfall during a short period of time, the faster the velocity created to carry the rainfall off-site. The higher the annual rainfall, the greater the number of periods of heavy rainfall.

Topographic Slope - Generally, the steeper the topographic slope, the faster the velocity of stormwater runoff.

Soil Type - More rainfall will soak into sandy soils then into clay soils. Hence, for a given rainfall intensity, the volume of runoff will be greater from areas underlain by clays or other low permeable soils than from permeable sandy soil.

Velocity - Velocity tends to decrease as stream width increases. Merging streams, eddy currents, and curves in streams are other factors that may reduce the velocity. Generally, the shorter the distance from the lead deposit to the property line, the more likely it is that the lead fragments in suspension will be transported off-site.

Vegetative Cover and Man-made Structures - Structures such as dams and dikes reduce the water's velocity and greatly reduce the size and weight of the lead particles the water can carry. Since lead particles are heavy compared to the other suspended particles of similar size, they are more likely to be deposited under the influence of anything that reduces velocity of the storm runoff. Grass and other vegetation reduce runoff velocity and act as a filter to remove suspended solids from the water.

Dissolved lead can migrate through soils to groundwater

Acidic rainwater may dissolve weathered lead compounds. A portion of the lead may be transported in solution in groundwater beneath land surfaces. Groundwater may transport lead in solution from the higher topographic areas to the lower areas such as valleys, where it is discharged and becomes part of the surface water flow. If the water flowing underground passes through rocks containing calcium, magnesium, iron, or other minerals more soluble then lead, or through minerals that raise the pH of the water, then the lead in solution may be replaced (removed) from the solution by these other metals. However, if the soil is a clean silica sand and gravel, fractured granite, or similar type material, then the lead may move long distances in solution. The factors most likely to affect the amount of lead carried by the groundwater in solution are discussed below:

Annual Precipitation - Generally, high precipitation rates result in heavy dew, more frequent rainfall, numerous streams, shallow depth to groundwater, shorter distance of travel, and more rapid rates of groundwater flow. Also, the greater volumes of rainfall over geologic time probably have reduced the amount of calcium and other soluble basic minerals that could raise the water pH and cause lead to precipitate (settle) out of solution from the groundwater.

Soil Types - Clays have a high ionic lead bonding capacity and more surface area to which the lead can bond. Also, groundwater movement in clay is very slow, which increases the contact time for lead to bond to the clay.

Low permeability reduces the amount of historical leaching and increases the probability of the presence of basic (pH-increasing) minerals that can precipitate out of solution in groundwater or cause the lead to bond to the clay. All of the basic calcium and related minerals generally will have been removed from the clean silica sand and gravel soils, so the lead in solution in groundwater in these type soils can move long distances (miles) through the ground relatively unchanged.

Soil Chemistry - The more basic minerals like calcium and magnesium that are present in soils along the pathways through which the groundwater moves, the greater the lead precipitation (removal) rate. Lead should move in solution only a short distance (a few feet) through a sand composed of calcium shell fragments, but could move in solution long distances (miles) through clean quartz sand.

Depth to Groundwater - In areas of groundwater discharge such as river flood plains and most flat areas, the groundwater surface is often a few feet below the surface. Remember, the shorter the distance traveled, the greater the risk that the lead will migrate into the environment. Shallow depth to groundwater is indicative of higher risk for lead to reach the water.

pH of Groundwater - Although other factors influence solubility of lead in water, a good rule of thumb is that lead will precipitate out of solution when the pH or alkalinity of water is greater then about 7.5. But, lead dissolved in acid groundwater may travel many miles without change.

Health Effects of Lead Exposure on Ranges

Lead poisoning is a serious health risk. At higher concentrations, it is dangerous to people of all ages, leading to convulsions, coma and even death. At even very low concentrations, it is dangerous to infants and young children, damaging the developing brain and resulting in both learning and behavioral problems. Figure 1-1 describes the effects of exposure to lead on children and adults.

Federal, state and local actions, including bans on lead in gasoline, paint, solder and many other lead-containing products, have resulted in significant reductions in average blood-lead levels. Despite these advances, the number of lead-poisoned children remains alarmingly high. Children living in older homes may be exposed to lead in peeling paint or paint dust. Children can also come in contact with lead in soil and with lead dust carried home on the clothing of parents.

On ranges, inhalation is one pathway for lead exposure since shooters are exposed to lead dust during the firing of their guns. Because wind is unlikely to move heavy lead particles very far, airborne dust is generally considered a potential threat only when there are significant structures that block air flow on the firing line. Under such conditions, the hygiene and other practices proposed by the NRA for indoor shooting ranges in their “Source Book” are applicable to outdoor ranges.

Range workers may also be exposed to lead dust while performing routine maintenance operations, such as raking or cleaning out bullet traps. Owners/operators may want to protect these workers by requiring them to wear the proper protective equipment or dampening the soil prior to work.

Another exposure route for lead at outdoor ranges is ingestion by direct contact with lead or lead particles. For example, lead particles generated by the discharge of a firearm can collect on the hands of a shooter. These particles can be ingested if a shooter eats or smokes prior to washing his/her hands after shooting. **The relative risk of lead exposure to people in a well managed facility is low.**

Detrimental effects due to elevated lead levels can also be found in animals. Excessive exposure to lead, primarily from ingestion, can cause increased mortality rates in cattle, sheep and waterfowl. For example, waterfowl and other birds can ingest the shot, mistaking it for food or grit. Waterfowl, in particular, are highly susceptible to lead ingestion. This is a concern at ranges where shooting occurs into or over

Effects on the Human Body from Excessive Exposure to Lead

If not detected early, **children** with relatively low levels of lead (as low as 10 microgram/deciliter for children) in their bodies can suffer from:

- damage to the brain and nervous system,
- behavior and learning problems (such as hyperactivity and aggressiveness),
- slowed growth,
- hearing problems,
- headaches, and
- impairment of vision and motor skills.

Adults can suffer from:

- difficulties during pregnancy,
- reproductive problems in both men and women (such as low birth weight, birth defects and decreased fertility),
- high blood pressure,
- digestive problems,
- neurological disorders,
- memory and concentration problems,
- muscle and joint pain, and
- kidney dysfunction.

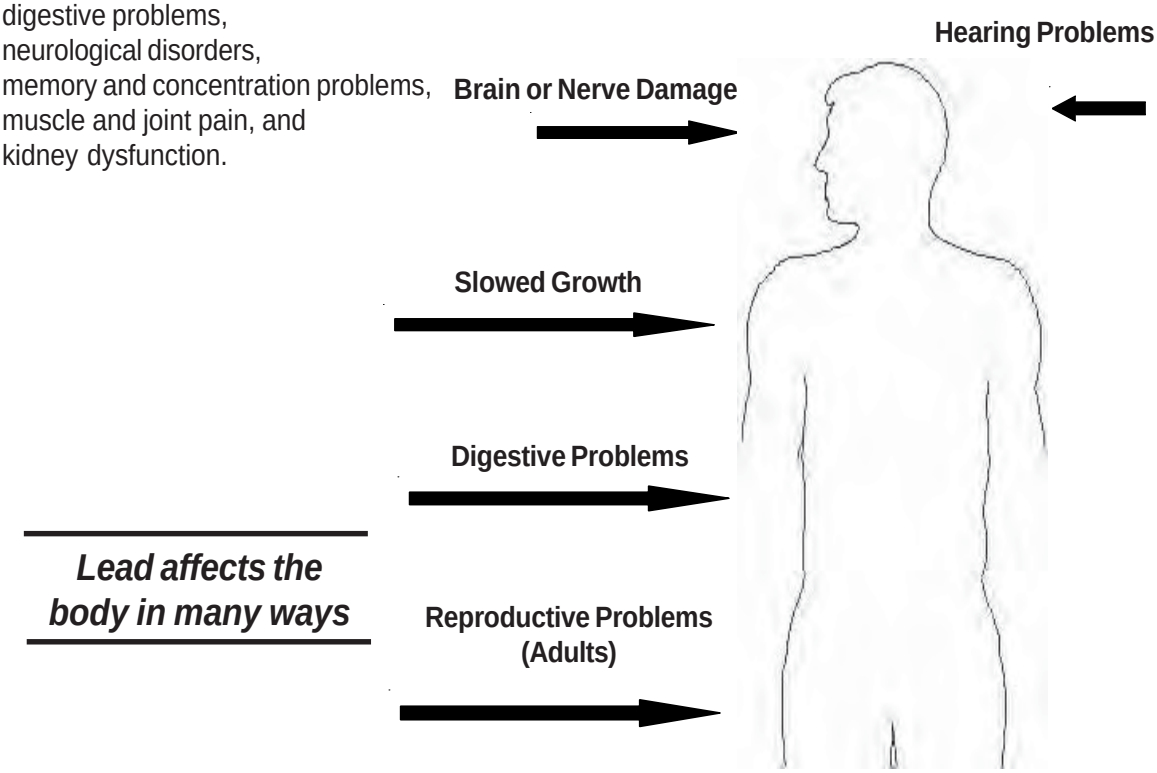


Figure 1-1: Effects on the Human Body from Excessive Exposure to Lead

water. Many of the legal and government actions that have been brought against ranges are based on elevated levels of lead and increased mortality in waterfowl. For example, in one case, an upland area of a range became a temporary pond after a thunderstorm. Waterfowl used the pond to feed and shortly thereafter, there was a waterfowl die-off (increase in bird mortality), apparently from lead ingestion.

1.2 Legal Requirements & Court Rulings

To date, most litigation concerns have been at shotgun ranges where the shotfall zone impacts water or wetland areas. The potential environmental and human health risks are greater at these ranges. However, all ranges, including those not located near water bodies, may be subject to legal and government action if proper range management programs are not implemented. Range owners/operators should expect greater scrutiny as ranges become more visible to regulators, environmental groups and the general public.

Citizen groups have been the driving force behind most legal actions taken against outdoor ranges. These groups have sued range owners/operators under federal environmental laws. Two of EPA's most comprehensive environmental laws, the Resource Conservation and Recovery Act (RCRA) and the Clean Water Act (CWA), specifically provide citizens with the right to sue in cases in which the environment and human health are threatened. These citizen suits have been highly effective in changing the way ranges operate, even when out-of-court settlements have been reached. The decisions of the United States Court of Appeals for the Second Circuit in *Remington Arms* and *New York Athletic Club* set a legal precedent in the application of RCRA and/or the CWA to outdoor ranges. Lead management programs at outdoor ranges must comply with both laws. Actions have also been taken under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) commonly know as Superfund. State and local statutes and regulations may also apply. To ensure environmental laws are being followed, range owners/operators must understand the legal issues and requirements.

1.2.1 Resource Conservation and Recovery Act (RCRA)

RCRA provides the framework for the nation's solid and hazardous waste management program. Under RCRA, EPA developed a "cradle-to-grave" system to ensure the protection of human health and the environment when generating, transporting, storing, treating and disposing of hazardous waste. RCRA potentially applies to many phases of range operation because lead bullets/shot, if abandoned, may be a solid and/or a hazardous waste and may present an actual or potential imminent and substantial endangerment.

Connecticut Coastal Fishermen's Association v. Remington Arms Company, et al.

In the late 1980s, the Connecticut Coastal Fishermen's Association filed a lawsuit against Remington Arms Company as the owner of the Lordship Gun Club. The Lordship Gun Club (a.k.a. Remington Gun Club) is a 30-acre site in Stratford, Connecticut, located on the Long Island Sound at the mouth of the Housatonic River. In the mid-1960s, the Lordship Gun Club was reconstructed to its final configuration of 12 combined trap and skeet fields and one additional trap field. Over the years, the Lordship Gun Club became known as one of the premier shooting facilities on the East Coast.

The Connecticut Coastal Fishermen's Association filed a lawsuit, alleging that lead shot and clay targets are hazardous waste under RCRA. The Complaint alleged that because the lead shot and clay targets were hazardous wastes, the gun club was a hazardous waste storage and disposal facility subject to RCRA requirements. The plaintiff also sought civil penalties and attorney's fees.

Remington moved for a summary judgment dismissing the complaint, and the Connecticut Coastal Fisherman's Association cross-moved for a partial summary judgment on the issue of liability. On September 11, 1991, the United

States District Court for the District of Connecticut ruled on the case.

Regarding the plaintiff's claims under RCRA, the District Court ruled in favor of the Connecticut Coastal Fishermen's Association, holding that the lead shot and clay targets were "discarded materials" and were "solid waste;" therefore, the materials were subject to regulation under RCRA. The court further stated that the discharged lead shot was a "hazardous waste," but declined to rule on whether the clay target fragments were also hazardous waste. Remington petitioned the United States Court of Appeals for the Second Circuit Court to review the lower court's ruling.

On June 11, 1992, both parties presented oral arguments before the court. Subsequent to oral arguments, the appellate court requested that EPA file an amicus brief "addressing whether lead shot and clay target debris deposited on land and in the water in the normal course of trap and skeet shooting is 'discarded material'... so as to constitute 'solid waste' under RCRA."

On March 29, 1993, the United States Court of Appeals for the Second Circuit reached its decision. With respect to RCRA, the court both reversed and affirmed the lower court's opinion in part.

Briefly, the decision affects currently operating and future gun clubs, and the following key points are of primary concern:

1. With respect to RCRA, the court agreed with EPA's amicus brief, which had argued that shooting at gun clubs is not subject to regulatory (as opposed to statutory) requirements. In other words, during routine operations, gun clubs are not viewed as facilities that manage hazardous wastes subject to RCRA regulations and, as such, do not require RCRA permits.

2. Another argument in the EPA's amicus brief with which the court agreed was the view that the RCRA statute allows citizen suits to be brought if a gun club's shooting activities pose an "imminent and substantial endangerment to health or the environment." Although gun clubs are not subject to RCRA regulations, EPA or any state, municipality, or citizen group can take legal action under the statutory provisions of RCRA against gun clubs for actual or potential environmental damage occurring during, or even after, the operation of the club. Under RCRA, the plaintiff would be eligible to recover its legal fees as well.

3. The court concluded that lead shot and clay targets meet the statutory definition of solid waste because these materials were "discarded (i.e. abandoned)" and "left to accumulate long after they have served their intended purpose." Further, the court concluded that based upon toxicity testing and evidence of lead contamination, the lead shot was a hazardous waste subject to RCRA.

The important point to consider here is that if lead shot and clay target debris are discarded (i.e. abandoned), these materials are considered a solid waste as defined in the statute and the facility may be subject to governmental or citizen suits.

If, on the other hand, the discharged lead shot is recovered or reclaimed on a regular basis, no statutory solid waste (or hazardous waste) would be present and imminent hazard suits would be avoided.

Thus, the Remington Arms case is an important legal precedent. Even though regulations have not been issued regarding gun club operations and environmental protection, gun clubs are still at risk of legal action under RCRA if they fail to routinely recover and reclaim lead, do not take steps to minimize lead release or migration, or if they abandon lead in berms.

Gun clubs where there is shooting into water, wetlands, rivers, creeks, and other sensitive environments have the highest degree of litigation risk. Conversely, gun clubs that have the lowest risk of environmental litigation or government action are those clubs that do not shoot into water or wetlands and which have an active program to recover lead.

The following describes how RCRA may apply to outdoor shooting ranges.

How is Lead Shot Regulated Under RCRA?

Lead shot is not considered a hazardous waste subject to RCRA at the time it is discharged from a firearm because it is used for its intended purpose. As such, shooting lead shot (or bullets) is not regulated nor is a RCRA permit required to operate a shooting range. However, spent lead shot (or bullets), left in the environment, is subject to the broader definition of solid waste written by Congress and used in sections 7002 and 7003 of the RCRA statute.

With reference to reclaiming and recycling lead shot, the following points should serve as guidance in understanding RCRA and how it applies to your range. (A more detailed discussion of the underlying RCRA rules applicable to lead shot removal at ranges is included in Appendix D)

- **Removal contractors or reclaimers should apply standard best management practices, mentioned in this manual, to separate the lead from soil. The soil, if then placed back on the range, is exempt from RCRA. However, if the soil is to be removed off-site, then it would require testing to determine if it is a RCRA hazardous waste.**

- **Lead, if recycled or reused, is considered a scrap metal and is, therefore, excluded from RCRA.**

- Collected lead shot and bullets are excluded from RCRA regulation, and need not have a manifest, nor does a range need to obtain a RCRA generator number (i.e., the range is not a hazardous waste "generator"), provided that the lead is recycled or re-used. The reclaimer does not need to be a RCRA transporter. **However, it is recommended that ranges retain records of shipments of lead to the receiving facilities in order to demonstrate that the lead was recycled. Records should also be kept whenever the lead is reused (as in reloading.) The range should be aware that it ultimately may be responsible for the lead sent for reclamation. Therefore, only reputable reclaimers should be utilized.**

- Lead from ranges destined for recycling may be temporarily stored on range property after separation from soil if the lead is stored in closed, sealed containers, the containers are stored in a secure location and routinely inspected by range staff, and records of inspections are maintained.

- Sections 7002 and 7003 of the RCRA statute allow EPA, states or citizens to use civil lawsuits, to compel cleanup of or other action for "solid waste" (e.g., spent lead shot) posing actual or potential imminent and substantial endangerment. Such actions can be sought whether the range is in operation or closed, and is based solely on a determination that harm is being posed or may be posed by the range to public health and/or the environment. Since the risk of lead migrating increases with time, making ranges that have not removed lead more likely candidates for government action or citizen lawsuits under RCRA Section 7002 and 7003, ranges are advised to maintain a schedule of regular lead removal.

- With time, lead in soil can become less desirable to reclaimers and smelters, thereby potentially reducing or eliminating financial returns from lead removal. Moreover, such soil may be subject to more expensive treatment to separate the lead for recycling.

- Lead removal will allow the range to: avoid contamination of the site and potential impacts to human health and the environment; reduce liability with regard to potential government agency or citizen suit action; and, possibly, benefit economically from the recycling of lead. Additional guidance on reclaiming lead is provided in other parts of this manual.

- Soil from berms and shotfall zones may be moved to another area of the range for such reasons as addressing potential environmental impacts (e.g., runoff), altering the layout to address safety concerns or allowing different types of shooting activities, or adding or removing shooting positions. However, removal of lead prior to such

movement of soil is normal practice and highly advised because it extends the usable life of the materials and reduces the possibility of release of lead into the environment. If lead is not first removed, it will be further dispersed and will be more difficult to remove in future reclamation. Written records of all such activity should be maintained indefinitely, as they will be necessary in subsequent construction or range closure.

- This RCRA summary applies to operating and non-operating ranges, and the use of BMPs at operating ranges is highly recommended. However, because of increased risk if lead is not actively managed, such application may not preclude the need for remediation, as appropriate and/or as required by states' regulations, when a range is permanently closed, on-site lead is abandoned, or the land use changes. Introductory guidance for remediation can be found at www.epa.gov/epaoswer/osw or www.epa.gov/superfund. Look under the sections "Cleanup" or "Resources," or use the Search function.

1.2.2 - Clean Water Act

The goal of the Clean Water Act (CWA) is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." The most common allegation against ranges by the EPA and citizen groups, is that they violate the CWA if they do not have permits that allow spent ammunition to be discharged into water. The CWA prohibits "the discharge of any pollutant by any person" into the waters of the United States without a National Pollution Discharge and Elimination System (NPDES) permit. There have been two court cases that have applied the provisions of the CWA to civilian shooting ranges. To understand how the CWA can apply to shooting ranges, a summary of the cases follows. Also see Table 1-1.

To understand the application of the CWA to outdoor ranges, one must know the definitions of key terms and how they have been applied to shooting activities. See Table 1-1.

In the *Remington Arms* and the *New York Athletic Club* lawsuits, citizen groups argued that the defendants violated the CWA by discharging pollutants from point sources into the Long Island Sound without a NPDES permit. Application of the CWA requires the violations to be ongoing. Consequently, the court in *Remington Arms* dismissed the CWA charge against the range because it had ceased operating before the lawsuit was filed.

However, in the *New York Athletic Club* case, the club was still in operation during the time of litigation, but had switched to steel shot. EPA's opinion on this case also addressed the CWA violation. EPA argued that certain trap/skeet ranges can convey pollutants, via point sources, to water in violation of the CWA if a NPDES permit is not obtained. Although some shooting organizations have disagreed with the EPA position, the United States District Court for the Southern District of New York specifically found that:

- The mechanized target throwers, the concrete shooting platforms, and the shooting range itself are considered point sources as defined by the CWA;

- Expended shot and target debris, including non-toxic shot, such as steel shot, left in water, are pollutants as defined by the CWA.

Although the New York district court's decision in the *New York Athletic Club* case is not controlling in any other district, range owners and operators of outdoor ranges that shoot over or into wetlands or other navigable waters of the United States should be aware of it.
Based on the court's decision in the *New York Athletic Club* case, any range whose shot, bullets or target debris enter the "waters of the United States" could be subject to permitting requirements as well as governmental or citizen suits. "Waters of the United States" or "navigable waters of the United States" are waters of the United States, including territorial seas that include any body of water that has any connection to, or impact on, interstate waters or commerce. The waters may include lakes,

Table 1-1: Application of Key Terms to Outdoor Ranges

Key Term	Statutory Definition	Application to *New York Athletic Club*
Discharge of a Pollutant	"any *addition* of any pollutant to navigable waters from any point source" (emphasis added) 33 U.S.C. § 1362 (12)	Shooting into water (including wetlands) constitutes a discharge. In the *New York Athletic Club*, the range did not dispute that its shooting operations resulted in the deposition of spent shot and other debris into the waters of the United States.
Point Source	"any discernible, confined, and discrete conveyance... from which pollutants are or may be discharged" into the Nation's waters. 33 U.S.C. § 1362 (14)	In *New York Athletic Club*, the court found that shooting ranges act to systematically channel pollutants into regulated waters and that mechanized target throwers convey pollutants directly into water. Specifically, it stated, "A trap shooting range... is an identifiable source from which spent shot and target fragments are conveyed into navigable waters of the United States." The court also determined that the concrete shooting platforms can be seen as separate "point sources" under the CWA or as one facet of the shooting range that systematically delivers pollutants (e.g. shot and wadding) into the water.
Pollutant	"dredged spoil, solid waste,... munitions... discharged into water" 33 U.S.C. § 1362 (6)	In *New York Athletic Club*, shot and target residue constitute a form of "solid waste" subject to regulation under the CWA as a "pollutant." Based on these determinations, the court supported EPA's contention that the ranges were discharging pollutants from a point source without a permit, in violation of the CWA.

ponds, rivers, streams, wetlands, or even guts that are frequently dry, which may not be obvious to range owners/operators. These ranges may be required to remediate contaminated sediments and soils, which could be both difficult and expensive, and to cease operations over waters and wetlands. **It is essential that these ranges change the direction of shooting, to avoid shooting over or into wetlands or other navigable waters of the United States, and initiate lead removal and recycling activities, where feasible.**

In addition, these ranges can cause a substantial impact on wildlife and wetlands, which range owners/operators may be required to restore under other federal laws (e.g., CERCLA, discussed below). Lead shot entering a water body substantially increases the potential risk of contaminating surface and groundwater which, in turn, threatens human health and the environment. Finally, as *New York Athletic Club*, *Remington Arms* and similar cases show, neighbors have the most leverage when range activity affects wetlands and waterways.

For ranges located away from coastal areas or whose operating areas are situated wholly over land, compliance with the CWA can be achieved by obtaining a NPDES permit for piped or channeled runoff from the range into water[1].

Shooting ranges impacting wetland areas may be subject to other regulations found in Section 404 of the CWA. This section is the principal federal regulatory program protecting the Nation's remaining wetland resources. Any plan by range owners/operators to dredge and/or fill wetlands may require a permit and will come under close scrutiny by federal, state and local governments and citizen groups. Owners and operators must comply with the CWA for range design, redesign, construction, reclamation or remediation occurring in wetland areas.

[1] The term "land" in this instance refers specifically to terrain recognized as "non-wetland" areas.

1.2.3 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), imposes liability on past and present owners or operators of properties where a release of a hazardous substance into the environment exists. CERCLA is used to ensure that an owner/operator cleans a contaminated site or to seek reimbursement from past owners/operators or disposers (potentially responsible parties or PRPs) when a party, either the government or private party, has cleaned up the contamination. Under CERCLA, lead is considered a hazardous substance.

EPA has the authority to order a PRP to clean up a site or conduct the cleanup and recover its costs from the PRP under CERCLA. Responsible parties may be held liable for all cleanup costs, which can be substantial. Under CERCLA, shooting ranges may be liable for government costs incurred during the cleanup of ranges, natural resources damages, and health assessments and/or health effects studies. The following two examples illustrate how shooting ranges (including one operated by the federal government) can be affected by CERCLA.

Southern Lakes Trap and Skeet Club Site, Lake Geneva, Wisconsin, et al.

In 1992, the US Fish and Wildlife Service (USFWS) began an investigation to determine the cause of death of over 200 Canada geese. The geese died as a result of acute lead poisoning after ingesting lead shot, which research indicated came from the Southern Lakes Trap and Skeet Club. The USFWS, in its role as Natural Resource Trustee, took action to recover the cost of damage to the natural resources (i.e., migratory geese) under CERCLA. In addition, EPA pursued a separate action under the Agency's CERCLA response authority. The club had leased the property from the property owners to operate a shooting range. Shortly after EPA sent out the notice of potential liability to the current and former owners and

operators of the club site, the club closed permanently.

In 1994, EPA issued an Administrative Order on Consent (AOC) against one current and one former owner of the property where the now closed Southern Lakes Trap and Skeet Club was located. The AOC required the owners to perform a site assessment, which included an evaluation of the costs to restore the wetlands. In 1998, EPA completed activities to clean up the site and restore some of the natural resources and wetlands. In a negotiated settlement, EPA recovered $1 million of the cost of the cleanup.

Walter L. Kamb v. United States Coast Guard, et al.

In another CERCLA action, Mr. Kamb (court appointed property guardian) sued the U.S. Coast Guard, California Highway Patrol, City of Fort Bragg, and the County of Mendocino (the defendants) for recovery of cleanup costs under CERCLA. Mr. Kamb had been appointed by the Mendocino County Superior Court to sell the property on behalf of the property owners. The property was formerly used by defendants as a rifle, pistol and trap range. Soil analysis indicated the presence of lead in the form of leadshot, bullets, pellets, and dust. The court found the defendants were "responsible parties" (liable for cleanup costs) under CERCLA. No apportionment of liability was made and the final determination of each parties' pro rata share of the response cost was deferred.

This case shows that range activity need not affect a water body to trigger CERCLA liability. CERCLA is a powerful statutory authority that can greatly impact current and former range owners/operators. The statute allows for recovery of damages to natural resources, the cost of any health assessment studies and all cleanup costs. Liability may extend to past owners and operators long after a range ceases operation.

1.2.4 Additional Laws and Regulations

Shooting ranges may also be subject to state and local laws and regulations. Many states have adopted their own environmental laws, which are based on federal laws. Specifically, these states have laws and regulations that mirror the CWA and RCRA program laws. EPA-approved state program laws must be as stringent as the federal laws and may be more stringent. Activities at shooting ranges may also be subject to local laws, ordinances and regulations addressing issues such as noise, zoning, traffic, wetlands and nuisance. Often, citizens or neighbors of outdoor shooting ranges can initiate noise nuisance claims against range owners/operators. Because many states have passed legislation protecting ranges from noise nuisance lawsuits, these may turn into claims of environmental violations under the laws discussed above due to the presence of lead and other products at ranges.

1.3 Benefits of Minimizing Lead's Environmental Impact

All ranges will benefit from proactively implementing successful BMPs. Even if range activities currently do not cause adverse public health and environmental impacts, by developing and promoting active lead management programs, ranges will benefit in the following ways:

- **Through a sound lead management program, shooting sports enthusiasts can reduce the potential of lead exposure and contamination to humans, animals and the environment.**

- **A lead management program will result in improved public relations for the range and the shooting sports**. Ranges can promote and publicize their successful BMP programs to improve their public image. Since many of the legal and governmental actions begin with or are due to citizen groups, an active lead management program may improve the public image of the range with these citizen groups.

- **The removal of spent lead from the range presents a clean, well maintained facility, which will increase customer satisfaction.**

- **Lead is a recyclable and finite resource and can be recovered from the active portion of ranges and sold to lead reclaimers.** Frequently, reclaimers do not charge range owners/operators to recover lead from ranges, and owners and operators may receive a percentage of the profit from the sale of reclaimed lead. This factor drives recycling efforts at many ranges.

- **By reducing or eliminating a potential source of lead migration in soil, surface water and groundwater, range owners/ operators may avoid costly and lengthy future remediation activities**.

- **Finally, implementing a BMP program for lead may eliminate or greatly reduce the risk of citizen lawsuits and the legal costs associated with these lawsuits**. Through management and removal practices, lead may no longer represent a threat upon which citizen lawsuits are based.

Range owners/operators may question whether the benefits of a regular and timely BMP program outweigh the efforts of implementing and maintaining a program. The questions may arise especially for ranges at which shooting activities involve waterways, since national attention has focused on ranges located adjacent to water (e.g., *Remington Arms* and the *New York Athletic Club*). However, all outdoor ranges may be subject to legal actions under RCRA and CERCLA authority. All of the benefits for adopting best management practices are available and worthwhile for every range owner and operator.

The following sections provide information that will assist the range owner or operator in implementing a BMP program for recovery and recycling of lead shots and bullets.

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Chapter II: Range Characteristics & Activities to Consider When Implementing Best Management Practices (BMP)

2.0 Background

Since each firing range site is unique, BMPs for lead must be selected to meet site-specific conditions in order to achieve maximum success. A range's physical characteristics and the operational aspects (e.g., volume of shooting, shooting patterns and operating schedules) will effect which BMPs may apply and how they will be implemented. Accordingly, whether designing a new outdoor range or operating an existing range, it is important that BMPs incorporate techniques appropriate for the range's individual characteristics.

Section 2.1 of this chapter identifies the physical characteristics that must be considered when evaluating your range. A summary of common physical characteristics at ranges is also presented in Table 2-1. These factors include:

- Range Size (primarily for shotgun ranges)
- Soil Characteristics
- Topography/Runoff Direction
- Annual Precipitation
- Ground and Surface Water
- Vegetation
- Accessibility

Section 2.2 discusses the operational aspects that must be considered. These factors include:

- Lead Volume
- Size of Shot/Bullets
- Operating Schedule
- Shooting Direction and Pattern
- Range Life Expectancy

In addition, Section 2.3 discusses issues that are specific to implementing BMPs when planning a new range.

2.1 Physical Characteristics

Physical characteristics of ranges, relative to lead management issues, are discussed below.

Range Size

Shotgun range design and type affects the ease of lead shot collection. Larger ranges typically tend to have lead shot that is dispersed over a wider area, while smaller ranges tend to concentrate lead shot in a smaller area. Reducing the area of the shotfall zone will concentrate the shot within a smaller area, allowing for easier cleanup and reclamation. BMP techniques for reducing the shotfall zone at trap and skeet ranges, as well as sporting clay ranges, are discussed in Chapter III.

Soil Characteristics

Spent lead bullets and shot are most often deposited directly on and into soil during shooting. When lead is exposed to air and water, it may oxidize and form one of several compounds. The specific compounds created, and their rate of migration, are greatly influenced by soil characteristics, such as pH and soil types. **Knowing the soil characteristics of an existing range site is a key component to developing an effective lead management plan**.

Soil pH

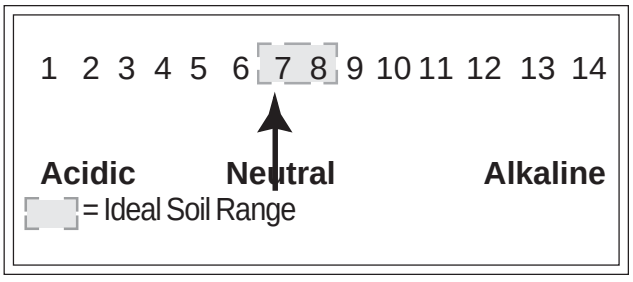


Figure 2-1 – pH scale

Soil acidity is measured as pH on a scale (illustrated as Figure 2-1) between 1 (most acidic) and 14 (most alkaline, or basic), where 7 is termed neutral. Ideal soil pH for shooting ranges is 6.5 to 8.5.[1]

1 National Shooting Sports Foundation, "Environmental Aspects of Construction and Management of Outdoor Shooting Ranges," June 1997.

Lead reacts more readily and may become more mobile under acidic (pH < 6) or higher alkaline (pH>8) conditions. This means that spent lead shot left in or on such soils may eventually break down and contaminate underlying soil. In moderately alkaline soils (pH 7 - 8.5), the lead precipitates out of solution and binds to the soil. This "binding" effect prevents the lead from migrating to the subsurface. In general, soils in the eastern part of the United States tend to be acidic, whereas western soils tend to be more alkaline.

Soil Physical Characteristics

The migration rate of specific lead compounds is affected by the physical characteristics of soil. For example, dense soils, consisting of heavy clays, will prevent the lead compound from moving quickly through the subsurface. Any "free" lead ions become attached to clay particles, with this bond helping to prevent migration. However, with denser soils, the amount of surface runoff increases.

Although clay soils inhibit migration, lead reclamation by contemporary removal machinery tends to be more difficult in clayey conditions. Clayey soils tend to clog the screens and "bind" with shot and bullets. This situation may require additional traditional screening, or perhaps screening using water to enhance separation.

In contrast, sandy soils or gravel may not impede migration because the open pores of these soils allow lead compounds to percolate quickly. Fortunately, lead reclamation activities are more easily conducted in sandy soils. With this in mind, ranges located in sandy soils should remove lead more frequently.

Annual Precipitation

One of the most important factors that influences lead degradation (i.e., chemical reactions) and migration is precipitation. Water, most often in the form of rain, provides the means by which lead is transported. In general, ranges located in areas with high annual/seasonal rainfall[2] have a higher risk of lead migration than those located in arid regions. This is especially true of outdoor ranges using "Steel Bullet Traps."

Steel bullet traps build up a layer of lead residue; these particles are extremely small and more easily transported by rain/water. Also, the smaller the particle, the quicker it will degrade. A bullet trap needs to have a means to collect contact water, or be covered to prevent water from reaching it, and to minimize releases and degradation.

Topography/Runoff Directions

The topography of your range impacts both the ease of lead reclamation and the mobility of the lead. For example, lead reclamation is more successful at ranges where the shotfall zone is relatively flat, since many lead reclamation companies use heavy machinery that cannot operate on slopes or steep hills.

Another important characteristic is the direction in which your range topography slopes. During and after periods of rain, stormwater runoff may wash lead particles or lead compounds off the range. If there are surface water bodies such as lakes, rivers, or wetlands downgradient, the potential for lead to adversely affect the surrounding environment is even greater. Therefore, it is important to identify and control the direction of surface water runoff at your range. BMPs for modifying and controlling runoff are described in detail in Chapter III.

Groundwater

Groundwater depth should be considered when developing a lead management plan since the closer the groundwater is to the surface, the greater the potential for dissolved lead to reach it.

Vegetation

Vegetative ground covers can impact the mobility of lead and lead compounds. Vegetation absorbs rainwater, thereby reducing

2 Heavy annual rainfall is anything in excess of the average annual rainfall, which for the northeast United States (e.g. New York, New Jersey) is between 40 and 45 inches.

Table 2-1 – Common Physical Characteristics at Ranges – Potential Risks and Benefits Associated with Range Operations

Physical Characteristics	Potential Risk to Environment	Potential Benefits in Preventing/Managing Contamination
Clay, acidic soils	Acidic soils contribute to lead dissolution -- increasing the potential for lead contamination -- may increase run-off Difficult to reclaim lead via sifting/raking	May impede percolation of water through contaminated soil Binds "free" lead ions May benefit growth of vegetative covers
Sandy, alkaline soils	Contaminated rainwater can easily percolate through soil and groundwater Extremely alkaline soil will not support vegetation	Alkaline soils may inhibit lead dissolution Easier to reclaim lead via sifting/raking
Sandy, acidic soils	Acidic soils contribute to lead dissolution -- increasing the potential for lead contamination Contaminated rainwater percolates quickly through sandy soils	Easier to reclaim lead via sifting/raking
Steep Rolling Terrain	May promote off-site drainage or drainage to on-site surface water bodies Can impede reclamation of expended shot via raking	None
Flat Terrain	Rainwater may "pond" in areas, promoting lead dissolution and contamination	Expended shot easily recovered Off-site drainage minimized
Wooded areas	May impede lead reclamation activities making equipment difficult to maneuver May provide habitat for wildlife - increasing exposure to lead	None
On-site or contiguous surface water bodies	VERY high potential for contamination when shot fall zone is located over or adjacent to water; increased wildlife exposure; increased lead dissolution. This is NOT an option for successful range location and may be more likely subject to litigation and/or governmental action if lead is deposited into water bodies	None
Vegetation	Lead may be absorbed into grasses, other wildlife food sources	Ground covers slow down surface water run-on and run-off Some vegetation can extract lead ions from the soils

the time that the lead is in contact with water. Vegetation also slows down surface water runoff, preventing the lead from migrating off-site. However, excessively wooded areas (such as those often used for sporting clay ranges) inhibit lead reclamation by making the soils inaccessible to some large, lead-removal machinery. Understanding the type, concentration and variety of vegetation on your range is necessary for developing your lead management program and implementing BMPs at your range.

Accessibility

Accessibility to shotfall zones and backstops is extremely important for lead reclamation activities. A range that is not accessible to reclamation equipment will have difficulty implementing lead reclamation practices.

2.2 Operational Aspects

Operating practices can have a great affect on the volume and dispersion of lead at your range.

Lead Volume

Keeping records of the number of rounds fired over time at your range is important. The number of rounds fired provides a realistic estimate of the quantity of lead available for reclamation. This information helps to determine when reclamation is necessary in order to prevent accumulation of excess amounts of lead, thereby decreasing the potential for the lead to migrate off-site.

Size of Shot/Bullets

Knowledge of the size shot/bullets used on your range may be helpful. Lead reclamation companies generally use physical screening techniques to separate lead shot and bullets from soil. These screens come in a variety of sizes. Knowing what size shot/bullets have been used at your range will allow the reclaimer to maximize the yield of lead shot/bullets at your range.

Shooting Direction and Patterns

Shooting directions and patterns are important to consider when determining the effectiveness of bullet containment devices. For example, many bullet traps are effective in containing bullets fired from specific directions. It is vital that you utilize bullet containment devices that match your range's specific shooting patterns and manufacturers specifications. Understanding the shooting direction and patterns will also help to correctly identify the shotfall zone at trap and skeet ranges.

Shooting into Water Bodies

Shooting into water bodies or wetlands should not occur. Besides the environmental impacts discussed previously, the introduction of lead to surface water bodies will likely cause a range to be susceptible to litigation and/or governmental action. Shooting into water bodies or wetlands is NOT an option for ranges that want to survive in the future.

Range Life Expectancy and Closure

The life span of your range may be impacted by many factors, including financial and environmental issues, noise, and encroachment on residential areas. If your range is slated for closure, contact your local state or EPA representatives for guidance.

2.3 Planning a New Range

As discussed in the previous sections, site characteristics and operational aspects affect lead migration, degradation and reclamation activities at ranges. **If you are planning on opening a new range, you should select and/or design a site in consideration of the factors discussed in this manual**. This will allow you to minimize the potential of lead impacting your site or adjacent properties. A new range owner has the advantage of being able to design a successful lead management program in full consideration of the site characteristics and recommended BMPs. This advanced understanding of operational aspects

and requirements will allow you to minimize the potential for lead migration prior to opening.

The most important site selection criteria to consider when selecting a new range location include: topography; surface water flow patterns; and depth to groundwater. If possible, ranges should be developed on flat terrain, as it facilitates reclamation and reduces the chance of off-site migration due to surface water runoff as compared with highly sloped terrain. When considering a prospective location for a range, ask yourself: What is the direction of surface water runoff? Does the site drain to surface water (e.g., streams, rivers) on-site? Off-site? Can the range design be modified to minimize potential runoff? Is reclaimation equipment accessible to the area to clean the range?

By selecting an appropriate location and designing a lead management program in consideration of site characteristics, new shooting ranges can be developed to minimize the potential for lead contamination. Other important site characteristics can be modified. For example, a new shotgun range can be designed to concentrate the shotfall area, vegetation can be added or altered, and the most advantageous shooting direction can be selected. These modifications are BMPs, and are discussed in further detail in Chapter III.

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Chapter III: Best Management Practices (BMPs) For Outdoor Ranges

3.0 Background

To operate an outdoor range that is environmentally protective requires implementing an integrated lead management program, which incorporates a variety of appropriate BMPs. These BMPs create a four step approach to lead management:

- Step 1 - **Control and contain lead bullets and bullet fragments**
- Step 2 - **Prevent migration of lead to the subsurface and surrounding surface water bodies**
- Step 3 - **Remove the lead from the range and recycle**
- Step 4 - **Documenting activities and keeping records**

An effective lead management program requires implementing and evaluating BMPs from each of the four steps identified above and illustrated as Figure 3-1. The BMPs discussed in Sections 3.1 and 3.2 should not be considered alternatives to lead reclamation, but rather practices that should be followed between lead reclamation events.

It is important to note that the cost and complexity of these BMPs vary significantly. **It is your range's individual characteristics that will determine which BMPs should be implemented.** The specific BMPs are described more fully below.

3.1 Bullet and Shot Containment Techniques (Step 1)

3.1.1 Bullet Containment

Knowing where spent lead is allows the appropriate BMP to be used. The single most effective BMP for managing lead in these areas is by bullet containment. Owners/operators should employ a containment system that allows for the maximum containment of lead on-site. The containment systems mentioned in this section are for reference only. Each containment design for a range is site specific. Each owner/operator must look at the various factors in determining which containment system is best for his or her range. Some factors include: overhead, cost of installation, maintenance (e.g., creation of lead dust from steel containment systems). Range owner/operators should consult with various contractors to determine which containment system is best for their range.

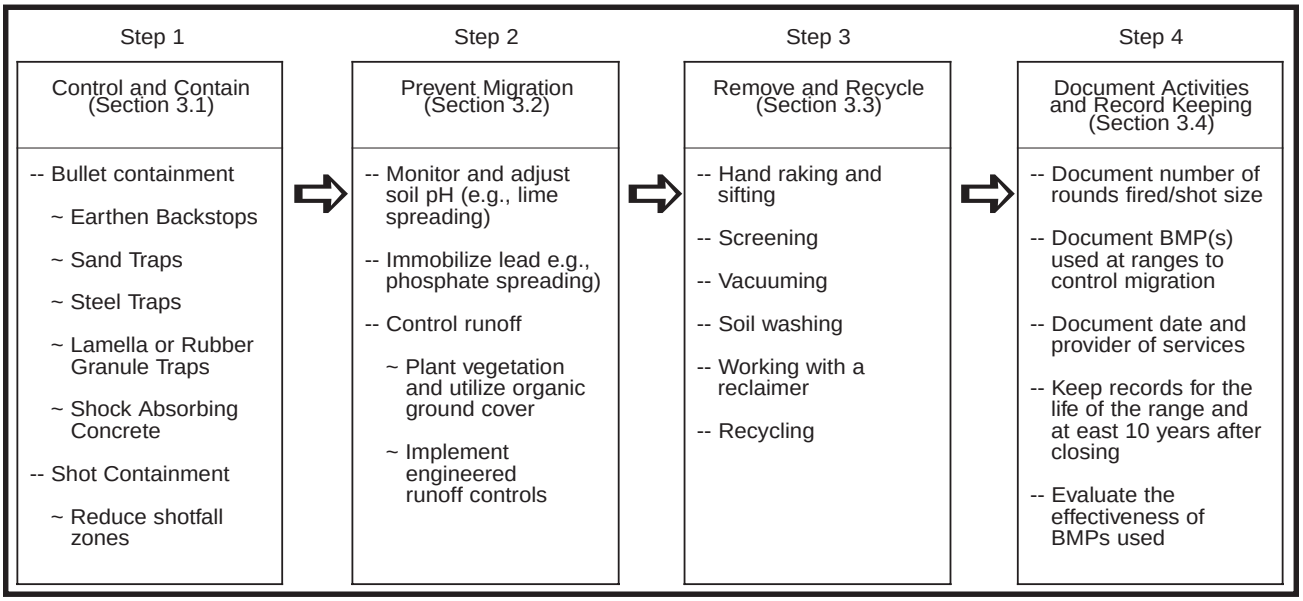


Figure 3-1 – 4 Steps to Build a Successful Lead Management Program Utilizing a Variety of BMPs

This section discusses BMPs for controlling spent lead bullets and fragments in a "controlled" and well-defined area behind the target area. Containing bullets and bullet fragments is critical to successfully managing lead.

There are a variety of containment device options available that serve as BMPs to control lead. The principle behind all of them is trapping and containing the actual bullet. They include:

- Earthen Berms and Backstops
- Sand Traps
- Steel Traps
- Lamella or Rubber Granule Traps
- Shock Absorbing Concrete

For each type of trap, design variations have been developed to fit the specific needs of an individual range. Below are discussions of each general category of trap. Some bullet containment devices are so comprehensive that they virtually eliminate lead's contact with the environment.

However, it is important to discuss all types of bullet containment devices because they are part of comprehensive BMPs for managing lead at rifle and pistol ranges.

EPA does not endorse any bullet containment design as being "better" than another. Different containment designs attempt to eliminate lead's contact with the environment, however, additional BMPs may be required for lead management.

EPA recommends that you discuss your range's bullet containment needs with a variety of vendors before deciding what type of containment device to use. This manual does identify the possible advantages and disadvantages associated with each containment device in Table 3-1, at the back of this chapter.

Earthen Berms and Backstops

Perhaps the most common bullet containment system at rifle and pistol ranges is the earthen backstop (earthen material, i.e., sand, soil, etc., which is located directly behind the targets). The earthen backstop is generally between 15 and 20 feet high with a recommended slope as steep as possible[1]. In many instances, backstops may be naturally occurring hillsides. When using an earthen berm or backstop, ensure that the uppermost layer (to a depth of one to two feet) exposed to the shooting activity is free of large rocks and other debris. These materials tend to increase ricochet and bullet fragmentation, which will, in turn, make lead reclamation activities more difficult, not to mention possible safety issues.

Removal of lead from earthen backstops may require lengthy reclamation (see Section 3.3) of the soil to remove the lead. Continued use of the backstop without removing the lead may result in increased ricochet of bullets and fragments. In addition, the backstop may lose its slope integrity because of "impact pockets" that develop. Once the lead has been removed from the earthen backstop, the soil can be placed back on the range and used again. Adding lime and phosphate during the rebuilding process is recommended as appropriate (see Section 3.2). However, other bullet containment techniques, including those listed below, should be considered prior to reestablishing an earthen backstop.

Sand Traps

A variation of the earthen backstop is the sand trap. Sand traps range from those that are simply mounds of sand or soil located directly behind the bullet targets, which serve as backstops to a sand trap that employs a system designed to contain, collect and control lead and contact water. This sand trap uses a grade of sand that is ballistically acceptable. Regular maintenance must be performed to remove larger particles (bullets) from the impact area. These traps are placed so that bullets fired across the range pass through the targets and become embedded in the sand. These traps are typically 15 to 20 feet high with a slope as

1. National Rifle Association, "The NRA Range Source Book: A Guide to Planning and Construction," June 1998

steep as possible. The most important design criterion for these traps is that the uppermost layer (to a depth of 1 to 2 feet) be free of large rocks and other debris to reduce ricochet and bullet fragmentation, and to facilitate reclamation efforts. There may also be an impermeable layer (e.g., clay or liner) under the sand to prevent lead from contacting the soil underlaying the trap.

Sand traps come in various designs and levels of complexity. The sand trap may be ballistic grade sand contained in a high backstop, or a more complex "Pit and Plate" system. The Pit and Plate system uses an angled, steel deflection plate cover that helps to direct bullets and bullet fragments to the top layer of sand only. Some of the more sophisticated sand traps incorporate lead recovery devices. However, the Pit and Plate may increase the surface-to-mass ratio of the bullet splatter and, therefore, may increase environmental risk of lead migration.

Regardless of the type of sand trap that is used, the traps become saturated with bullets/bullet fragments. Once this happens, the sand must be sifted (see Section 3.3) to remove the bullets. The recovered bullets can then be sold to a lead recycler (this is discussed in more detail later in the chapter). After sifting, the sand can be returned to the trap. Continued use of the trap, without removing the lead, may result in an increased risk of ricocheting off the backstop and thus creating an increased safety hazard. Furthermore, the sand trap will become unstable over time. Sand traps may be located over an impermeable liner, to prevent lead from contacting soil underlying the trap. This will provide additional protection to soil and groundwater.

Steel Traps

Steel traps are located directly behind the targets so that expended bullets, along with bullet particles, are directed into some form of deceleration chamber. Once inside the chamber, the bullets decelerate until the bullets/ bullet particles fall into collection trays at the bottom of the deceleration chamber. When the trap is full, or on a more frequent basis, the spent lead can easily be reclaimed for recycling.

With some steel traps, expended lead bullets may not come in direct contact with soils, thereby possibly minimizing lead's contact with the environment. Consequently, the need for other BMPs (e.g., lime spreading, and/or engineering controls), such as those required at ranges with unlined earthen backstops or unlined sand traps, may be avoided if this trap design is selected for the range's bullet containment device. In addition, bullet removal is somewhat easier than from a sand trap, and may only require emptying the bucket or tray containing the bullets and/or bullet fragments. However, an increase of lead dust and fragmented lead may be an additional environmental concern. Therefore, understanding the amount of lead dust and fragments is important to a successful lead management program. Also, some steel trap designs are not intended for shooting at different angles, therefore limiting the shooter to shooting straight on (no action shooting).

As with sand traps, steel traps vary in design and complexity. For example, the Escalator Trap has an upward sloping deflection plate that directs bullets into a spiral containment area at the top. The Vertical Swirl Trap is a modular, free standing trap with four steel plates that funnel the bullets into a vertical aperture in which they spin, decelerate, and become trapped in a bullet collection container. The Wet Passive Bullet Trap is equipped with steel deflection plates that slope both upward and downward. The upwardly sloped deflection plate is covered with an oil/water mixture to help reduce the occurrence of ricochet and bullet fragmentation. The bullet follows its own path in the round deceleration chamber for bullet recycling.

Lamella and Rubber Granule Traps

The Lamella Trap uses tightly-hanging, vertical strips of rubber with a steel backing to stop bullets. This trap is located directly behind the targets and, in many cases, the targets may actually be mounted to the trap. Lead removal

requires mining the bullets from the rubber. The Rubber Granule Trap uses shredded rubber granules, housed between a solid rubber front and a steel backing, to stop bullets once they pass through the target. For both traps, the bullets remain intact, thus eliminating lead dust and preventing lead and jacket back splatter. Depending on the design of the rubber trap, the bullet either remains embedded in the rubber strip or falls to the bottom of the trap, from which the bullets are removed for recycling.

These traps, when properly installed, are intended to increase safety by decreasing the occurrence of back splatter and eliminating the introduction of the lead dust into the air and ground. However, there are several concerns over their use, since they may:

- require additional maintenance;
- in some cases, present a fire threat under extremely high volume use (due to heat from friction created upon bullet impact);
- not withstand weather elements over the long term; and
- cause the rubber particles to melt to the lead bullets, making reclamation more difficult.

With the availability of fire-resistant rubber and gels (see Appendix A), these issues are becoming less of a concern than in earlier models.

Shock Absorbing Concrete

In addition to the bullet containment devices discussed above, there are new designs and innovations continually being developed. One of these innovative bullet containment devices is Shock Absorbing Concrete (SACON). SACON, which has been used as a bullet containment device since the 1980s and was extensively field tested by the military, has become commercially available in the past several years as a backstop material for small arms ranges. For conventional rifle and pistol ranges, SACON may provide a means to easily reclaim lead. Additionally, crushed, lead-free SACON can be recycled (recasted) after bullet fragments have been removed by adding it to other concrete mixtures for use as sidewalks, curbs, etc.

3.1.2 Shot Containment

Reducing the Shotfall Zone

Unlike rifle and pistol ranges, the area impacted by lead shot fired at trap, skeet and sporting clays ranges is spread out and remains primarily on the surface. **Knowing where spent lead is allows the appropriate BMP to be used. The single most effective BMP for managing lead in these areas is reducing shotfall zones.**

Concentrating the lead shot in a smaller area by modifying the shooting direction facilitates lead management by providing a smaller and more dense area of lead to both manage in-place and reclaim, thereby making the management and reclamation process simpler and more effective.

Sporting Clays Courses

Technologies have been developed to assist in reducing the range size of trap and skeet, and sporting clays facilities. The National Sporting Clays Association (NSCA) supports and promotes the Five-Stand Sporting Clays compact course design for shooting sporting clay targets, invented by Raymond Forman of Clay-Sport International, Cochrane, Alberta, Canada. The targets are directed over a smaller area than in English Style Sporting Clays (conventional sporting clays). It was originally designed to be overlaid on a conventional trap or skeet field and to be an alternative to earlier designs, which cover a much larger area. Another design, known as the National Rifle Association (NRA) Clays, is a portable target throwing unit which concentrates 15 rail-mounted machines on a two-story flatbed trailer. The NRA has also developed “compact sporting,” which is specifically for sporting clay facilities. This practice alters the angle that the target is thrown to concentrate the shotfall zone.

Skeet Fields

The typical single skeet field has a shotfall zone that is fan-shaped. For skeet fields with multiple stands side-by-side, the shotfall zones would overlap creating a shotfall zone that has a concentration of shot near the center of the fan.

Trap Fields

One way to reduce the shotfall zone at trap fields is to build the fields at an angle to one another. This will make the shape of the shooting dispersal pattern smaller and more concentrated. However, if you do decide to choose this option, be aware of safety issues when designing the overlapping shotfall zones.

For a range with only one trap field, one way to minimize the shotfall zone is to keep trap machines set in as few holes as possible (e.g., the number two or three hole setting). This reduces the area of lead concentration by limiting the angles for pigeon throwing, and therefore the area for lead shot fall. However, when two or more trap fields are positioned side by side, the shotfall zone will be continuous regardless of the "hole" setting.

Shot Curtains

Another method to consider for concentrating lead shot is the use of a shot curtain. This device is emerging as a potentially effective tool to keep lead shot out of selected areas of the range and, thereby, reduce the size of the shotfall zone and corresponding cost of reclamation. Different designs and material have been utilized in shot curtains and a number are in operation. The effectiveness of shot curtains is site specific and their long term viability and expense have yet to be fully determined.

3.2 BMPs to Prevent Lead Migration (Step 2)

This section discusses BMPs for preventing lead migration. These BMPs include:

- **Monitoring and adjusting soil pH**
- **Immobilizing lead**
- **Controlling runoff**

These BMPs are important for all outdoor ranges.

3.2.1 Monitoring and Adjusting Soil pH and Binding Lead

Lime Addition

The BMP for monitoring and adjusting soil pH is an important range program that can effect lead migration. Of particular concern are soils with low pH values (i.e., acidic conditions), because lead mobility increases in acidic conditions since the acid of the soils contributes to the lead break down. **The ideal soil pH value for shooting ranges is between 6.5 and 8.5**. This BMP is important because many soils in the eastern United States have pH values lower than 6.[2]

To determine the pH of your soil, purchase a pH meter at a lawn and garden center. The pH meters are relatively inexpensive but valuable tools in the management of lead at your range. If the soil pH is determined to be below 6, the pH should be raised by spreading lime. **It is recommended that the pH be checked annually**.

One way to control lead migration is by spreading lime around the earthen backstops, sand traps, trap and skeet shotfall zones, sporting clays courses and any other areas where the bullets/shots or lead fragments/dust accumulate. For example, lead mobilized in rainwater from the lead that spatters in front of backstops after bullet impacts can be effectively controlled by extending a limestone sand layer out about 15 feet in front of the backstop. Likewise, spreading lime over the shotfall zone will help to raise the pH of the very top soil layer to a pH closer to ideal levels and reduce the migration potential of lead. This is an easy, low cost method. Spreading lime neutralizes the acidic soils, thus minimizing the potential for the lead to degrade. Lime can be easily spread by using a lawn fertilizer drop spreader available at any lawn and garden center.

Smaller forms of limestone (powdered, pelletized, and granular) are better suited

2 National Shooting Sports Foundation, "Environmental Aspects of Construction and Management of Outdoor Shooting Ranges," June 1997

because they dissolve and enter the soil more quickly then larger forms. However, the smaller forms of lime must be replenished more often. Conversely, limestone rock dissolves more slowly but does not need to be replenished as often. The larger rock form is better suited for drainage ditches, where it can decrease lead mobility by raising the pH of the storm water runoff.

Another way to control lead migration in earthen backstops is to break the capillarity within the base of the backstop. Most porosity in the soil material used in backstop is of capillary size, and, as a result, water is pulled upward into a capillary fringe within the base of the backstop. The height to which the water will rise in an earthen backstop depends on the soil material in the backstop. Water will rise more then 6 feet in clay, 3.3 feet in silt, 1.3 feet in fine sand, 5 inches in coarse sand, and only 2 inches in gravel.

Because of capillarity, the spent bullets may be in contact with acidic rainwater for a longer period of time, hence more lead is dissolved. Breaking the capillarity by adding a layer of limestone or gravel to the base of the backstop should reduce the rate of deterioration of spent bullets, the erosion of the backstop, and the amount of lead going into solution in the water in the backstop. Also, any lead dissolved should precipitate out of solution as the acids are neutralized and the pH raised from the water passing through and reacting with the limestone.

Lime spreading is an especially important method for implementing this BMP at sporting clays ranges where heavily wooded areas are less accessible to conventional lead removal equipment. These types of ranges also tend to have more detritus (e.g., leaves, twigs, etc.) on the ground, which can increase soil acidity as they decompose. **In these areas, semiannual monitoring of the soil pH levels is suggested**.

Spreading bags of 50 pounds (at ranges with sandy soils) or 100 pounds (at ranges with clayey soils) per 1,000 square feet of range will raise the pH approximately one pH unit for a period of between one and four years, respectively. The market price of lime in either the granular or pelletized form commonly ranges from approximately $2.00 to $4.00 per fifty pound bag.

Table 3-2 provides information for raising pH levels of clay soils in temperate climates (i.e., Mid-Atlantic/Northeast). Additional information on the amount of lime to apply may also be found on the bags of the purchased lime and/or from the local lawn and garden center. It should be noted that if the soil pH is below 4.5, the addition of lime may only raise the soil pH to approximately 5. In this situation, other BMPs should be used as well. If the soil pH is above the ideal range upper value (8.5), do not add lime. Adding lime to a soil of this pH could result in mobilization of the lead. Lime spreading may be done at anytime during the year, except when the ground is frozen.

Additionally, it is important to remember to monitor the soil pH annually, as the effectiveness of the lime decreases over time. Additional routine applications will be necessary throughout the life span of most ranges.

Table 3-2 – Calculating Weight of Lime to Increase Soil pH Values*

		Current pH							
		4.0	4.3	4.5	4.8	5.0	5.5	6.0	6.5
Desired pH	5.0-6.0	14	11	8	5	3	-	-	-
	6.5-8.5	-	-	-	20	17	11	7	-

* Lime requirements stated as pounds of lime/100 square foot of problem area for clay soils in temperate climates (i.e., Mid-Atlantic/Northeast US).

Phosphate Addition

In addition to lime spreading, another way to control lead migration is phosphate spreading. This method is recommended where lead is widely dispersed in range soils, a range is closing, or there is a high potential for vertical lead transport to groundwater (e.g., low soil pH, shallow water table). Under these circumstances, range soils may benefit from phosphate treatment. Unlike lime spreading, the main purpose of phosphate spreading is not to adjust soil pH but to bind the lead particles. This process also decreases the potential amount of lead that can migrate off-site or into the subsurface. Phosphate spreading can be done either separately or in conjunction with lime spreading. Generally, 15 to 20 pounds of phosphate per 1,000 square feet will effectively control the lead.

Phosphate spreading is especially recommended for sporting clays ranges and those parts of ranges not easily accessible by reclamation equipment. Phosphate spreading should be repeated frequently during the range's lifetime. See pilot testing under "Other Ways to Bind Lead" below for proper frequency for replacing phosphate.

You can purchase phosphate either in its pure form, as phosphate rock, or as lawn fertilizer. The average lawn fertilizer costs approximately $7.00 per 40 pound bag. If you purchase lawn fertilizer, remember to check the bag for the actual percentage of phosphate. Most fertilizers contain 25% phosphate, so that if you purchase a 40 pound bag of fertilizer that contains 25% phosphate (i.e., 10 pounds of phosphate) you will need to spread 80 pounds of fertilizer per 1,000 square feet of the backstop. A typical fertilizer drop spreader can be used for distributing the phosphate. Like lime, phosphate should not be spread when the ground is frozen. In addition, it is not advised to use phosphate near water bodies since it contributes to algal blooms. Rock phosphate is a better choice if water is nearby.

Other Ways to Bind Lead

Although it may be possible to minimize lead's mobility by spreading fertilizers that contain phosphate at impacted areas of the range, a more comprehensive procedure for immobilizing leachable lead in soils, by using pure phosphate in rock form or a ground phosphate rock [Triple Super Phosphate (TSP)], was developed and patented by the U.S. EPA/Ohio State University Research Foundation and RHEOX, Inc. This procedure used a three step approach to minimize lead's mobility. The first step was to identify the boundaries of the area of the range to be treated. This included not only determining the length and width of the range area, but also the depth of lead within the area.

Depth was determined by taking sample cores of the area, which also identified "hot spots" where lead accumulation was greatest. Once the area was identified, the second step was to treat the area with TSP. Pure phosphate rock was used rather then fertilizers, as this phosphate is insoluble in water and will not cause an increase in phosphate runoff.

In this step, pilot testing was conducted. Here, various amounts (in increasing percentages by weight) of TSP were added to the affected soil areas, then the area was tested according to an EPA test method that identified the amount of leachable lead in a given soil sample. This test is called the Toxicity Characteristic Leaching Procedure, or TCLP. Separate TCLP testing of the range's hot spots was conducted.

Upon completion of the pilot testing, which determined the amount of TSP needed at the range, the third step was to begin actual treatment of the range. Where the depth of the lead accumulation was shallow (less than two feet), then standard yard equipment, such as tillers, seed/fertilizer spreaders, and plows were used to mix TSP with the affected soil. Where the affected area's lead accumulation was deeper than two feet, an auger was required to mix the TSP with the affected soil. Random testing of the range ensured the effectiveness of the treatment level.

3.2.2 Controlling Runoff

The BMPs for controlling soil erosion and surface water runoff are important to preventing lead from migrating off-site. There are two factors that influence the amount of lead transported off-site by surface water runoff: the amount of lead fragments left on the range and the velocity of the runoff.

The velocity of the water can successfully be controlled at outdoor ranges by: (1) using vegetative, organic, removable and/or permanent ground covers; and (2) implementing engineered controls which slow down surface water runoff and prevent or minimize the chances of lead migrating off-site. Bear in mind that safety considerations and potential ricochets need to be considered when implementing any engineered controls.

Vegetative Ground Cover

Planting vegetative ground cover (such as grass) is an important and easy erosion control method. Vegetation provides several benefits by minimizing the amount of lead that will run off the land surface during heavy rainfall. It is important to use a mixture of grass seeds to ensure that the cover will last into the future (i.e., annual rye grass lasts one year and dies and perennial rye grass lasts three to four years, then dies off). Fescue grasses form useful mats that are effective in controlling erosion.

Ground cover absorbs rainwater, which reduces the amount of water the lead is in contact with, as well as the time that the lead is in contact with the water. Furthermore, the ground cover will divert and slow down surface water runoff, thus helping to prevent lead from migrating off-site.

Grasses yield the greatest benefit at rifle and pistol ranges where the bullet impact areas are sloped, and water runoff and soil erosion may be more likely. Specific recommendations are to:

- Utilize quick growing turf grass (such as fescue and rye grass) for the grass covering of backstops, which can be removed prior to reclamation and replanted thereafter;
- Avoid vegetation that attracts birds and other wildlife to prevent potential ingestion of lead by wildlife; and
- Use grass to direct surface water drainage away from the target area (e.g., planting them at the top of the backstop or sand trap). This will minimize the water's contact with lead bullet fragments, minimizing the potential for lead migration.

Grass is not impermeable; however, it does slow down the rate of flow and reduce the amount of lead entering the soil via rainwater. Remember, grass requires periodic maintenance (i.e., mowing) to maintain its effectiveness as well as for aesthetic reasons.

Mulches and Compost

Mulches and composts can reduce the amount of water that comes in contact with the lead fragments. In addition, mulches and compost contain hermic acid, which is a natural lead chelating agent that actually sorbs lead out of solution and reduces its mobility. At a minimum, the material should be two inches thick. These materials can be spread over any impacted area and/or low lying areas where runoff and lead may accumulate. Like vegetative covers, organic surface covers are not impermeable. In addition, the organic material needs periodic replacement to maintain effectiveness and aesthetic integrity. Furthermore, these materials should be removed prior to any lead removal event, as they may impede sifting or screening. **Note that these materials tend to be acidic (especially during decomposition), so, if low pH is a concern at your range, this option may not be appropriate. Again, however, lime may be used to control pH (see Section 3.1.1)**

Surface Covers

Removable Surface Covers

Removable surface covers may be effective at outdoor trap and skeet ranges. In this case, impermeable materials (e.g., plastic liners) are

placed over the shotfall zone during non-use periods. This provides the range with two benefits during periods of rainfall: (1) the shotfall zone is protected from erosion; and (2) the spent lead shot is contained in the shotfall zone and does not come in contact with rainwater.

Permanent Surface Covers

For outdoor rifle and pistol ranges, impact backstops and target areas can also be covered with roofed covers or other permanent covers to prevent rainwater from contacting berms. However, this method may be less desirable because of the cost to install the roof, which must be carefully designed to avoid safety issues with ricochets, etc.

For shotgun and other ranges, synthetic liners (e.g., asphalt, Astroturf™, rubber, other synthetic liners) can also be used beneath the shotfall zone to effectively prevent rainwater or runoff from filtering through lead and lead contaminated soil. Synthetic liners will generate increased runoff, which must be managed, however. No single type of liner is suitable for all situations based on site characteristics. Therefore, liners must be chosen on a site-specific basis, bearing in mind the site's unique characteristics, such as soil type, pH level, rainfall intensity, organic content of soil, and surface water drainage patterns.

Engineered Runoff Controls

Runoff control may be of greatest concern when a range is located in an area of heavy annual rainfall because of an increased risk of lead migration due to heavy rainfall events. A "hard" engineered runoff control may be needed in this situation. A heavy rainfall event is defined as rainfall that occurs at such a rate that it cannot be absorbed into the ground and causes an increase in the volume and velocity of surface runoff. The impacts of rainfall are greater in rolling or sloped terrain (increases velocity of runoff) or where surface water bodies are located on, or immediately adjacent to, the range.

Examples of "hard" controls include:

- Filter beds
- Containment Traps and Detention Ponds
- Dams and Dikes
- Ground Contouring.

Designing and implementing these "hard" engineering controls may require the assistance of a licensed professional civil engineer. They are included in this manual to offer the reader a general understanding of these BMP options. However, this manual does not offer specific instructions for construction and operation of these controls. For information about designing and implementing any of these controls, or assistance with other range design questions, contact a licensed professional civil engineer having applicable experience or the NRA Range Department, at (800) 672-3888, ext. 1417. The National Sports Shooting Foundation (NSSF) may be contacted at (203) 426-1320 for specific references regarding the use and design of these controls.

Filter Beds

Filter beds are engineering controls built into an outdoor range to collect and filter surface water runoff from the target range. The collected runoff water is routed to a filtering system, which screens out larger lead particles, raises the pH of the water (thus reducing the potential for further lead dissolution), and drains the water from the range area. This technique may not completely prevent lead from entering the subsurface, since lead bullets, fragments and large particles may still remain on the range.

Filter beds should be established at the base of the backstop (see Figure 3-2). In addition to mitigating off-site migration, the filter beds work to raise the pH of the rainwater, which has fallen on the target range, to reduce lead dissolution, and to strain small lead particles out of the rainwater. The filters typically consist of two layers: a fine-grained sand bed underlain by limestone gravel or other neutralization material. By design, the backstops and berms direct the runoff so that it drains from the range to the filters. The collected water then soaks through the top sand layer into the neutralization material,

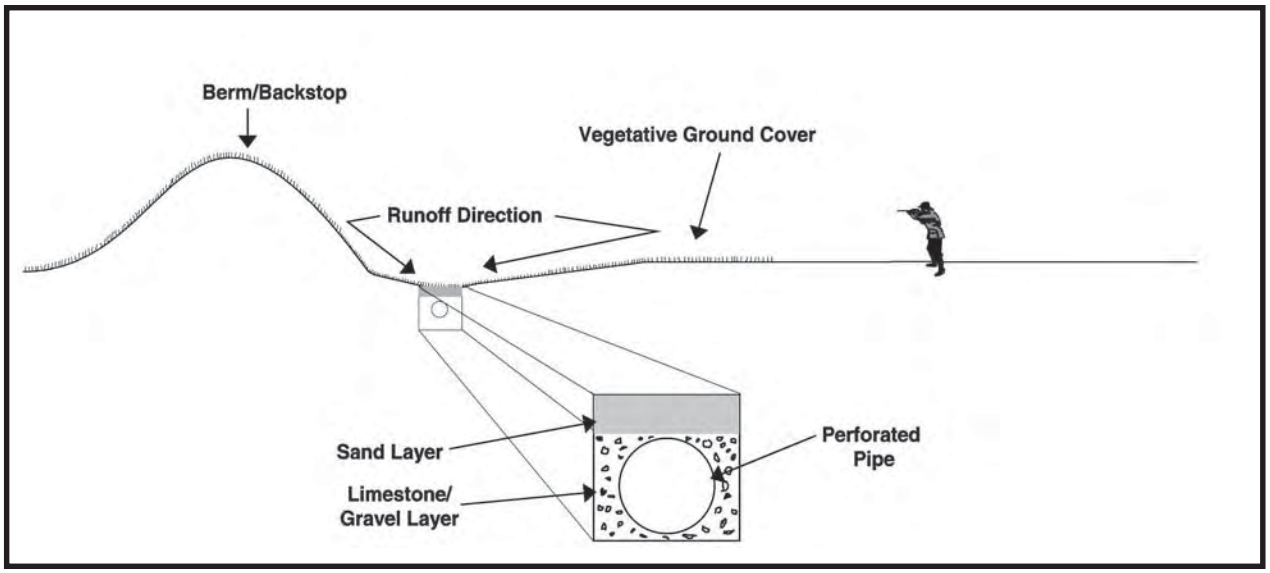


Figure 3-2 – Sample Filter Bed System (Adapted from Proceedings for National Shooting, Range Symposium, October 17-19, 1993, North American Hunting Club and Wildlife Forever)

which raises the pH of the filtrate. The lead particles in the rainwater are collected on the sand, while the pH-adjusted water drains through the filter to a perforated drainage pipe located within the limestone gravel.

Filter beds are designed to capture fine particles of lead transported in surface water runoff. They are not designed to capture bullets. The operation and maintenance requirements of filter beds are minimal. Maintenance activity is limited to periodic removal of debris (such as litter, leaves, etc.) and occasional replenishment of the limestone.

The use of filter beds is most effective on sites with open, rolling terrain where surface water runoff is directed to them. At existing rifle and pistol ranges, a limited system of trenches and filters can be installed at the base of natural soil backstops or at natural drainage depressions.

Containment Traps and Detention Ponds

Containment traps and detention ponds are designed to settle out lead particles during heavy rainfall. Typically, they are depressions or holes in the range's drainage paths. Here, the lead-containing runoff passes through the trap or pond, allowing the lead bullet fragments to settle out. Vegetative cover can be placed in the drainage path to increase the effectiveness of containment traps and ponds by further reducing the velocity of runoff and allowing for more lead fragments to settle from the runoff. It is important to regularly collect the lead and send this lead to a recycler.

Dams and Dikes

At shotgun ranges, dams and dikes can also be used to reduce the velocity of surface water runoff. Dams and dikes must be positioned perpendicular to the direction of runoff to slow the flow of surface water runoff. To accomplish this, determine the direction of the range's surface water runoff. This will be particularly obvious at ranges with sloped terrain. The dams or dikes should be constructed using mounds of dirt that are approximately a foot high. These mounds should transect the entire range perpendicular to the stormwater runoff direction.

These runoff controls are most important at ranges at which off-site runoff is a potential problem, such as ranges where the lead accumulation areas are located upgradient of a surface water body or an adjacent property. Since lead particles are heavier than most other suspended particles, slowing the velocity of surface water runoff can reduce the amount of lead transported in runoff.

Ground Contouring

Another mechanism to slow runoff and prevent lead from being transported off site is ground contouring. By altering drainage patterns, the velocity of the runoff can be reduced. Furthermore, in areas where pH is high (resulting in a lower potential for lead dissolution), the soil can be graded or aerated to increase the infiltration rate of precipitation, so that rainwater is more easily absorbed into the soil. This slows down or prevents surface water runoff and off-site migration. It should be pointed out that this design, in effect, collects lead in the surface soils. Therefore, range operation and maintenance plans should include lead reclamation as well as adjusting the pH, and adding phosphate.

3.3 Lead Removal and Recycling (Step 3)

To successfully minimize lead migration, the most important BMP for lead management is lead reclamation. Implementing a regular reclamation program will allow you to avoid expensive remediation and potential litigation costs. Ranges in regions with high precipitation and/or with acidic soil conditions may require more frequent lead recovery since the potential for lead migration is greater. In regions with little precipitation and/or where the soil is somewhat alkaline, spent bullets may be allowed to accumulate on the soil for a longer time between reclamation events. It should be noted that to ensure that lead is not considered "discarded" or "abandoned" on your range within the meaning of the RCRA statute (i.e., a hazardous waste), periodic lead removal activities should be planned for and conducted. This typically requires one or more of the following:

- Hand Raking and Sifting
- Screening
- Vacuuming
- Soil Washing (Wet Screening, Gravity Separation, Pneumatic Separation)

These methods are discussed in detail below. Figure 3-3 provides examples of common lead reclamation equipment.

Figure 3-3 – Examples of Common Lead Reclamation Equipment



Example of shaker system.
Courtesy of National Range Recovery



Example of final separation device ***(Patented Pneumatic Separation Unit) used with a Shaker System. Courtesy of MARCOR.***

Also, it is important to be aware that state regulations may require that the material being sent for recycling have a minimum lead content in order to qualify as a scrap metal that can be shipped under a bill of lading (i.e., exempt from RCRA).

3.3.1 Hand Raking and Sifting

A simple BMP that can be done by club members, particularly at small ranges, is raking and/or sifting bullet fragments from the soil. Sifting and raking activities should be concentrated at the surface layer. This is a low-technology and low-cost management alternative for lead reclamation. Once collected, the lead must be taken to a recycler or reused. Arrangement with a recycler should be made prior to collecting any spent lead to avoid having to store the lead and avoid potential health, safety and regulatory concerns associated with storing lead.

At trap and skeet ranges, conducting sifting and raking activities in the shot fall zone (approximately 125 - 150 yards from the shooting stations) will yield the most lead. For sporting clay ranges, these activities should be conducted around tree bases, where lead shot tends to collect. Basically, the process consists of raking with a yard rake the topsoil in the shot fall areas into piles, as if you were raking leaves, removing any large debris (e.g., rocks, twigs, leaves, etc.), and then sifting the soil using screens.

Once the soil has been raked and collected, pass it through a standard 3/16 inch screen to remove the large particles. This process will allow the lead shot sized particles to pass through the screen. The sifted material (those not captured by the 3/16 inch screen) should be passed through a 5/100 inch screen to capture the lead and lead fragments. This process will also allow sand and other small sediment to pass through the screen. Screens can be purchased at many local hardware stores. The screens should be mounted on a frame for support. The frame size will vary based on the technique used by each range. For example, if one person is holding the framed screen, it may be better to use a smaller frame (2 feet by 2 feet) whereas, if several people are holding the framed screen, it can be larger.

Raking and sifting can be performed by club members on a volunteer basis. Some clubs provide incentives, such as reduced fees, to members who assist with the lead removal process. Other clubs have hired college students during the summer. A number of small clubs have found that reloaders will volunteer to rake in exchange for collected shot.
Hand sifting and raking are cost effective lead removal techniques for small ranges, or low shooting volume ranges. However, these techniques may not be appropriate for situations in which there is a large volume of lead on the range. In this instance, reclamation machinery may be more appropriate.

Note: Those conducting the hand raking and sifting reclamation at ranges should protect themselves from exposure to lead. Proper protective gear and breathing apparatus should be worn. The Occupational Safety and Health Administration (OSHA) or an appropriate health professional should be contacted to learn about proper protection.

3.3.2 Purchasing/Renting Mechanical Separation Machinery

Reclamation equipment may be rented from local equipment rental services. One type of machine that it may be possible to rent for lead shot reclamation is known as a screening machine (also referred to as a mobile shaker, gravel sizer, or potato sizer). This device uses a series of stacked vibrating screens (usually two screens) of different mesh sizes and allows the user to sift the lead shot-containing soil [gathered by hand raking, sweeping, or vacuuming (discussed above)]. The uppermost screen (approximately 3/16 inch mesh) collects larger than lead shot particles, and allows the smaller particles to pass through to the second screen. The second screen (approximately 5/100 inch mesh) captures lead shot, while allowing smaller particles to pass through to the ground. The lead shot is then conveyed to a

container such as a five gallon bucket. In the Northeastern United States, the typical rental cost for this equipment is between $500 and $4,500 a week, depending on the size shaker desired. It may be possible to get more information on rentals for this type of equipment from heavy equipment rental companies.

Another possible option is to rent a vacuum system that will collect the lead shot-containing soil from the range. Here, vacuuming takes the place of hand raking or sweeping. A vacuum machine is used to collect the lead shot-containing soil. Once collected, the lead shot-containing soil must be sifted through a screening system (either a rental screening machine, or a series of home made framed screen sets). You may be able to obtain more information about renting vacuums or vacuuming services (e.g., it may include a person to operate the machinery) from heavy equipment rental companies.

Some clubs have found that performing their own lead reclamation to be very time consuming. Part of the reason these reclamations took so long is that the soils were wet. Reclamation is much easier under dry soil conditions. For example, one club reclaimed lead from their range using equipment they modified themselves. Twenty-five tons of lead were collected but the reclamation took over two years. Another club took a year to reclaim 10 tons of lead. A more preferable option may be to hire a reclamation company.

3.3.3 Hiring a Professional Reclamation Company

Another option for lead removal is to hire a professional reclaimer. Lead reclamation companies claim to recover 75%-95% of the lead in the soils. Generally, with reclamation companies there is no minimum range size requirement for lead reclamation. Concentration of lead is more important than quantity spread over a field, especially if it is a difficult range for reclamation (e.g., hilly, rocky, a lot of clay in the soil).

Please note that reclamation companies tend to be in high demand — it may take over a year for the company to start at your club. Therefore, it is wise to plan ahead and make the call to the reclamation company as early as possible.

Some reclamation companies require a site visit to view the topography, the soil composition, and amount of lead observed on the ground. During the visit, some companies may even do a site analysis to determine whether or not it is feasible to reclaim. This analysis identifies the location of lead, the expected recovery amount, and the depth lead reaches into the soils.

3.3.4 Reclamation Activities

Using machinery to reclaim lead usually requires that the area be clear of scrub vegetation. Grass, mulch, or compost is generally removed or destroyed during the reclamation process. Some reclamation companies have no problem beginning reclamation on a grassy field. Other reclamation companies will remove grass before or during reclamation (by burning it, if allowed locally, leaving behind the lead shot), and still others require that all vegetation be removed before they arrive at the range. Some companies will re-seed the area once the reclamation is completed.

Since sporting clay ranges generally have many trees, removal of vegetation as discussed above may not directly apply to existing sporting clay ranges. At these ranges, the focus is on removing vegetative debris (i.e., fallen limbs, tree bark, etc.) prior to reclamation. This may include removing some trees to gain better access with the reclamation machinery. Of course, when designing a new sporting clay range, steps to facilitate lead reclamation should be taken into account. For example, less and more widely spaced trees will facilitate lead reclamation.

Reclamation companies use several types of machinery to reclaim lead. Some companies drive their separation machinery over the site. The lead-laden soil is picked up, processed and then returned to the ground after most of the lead

is removed. Other companies scrape off the top several inches of soil from the ground, using a front-end loader to bring the soil/lead to stationary reclamation machines, and then return the soil to the field after reclamation. Many companies till the top two to five inches of soil and grass immediately prior to reclamation to facilitate the process (some companies may require this to be done prior to arrival on the range).

Regardless of how it is collected, the actual reclamation of the lead follows the same general pattern. Most often, it is sifted through a series of shaking screens. The lead and soil pass through shaking screens (usually at least two screens) of decreasing mesh (hole) size, with the topmost screen having the largest mesh. This part of the reclamation machinery is usually adapted from machinery used for potato or gravel sizing.

Any soil/debris automatically screened out as being too big or too small is either returned to the field or re-screened to ensure no lead is caught in the debris. This procedure is why moist, clay soils are more difficult to reclaim. The moist, clay soils can bind together into shot-sized pellets producing more “product” for the second part of the reclamation. The wet soils can also clog the screens.

For some reclamation companies, their process ends after sifting the soil and returning it to the ground. However, some companies take reclamation one step further. After screening, the resulting lead, soil, and other lead-sized particles enter a blowing system. Here the lead shot is easily separated from the soil and other debris by the blowing air. The lead is much more dense than the soil and other lead-sized debris so that it falls out first. Figure 3-3 depict examples of actual lead reclamation machinery.

Some lead reclamation companies will perform the reclamation during club off-hours so that club activities are not interrupted. Additionally, some perform the reclamation on a field-by-field basis, to minimize any disruptions to club activities. However, others companies require the club to shut down during the reclamation. Reclamation time varies depending on weather, site accessibility, range size, and number of personnel assigned to perform the reclamation.

Reclamation activities may generate dust, especially in drier western locations. To prevent or minimize dust from traveling off the range and causing complaints from neighbors, reclamation activities generating dust should only be conducted during periods of no wind. In addition, such activities should be completed as quickly as possible.

Vacuuming

For ranges that are located on hilly, rocky, and/or densely vegetated terrain, several reclamation companies employ a vacuum system that collects the lead shot (and soil and other detritus). The resulting mix is then placed into the reclamation machinery discussed above. This method is especially effective for sporting clay ranges where lead shot tends to pile up around tree bases.

Vacuuming has traditionally been used for removal of lead shot from trap, skeet and sporting clay ranges. Another way to apply this method involves removing the top layer of an earthen backstop or sand trap with shovels. It is then spread thinly over an impermeable material such as plywood. A vacuuming device is then used to collect the materials that are lighter than lead (e.g., sand or soil), while leaving behind the heavier materials (i.e., lead bullets/shots and fragments). The soil can then be returned to the range. This process is most efficient for dry, sandy soils without a lot of organic material. A more recent innovation is the use of a high suction vacuum. This vacuum itself does not have to be moved about, since a very long hose (up to 600 feet) is used to move in and around trees during the collection of lead shot at trap and skeet ranges.

Soil Washing (Physical and Gravity Separation)

Soil washing is a proven technology and another lead reclamation method used by some reclaimers to separate the lead particles from

the soils. Soil washing is the separation of soils into its constituent particles of gravel, sand, silt and clay. Because of the much higher surface area and surface binding properties of clay, most lead contaminants tend to adhere to the clay particles.

Soil washing, therefore, attempts to generate a clean sand and gravel fraction by removing any fines adhering to the larger soil particles and, if necessary, to transfer contaminants bound to the surface of the larger particles to the smaller soil particles. Typically, the soils are first excavated from the range and then mixed into a water-based wash solution. The wet soil is then separated using either wet screening or gravity separation techniques. One benefit of this system of reclamation is that it does not require that soils be dry.

In addition, soil washing may be able to recover all or almost all lead particles through a combination of wet screen sizing and density separation. This technique is an option for remediation of a range being closed and may compare favorably from an economic standpoint with the disposal option.

Soils treated using this method have been shown to be below 5 mg/L TCLP and to have up to 99% of particulate lead removed. Treatment costs are site specific, but can range from less then $40 per ton (1999 levels) for simple physical/gravity separation up to about $100 per ton for processes involving leaching. Credits for recycled lead help offset the treatment cost and the cost of recycling any treatment sludges and concentrated soil fines. Water used in soil washing is from a closed loop system and should only be disposed at completion of cleanup. Experience shows the water to not be a RCRA regulated hazardous waste, therefore probably allowing disposal to a local wastewater treatment plant.

Wet Screening

With this method, particles larger and smaller than the surrounding soils are passed through a series of large-mesh to small-mesh screens. Each time the mixture passes through a screen, the volume of the soil mixture is reduced. Large particles such as lead shot/bullets and fragments are screened out of the soil/wash mixture early in the process and can be taken off-site for recycling - allowing the soil to be placed back on-site.

Gravity Separation

This technique can be used in cases where the lead particles are the same size as surrounding soil particles. The wet soil/wash mixture is passed through equipment, which allows the more dense materials (i.e., lead materials) to settle to the bottom of unit and separate out of the soil/wash mixture.

Pneumatic Separation

Pneumatic separation (see figure 3-3) is an effective means to enhance the traditional screening results. Traditional screening cannot separate shot and bullets from other shot and bullet sized material, i.e., rocks, stones, roots, and various debris. A recycling facility considers non-lead items as “contaminants” which drastically reduces the value of the recycled lead. Pneumatic separation utilizes an air stream, and specific density analysis, to effectively separate the shot/bullets from the other shot/bullet sized material.

3.3.5 BMPs to Assist Lead Reclamation and Recycling

There are several operational activities that should be conducted throughout the year to facilitate reclamation. The following is a discussion of these activities.

Frequency of Lead Removal

It is important to perform lead removal at a frequency appropriate for your site. The frequency is dependent on several factors. These include:

- Number of rounds fired
- Soil pH
- Annual precipitation
- Soil Type
- Depth to groundwater.

Lead quantity, as estimated by the number of rounds fired, is a factor in determining the appropriate frequency of reclamation at ranges. It also assists in determining the cost of reclamation. One reclamation company indicated that reclamation was most cost effective when it contains at least 20 pounds of lead per square foot of backstop. Another source indicated that a minimum of 100,000 rounds per firing lane should be allowed before lead reclamation occurs. This would ensure good range operation and maintenance, while minimizing the cost per quantity of lead recovered.

For shotgun ranges, tracking the number of targets thrown can help indicate when the lead shot should be reclaimed. For example, considering environmental issues, the market for scrap lead and common cleanup methods, one source indicated that when a range has thrown at least 250,000 to 1,000,000 targets, depending on the shooting area, reclamation of the lead shot is encouraged. Another reclaimer indicated that if at least two pounds of lead per square foot have accumulated on the range, reclamation is recommended.

Because the number of rounds fired is important to know, establishing record keeping procedures to monitor the number of rounds fired is recommended. This can be accomplished by maintaining logbooks and asking shooters to list the number of rounds shot and the type/size of shot/bullets they use. This should be done by lane and by stand.

There are many ranges at which lead removal has not occurred for many years. Many of these ranges are used extensively. Such ranges are especially good candidates for lead removal and recycling. Subsequent removal frequency depends on range use and environmental factors. The NRA recommends a frequency of one to five years for lead cleanup, even on ranges with minimal use[4]. One possible approach to reducing the cost of reclamation more cost effective is for a number of ranges in the same geographical area to work together in organizing coordinated removals at their ranges. This will reduce the reclaimer travel and mobilization cost for each range.

Minimization of Vegetation

As discussed previously, vegetation is useful both for controlling the amount of runoff and erosion from the range and inhibiting lead mobility. **However, excessive or unmaintained vegetative cover can interfere with reclamation activities.** For example, large amounts of vegetation impedes the screening and sifting processes used by many reclamation companies. Therefore, prior to reclamation activities, it is best to remove, reduce, or mow excessive vegetation from the area. Once the reclamation has been conducted, quick-growing vegetation such as a rye/fescue grass mix should be replanted. This process should be repeated for each reclamation event.
In addition, heavily wooded areas may inhibit lead reclamation because they are less accessible by heavy reclamation machinery. For ranges that are heavily wooded, it is recommended that you minimize the vegetation or modify the range design to allow lead reclamation equipment access to the range. Access to the impact area should be developed to facilitate reclamation. **Make sure that the pathways do not present a safety risk.**

Innovative Landscaping

Some new ranges are landscaping their ranges to include a sand track (an area the size of the shotfall zone that is only sand) located behind some aesthetically pleasing shrubs. This allows the spent shot to concentrate on the sand, making it very easy to perform reclamation because there is no interference by vegetation.

Selecting a Lead Reclaimer

In ensuring that the reclamation is conducted appropriately, selecting a reclaimer that is right for your range is extremely important. Some lead reclamation companies will travel to your range and assess the range prior to conducting

4. National Rifle Association, “Metallic “Bullets” lead Deposits on Outdoor and Indoor Firing Ranges” 1991

lead collection activities. This assessment trip allows the reclamation company to confirm information gained during initial discussions, as well as to assist in appropriately estimating costs, time required, and the estimated volume of lead at the range. Conducting this pre-assessment also allows you to determine which reclaimer is right for your situation.

Questions Commonly asked by the Reclaimer

When you contact a reclamation company, it is likely that the reclaimer will ask several general questions. Typical questions include:

- When was the last reclamation conducted?
- How many rounds have been shot since that last reclamation?
- What is the use frequency of the range?
- What are the site characteristics and soil types?
- What type of bullet containment device is used at the range?

Answering these questions will be a lot easier if you have maintained good records, as is suggested above.

Questions to ask the reclaimer

When choosing a reclaimer be sure to ask the general questions about prior cleanups (past projects), insurance to cover company and cleanup (general liability insurance, pollution insurance, bonding, etc.), and site plans to ensure health and safety of workers and range personnel. Other questions you may want to ask the reclaimer include:

- Can the reclamation take place outside normal hours of range operation?
- What costs are involved?
- How long will the reclamation take?
- Does vegetation at the range need to be removed?

Economic Considerations

Lead removal costs may vary dramatically depending upon the type and volume of soil or sediments, topography, amount of lead, location, and reclamation company and technique used. Because the economics vary due to many factors, this manual does not provide specific estimates. However, it is important to understand that lead reclamation will generally require an expenditure by the range, even when considering any monetary returns from selling reclaimed lead. By tracking the range use and using the criteria discussed earlier (see Frequency of Lead Removal), the reclamation costs per quantity of lead can be optimized. For long term range management, routine lead removal will help future cost avoidance by minimizing the need for costly site remediation

Some reclaimers bid the lowest flat fee with all the lead provided to the range for selling. The range owners/operators must then consider the transportation costs and recycling fee associated with sending the reclaimed shot and bullets to a recycling company. Alternatively, the reclaimer will use the economic return of lead sold for recycling, based on the volume reclaimed and the current value of lead, to reduce the total cost of reclamation and recycling. Although the value of lead varies, the scrap value of reclaimed lead typically falls between $.06 and $.25 per pound, **excluding transportation cost**. See the appendix for contact information regarding lead reclamation companies that specialize in lead removal at outdoor ranges.

3.4 Documenting Activities and Record Keeping (Step 4)

Documenting activities and keeping good records is of paramount importance for an effective lead management program at a range. Owners/operators should document all activities done at the range with respect to BMPs and recycling of lead. Records should be kept on when services were provided and who provided them.

Owners/operators may want to document what type of BMP(s) were implemented to control lead migration, the date of service, and who did the services. The records should be kept for the life of the range. Records may be used to show that owners/operators are doing their part to

help prevent lead migration off-site and show that they are doing their part to be stewards of the environment.

3.5 Additional Economic Considerations

Not all BMPs need to be implemented at once. Many can be phased in over time. However, it is important to begin implementing BMPs, especially lead reclamation and recycling, as soon as possible. Implementing the most appropriate BMPs for your range requires consideration of your range characteristics and costs associated with implementing the BMPs. This manual provides a large selection of BMPs that vary in both cost and sophistication. In selecting BMPs for your range, it is important to look at all costs and all the benefits (or potential problems) associated with each BMP.

3.6 Summary of Key BMPs for Shooting Ranges

There are several BMPs that are highly recommended to be implemented, if applicable to your range. Table 3-1 identifies the advantages and disadvantages of all BMPs discussed in this chapter. This table serves as a quick reference guide for potential BMPs. Readers should refer back to the detailed discussions above for further information regarding these BMPs.

3.7 Certificate of Recognition

EPA has established a voluntary process whereby a shooting range may apply for a "Certificate of Recognition." The Certificate is intended to be awarded to ranges that have certified that they have prepared and intend to implement, or have implemented, a written Environmental Stewardship Plan that is consistent with the EPA *Best Management Practices for Lead at Outdoor Shooting Ranges* manual. To assist in this process, Appendix E contains a template for an Environmental Stewardship Plan, an electronic copy of which is available on EPA's shooting range website (http://www.epa.gov/region2/leadshot) in several formats. This template, combined with information provided throughout this manual, other resources and guidance, and site-specific factors, will help in guiding the process of evaluating relevant information about your facility and determining which BMP(s) might be appropriate for your ranges. EPA's template was adapted from Appendix C of the National Shooting Sports Foundation's manual, *Environmental Aspects of Construction and Management of Outdoor Shooting Ranges* (the NSSF manual.) Accordingly, use of that template would also be acceptable for use in EPA's Certificate of Recognition program.

In order to request this certificate, a range must submit a notice to the Lead Shot Coordinator in EPA Region 2 stating that they have completed an Environmental Stewardship Plan as indicated above and are intending to implement it within six months. The certificate is intended to convey, to all that may see it, that the range has declared its intention to properly manage lead shot and bullets. However, it must be noted that a certificate is not a permit to operate and provides no additional operational approval, implied or otherwise.

Table 3-1 – Summary of Key BMPs

BMPs for Preventing Lead Migration		
Monitoring and Adjusting pH		
BMP Option	**Advantages**	**Disadvantages**
Lime Spreading	1. Easy 2. Inexpensive 3. Effective	1. Does not offer a permanent solution 2. Will not work in extremely acidic conditions
Immobilizing Lead		
BMP Option	**Advantages**	**Disadvantages**
Phosphate Spreading	1. Easy 2. Inexpensive 3. Effective	1. Does not offer a permanent solution
Controlling Runoff		
BMP Option	**Advantages**	**Disadvantages**
Vegetative Ground Cover (e.g., grass, etc.)	1. Easy 2. Aesthetically pleasing 3. Relatively inexpensive 4. Effectively slows and can redirect runoff 5. Some may "bioabsorb" lead	1. Requires periodic maintenance 2. Must be removed or reduced prior to reclamation 3. Excessive vegetation will interfere with reclamation
Organic Surface Cover (e.g., mulch and compost)	1. Easy 2. Aesthetically pleasing 3. Relatively inexpensive 4. Effectively slows and can redirect runoff	1. Requires periodic maintenance 2. Must be removed prior to reclamation 3. May not be suitable at ranges with acidic soil conditions
Filter Beds	1. Diverts and treats lead contaminated runoff 2. Low maintenance 3. Assists with range drainage	1. May require hiring a licensed engineer 2. Higher initial setup cost

Table 3-1 – Continued

Controlling Runoff (cont.)		
BMP Option	**Advantages**	**Disadvantages**
Water/Sediment Traps	1. Low maintenance 2. Assists with range drainage	1. May require hiring a licensed engineer 2. Higher initial setup cost
Dams and Dikes	1. Low maintenance 2. Assists with range drainage	2. Higher initial setup cost
Ground Contouring	1. Lower initial setup cost 2. Assists with range drainage	1. May require hiring a licensed engineer
Controlling and Containing Bullets		
Bullet Containment Devices		
BMP Option	**Advantages**	**Disadvantages**
Earthen Backstop	1. Minimal (if any) initial setup cost 2. Accepts firing from various guns and directions	1. Build up of bullets increases chances of ricochet and fragmentation problems 2. Lead removal requires mining 3. Potential decreased value of lead because it is less clean than lead reclaimed from other trap systems 4. Does not eliminate lead's introduction into the environment
Sand Trap	1. Low initial setup cost 2. Ease of maintenance 3. Accepts firing from various guns and directions	1. Build up of bullets increases chances of ricochet and fragmentation problems 2. Lead removal requires mining
Pit and Plate Trap (Sand)	1. Low initial setup cost 2. Simple installation 3. Lead removal and recycling requires less extensive mining	1. Lead builds up on top layer of sand causing ricochet problems 2. Increased bullet fragmentation 3. Higher level of maintenance than sand traps

[1] Much of this information was obtained from Action Target's Bullet Containment Trap Technologies video. Reference to various pros and cons of individual bullet containment devices is included in this manual for informational purposes only. The USEPA does not endorse any particular bullet containment device, design, or product.

Table 3-1 – Continued

Controlling and Containing Bullets (Cont.)		
Bullet Containment Devices (cont.)		
BMP Option	**Advantages**	**Disadvantages**
Escalator Trap (Steel)	1. Can be used indoors and outdoors	1. Deflection plates require regular oiling. The oil used is hazardous and can easily migrate at outdoor ranges 2. Relatively high maintenance 3. Poor lead collection because the bullets may become clogged at the spiral collection area at the top of the deflection plate 4. Increased bullet fragmentation 5. May require rubber curtains to be placed in front of the trap to slow bullets 6. More noise 7. Possible creation of lead dust
Vertical Swirl (Steel)	1. Can be used indoors or outdoors 2. Bullets are captured in pure form in containers, thus removal and recycling is easy	1. Does not accept shooting from all directions 2. Corners where each unit meet can cause ricochet and fragmentation problems 3. More noise 4. May create lead dust
Wet Passive Bullet Trap (Steel)	1. Can be used indoors and outdoors 2. Excellent results (i.e., low ricochet, low fragmentation, ease of removal) 3. Bullets are captured in containers, thus removal and recycling is easy	1. Expensive 2. Oil and water mixture is hazardous 3. More noise
Lamella Trap	1. Can be used indoors or outdoors 2. Reduction of lead dust	1. Rubber strips quickly become destroyed and must be replaced 2. Potential fire hazard 3. High maintenance 4. Scattered lead fragments mixed with rubber can migrate; lead contaminated granules are hazardous and require special handling

Table 3-1 – Continued

Controlling and Containing Bullets (Cont)		
Bullet Containment Devices (cont.)		
BMP Option	**Advantages**	**Disadvantages**
Rubber Granule	1. Can be used indoors or outdoors 2. Reduction of lead dust 3. Minimizes fragementation, compared with some backstops	1. Rubber strips can quickly become destroyed and must be replaced 2. Some pose potential fire hazard, although fire-retardant/resistant materials are available in some designs 3. High maintenance 4. Scattered lead fragments mixed with rubber can migrate; lead contaminated granules are hazardous and require special handling
Shock Absorbing Concrete	1. Adaptable/can be formed in any shape 2. Can be used to reduce erosion in soil berms/target emplacements 3. Crushed concrete can potentially be recast after fragments removed	1. Mechanical lifting and handling equipment must be used during installation and maintenance 2. High maintenance (replacement) costs
Removal and Recycling of Lead		
Hand Raking and Sifting	1. Easily done by club members 2. Inexpensive 3. Can be done outside operating hours 4. Relatively effective	1. May be more time consuming at large ranges 2. Weather sensitive (i.e., works best under dry conditions) 3. Exposure to lead and lead dust possible
Screening	1. Effective 2. Potential economic returns	1. Vegetation must be removed 2. Weather sensitive (i.e., works best under dry conditions)
Vacuuming	1. Effective 2. Can be used at least accessible ranges 3. Less vegetation needs to be removed	1. Weather sensitive (i.e., works best under dry conditions)
Soil Washing	1. Effective at cleaning the soil to remove the lead particles so one is left with non-lead soil	1. Vegetation must be removed

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U.S. Department of the Interior, *Pollution Prevention Handbook -- Firing Ranges,* Department of the Interior, Office of Environmental Affairs, Washington, D.C.

U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, D.C., Directive 9355.4-12, *Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities*, July 14 1994

U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington D.C., *A Citizen's Guide to Soil Washing*, EPA 542-F-96-002. , April 1996.

U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, D.C. *Physical/Chemical Treatment Technology Resource Guide*, EPA 542-B-94-008. September 1994.

Appendix A: Resources

This manual provides contacts for lead reclamation companies, lead recycling companies, bullet trap manufacturers, and organizations that provide prevention and/or remediation techniques to assist clubs and firing ranges in implementing Best Management Practices for shooting ranges. The list was updated for the June 2005 printing. Vendors who are interested in being added to the list of lead reclaimers or remediation contractors should contact:

Lead Shot Coordinator
RCRA Compliance Branch
US EPA Region 2
290 Broadway
New York, NY 10007-1866
Telephone: (212)637-4145
E-mail: Leadshot.Region2@epa.gov



Lead Recycling Companies

Below is a list of recycling companies for lead in soils and spent lead shot/bullets that were contacted during the writing of this manual. Lead recycling companies smelt lead. It is not inclusive and is included for informational purposes only. Local scrap metal recyclers may also accept spent lead shot or spent bullets. Mention of these companies does not serve as an endorsement by the EPA.

The Doe Run Company Resource Recycling Divsion HC1 Box 1395 Boss, MO 65440 800-633-8566 573-626-3476 Lou Magdits l.magdits@doerun.com	**East Penn Manufacturing Company, Inc**. P.O. Box 147 Lyon Station, PA 19536 610-682-6361 Rick Leiby Web Site: http://www.eastpenn-deka.com
Exide Spring Valley & Nolan Streets Reading, PA 19612 800-437-8495 Robert Jordan, Maritza Rojas-Suarez Web site: http://www.exide.com	**Gopher Smelting and Refining** 3385 Highway 149 South Eagan, MN 55121 651-454-3310 800-354-7451 Mark Kutoff Web Site: http://www.gopherresource.com/
Gulf Coast Recycling 1901 N. 66th St Tampa, FL 33619 813-626-6151 William Weston	**Kinsbursky Brothers, Inc**. 1314 N. Anaheim Blvd Anaheim, CA 92801 714-738-8516 Paul Schneider Web Site: http://www.kinsbursky.com
Reserve Trading Corp. P.O. Box 302 Medina, OH 44258 330-723-3228	

Lead Reclamation Companies

Below is a list of reclamation companies for lead in soils and spent lead shot/bullets that were contacted during the writing of this manual. Lead reclamation companies reclaim lead from ranges. It is not inclusive and is included for informational purposes only. Mention of these companies does not serve as an endorsement by the EPA.

Brice Environmental 3200 Shell St, P.O. Box 73520, Fairbanks, AK 99707 Craig Jones 907-456-1955 www.briceinc.com Reclaims primarily from earthen backstops and sand traps.	**En·Range, Inc.** 3326 NW 29th St. Miami, FL 33142-6310 Thomas M. Taylor 305-999-9965 Fax 305-635-8645 Email: enrange1@yahoo.com www.en-range.com Provides lead reclamation and other environmental and maintenance services.	**Entact** 1010 Executive Court Suite 280 Westmont, IL 60559 630-986-2900 www.entact.com Performs physical removal of the lead from backstops, chemical treatment of soils and returns soil to the backstop.
Karl & Associates, Inc. 20 Lauck Road Mohnton, PA 19540 Edmund Karl III 610-856-7700 Works primarily in the the mid-Atlantic area. Lead-containing soil is physically removed and sent to licensed disposal sites or licensed recycling facilities.	**MARCOR** 246 Cockeysville Road Hunt Valley, MD 21030 Dave Jungers 410-785-0001 www.marcor.com Uses a pneumatic separation unit to remove lead from contaminated soil and treats soil to pass TCLP.	**Metals Treatment Technologies, LLC (MT^2)** 12441 West 49th Avenue Suite 3 Wheat Ridge, CO 80033 Jim Barthel 303-456-6977 www.metalstt.com Removes lead from soil and treats soils at all types of ranges.
Sears Trucking Company P.O. Box 38 El Reno, OK 73036 Garland Sears 800-522-3314 Fax 405-262-2811 Physically removes lead from soils at trap and skeet ranges.	**Solucorp Industries, Ltd.** 250 West Nyack Road West Nyack, NY 10994 Mike DeLuca 845-623-2333 Fax 845-623-4987 Email: solucorpmbs@aol.com www.solucorpltd.com Removes and treats soil using their Molecular Bonding System (MBS) soil stabilization technology.	**Southern Lead Removal** P.O. Box 2645 Daytona Beach, FL 32115 Kevin Gilchrist 386-763-0115 Fax 386-761-6991 Removes lead from indoor and outdoor pistol ranges only.
Sport Shooting Services P.O. Box 667 Crawfordville, FL 32326 Ed Tyer 850-926-7375 Cellphone 850-294-0132 Email: envirorange@aol.com Removes lead from earthen berms, uses a shaker and screen system to separate lead from soils, rents screening equipment, and consults on range design, primarily in Florida.	**Terra Resources, Ltd.** HC4 Box 9311 Palmer, AK 99645 Larry Wood 907-746-4981 Cellphone: (907) 232-5059 Fax: 907-746-4980 www.terrawash.com Uses gravimetric process to separate lead and TerraWash™ soil washing technology.	**Waste Recycling Solutions, Inc.** 1850 Route 112 Medford, NY 11763 Tommy Arabia, President 631-654-3811 Uses a vacuum system to remove lead from trap and skeet ranges.

Other Resources

Below is a list of additional phone numbers that may be of use if you have general questions including questions on range construction, design, and implementing BMPs.

U.S. Fish and Wildlife Service 4401 North Fairfax Arlington, VA 22203 703/358-2156 Web site: http://www.fws.gov/	**Institute of Scrap Recycling Industies, Inc**. 1325 G Street, NW, Suite 1000 Washington, DC 20005-3104 202/737-1770 Web site: http://www.isri.org/
Lead Industries Association, Inc. 13 Main Street Sparta, NJ 07871 973/726-LEAD (973/726-5323) fax: 973/726-4484 Web site: http://www.leadinfo.com	**National Rifle Association of America** 11250 Waples Mills Road Fairfax, VA 22030 800/NRA-3888 Web site: http://www.nra.org
National Shooting Sports Foundation and National Association of Shooting Ranges 11 Mile Hill Road Newtown, CT 06470 203/426-1320 NSSF web site: http://www.nssf.org NASR web site: http://www.rangeinfo.org	**Sporting Arms and Ammunition Manufacturers' Institute, Inc.** Flintlock Ridge Office Center 11 Mile Hill Road Newtown, CT 06470-2359 203/426-4358 Web site: http://www.saami.org
Wildlife Management Institute 1101 14th Street, N.W. Suite 801 Washington, DC 20005 202/371-1808 Web site: http://www.wildlifemanagementinstitute.org	

Web Resources

Useful Web Sites	
Description	**Web Address**
Federal Government Sites	
U.S. EPA's Outdoor Shooting Range Home Page	http://www.epa.gov/region2/waste/leadshot/
U.S. EPA – Military Munitions Rule	http://www.epa.gov/epaoswer/hazwaste/military/ http://www.epa.gov/tribalmsw/thirds/remunition.htm
U.S. Occupational Safety and Health Administration (OSHA)	http://www.osha.gov/
National Institute for Occupational Safety and Health (NIOSH)	http://www.cdc.gov/niosh/
State Government Sites	
Florida: BMPs for Shooting Ranges	http://www.dep.state.fl.us/waste/categories/shooting_range/
Massachusetts : Lead Shot in the Environment	http://www.state.ma.us/dep/files/pbshot/pb_shot.htm
Minnesota: Poster for "Firing Range Hazards"	http://www.cdc.gov/niosh/mnables.html
Ohio: Lead Shot Reclaimers list	http://www.epa.ohio.gov/dhwm/leadrecy.htm
Wyoming: Lead Recyclers List	http://deq.state.wy.us/outreach/lead.htm
Court Decisions	
Connecticut Coastal Fishermen's Association v. Remington Arms	http://www.duedall.fit.edu/summer/rcra.htm
Long Island Soundkeeper Fund and NY Coastal Fishermen's Assoc. v. New York Athletic Club	http://www.epa.gov/region02/waste/leadshot/lisfnyac.htm
Articles and Research	
USAF - Lead Contamination in Soils at Military Small Arms Firing Ranges	http://www.afcee.brooks.af.mil/pro-act/fact/june98a.asp
U.S. Army Env. Center (AEC) – Small Arms Range Technology	http://aec.army.mil/usaec/range/operations03.html http://aec.army.mil/usaec/technology/rangexxi03.html http://aec.army.mil/usaec/publicaffairs/update/win97/range.htm
AEC – Green Bullets	http://aec.army.mil/usaec/publicaffairs/publicity02.html http://aec.army.mil/usaec/technology/rangexxi00a.html http://aec.army.mil/usaec/publicaffairs/update/spr97/bullets.htm
AEC - Recycling of Firing Range Scrap	http://aec.army.mil/usaec/publicaffairs/update/spr99/spr9911.htm
Florida Center for Solid and Hazardous Waste Management	http://www.floridacenter.org/
National Association of Shooting Ranges' Reference Library	http://www.rangeinfo.org/resource_library/facility_mngmnt/

Bullet Trap Manufacturers[1]

Bullet Trap Manufacturer	Designs Available	Estimated Cost of Trap	Price Includes	Not Included in Price	Usage of Trap	Description	General Comments
Action Target (801) 377-8033 Contact: John Curtis, CEO actiontarget.com	Total Containment Trap (TCT)	$1,600 to $1,800 /linear foot (dependent on features selected)	Purchase of Equipment Installation Delivery (Freight included)		Rifle Pistol Armor - piercing* *depends on type of armor-piercing	The TCT is a funnel-style trap that uses steel plates mounted at low angles to direct bullets into a deceleration chamber. The low angles prevent break up of the bullets until they reach the chamber, where the bullets lose energy and drop into removeable storage containers. An optional dust collection unit uses a powerful vacuum to remove lead dust and other fine particles from the collection chamber.	The TCT is designed for both indoor and outdoor applications. It may be used safely with handguns, shotguns, and high-powered rifles, and has been successfully tested and used with 50-caliber fire.
Action Target (Cont.) see details above	Rubber Berm Trap (RBT)	$1100/liner foot	Installation and Delivery		Rifle or Pistol. Armor-piercing. Cannot use incendiary rounds.	The RBT is very similar in form and function to a traditional sand or earthen berm trap, with the obvious difference being the use of chopped rubber instead of sand as a collection medium. Bullets fired into the trap are absorbed by the rubber and remain there until reclamation through mining of lead from the trap.	Because rubber is a softer collection medium, bullets can be captured with less break-up and fragmentation. The resulting reduction in lead dust levels is especially beneficial in indoor ranges. This benefit is decreased as more rounds accumulate in the trap, causing newly fired bullets to impact bullets already in the trap.

[1] EPA does not endorse any particular bullet containment device or product. Information on this table is offered to readers for a general understanding of some common bullet trap options and is based on vendor marketing literature.

Bullet Trap Manufacturers Con't.[1]

Bullet Trap Manufacturer	Designs Available	Estimated Cost of Trap	Price Includes	Not Included in Price	Usage of Trap	Description	General Comments
Copius Consultants (516) 783-7489 Contact: Craig Copius	Containment/ Recovery System	Ranges from $600/linear foot to $1,000/linear foot (Price varies with specific design selected)	Purchase of Equipment	Shipping	Rifle Pistol Machine gun Shotgun	This is a modification of the sand backstop. Sizes vary depending on the needs and characteristics of the range; however, average height is 10' - 12' and average width is 12' - 14'. The trap utilizes ballistic grade sand to trap bullets and bullet fragments in a sealed system. The system contains collection and filtration systems to ease reclamation and eliminate off-site migration of lead.	Specific recommended bullet trap is based on the following: 1) Type of usage, quantity of usage, etc. 2) Location in country 3) Environmental issues (e.g., location near a waterbody) Price will depend on the design adopted. One unique feature is that shooting can occur at any angle.
Meggitt Defense Systems Caswell (612) 706-6201 Contact: Brian Danielson	Granular Rubber Bullet Traps	$940 to $1,300/linear foot (dependent on type of trap and other features selected)	Purchase of Equipment Installation Delivery (Freight included)		Pistol Rifle Armor- Piercing Shotgun Machine gun Tracers (Speak to Sales Rep.)	The trap absorbs bullets fired from any angle or distance. No exposed steel surfaces; bullets are not fragmented. The granulated material used in the trap can be turned over quickly to recover the spent rounds.	Suitable for indoor and outdoor ranges. Eight types of traps available. Custom builds traps. Provides site-specific design, if requested. Reclamation is recommended after approximately 90,000 rounds have been fired (depending on trap type.)

[1] EPA does not endorse any particular bullet containment device or product. Information on this table is offered to readers for a general understanding of some common bullet trap options and is based on vendor marketing literature.

Bullet Trap Manufacturers Con't.[1]

Bullet Trap Manufacturer	Designs Available	Estimated Cost of Trap	Price Includes	Not Included in Price	Usage of Trap	Description	General Comments
Range Systems (888) 999-1217 (763) 533-9200 Contact: Steve Thomas range-systems.com	Encasulator Bloc Trap™ Encasulator Granular Trap™	$800-$1,250/linear ft (Price varies with design criteria and product selection)	Purchase of Equipment Installation	Freight	Pistol Rifle Shotgun (shot and slugs)	The bullet traps are constructed for maximum bullet retention with minumum space and cost. The bullet traps virtually eliminate ricochet and airborne lead.	Full service shooting range provider from design and engineering to construction and maintenance. Custom-built traps with exclusive patented rubber technology.
Savage Range Systems (413) 568-7001 Contact: Joan Drucker snailtraps.com	The SNAIL™ Trap	Two types of traps: Pistol Wet: $2,250/linear ft Pistol Dry: $2,150/linear ft Rifle Wet: $2,400/linear ft Rifle Dry: $2,300/linear ft	Purchase of Equipment	Shipping Installation	Rifle (up to .50 cal BMG) Pistol	The SNAIL trap is designed with low angle entrance ramps to guide the bullet into the circular deceleration chamber without scarring the plate. The bullet loses all of its energy in the chamber and drops into a collection system. The use of water and synthetic oil contains the lead particulates and dust, and minimizes friction on the plates.	Usage for indoor and outdoor ranges. Can also be provided with a conveyance system that drops the bullet to a single collection point (e.g., 55-gallon drum) for recycling. Low-maintenance system

[1] EPA does not endorse any particular bullet containment device or product. Information on this table is offered to readers for a general understanding of some common bullet trap options and is based on vendor marketing literature.

Bullet Trap Manufacturers Con't.[1]

Bullet Trap Manufacturer	Designs Available	Estimated Cost of Trap	Price Includes	Not Included in Price	Usage of Trap	Description	General Comments
Stapp EBC, Incorporated (703) 239-9223 Contact: Matt Ciskowski, P.E. 8101 Ox Road Fairfax Station, VA 22039 Fax: (703) 239-9224 bulletcatcher.com	STAPP Bullet Catcher	Varies by specific design (measured by square foot)	Purchase of Equipment Installation Delivery (Freight)		Pistol & Rifle (best for calibers up to 12mm) Can handle jacketed rounds and tracers	The STAPP bullet catcher (consisting of a bottom rubber liner, drainpipe reservoir, rubber granule fill, and cover layer of rubber) collects lead and any infiltrating water without runoff. The system is constructed over an earthen berm and can be modified to any range configuration. Projectiles are completely collected by the bullet catcher with minimal fragmentation. The surrounding structure is ricochet-proof even under the most extreme temperatures.	Designs are site adapted. Reclamation can be performed by Stapp EBC or by range personnel. Email: mciskowski-trc@verizon.net

[1] EPA does not endorse any particular bullet containment device or product. Information on this table is offered to readers for a general understanding of some common bullet trap options and is based on vendor marketing literature.

Bullet Trap Manufacturers Con't.[1]

Bullet Trap Manufacturer	Designs Available	Estimated Cost of Trap	Price Includes	Not Included in Price	Usage of Trap	Description	General Comments
Super Trap Inc. (951) 736-9440 Contact: Art Fransen, Retired, L.A.S.D. 1601 Commerce St Corona, CA 92880 Fax: (951)736-9450 Email: info@supertrap.com supertrap.com	Gel-Cor™ Class A, Fire-Rated Rubber Bullet Traps ELIxIR™ Tactical Shooting Ranges Super Trap® Range Backstops SACON® Perimeter Facilities, Walls, Blocks & Tiles	Approx $520 to $1,600 per linear foot Varies by design, including: - indoor - outdoor - foundation - width of trap	Purchase of Equipment Installation Training	Shipping (Price will depend on destination)	Rifle & Pistol (up to and including .50 cal) Machine Gun Armor Piercing Tracer & Incendiary Ammunition *Also:* Frangible & Tungsten Traditional & Tactical Shooting	STI specializes in tactical shooting ranges. The firing range system captures and contains bullets whole, using a treated, granular ballistic media of recycled pure SBR (styrene-butadiene rubber), free of all steel and fiber contaminants that could normally allow fires to ignite. The infrastructure is 10 gauge galvanized steel and the hopper/deflection baffle is 3/8" AR 500 steel rifle rated (indoor and outdoor.) Outdoor Ranges: The backstop base typically lies on a graded berm at the appropriate angle determined by the user and STI staff. SACON® can absorb bullets and prevent lead contamination, replacing railroad ties, logs, brick walls and concrete enclosures on firing ranges.	STI's bullet trap systems eliminates hazardous materials contamination (TCLP tests below 1ppm), in addition to preventing ricochets and lead splash-back. Reclamation is recommended after approximately 100,000 to 130,000 rounds per 4 ft lane, based on type of shooter position and layout of targetry (static vs. dynamic.) Lead reclamation is performed using a vacuum air density separator system and rubber media is continuously reused. Use of recycled rubber media in the trap may qualify the range improvement for grant funding. Contact regional recycling associations for more information. STI offers more than six versions of Tactical Shooting Ranges, as well as custom built traps.

[1] EPA does not endorse any particular bullet containment device or product. Information on this table is offered to readers for a general understanding of some common bullet trap options and is based on vendor marketing literature.

Appendix B: Lead Shot Alternatives

Another method of preventing lead contamination at pistol, rifle, trap, skeet, or sporting clays ranges is to use less toxic or non-lead ammunition.

Much progress has been made in the development of alternatives to lead shot for hunting uses. Information gathered since 1976 on lead poisoning of endangered and non-endangered migratory birds due to lead shot ingestion led the United States Fish and Wildlife Service (USFWS) to consider several alternatives to eliminate lead poisoning among migratory waterfowl birds. A ban on lead shot for water fowl hunting was phased in beginning in 1986 and finalized in 1991. Lead shot is also now banned for shotgun hunting occurring near wetlands in national wildlife refuges. Starting in the fall of 1998, the USFWS banned the use of lead shot in waterfowl production areas. Additionally, many state-managed hunting areas require non-toxic shot for upland/small game hunting.

There are several alternatives to lead shot on the market today and still more alternatives are being developed. Before being used for waterfowl hunting, these alternatives must be approved by the USFWS. Bismuth, steel, tungsten/iron, and tungsten/polymer shots have been approved by the USFWS and additional alternative shot materials are in the USFWS approval process. Most of the ammunition manufacturers in the United States, as well as the military, have developed non-toxic alternatives to lead. Research in Europe may also result in additional non-toxic shot alternatives from which U.S. shooters may choose in the future. The following pages compare lead shot to non-toxic, alternative shot.

Summary of Lead Shot Alternatives†

Shot Material	Approximate Cost per 25 Round Box[1]	Ballistic Performance	Availability	Comments
Lead	$5.00/box $3.00 - $4.00/box of reloaded shells	Standard to which all alternatives are compared	Readily available	Lead is heavy and malleable
Bismuth* 97% Bismuth/ 3% tin	Bismuth shells are packed in 10 round boxes @ $15.00 - $25.00/ 10 round box	Similar to lead	Limited world supply of bismuth	Bismuth is a byproduct of lead and gold mining. There are currently many uses, including: medicine (Pepto-Bismol), cosmetics, pigments, and shotgun shot. The addition of tin makes bismuth more malleable and reduces frangibility. Bismuth shot is safe to use in older firearms.

† Product reference within this table is not an endorsement by EPA.

* Approved by USFWS for migratory waterfowl hunting.

[1] Costs will vary from store to store and were valid at the time of manual development.

Summary of Lead Shot Alternatives – Continued†

Shot Material	Approximate Cost per 25 Round Box[1]	Ballistic Performance	Availability	Comments
Steel*	$8.00 - $12.95/box $6.00/box of reloaded shells $15.00/box (copper-plated)	In test performance by the Cooperative North American Shotgun Education Program (CONSEP) in hunting situations, no significant differences were found between lead and steel shot at reasonable distances. Lead is more effective at longer ranges.	Readily available from both domestic and imported sources.	Steel shot is about 33% lighter then lead. Therefore, the initial velocity must be increased so that downrange pellet energy remains similar. In hunting situations, larger, and therefore heavier, steel shot is used. Few shooting competitions allow steel shot at this point, but the number is increasing. While steel target loads are available, shooter perception that steel will adversely affect guns and scoring seems to be the limiting factor in acceptance of steel shot for target shooting. Steel shot will not damage newer guns, but may cause ring bulge in older guns if a very tight choke is used. This problem has been resolved in the newer guns with the use of screw-in chokes.

† Product reference within this table is not an endorsement by EPA.

* Approved by USFWS for migratory waterfowl hunting.

[1] Costs will vary from store to store and were valid at the time of manual development.

Summary of Lead Shot Alternatives – Contiued†

Shot Material	Approximate Cost per 25 Round Box[1]	Ballistic Performance	Availability	Comments
Steel* (cont.)				Another concern with steel shot is safety. Because steel is much less malleable then lead, steel shot is likely to ricochet if it strikes something hard. Lead shot, on the other hand, will deform and flatten. In Europe, steel shot is banned for hunting because it can become embedded in trees. The steel shot in trees cut for lumber can cause damage to sawmill equipment and raise concerns about worker safety. Although steel shot can be reloaded, components are not readily available.
Tungsten/Iron* 40% tungsten/ 60% iron	$62.50/box (tungsten/iron shots are packed in 10 round boxes @ $25.00/10 round box)	Preliminary reports indicate that tungsten/iron shot is as effective as lead shot. However, the amount of shot in each cartridge is significantly less then in typical lead cartridges or even steel cartridges. The density of tungsten/iron is 94% that of lead.	Readily available	The tungsten/iron shot currently available is harder than steel. It would, therefore, cause similar damage to older guns.

† Product reference within this table is not an endorsement by EPA.

* Approved by USFWS for migratory waterfowl hunting.

[1] Costs will vary from store to store and were valid at the time of manual development.

Summary of Lead Shot Alternatives – Continued†

Shot Material	Approximate Cost per 25 Round Box[1]	Ballistic Performance	Availability	Comments
Tungsten/polymer* Various manufacturers have received final approval from the USFWS to market this type of shot.	Not available yet	Comparable to tungsten/iron	Currently not available	Two ammunition manufacturers are currently producing tungsten/polymer shot. This shot is more malleable than the tungsten/iron alloy and would, therefore, be less damaging to shotguns. A research and development company has developed a tungsten/polymer material as a substitute for lead in all its uses. According to this company, its tungsten/polymer can be formulated to be flexible or stiff, depending on the application. This material has been tested by the US Army in projectiles, but has not been used to manufacture shot. However, the company has initiated the process of applying to the USFWS for approval of this material as non-toxic shot.

† Product reference within this table is not an endorsement by EPA.

[1] Costs will vary from store to store and were valid at the time of manual development.

Summary of Lead Shot Alternatives – Continued[†]

Shot Material	Approximate Cost per 25 Round Box[1]	Ballistic Performance	Availability	Comments
Tungsten/steel Same as tungsten/Iron				
Tin USFWS granted temporary approval for 1999-2000 hunting season	Not available yet	Since tin is just being developed as an alternative to lead, performance information is not yet available. However, since the density of tin is less than steel, performance may be less effective than steel.	Currently not available	This material is just being developed as a lead shot alternative. However, it has similar problems as steel in that it is lighter then lead. The International Tin Research Institute in england is developing this product.

Other materials that are currently being experimented with as alternatives to lead are molybdenum and zinc. Not enough information is available to have included these alternatives in the above table.

[†] Product reference within this table is not an endorsement by EPA.

Summary of Lead Shot Alternatives - Conclusions

The table clearly illustrates that a number of non-toxic alternatives to lead shot exist such as steel and tungsten as well as alloys and synthetic polymers. As demand for shot from these metals increases from migratory waterfowl hunters, it is anticipated that the costs will come down. However, alternatives currently cost approximately two to twenty times more than lead shot.

The ban on lead shot in hunting situations impacts target shooting. The alternatives to lead shot that are now being developed for or are already approved by the USFWS for migratory bird hunting could be considered for use by target shooters.

Although alternatives to lead shot are now being used by hunters, it is rare that the alternatives are used by target shooters. The limiting factors appear to be the expense and performance. All the alternatives to lead are much more expensive, some prohibitively. Unfortunately, the least expensive alternative, steel, is also perceived to be less effective.

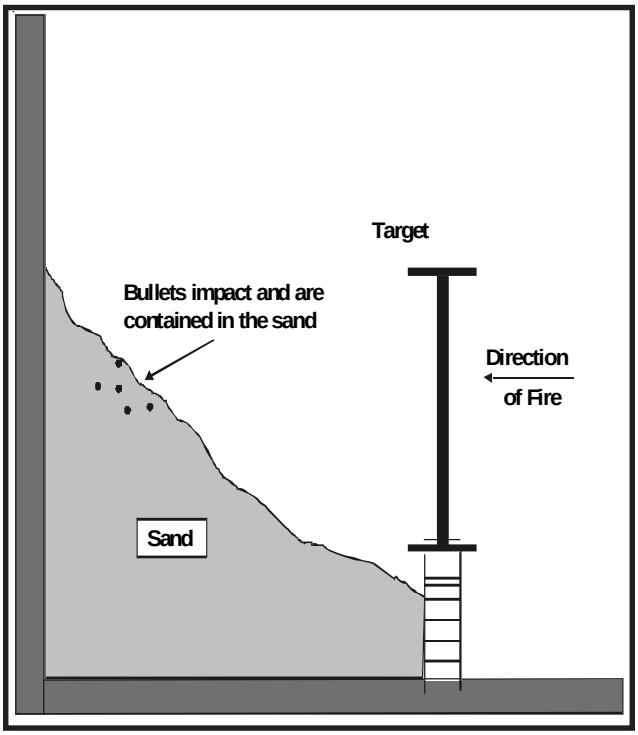
To encourage use of lead shot alternatives, some ranges sponsor shooting competitions using lead-free ammunition, but these are rare. The use of steel or other alternative shot is a recommended BMP in established sporting clays areas at which reclamation of lead shot is difficult to impossible.

Note: Switching to non-toxic shot may create additional issues. For instance, steel has an increased risk of ricochet. Switching to steel may require additional safety features and/or operating procedures.

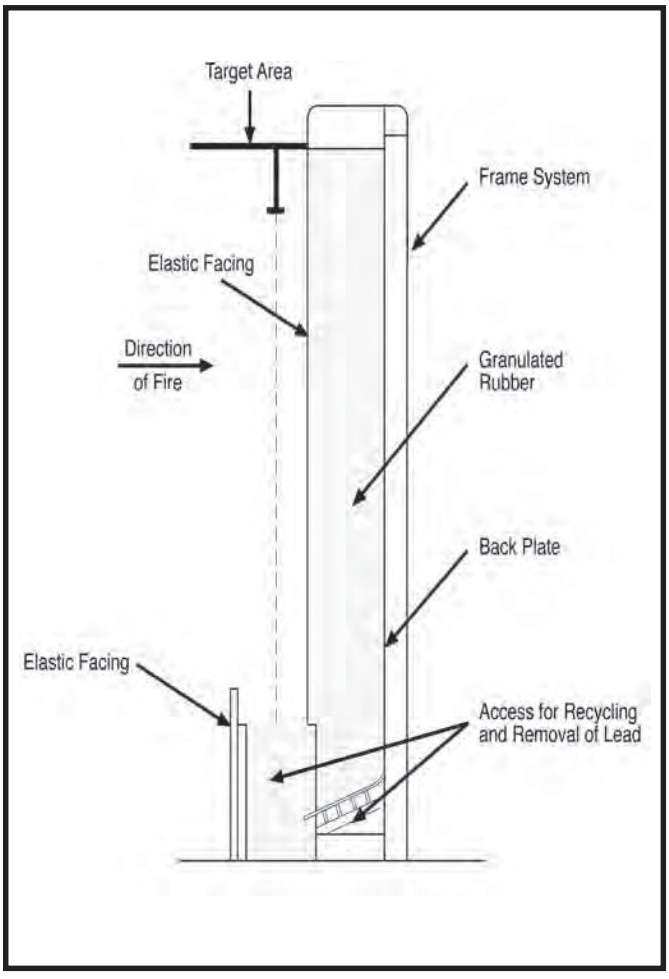
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Appendix C: Sample Bullet Containment Devices

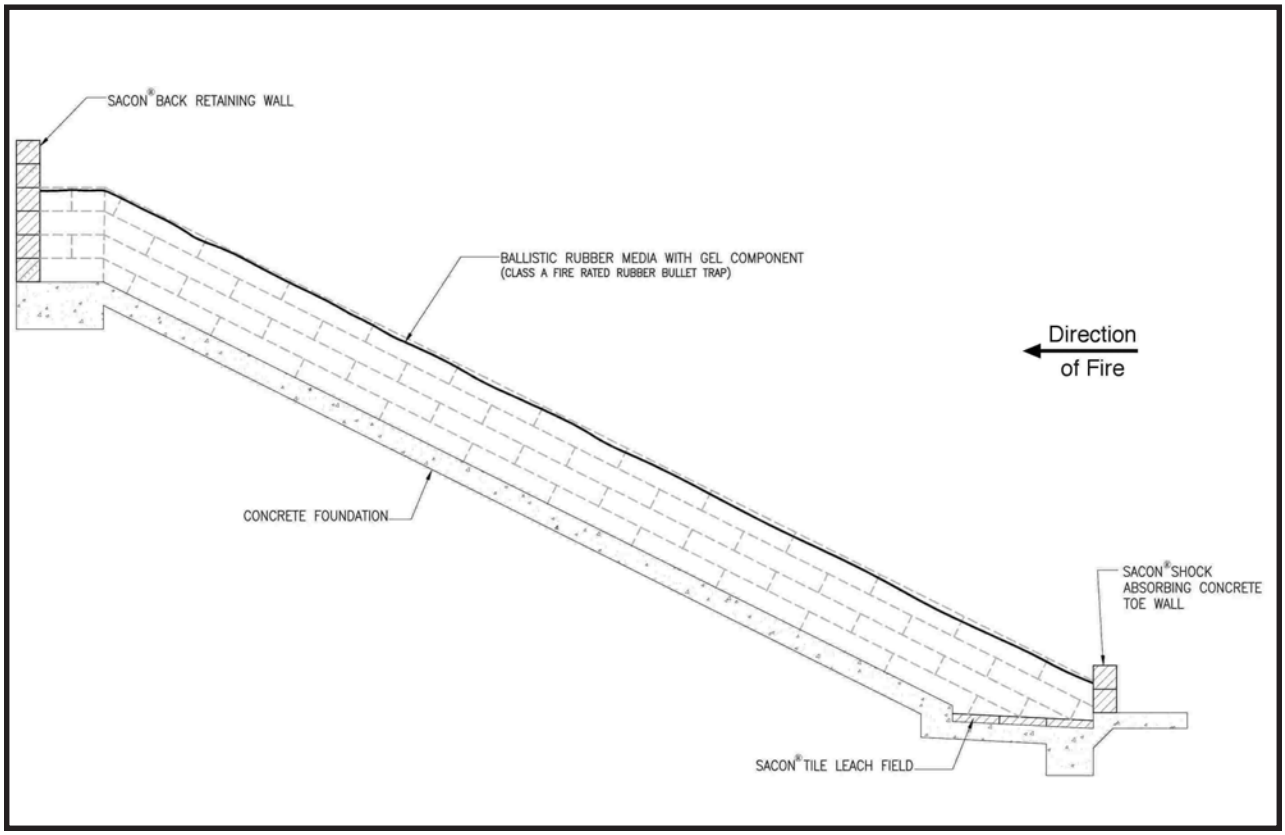
The bullet containment designs in this appendix are sample designs for the containment systems mentioned in this manual. Design systems may vary from different manufacturers. Reference to various individual bullet containment devices is included in this manual for informational purposes only. EPA does not endorse any particular bullet containment device, design, or product.



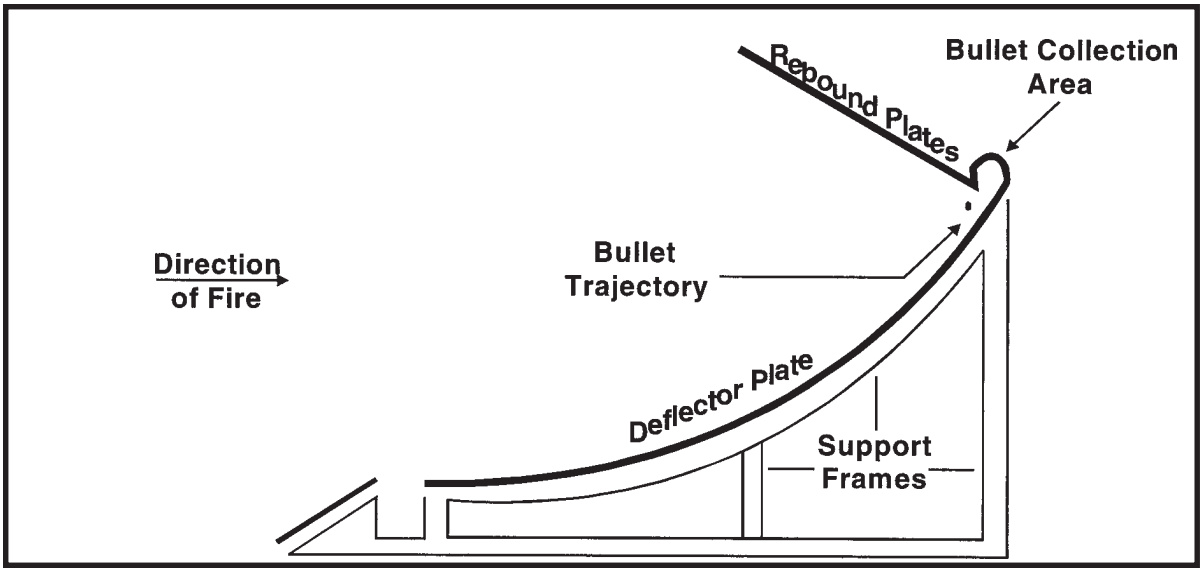
Sand Trap



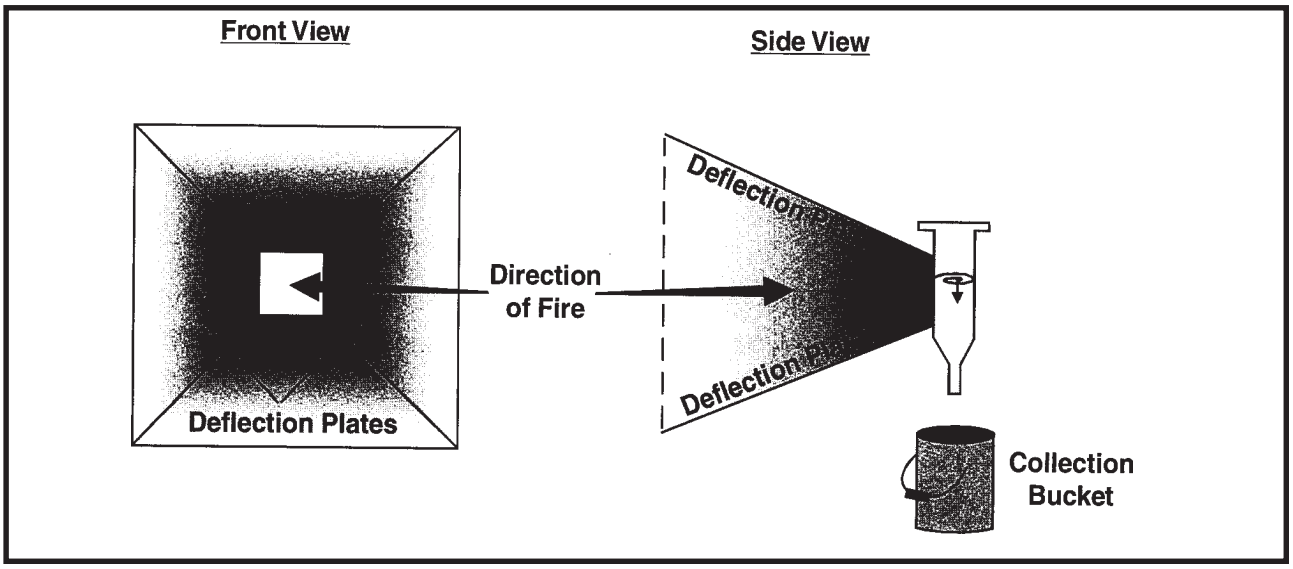
Rubber Granule Trap (Adapted from: *Bullet Trap Feasibility Assessment and Implementation Plan: Technology Identification Final Report*, U.S. Army Environmental Center, March 1996)



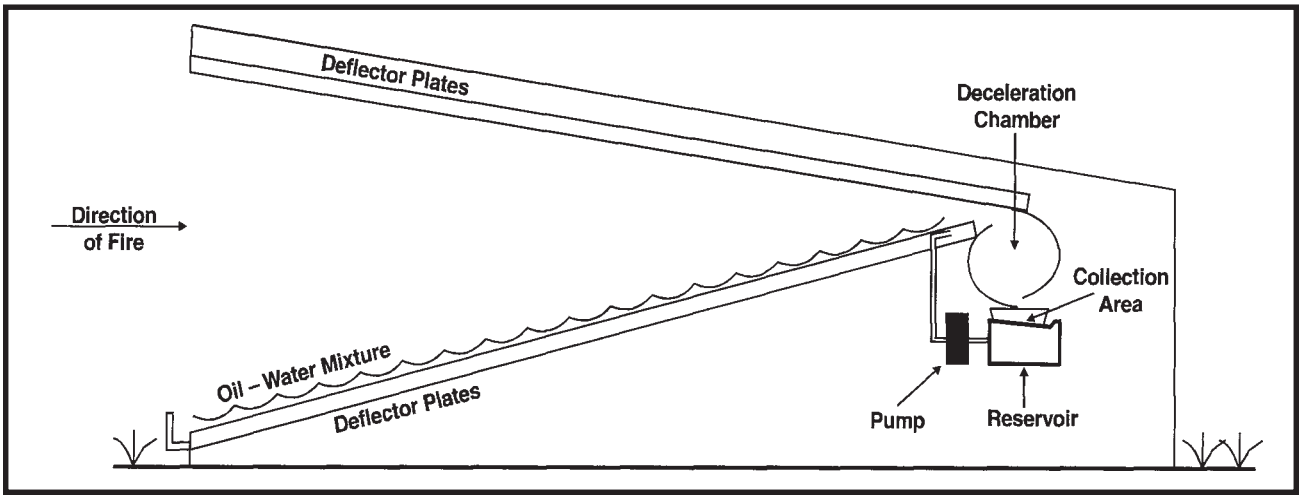
Gel-Cor Bullet Trap™ (Provided by Super Trap, Inc.)



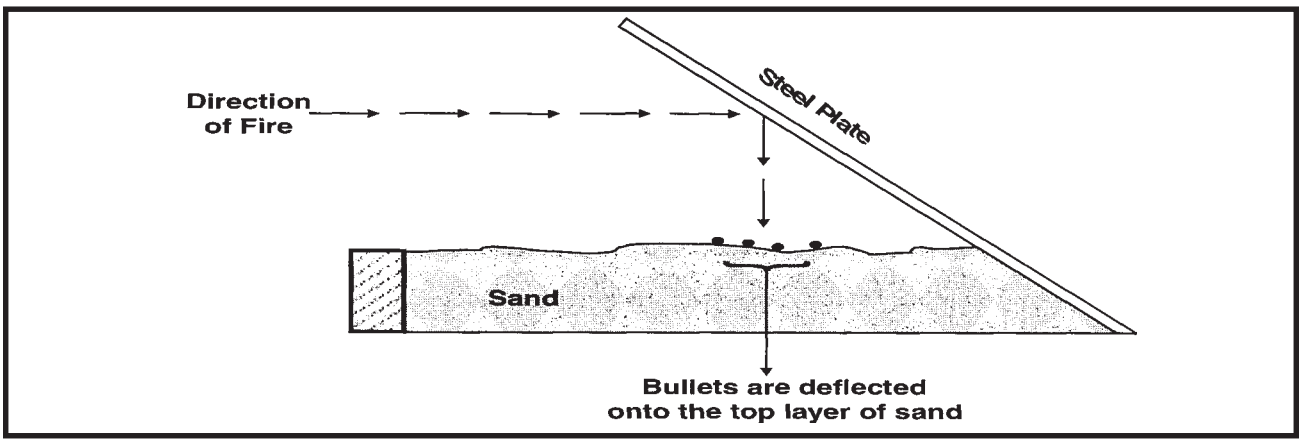
Escalator Trap (Adapted from: *Bullet Trap Technologies,* Action Target Educational Video Series)



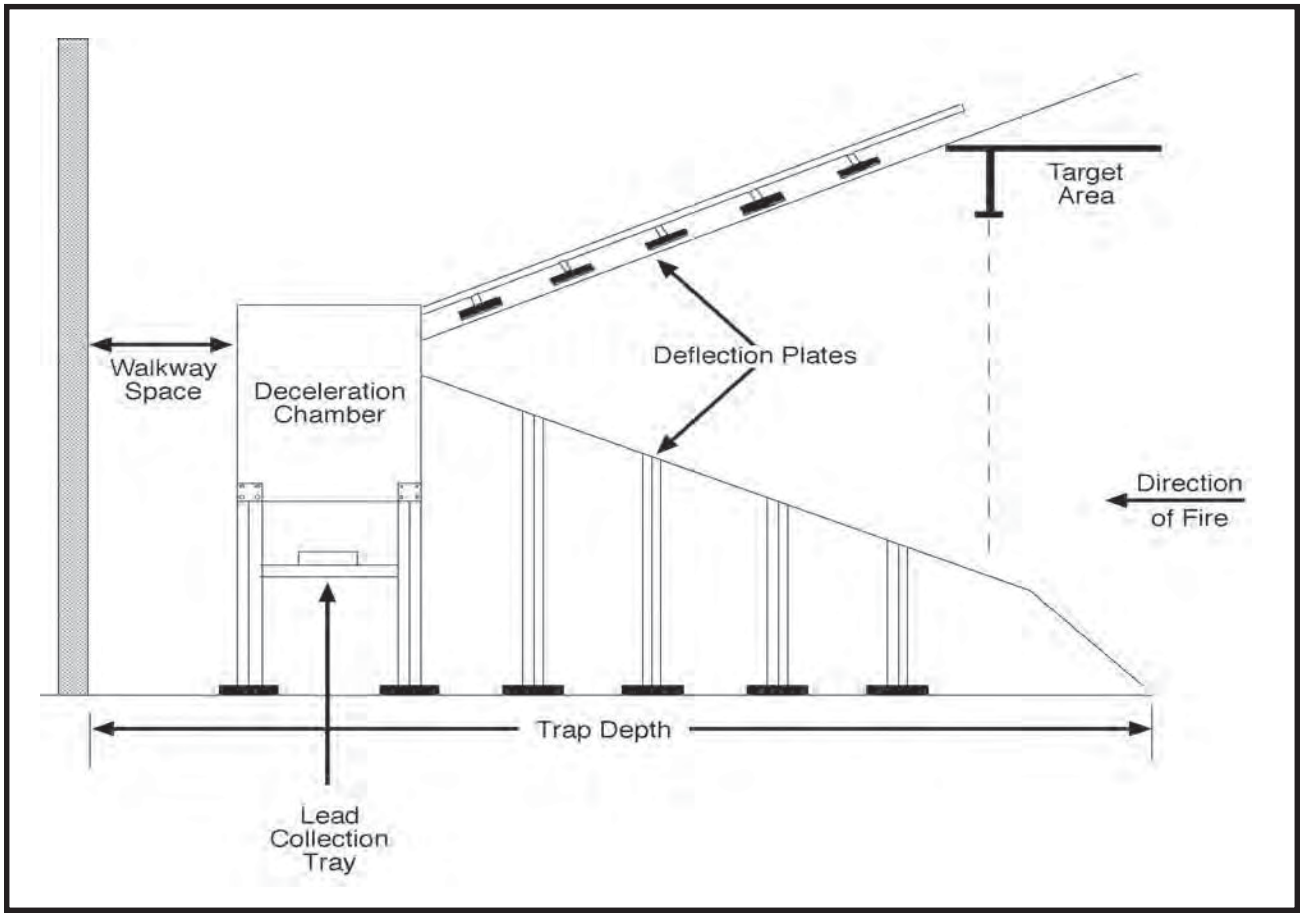
Vertical Swirl Trap (Adapted from: *Bullet Trap Feasibility Assessment and Implementation Plan: Technology Identification Final Report*, U.S. Army Environmental Center, March 1996)



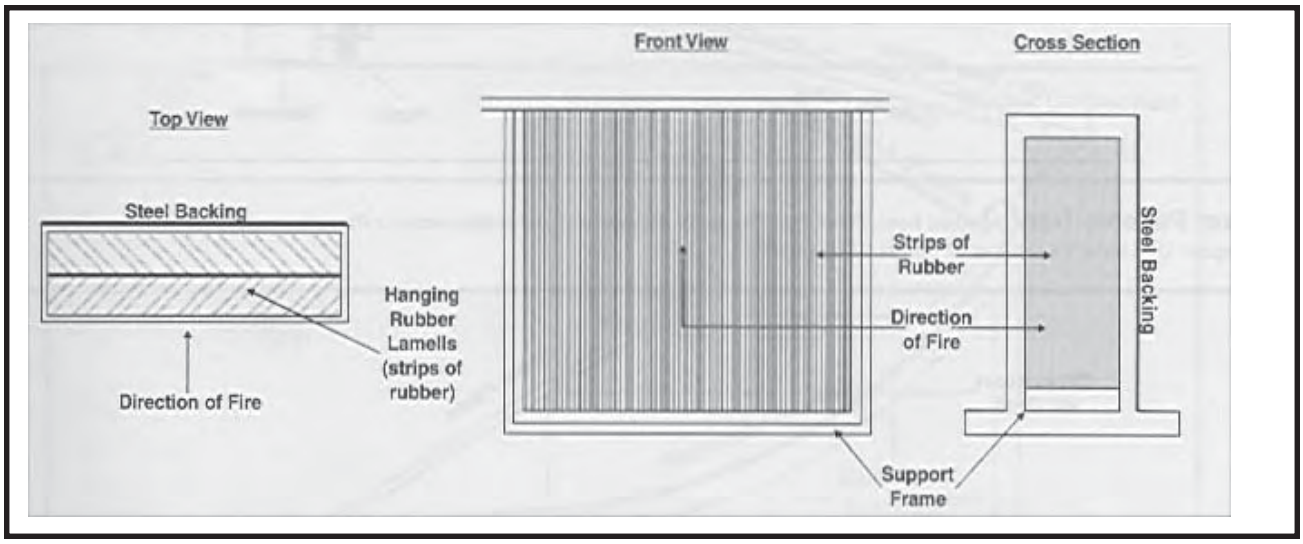
Wet Passive Trap (Adapted from: *Bullet Trap Feasibility Assessment and Implementation Plan: Technology Identification Final Report*, U.S. Army Environmental Center, March 1996)



Pitt and Plate (Adapted from: *Bullet Trap Feasibility Assessment and Implementation Plan: Technology Identification Final Report*, U.S. Army Environmental Center, March 1996)



Steel Bullet Trap (Adapted from: *Bullet Trap Technologies*, Action Target Educational Video Series)



Lamella Trap (Adapted from: *Bullet Trap Feasibility Assessment and Implementation Plan: Technology Identification Final Report*, U.S. Army Environmental Center, March 1996)

Appendix D: RCRA Regulatory Requirements and Interpretations

Timely separation of lead shot and bullets from soil at active ranges, recycling of the lead, and subsequent redeposition of the soil on the active range is exempt from RCRA regulation.

1. Reclaiming and Recycling Lead Shot

EPA's Office of Solid Waste issued guidance in 1997 indicating that lead shot, when recycled, is considered a scrap metal and is therefore exempt from RCRA regulation. A copy of the March 17, 1997 letter with this guidance is attached. Under the RCRA Subtitle C hazardous waste management regulations, lead shot would be considered scrap metal, which is exempt from hazardous waste regulations if it is recycled (see 40 CFR 261.6(a)(3)(ii)). Although storage of scrap metal being recycled is not affected by specific time limits such as the speculative accumulation provision (40 CFR 261.1(b)(8)), the scrap metal must legitimately be recycled to remain exempt under this provision. It should also be noted that lead shot may be subject to the authority of RCRA 7003, which addresses imminent hazards. However, use of best management practices is likely to prevent situations which would present an imminent hazard. Using such practices, together with following a clear, written policy governing the facility's recycling efforts, should also assist in assuring that the facility's practices can be demonstrated to be legitimate recycling.

2. Storage of Lead on Shooting Ranges Prior to Recycling

Some ranges have indicated that it may be desirable to store recovered lead shot and bullets on the range property for some periods of time prior to sale for recycling.

Provided that best management practices are followed in terms of storing and recycling the sorted lead, a range that follows such practices, and engages in legitimate recycling, should be able to store such material prior to recycling without RCRA regulatory controls (see discussion below). Best practices would suggest that the sorted lead, at a minimum, should not be exposed to the elements and should be managed so as to prevent releases to the environment. Best practices also indicate that the sorted lead should be stored in containers in good condition, regular inspections of the container condition should be conducted, and the records of inspections should be maintained and be readily available. Further, best practices also suggest that the sorted lead should be recycled in a timely manner and storage times should not exceed the time-frames or goals articulated in a clear, written policy.

3. Placement of Soil After Removal of Lead

For soil placed back on an active range after a BMP has been applied to remove the lead, the following regulatory approach has been followed. On February 12, 1997, EPA published the RCRA Subtitle C Military Munitions Rule in the Federal Register (62 Fed. Reg. 6621). The Military Munitions Rule considers range management to be a necessary part of the safe use of munitions for their intended purpose. Thus, the range clearance activity (recovery of lead shot and bullets) is an intrinsic part of the range operation. Therefore, the rule excludes range clearance activities (including the placement of soil back on the range) from RCRA Subtitle C regulation. Although the Military Munitions Rule did not apply to non-military ranges, EPA, in its response to comments on the proposed rule, clearly stated that "it felt that the 'range clearance' interpretation in the final Military Munitions Rule is consistent with the EPA's interpretations for non-military ranges." In addition, the EPA's Director of the Office of Solid Waste sent the New York State Department of Environmental Conservation a letter dated April 29,1997, confirming that the Military Munitions Rule range clearance principles apply equally to non-military ranges. A copy of the letter is attached.

4. Relocation of Backstop and Shotfall Zone Soil

Some ranges have indicated to the EPA that it may be desirable to transport and/or relocate a backstop in order to reorient or modify their range. This may occur when there is a need to reorient the range due to environmental concerns (e.g., shooting over water (wetland, stream, pond) or excessive runoff), alter the layout to improve shooter safety, or redesign to modify shooting conditions (e.g., adjusting number of shooting positions, increasing or decreasing target distance.) In some cases backstop material would not be moved off the range property, but to another area on the range property.

EPA's position is that range backstop materials are part of the range and are not wastes when they are moved or relocated, as long as the range continues to be used as a range and the backstop materials continue to be used as backstop materials. Hence, backstop materials that are still in use are not subject to the RCRA hazardous waste management regulations and need not be tested for hazardous waste characteristics. However, removal of lead from backstop materials that are to be relocated or moved is a normal practice of good range management in that it extends the usable life of the materials and reduces the possibility of releases of lead into the environment. If lead removal does not occur before moving the backstop material, the lead will become more dispersed throughout the material during movement and will thus be more difficult to recover in future reclamation events.

As a range management practice, it is environmentally preferable to use soil that may already contain lead and is on an active portion of the range, which will therefore undergo regular lead reclamation in the future, than to leave such soil in place and construct a new backstop with lead-free soil. Records of all movements of berm and shotfall zone soils, along with corresponding site plans, should be maintained indefinitely, as they will be necessary in evaluating cleanup needs during subsequent construction or range closure.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460
March 17, 1997

Mr. Duncan Campbell
Environmental Protection Agency, Region V
RCRA Enforcement
77 West Jackson Boulevard
Chicago, Illinois 60604-3507

Dear Mr. Campbell:

Enclosed please find a memorandum on the regulatory status of lead shot, which includes a general discussion on the regulatory status of lead shot as scrap metal. I hope that this information is sufficient to address your specific concerns as they relate to the pile of lead shot at the Saxon Metals facility.

If you have any questions or would like to discuss this matter further, please contact me at (703) 308-8826.

Sincerely,
Jeffery S. Hannapel
Office of Solid Waste

Enclosure

To: Duncan Campbell, EPA Region V
From: Jeff Hannapel, EPA Office of Solid Waste
Date: March 13, 1997
Re: Regulatory Status of Lead Shot

Based on our conversations, it is my understanding that Saxon Metals received for recycling a shipment of approximately 30,000 pounds of lead shot from a commercial indoor shooting range. Smokeless gun powder is, presumably, commingled with the lead shot. The mixture appears to exhibit the ignitability characteristic of hazardous waste (as evidenced by the incident in which the material ignited when Saxon Metals was attempting to load it into the furnace with a front-end loader). You have asked our office to provide you with guidance on the regulatory status of the lead shot portion of the mixture, specifically whether it is considered a spent material or scrap metal.

The Agency has taken the position that the discharge of ammunition or lead shot does not constitute hazardous waste disposal because the Agency does not consider the rounds from the weapons to be “discarded.” As you know, discard is a necessary criterion to be met

before a material can be considered a solid waste and subsequently a hazardous waste. (40 CFR §261.2(a).) The Agency's interpretation regarding discard is based on the fact that shooting is in the normal and expected use pattern of the manufactured product, i.e., the lead shot. Enclosed for your information is a September 6, 1988 letter from EPA to IDEM on this particular point.

In the federal regulations, the term, "scrap metal," is defined as "bits and pieces of metal parts (e.g., bars, turnings, rods, sheets, wire) or metal pieces that may be combined together with bolts or soldering (e.g., radiators, scrap automobiles, railroad box cars), which when worn or superfluous can be recycled." (40 C.F.R. §261.1.) In the Federal Register preamble for the final regulations on the definition of solid waste, EPA indicated that "scrap metal is defined as products made of metal that become worn out (or are off-specification) and are recycled to recover their metal content, or metal pieces that are generated from machine operations (i.e., turnings, stampings, etc.) which are recycled to recover metal." (50 Fed. Reg. 614, 624 (1985).) The lead shot portion of the Saxon Metals pile would be considered scrap metal pursuant to the regulatory definition of scrap metal.

EPA provided further clarification on the regulatory status of scrap metal in the Federal Register preamble to the definition of solid waste final regulations:

> [a]t proposal, scrap metal that was generated as a result of use by consumers (copper wire scrap, for example) was defined as a spent material. (This type of scrap is usually referred to as "obsolete scrap.") Scrap from metal processing, on the other hand (such as turnings from machining operations) was defined as a by-product. (It is usually called "prompt scrap.") Yet the scrap metal in both cases is physically identical (i.e., the composition and hazard of both by-product and spent scrap is essentially the same) and, when recycled is recycled in the same way - by being utilized for metal recovery (generally in a secondary smelting operation). In light of the physical similarity and identical means of recycling of prompt scrap and obsolete scrap, the Agency has determined that all scrap metal should be classified the same way for regulatory purposes. Rather than squeeze scrap metal into either the spent material or by-product category, we have placed it in its own category.

(50 Fed. Reg. at p. 624) Based on these regulatory passages, the lead shot portion of the pile would be considered scrap metal, and not a spent material. The lead shot is a product that is made of metal that can be recycled to recover metal content. Furthermore, the lead shot has not been "discarded" by virtue of its discharge at the shooting range, because the discharge is within the normal and expected use pattern of the manufactured product. Accordingly, lead shot would be considered scrap metal for regulatory purposes. Scrap metal is a solid waste, but it is exempt from the regulatory requirements of Subtitle C when it is recycled. (40 C.F.R. §261.6(a)(3)(ii).) As part of the Phase IV land disposal restrictions supplemental rulemaking (which was proposed January 25, 1996 and is expected to be finalized in April 1997), processed scrap metal and two categories of unprocessed scrap metal that is being recycled would be excluded from RCRA jurisdiction.

Please note that this discussion of the regulatory status is limited to the lead shot portion of the pile as you requested. To the extent that the entire pile exhibits the ignitability or reactive characteristic of hazardous waste, the mixture of materials would be considered hazardous waste and not scrap metal. The scrap metal designation for the lead shot would be applicable only to the extent that the lead shot could be segregated from the other materials in the pile.

I hope that this guidance on the regulatory status of lead shot recovered from shooting ranges provides you with the clarification that you needed. If you have any questions or would like to discuss this matter further, please contact me.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460
APR 29 1997

Mr. John P.Cahill
Acting Commissioner
State of New York
Department of Environmental Conservation
Albany, New York 12233-1010

Dear Mr. Cahill:

Thank you for your letter of April 3, 1997 to Administrator Browner requesting a clarification of the Environmental Protection Agency (EPA) Final Military Munitions Rule regarding the extension of its range clearance principles to non-military ranges. Although the final rule addresses only military ranges, we agree with your view that the range clearance principles apply equally to non-military ranges [see comment no. 5 on page 36 of the enclosed excerpt from the Military Munitions Final Rule Response to Comments Background Document].

We are aware of the State of New York's active leadership role in the clean-up of private firing ranges. We appreciate your writing in support of the range clearance aspects of the final Military Munitions Rule and we will consider your suggestions that we issue broader guidance on the applicability of its principles to non-military ranges.

Sincerely yours,

Elizabeth Cotsworth, Acting Director
Office of Solid Waste

Enclosure

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Appendix E: Template for an Environmental Stewardship Plan for Management of Lead Shot/Bullets

Instructions

EPA encourages outdoor shooting ranges to adopt and implement the Best Management Practices (BMPs) found in this manual. To this end, it is recommended that ranges first prepare an Environmental Stewardship Plan (ESP or Plan), which gathers information about, and guides evaluation of, site specific conditions of each range. As such, the ESP assists in selection of appropriate BMPs.

This document serves as a template that may be used by sportsmen's clubs and shooting ranges in their preparation of an ESP. This template was adapted from Appendix C of the National Shooting Sports Foundation's manual, *Environmental Aspects of Construction and Management of Outdoor Shooting Ranges* (the NSSF manual.) This template is only a tool to assist in making ESP preparation easier and can, and in some cases should, be modified to incorporate specific information relative to your club and its ranges. It is intended to be used in conjunction with a full understanding of the NSSF, U.S. Environmental Protection Agency (EPA) and, for ranges in Florida, Florida Department of Environmental Protection (DEP) manuals for the safe management of lead at outdoor shooting ranges. This template is intended to encourage ranges to prepare ESPs and submit them to EPA or NSSF to obtain a Certificate of Recognition from EPA. In this regard, either the following template or the NSSF template is recommended for use in conjunction with EPA's Certificate of Recognition program.

An electronic copy of this template is available on EPA's shooting range website (http://www.epa.gov/region2/leadshot) in several formats.

Disclaimer: This template does not serve as a substitute for understanding the concepts and techniques discussed in the EPA manual or other manuals. This template is not to be used as a substitute for consultation with scientists, engineers, attorneys, other professionals, or U.S. EPA.

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Environmental Stewardship Plan for Management of Lead/Bullets at Outdoor Shooting Ranges

Club Name

Address
City/Town, State & Zip Code
Phone #:

Date

Table of Contents

❑ **Introduction**
- Mission Statement
- Purpose
- Goal
- Delete

❑ **Site Assessment**
- Description of Ranges and Support Facilities
- Existing Environmental Conditions
  - Trap and Skeet Fields
  - Sporting Clays Course
  - Rifle and Black Powder Range(s)
  - Outdoor Handgun Range(s)

❑ **Trap and Skeet Fields**
- Action Plan
  - Potential Management Options
  - Selection of Management Options to be Implemented
  - Options Selected
    a) Management Actions
    b) Operational Actions
    c) Construction Actions
- Plan Implementation
  - Schedule for Implementation
  - Responsibilities

❑ **Rifle, Black Powder, and Outdoor Handgun Ranges**
- Action Plan
  - Potential Management Options……...
  - Selection of Management Options to be Implemented……...
  - Options Selected…….
    a) Management Actions……...
    b) Operational Actions…….
    c) Construction Actions……...
- Plan Implementation……..
  - Schedule for Implementation…….
  - Responsibilities……..

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❑ **Sporting Clays Course**……

- Action Plan……
  - Potential Management Options……..
  - Selection of Management Options to be Implemented……...
  - Options Selected…….
    a) Management Actions……..
    b) Operational Actions……
    c) Construction Actions……...
- Plan Implementation……..
  - Schedule for Implementation……
  - Responsibilities……..

❑ **Measuring Success**……..

- Vegetation……..
- Soil and Runoff pH…….
- Erosion……...

❑ **Plan Review and Revisions**…….

Figures

Figure 1: Site Location Map
Figure 2: Facilities Diagram
(Additional figures, as appropriate)

Tables

Table 1:
Table 2:

Appendices

Appendix A:
Appendix B:
(Additional Appendices, as appropriate)

Introduction

The XYZ Club, Inc. is located at 123 X Road in Anytown, USA…

Mission Statement

The XYZ Club, Inc. is committed to…

- *Purpose*:

The Purpose of this Environmental Stewardship Plan (i.e., the Plan) is to:

- Identify potential environmental concerns that may exist;
- Identify, evaluate, and prioritize appropriate actions to manage lead shot and bullets safely, as well as identifying and addressing environmental concerns;
- List short- and long-term steps needed for implementation;
- Develop an implementation schedule;
- Identify ways to measure the Plan's success;
- Evaluate annual progress made towards achieving environmental stewardship goals;
- etc.

- *Goal* – To minimize the release of lead into the environment.

Activities to Reach Goal:
Examples include:

▷ Avoid shooting over and into water and wetlands.
▷ Prevent off-site migration of lead through groundwater and surface water runoff.
▷ Conduct lead recovery.
▷ Discourage ingestion of lead by wildlife.
▷ Maintain soil pH between 6.5 and 8.5 in the shotfall zone.

Site Assessment

Description of Ranges and Support Facilities

The XYZ Club has an x position Trap Range, a y position Skeet Range, a z position Sporting Clays Course, and a q position Small Arms Range. These ranges are located in a rural setting and are oriented away from residential areas and surface water bodies.

[Briefly describe each range, its dimensions, orientation, vegetative cover, numbers of shooters and targets used per year, wildlife usage, etc.]

Existing Environmental Conditions

[Describe any known environmental conditions associated with the ranges. This might include type of soil, depth to groundwater, soil pH, drainage to surface water, unique animal or bird populations, etc. Refer to figures, tables, the results of surveys, inspections, professional opinions, etc.]

- *Trap and Skeet Fields*

- *Sporting Clays Course*

- *Rifle and Black Powder Range(s)*

- *Outdoor Handgun Range(s)*

Trap and Skeet Fields

Action Plan

[Briefly describe the management options selected.]

- *Potentially Applicable Management Options*

[See EPA or NSSF guidance manual for full listing of options]

Examples include:
- Vegetate sparse grass area of trap/skeet field.
- Reorient trap field to avoid lead shot entering wetlands.
- Reorient sporting clays stations to maximize the overlap of falling shot into the open field where it can be more easily recovered for recycling.
- Limit use of the trap/skeet range to only those stations that do not have wetland area within the shotfall zone.
- Apply lime to shotfall zones if soil test results indicate this would be beneficial.
- Prepare fields for lead reclamation.
- Get bids for lead reclamation project.
- Conduct lead reclamation within the trap/skeet shotfall zones.
- Change mowing frequency to closely mow grass in shotfall zones.
- Construct lean-tos at backstop berms.
- Construct a lime lined drainage swale for stormwater management.
- List additional Best Management Practices that may be appropriate to your club.

In addition to appropriate site-specific management options, the list should always include conducting lead reclamation within the berm for rifle and pistol ranges and conducting lead reclamation within the trap, skeet, and sporting clays shotfall zones.

- *Selection of Management Options to be Implemented*

Option x:
Option y:
Option z:

[Describe why the above options were selected and the general roles of club officers, the membership, and outside consultants, as applicable, in implementation.]

In order to implement the options selected, the following actions are necessary.

a) Management Actions: [Examples include: assign personnel responsible for initiating, conducting, and completing the alternatives selected above.]
b) Operational Actions: [Examples include: collect soil samples for pH analysis, consult with USDA's Natural Resources Conservation Service and/or the county Cooperative Extension Service regarding best suited vegetative management recommendations.]
c) Construction Actions: [Examples include: do site preparation work, get bids, institute mowing and vegetative management recommendations, reorient shooting position as appropriate.]

Plan Implementation

- *Schedule for Implementation*

Winter/Spring: [Examples include: pH survey, contact local officials for vegetation management recommendations, reorient shooting positions as appropriate, realign shooting positions as appropriate.]

Summer/Fall: [Examples include: prepare site for reclamation project, apply lime/fertilizer/seed, get bids for berm lean-tos/reclamation. As a rule of thumb, 50 pounds of lime per 1,000 square feet should raise soil pH by 1 once the residual acidity is overcome.]

- *Responsibilities*

[Specific duties (i.e., the trap/skeet chairman/chairmen will…, The club treasurer will…, The membership will provide the labor to…)]

Rifle, Black Powder, and Outdoor Handgun Range(s)

Action Plan

[Briefly describe the management options selected.]

Potentially Applicable Management Options

[See EPA or NSSF guidance manual for full listing of options]

Examples include:
- Culvert the stream through the shooting ranges.
- Vegetate the backstop berm(s) to minimize erosion.
- Construct a lime lined drainage swale for stormwater management.
- Apply lime to the berm and foreground if pH test determines it is necessary.
- Begin planning a lead reclamation project.
- Construct lean-tos at berms.
- List additional Best Management Practices that may be appropriate to your club.

Selection of Management Options to be Implemented

Option x:
Option y:
Option z:

[Describe why the above options were selected and the general roles of club officers, the membership, and outside consultants, as applicable, in implementation.]

In order to implement the options selected, the following actions are necessary.

a) Management Actions: [examples include: assign personnel responsible for initiating, conducting, and completing the alternatives selected above.]
b) Operational Actions: [examples include: collect soil samples for pH analysis, consult with USDA's Natural Resources Conservation Service and/or the county Service Forester regarding best suited vegetative management recommendations.]
c) Construction Actions: [examples include: do site preparation work, get bids, institute mowing and vegetative management recommendations, reorient shooting position as appropriate.]

Plan Implementation

- *Schedule for Implementation*

Winter/Spring: [examples include: pH survey, contact local officials for vegetation management recommendations, reorient shooting positions as appropriate, realign shooting positions as appropriate.]

Summer/Fall: [examples include: prepare site for reclamation project, apply lime/fertilizer/seed, get bids for berm lean-tos/reclamation.]

- *Responsibilities*

[Specific duties (i.e.: the small arms range chairman/chairmen will…,The club treasurer will…, The membership will provide the labor to…)]

Sporting Clays Course

Action Plan

- *Potentially Applicable Management Options*

[See EPA or NSSF guidance manual for full listing of options]

- *Selection of Management Options to be Implemented*

- *Options Selected*

Plan Implementation

- *Schedule for Implementation*

- *Responsibilities*

Measuring Success

By monitoring the success of the Plan, the club is best prepared to make whatever changes may be necessary to reinforce success and make the most of environmental stewardship efforts. Below are some examples of areas to monitor:

Lead Recovery

[Document the quantity (pounds) of lead recovered and recycled, along with the cost of conducting the activities.]

Vegetation

[The density of vegetation growth should be measured throughout the growing season, especially in areas of sparse growth where steps have been taken to increase the vegetative cover. This is can be done by taking periodic photographs (e.g., once a month) from the same places to document the impact of the Plan.]

Wildlife

[Keep a log of visual observations made regarding the frequency of range usage by the variety of species in your area.]

Soil and Runoff pH

[Track soil and runoff pH through semiannual monitoring and adjust the amount of lime applied to different areas of the range to maintain a pH level that will prevent lead from dissolving (i.e., a pH of 6.5-8.5).]

Erosion

[Again, keeping a photographic record of problem areas best prepares your club to document achievements and adjust the Plan as appropriate.]

Plan Review and Revisions

Review the Plan on an annual basis. Update the Plan as needed and schedule activities for subsequent years. Make recommendations for future club officers to consider when updating the Plan and designating future activities to be conducted (tell them what worked, what didn't work, and what still needs to be done.)

FIGURES

Figure 1
Facility diagrams

Figure 2
Resource maps (USGS topographic map, wetlands maps, soil survey maps, FEMA floodplain map, etc.)

Figure 3 (Optional)
Site photographs

Figure 4 (Optional)
Aerial photo of range and surrounding area

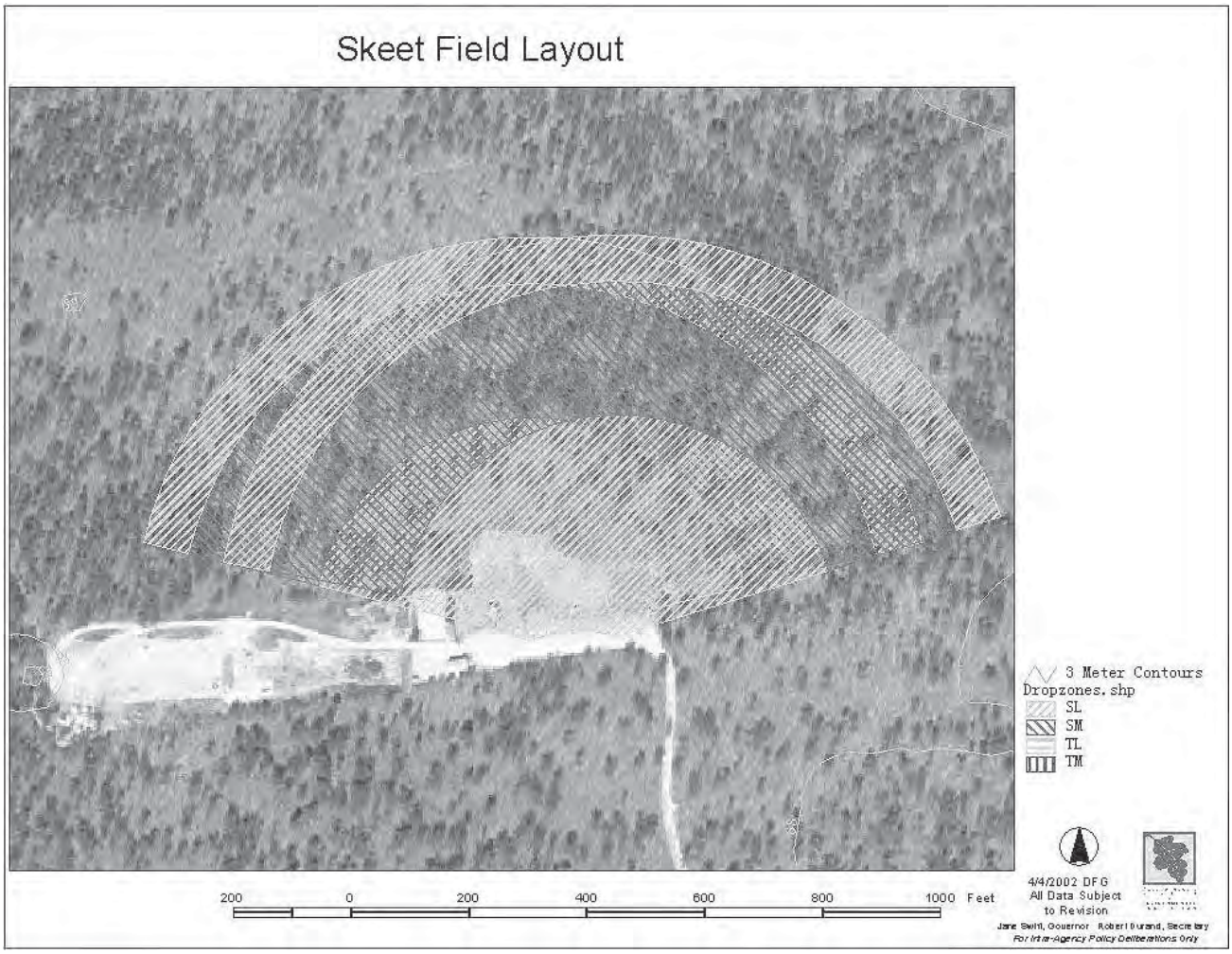
Appendix A
(Optional)

Appendix B
(Optional)

[Insert other figures as necessary to support the text]

Other figures may include an aerial photograph, and sketches of the Club property in general and/or specific ranges in particular.

Example:



[Insert Site Location Map Here]

Typically, a Site Location Map is cut from a USGS Topographic Map of you Club's area. The Club should be centered on the map. Indicate the property boundaries and layout of the range.

Appendix A

Information from USDA, Natural Resources Conservation Service [and/or county Cooperative Extension Service]

[concerning soil and vegetation management recommendations]

Appendix B (etc.)
[For other supporting documentation as needed.]

RANGE DESIGN CRITERIA



U.S. DEPARTMENT OF ENERGY
Office of Health, Safety and Security

AVAILABLE ONLINE AT:
http://www.hss.energy.gov

INITIATED BY:
Office of Health, Safety and Security

CERTIFICATION

This document contains the currently-approved firearms "Range Design Criteria" referred to in DOE M 470.4-3A, *Contractor Protective Force*, and DOE M 470.4-8, *Federal Protective Force*.

Barbara R. Stone
Director
Office of Security Policy

11/18/08
Date

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RANGE DESIGN CRITERIA

1. PURPOSE. This document contains design criteria for U.S. Department of Energy (DOE) live-fire ranges for use in planning new facilities and major rehabilitation of existing facilities. This document supersedes DOE M 470.4-3 Section B, Chapter II and will be approved and maintained by the Office of Security Policy, Office of Health, Safety and Security (HSS) as a stand-alone document on the HSS website.

2. PLANNING FACTORS. All applicable local, State, Federal, U.S. Environmental Protection Agency, Occupational Health and Safety Administration (OSHA), and National Environmental Policy Act requirements should be addressed and be reviewed annually (at least every 12 months) to incorporate any requirements changes that occur.

3. PLANNING OVERVIEW.

   a. General Considerations.

      (1) Live-fire range design should: (a) promote safe, efficient operation; (b) include provisions for ease of maintenance; and (c) be affordable to construct and maintain.

      (2) Live-fire ranges should be designed to prevent injury to personnel and to prevent property damage outside the range from misdirected or accidental firing and ricochets. They should also be designed to direct ricochets away from the firing line inside the range.

      (3) An open range may be established provided that enough distance and land area available to allow for surface danger zones (SDZs) appropriate for the weapons to be used. Lack of SDZs may require baffled ranges. Extreme weather conditions may necessitate indoor ranges.

   b. Type of Range.

      (1) Range requirements should be considered when determining the type and size of the range and the material to be used.

      (2) The range should be suitable for training and qualifications for all courses of fire used on the site as set forth in the HSS-approved Firearms Qualification Courses.

      (3) The range should be designed for shooting day and reduced-lighting DOE firearms courses, moving targets, multiple targets, and advanced shooting courses that may be required by the site.

      (4) When determining whether the facility will be an indoor, open outdoor, partially baffled, or fully baffled range, the decision-making process should include site weather conditions, available land, available funding,

and environmental, safety, and health considerations. The following additional factors should be considered.

(a) How many shooters must be accommodated?

(b) Will emphasis be on training or competitive activities?

(c) What types of firearms and range of ammunition will be used? (See Table 1.)

(d) Will the facility be used exclusively by DOE or will it be open to other organizations?

(e) What special uses will be made of the facility, e.g., advanced training, special weapons, or explosives?

(f) What lighting will be required, and what lighting is desired?

(g) What administrative space will be needed?

(h) What types of target mechanisms will be used?

(i) Will spectator safety areas be needed?

(j) What types of acoustics will be needed?

(k) How will lead contamination be controlled?

(l) Where will bullet traps be needed?

(m) Where will firearms cleaning and maintenance be performed?

c. Site Selection Preparation. The site selected should accommodate the required facility. It should meet acceptable standards for safety and have sufficient space, access, and acceptable zoning and construction costs. Land acquisition costs, future land values, and possible restrictions should also be examined. To ensure the project is feasible the following data should be considered.

(1) Documents. Copies of specific site, environmental, and construction criteria; applicable mandated regulations from the State, county, and local authorities; copies of ordinances, zoning regulations, soil conservation standards, health department requirements, and any other regulations that may pertain to the project should be obtained.

(2) Alternate Sites. Identify alternate sites, because one or more of the potential sites may be unsuitable or construction costs may be prohibitive.

(3) Technical Data. Gather technical data relevant to each site including zoning maps, aerial photographs, topographic maps, and onsite ground and aerial information.

d. Considerations. The criteria to be considered in this process are:

(1) environmental restrictions, e.g., Endangered Species Act, Wilderness Act, and air and water pollution criteria;

(2) access, e.g., is it adequate or should a roadway be constructed to the site;

(3) construction cost, e.g., berms, baffles, barriers, earth moving;

(4) other restrictive Federal or State statutes and local ordinances; and

(5) community growth, especially in areas where urban growth is rapid. Escalating property values may make it unwise to construct in a particular area.

e. Preliminary Design Stage. The following preliminary design process is to be followed.

(1) Prepare:

(a) a preliminary layout sketch of each site;

(b) a draft document, which should include specifications for applicable zoning, building codes, environmental, safety, and health considerations, and other pertinent restrictions;

(c) alternative preliminary site plans showing different range layouts;

(d) a planning cost estimate; and

(e) a risk analysis report.

(2) Submit all zoning and building permit applications for approval. Be prepared, via the draft document, to present and, if necessary, defend the proposal at public hearings before zoning boards, health officials, and other governmental bodies involved in issuing permits.

f. Final Design Stage.

(1) The preliminary site plans include a layout of the proposed range with its accompanying safety fan in a cross section and top view.

(2) The range master/manager, training manager, safety manager, industrial hygienist, appropriate operating personnel and public works engineer

should review the design requirements during the planning phase, before the construction drawings are started, and during the construction phase.

4. OUTDOOR RANGE DESIGN.

a. Site Selection.

(1) Outdoor range sites should be remote from other activities but accessible by road. SDZs should not extend across traveled roads, navigable waterways, railroads, or other areas.

(2) To protect against unauthorized access, SDZs should be controlled while firearms are being discharged. To prevent future encroachment, SDZs should be recorded on site maps.

(3) If other methods to control access to SDZs are not effective, then the zones should be fenced in. Natural barriers around the site, e.g., rivers, hills or a large drainage channel may be used to prevent encroachment and will ensure privacy. The best site is one with a natural backstop for projectiles to reduce the cost of constructing earth impact berms and to provide natural sound abatement.

(4) Outdoor ranges should be oriented to eliminate firing into the sun. The range should be oriented to the north or slightly to the northeast. The ideal direction is between due north and 25º northeast.

b. Range Planning.

(1) Firing into upward sloping land and land with natural backstops of hills or mountains is recommended.

(2) Firing platforms, access roads, and targets should be elevated above the flood level.

(3) The line of fire in rough terrain should be perpendicular to high ground. The line of fire on flat terrain should be free of knolls, ridges, and trees that reduce visibility.

(4) Known distance ranges should be as flat or evenly graded as possible. If the grade between the firing points and target does not exceed 2 percent, then the firing points may be below the target.

(5) Roads used for setting and servicing targets in impact areas and for maintenance of earth berm may be graded pathways. Roads in areas not subject to disturbance, e.g., vehicle parking areas, and roadways behind firing lines or out of range of weapons, should be designed for anticipated vehicle weight and usage.

(6) The ground between the targets and firing line should be free of any hardened surface (smooth-surfaced walkways excepted) such as rocks or other ricochet-producing material.

(7) The surface may be sodded or planted with low-growing ground cover.

(8) The surface should be smooth, firm, and graded to drain away from the targets. A slight side-to-side grade of 1 percent to 2 percent should be provided for storm water runoff. For baffled ranges, the lateral slope should not exceed 2 percent because of the geometry of the baffle system.

(9) The overall size will be governed by the range distance and number of firing positions.

(10) Range distances from the firing line to the target are determined by the approved DOE qualification courses of fire for all weapons available for use by Protective Force (PF) personnel and by site-specific training courses of fire. The distances from the firing line to the target should be accurate to +.01 percent. It is important that any inaccuracy in the firing line-to-target distance is a greater, rather than lesser, distance (e.g., 101 yards for a 100-yard range instead of 99 yards).

(11) Shooters should have secure footing.

c. Surface Danger Zones. SDZs should be established to contain all projectiles and debris caused by firing ammunition and explosives (see Table 1). SDZ dimensions are dictated by the types of ammunition, types of targets, and types of firing activities allowed on the range. A basic SDZ consists of three parts: impact area, ricochet area, and secondary danger area (Figure 1). Figures 2 through 6 illustrate the application of the basic parts in the design of SDZs for various kinds of range activities.

(1) The primary danger area established for the impact of all rounds extends 5º to either side of the left and right limits of fire and downrange to the maximum range of any ammunition to be used on the range.

(2) The ricochet area is 5º to either side of the impact area and extends downrange to the maximum range of any ammunition to be used on the range.

(3) The secondary danger area is that area paralleling, and 100 yards outside of, the outermost limits of the ricochet area and extending downrange to the maximum range of any ammunition to be used on the range.

(4) Boundaries of SDZs must be posted with permanent signs warning persons of the danger of the live-fire range and prohibiting trespassing. The signs must be posted in a way that will ensure a person cannot enter

the SDZ without seeing at least one legible sign (i.e., usually 200 yards distant or less).

(5) Limit of fire markers, both external and internal, must be placed to denote right and left limits of fire. Where cross firing is to be conducted, internal limit markers must be emplaced to denote internal right or left limits of fire from specific firing positions.

(6) Ranges may be located parallel to one another if in compliance with Figure 19 for separation.

(7) When there is insufficient distance to lay out a new range with the required SDZ or utilize other ammunition with a maximum range that does not exceed the SDZ, engineered or administrative controls can be used to control firing on that range. Permission to deviate from established SDZ requirements must be granted by the DOE cognizant security authority and supported by a safety risk analysis.

(8) Administrative controls such as use of the low-ready position or engineered controls such as muzzle traverse/elevation limiters can be used to control the firearm. Natural terrain such as a mountain or a hill provides an excellent backstop for firing. The terrain should be high enough to capture rounds fired at up to a maximum 15° muzzle elevation.

(9) To change the size and shape of an SDZ, baffles may be installed. Partial and full baffle systems consist of the following components: overhead baffles, a canopy shield over firing points, bullet impact berm, and side berms, sidewalls, or side baffles. A fully baffled range must be constructed so all direct fire can be contained within the range (see Figures 7 and 8).

d. Support Facilities. Range planners should consider the site-specific need for the following range support facilities.

(1) Targets.

(2) Target storage.

(3) Bunkers, trenches, and protective barriers for personnel protection.

(4) Range control towers.

(5) Toilets.

(6) Range poles, banners, markers, and signs.

(7) Communication systems.

(8) Access and range roads.

(9) Parking areas.

(10) Potable water.

(11) Target maintenance.

(12) Ammunition storage.

(13) Power.

(14) Sewer.

(15) All other necessary utilities.

Table 1. Maximum Range of Small Arms Ammunition

Maximum Range of Small Arms Ammunition	
Caliber	**Maximum range of small arms ammunition (distance in meters)**
.22 long rifle	1,400
.38 revolver	
Ball, M41	1,600
Ball PGU-12/8	1,900
.40 pistol	
Ball	1783
JHP	1908
Frangible	1000
.45 pistol	1,500
.45 submachine gun	1,600
.357 magnum	2,160
9mm pistol	1,740
9mm submachine gun	1920
.44 magnum	2,290
.50 machine gun	
Ball, M33	6,500
AP, M26	6,100
12 gauge shotgun, riot 00 buckshot	600
.30 rifle and machine gun	
Ball, M23	3,100
AP, M2	4,400
.30 carbine	2,300
5.56mm rifle	
Ball, M193	3,100
7.62mm rifle and machine gun	
Ball, M80	4,100
Match, M118	4,800
40mm	
M79	400
Mk-19 40mm	2200

e. Design Criteria.

(1) Firing Line Items. Provide the following components.

(a) Floor Surface. The surface should be smooth, firm, and graded to drain away from the targets. A slight side-to-side grade of 1 percent to 2 percent should be provided for storm water runoff. Transverse firing line grading should match target line transverse grading. The distance between the firing line(s) must be sufficient to support the type of training conducted. Firing lanes must be clearly marked on the surface to match the targets. Depending on the number of personnel to be supported and the funds available, the following surfaces should be considered:

1 ground firmly compacted with mown grass;

2 sand or fine gravel;

3 wood decking of sufficient thickness and support to prevent movement; and

4 concrete topped with appropriate cushioning material.

(b) Overhead Containment. On partially and fully baffled ranges, a ballistic canopy (see Figure 9) should be provided over all locations where a weapon may be expected to be discharged (firing line, by definition). Figure 9 represents one construction approach, but the canopy must contain the direct fire effects of the most energetic round fired on the range. This canopy should begin at least 3 feet behind the firing line. General structural requirements may dictate more distance. The canopy should extend forward a minimum distance of 13 feet minimum, which will work geometrically with the first overhead baffle to prevent a weapon from firing directly out of the range (see Figures 16 and 17). The canopy should be constructed of ballistic material with sacrificial cladding as described below. Sound reduction ceiling waffles should be considered. Weather roofing is required above the ballistic material and it must slope sufficiently to drain.

(2) Firing Point. The depth of the firing point is determined by the shooting activity; e.g., rifle firing requires more depth than pistol firing.

(a) The minimum depth of the firing point is the area required for the shooter, shooter's equipment, scorers, and range officers. For example, a pistol range might have a firing line approximately 6 to 10 feet deep, while a rifle range would have a firing line up to 20 feet deep. This variation is based on available space, type of

shooting, size of target frames and carriers, and the spacing of target frames or carriers.

(b) For rifle ranges, each firing point should be 9 feet wide (see Figure 10). Firing lanes for pistols and shotguns should be 5 feet center to center (see Figure 11).

(3) Ballistic Material. The purpose of this material is to absorb, deflect, or fragment projectiles. Material for baffles on partially and fully baffled ranges is shown in Figures 12 and 18. Wood that is used should be of middle grade exterior timber or plywood. Timber in contact with the ground must be pressure-treated for this purpose. Avoid exposed connectors if possible. Refer to Table 2, Thickness of Material for Positive Protection Against the Caliber of Ammunition Listed, for the thickness of various materials.

(4) Sacrificial Cladding. Provide ¾-inch thick plywood with a ¾-inch air gap on any surfaces (baffles, wing walls, metal connectors, etc.) that are within 11 yards of the firing line to prevent back splatter.

(5) Firing Line Cover Material. The firing line should be covered to protect the shooter and allow activities to be held regardless of the weather. On ranges with several firing lines, the cover is generally installed at the longest firing distance. The firing line covers described below are for shelter only and should not be confused with the ballistic firing line canopies required on baffled ranges. Material that can be used for firing line covers includes wood, concrete, steel, and plastic. Most covers are constructed from wood products and are a shed or gable roof design. In some cases, corrugated metal or fiberglass roofing material can actually increase sound levels at the firing line and in areas around the range. Therefore, to reduce noise, corrugated metal or fiberglass roofing material should not be used unless it is acoustically treated. The structure should be designed to include the following:

(a) The shed roof should have a 6-inch (15cm) cavity filled with fiberglass insulation (or equivalent) and be enclosed on the bottom with 19mm (¾-inch) plywood or insulation board. Although this will not provide a completely effective sound barrier, sound waves will strike and penetrate the inside layer of plywood, and the sound will be reduced;

(b) A plywood shed roof should have a 15cm (6-inch) hollow core enclosed with a small grid mesh screen and a six-mil polymer barrier to retain the insulation. The intervening space should be filled with blown-in insulation to trap sound waves and reduce the drum effect of an open roof; and

(c) A gable roof has a large hollow area above the joists; however, additional sound damping materials should be installed to reduce the drum effect and the sound pressure level as they are reflected onto the firing line area. The underside of the roof surface will require a minimum of 4 inches of insulation to fill in between the rafters and a minimum of 3 inches of insulation above the ceiling and between the joists. This will reduce the drum effect caused when sound waves strike surface material (e.g., corrugated metal) and will absorb a portion of the reflected sound waves.

(6) Surface Material. Positions should be hard-surfaced (e.g., concrete, gravel, wood, asphalt, or sod).

(a) For ranges where prone shooting is conducted, gravel or similar materials may cause difficulty for the shooter. When the surface material is concrete or asphalt, shooting mats or padding will be required when the kneeling or prone positions are used.

(b) For ranges with multiple firing lines, hard-surfaced firing lines located downrange of another firing line should be recessed or shielded from bullet impact to avoid ricochets off exposed edges.

(7) Landscaping. The site should be landscaped to provide for erosion control, noise abatement, maintenance, appearance, fire protection, and safety.

NOTE: Any landscaping will complicate the removal of lead in the berms, especially on impact surfaces, and will create higher maintenance costs.

(a) Berms should be planted with grass to prevent erosion. Ground cover is acceptable on existing berms that have been maintained and where erosion is not a problem.

(b) When grass is selected as a ground cover, it should be appropriate for the geographic area and should readily grow and provide good coverage. The degree of shading caused by overhead baffles will determine the type of grass for the range floor. Use grasses and cover for earth berms that will not be accessed by moving equipment so that natural growth heights will be acceptable. In areas where the soil is poor or extremely sandy, plants such as Bermuda grass, ice plant, or vine root can be used to control soil erosion.

(c) Heavy landscaping may be used to cut down on noise transmission. Plants and trees may be planted behind the firing position shelters to alleviate noise transmission problems.

Soundproofing the firing line structures should be considered in problem areas. Trees should be kept away from firing lines to allow range control officers to see all shooters.

(d) For windbreaks, trees may be planted along the length of the range with partial side berms or wing walls where strong prevailing crosswinds are problems to shooting accuracy.

(e) Densely planted rows of fast-growing, compact, and thorny shrubs may be planted below the trees at ranges with partial berms or wing walls to abate noise, prevent encroachment, and alleviate crosswind problems.

(8) Target Line and Mechanisms. Components must be as follows.

(a) The target line should be a minimum of 30 feet from the toe of the impact berm. The distance between targets must be the same as the distance between firing positions.

(b) Target line bases must match grading with the firing line. Mechanical target support bases must be protected from the direct line of fire. They may be buried flush with the ground or placed behind a protective wall. Note that a small raised earth berm at this location generates significant ricochet. The complexity of the mechanism will dictate the protection requirement. See Figure 13 for wall or trench protection of high cost target line mechanisms.

(c) Target supports can be made of steel angles and channels, PVC pipe or wood. Do not use metal parts within 33 feet of the firing line where direct fire strikes are anticipated. Discharging weapons close to metal surfaces is extremely dangerous. Present the smallest surface area that is structurally sound to the line of fire to minimize ricochet. Design the target holders for easy and inexpensive replacement. Portable, self-supporting 2- by 4-inch wood frames or 2-inch by 2-inch wood plank placed into buried PVC pipe work well on simple ranges. The full face of the target must be visible to the shooter.

(d) Turning targets and the display time are at the discretion of the user. Commercially available, electrically motorized target carrier and electronic scoring systems should be considered where economically feasible.

(e) On open ranges, a single target line with multiple firing lines is preferred. On partially or fully baffled ranges, in most instances, a single firing line with multiple target lines will produce the most cost-effective range because of the firing line canopy. An

extremely advanced target mechanism may be significantly more expensive than multiple canopies used to shift the advantage.

(9) Impact Structures. The structure varies depending on the type of range. Natural terrain such as a mountain, cliff, or steep hill may be incorporated into impact structures provided the completed structure complies with the minimum requirements of this Section. Acceptable structures by range type are listed below.

(a) For open ranges, the top elevation of the earth impact berm should be 26 feet above the range surface for ranges 100 yards long or longer and 16 feet above the range surface for ranges 50 yards long or less. The impact berm should extend 50 yards beyond where the target line ends for 100-yard-long ranges and 16 feet, or until joining with the side containment, if provided for ranges 50 yards long or less.

(b) The suggested elevation may be met by designing a combination of earth berm and vertical baffle (see Figure 14). The earth berm portion should have a top elevation of 16 feet above the surface of the range. The vertical baffle should be constructed of ballistic material and designed to withstand local seismic and wind loads. This combination arrangement would reduce the footprint and the amount of material in the earth berm.

(c) The preferred slope of the impact berm face is 1 to 1 or steeper. The steeper the slope, the more likely the berm is to absorb projectiles. The top should be 10 feet wide. The impact slope should be constructed with a 3-foot layer of easily filtered soil (to reclaim the lead projectiles) free of boulders, trees, rocks, stones, or other material that will cause ricochet. The rear slope should be appropriate to the native soil and maintenance requirements.

(d) For partially and fully baffled ranges, the top elevation of the impact structure will vary depending on the overhead baffle and impact structure arrangement. The impact structure for a partially baffled range can be: standard impact berm, bullet trap, or hybrid. For fully baffled ranges, the impact structure must be a bullet trap. In all instances, the impact structure must connect to the side containment. The top of the berm should be at an elevation 5 feet above the point where the highest line of direct fire can strike the berm.

(e) Outdoor bullet traps can be constructed by placing the last vertical overhead baffle over the last target line and placing a sloped baffle to connect from the top of the earth berm to the back of the last vertical baffle. The bottom of this lower-sloped overhead baffle

should be 2 feet above the highest point on the berm where direct fire might strike. See Figure 15 for material and construction details. Rainfall runoff from the sloped baffle onto the berm must be considered.

(10) Side Containment. For partially and fully baffled ranges (Figures 7 and 8), the top elevation of the side containment must geometrically mate with the overhead baffles to be high enough to prevent any direct fire from exiting the range. Full-side height containment should extend 3 feet to the rear of the firing line. Locate the side containment at least 10 feet outside of the centerline of the outermost firing lane. Construction may be in the following forms.

(a) Earth Berm. Construct earth berms to an inside slope of 1 to 1.5. If native soil characteristics will not produce a stable slope at this angle, provide geotechnical fabric reinforcement in the fill. The top width of the berm should be at least 10 feet. No rocks are permitted in the top 3 feet of the inside surface. Generally, earth berms cannot be used on partially or fully baffled ranges; however, earth berms are permissible if the firing range is small and the overhead baffle and berm geometry intercept ricochets.

(b) Continuous Walls. Construct continuous walls of ballistic material to withstand local wind and seismic loads. Provide sacrificial cladding to 13 feet forward of the firing line and 3 feet behind the firing line. Continuous walls are preferred for fully baffled ranges.

Table 2. Thickness of Material for Positive Protection Against the Caliber of Ammunition Listed

Cover material	Caliber and thickness required to stop penetration		
	5.56 mm	7.62 mm and Cal. 30	Cal. 50
Concrete (5,000 lbf/in^2)	5 inches	7 inches	12 inches
Gravel-filled concrete masonry units	8 inches	12 inches	24 inches
Broken stone	14 inches	20 inches	30 inches
Dry sand	16 inches	24 inches	32 inches
Wet sand	25 inches	36 inches	48 inches
Oak logs (wired)	28 inches	40 inches	56 inches
Earth			
Packed or tamped	32 inches	48 inches	60 inches
Undisturbed compact	35 inches	52 inches	66 inches
Freshly turned	38 inches	56 inches	72 inches
Plastic clay	44 inches	65 inches	100 inches
NOTE: Figures are based on new material. Degradation may occur over time.			

(c) Wing Walls. Wing walls (side baffles) are discontinuous side protection set at 45º to the line of fire. Locate the wing walls so that they are overlapped by 6 inches based on any line of fire that may strike them. Construct the wing walls of ballistic material to

withstand wind and seismic loads. Additionally, provide sacrificial cladding on wing walls closer than 30 feet to the firing line.

(d) End Walls. End walls may be constructed at the firing lane edge on the firing line in lieu of extending side containment 3 feet behind the firing line. Walls should be long enough to close off any line of sight between the end of the side containment and the rear 3 feet mark. The end walls should be constructed of ballistic material with sacrificial cladding extending from the canopy to the firing line surface.

(11) Overhead Baffles. Overhead baffles must be located so that no direct fire can exit the range from any firing position. The first overhead baffle must be geometrically coordinated with the firing line ballistic canopy (see Figure 9). The top elevation of the top of each following baffle should be 6 inches higher than a line of fire that just clears beneath each preceding baffle (see Figure 16). Overhead baffles should be the same height and spaced apart down range to achieve the required geometry (see Figure 17). The last baffle should be placed so the line of fire will strike the impact structure no higher than 5 feet below the top elevation of the structure. On a fully baffled range, the last overhead baffle must be over the last target line.

(a) On partially baffled ranges, overhead baffles must extend laterally to within 1 foot of the side containment. On fully baffled ranges, the overhead baffle must tie into the side containment.

(b) The vertical dimension of an overhead baffle when it is vertical varies with the number and spacing of the baffles. Normally, the height is between 5 and 8 feet when considering structural support size and costs.

(c) The baffles must be constructed of ballistic material. Baffles within 11 yards of the firing line should be covered with sacrificial cladding. See Figures 12 and 18 for possible configurations.

(d) Space the structural columns as far apart laterally as possible to open firing lanes. If possible, do not construct columns within the range. Design columns or beams to withstand local wind and seismic loads, and provide protective steel plate on the faces of the columns exposed to the firing line in accordance with Figures 12 and 18. Provide sacrificial cladding if the column is within 10 yards of the firing line. Overhead baffles may be placed on a flatter slope and overlapped to function as firing line canopies if multiple firing lines are to be used (see Figure 17). This arrangement is cost-effective for baffled combat lanes.

5. INDOOR RANGE DESIGN.

a. Use of Indoor Ranges.

(1) Indoor ranges must be designed so projectiles cannot penetrate the walls, floor or ceiling, and ricochets or back splatter cannot harm range users. Considerations should be made for cleaning of all surfaces and handling of hazardous wastes.

(2) Lead exposure requirements must be reviewed for applicability.

b. Site Selection.

(1) Walls and Partitions. Indoor ranges must incorporate walls and partitions capable of stopping all projectiles fired on the range by containing or redirecting bullets to the backstop.

(2) Existing Buildings. If there are existing drawings of the facility, copies should be obtained from the original owner, architect, engineer, builder, or building permit. If original drawings of the building are not available, a sketch can be made of each floor of the building with a special emphasis on the load-bearing walls. The following considerations should be used when making the initial evaluation of an existing building.

(a) General Construction. Buildings constructed of wood products should be avoided. Modifications to reinforce the structure to support metal backstops or to reduce fire hazards may not be cost-effective.

(b) Exterior Walls. The type of exterior wall construction (e.g., masonry, wood, concrete, metal, combination, other) should be identified. Masonry buildings should be given primary consideration, especially those constructed on concrete slabs.

(c) Floors, Walls, and Ceilings. Floors, walls, and ceilings must be able to contain a bullet fired as well as the sound.

1 The ideal wall is made of poured concrete a minimum of 6 inches thick.

2 To aid in range cleaning, concrete floors should be finished so they have a nonporous surface.

3 Ceilings should be 8 feet high and enclosed to reduce air turbulence created by ventilation systems.

4 Evaluate the structural support designs of older buildings for their ability to withstand new loading. Original design

considerations usually do not allow for installing heavy backstops and other range equipment.

5 To decide if modifications are necessary, slab buildings must be analyzed carefully to determine the capacity for floor loading. If there are no floor drains and it is economically feasible, modifications should also include adding one or more floor drains.

6 Ceiling joists may require strengthening to support baffles and shielding material.

(d) Electrical. Electrical needs may require the installation of heavy-duty wiring both internally and externally to accommodate the added power needs of range ventilation, heating, lighting and target-carrier mechanisms.

(e) Plumbing. Plumbing does not usually require major modifications; however, heavy metals may be prohibited from area wastewater treatment collection systems. Therefore, an approved filtration system may be necessary for disposal of hazardous waste material; e.g., lead.

(3) Precast Buildings.

(a) Precast concrete companies can provide complete precast buildings (job site-delivered) if engineering specifications for steel placement are provided on a set of plans (drawings) for the proposed building.

(b) Precast assembly allows for installation of a roof design more suitable for an indoor range. Gabled or hip roof designs should not be used.

(c) Hollow, precast concrete panels provide an option to bar joists, eliminating bullet ricochet or splatter. A flat bar joist design is the recommended alternative to hollow, precast concrete panels.

(d) The flat roof design also provides support for heating, ventilating, and air conditioning (HVAC) equipment outside of the range, which saves space and reduces cost.

(4) New Construction. New indoor construction projects require the same guidelines as existing buildings; however, they offer the advantage of building a structure specifically for an indoor shooting range.

c. Range Planning. Design work for ventilation, wall structures, floors, ceiling, acoustics, backstops, and lighting will depend on how the range will be used.

(1) A determination for the type of building required includes the following considerations.

(a) Can the range be built in an existing building or is a new one required?

(b) How large should it be?

(c) How many shooters will it be expected to serve?

(d) Will it be used for competition?

(e) Should space be allowed for classrooms?

(f) How much will the facility cost?

(2) The planning process should include:

(a) obtaining ordinances, zoning regulations, building codes, soil conservation regulations and other information pertaining to legal requirements;

(b) for evaluation, identifying a site for a new building or several existing buildings that may have the suitable design characteristics; and

(c) gathering other technical information relevant to the project. This information includes zoning requirements, onsite information, and range design criteria. Local zoning codes or health department regulations normally will provide answers or solutions on how the project is to be handled.

d. Design Criteria. Based on the site selected, type of shooting, number of users, and site layout, the next step is to design the facility by preparing detailed drawings showing specifications and necessary dimensions. The four main considerations for indoor ranges are shooter needs, type of shooting activity, number of firing points, and number of users. Special consideration should be given to ventilation, lighting, safety baffles, and backstop design. The following standard and optional features for indoor ranges should be considered.

(1) Backstops and Bullet Traps.

(a) The design of a backstop or bullet trap is a contributing factor to the service life of the unit. Steel should be installed according to

the type of ammunition to be used and to proven angle configurations.

(b) The design criteria should be based on the planned use of the facility. Metal plates selected for use in a backstop or trap must resist repeated stress according to the degree of stress applied. Necessary characteristics are resistance to abrasion, resistance to penetration, surface hardness, thickness, and alloyed strength to resist metal fatigue.

(c) The main backstop is generally a fabricated steel plate or series of plates used to stop bullets fired on a range. Backstop configurations and plate thickness will change according to type of shooting activity.

(d) Steel backstops with sand or water pits are common; however, a few indoor ranges use earthen or sand backstops.

CAUTION: Earthen or sand-filled backstops are not recommended because they can create health hazards for maintenance workers from silica and lead dust. They also cause excessive wear on ventilation fans.

(e) Backstops must extend from side to side and from ceiling to floor to protect the end of the range completely from penetration by direct bullet strike and prevent ricochets, back splatter, and splatter erosion of side walls.

(f) Four basic backstop and bullet trap designs are used for indoor ranges: Venetian blind, escalator, Lead-a-lator®, and the angled backstop (45º) back plate. Other backstop designs exist and should be researched for applicable use.

1 Venetian Blind Backstop. Requires less space, but without proper installation and regular maintenance it can cause back splatter problems from exposed edges of each main segment of the backstop. Keeping the exposed edges ground to original specifications is time-consuming, difficult, and requires skilled personnel.

a To control back splatter, a curtain should be hung in front of the backstop. Tests have been conducted on materials including canvas, burlap, cardboard, insulation board, and synthetic rubber. Properly installed, these materials effectively stop back splatter. Walls using insulation board or a synthetic rubber curtain are best.

b The main advantage of the venetian blind backstop is minimal space requirements. While an angled plate or an escalator will use 14 feet of space, the venetian blind uses only 5 feet.

2 Escalator Backstop. Sets up with flat steel plates laid out on a framework sloping away from the shooter. Between each series of plates, an offset allows a bullet sliding down the facing surface to drop into a hidden tray for easy cleanup. At the top or back of the backstop, a swirl chamber is provided to trap the bullets or bullet fragments as they exit the backstop surface. Once the bullet's flight ends in a spin-out chamber, the bullet or pieces fall into a cleanup tray.

3 Lead-a-lator®. A variation of the escalator-type backstop that uses a curved instead of flat piece of steel. The surface is concave and operates so that a bullet will follow the contour of the surface into a dry lead spinout chamber where it is trapped.

4 Angled Backstop (or 45º Inclined Plates). Uses a sand or water trap and has been the traditional alternative for indoor ranges.

a The angle of the plate should never exceed 45º from the ground. The 45º plate and pit backstop is relatively inexpensive, but there are several disadvantages. Sand traps require frequent cleaning to remove bullet fragments. Cleaning operations require workers to wear high-efficiency particulate air (HEPA) filter masks if material is removed dry. It is best to dampen the sand trap material before and during cleaning operations to eliminate dust. To maintain a healthier internal environment, frequent removal, disposal, and replacement of lead-laden sand is required. The surface should be continually raked to keep the sand level and to guard against splatter as lead buildup occurs.

b The cleaning operations are easier when a water trap is used. However, a water trap requires chlorine and other chemicals to retard algae growth and antifreeze in colder months to prevent freezing. Installing a water pit requires a different approach to foundations and footings, especially in areas affected by earthquakes or freezing.

(2) General Range Cleaning. Both dry and wet methods can be used to clean the range. The method selected depends on the frequency of use. The wet method is preferred when floor drains are available, and keeping materials wet during cleaning operations reduces or eliminates release of microscopic dust particles. When dry methods must be used, workers must use the appropriate personal protective equipment (PPE) that has been established by local industrial hygiene personnel. After cleaning operations are complete, workers must shower and have work clothing laundered.

(3) Backstop Steel Plate Specifications.

(a) Steel plates supported by concrete or masonry should be anchored by expansion bolts or toggle bolts, as suitable for construction, with flush countersunk heads not more that 12 inches on center of all edges of each plate. Joints and edge lines should be backed with continuous ½-inch thick plate no less than 4 inches wide. Bolts should pierce both the facing and back plates. Expansion bolts should penetrate concrete not less than 2 inches. Steel plates must have milled edges at all joints.

(b) Joints must be butted flush and smooth. After the plates are erected, they must not have any buckles or waves. Exposed edges must be beveled at 42º to a fillet approximately ½-inch thick. There must be no horizontal joints in any steel plate work.

(c) Welding must meet the American Welding Society code for welding in building construction. Steel plates joined at, and supported on, structural steel supports must be spot-welded to steel supports not more than 6 inches on center.

(4) Baffles, Deflectors, and Shields. Baffles on indoor ranges protect lighting fixtures, HVAC ducts, ceilings, and target carrier apparatus. Baffles are designed to protect against the occasional errant bullet but not for repeated bullet strikes.

(a) To cover or protect vulnerable ceiling areas or range fixtures, baffles must extend the entire width of the range and downward. Spacing of baffles on a 50 to 75 feet range depends on the ceiling design. Range distance (firing line to target line) and height are factors. Ceilings must be impenetrable.

(b) Baffles or deflector plates must be used when modifying an existing building, especially in a building constructed of wood. This will prevent bullets from escaping or penetrating. Baffles should be a minimum of 10-gauge steel covered with a minimum of 1 inch of soft wood to prevent back splatter. The wood traps the

projectile, whereas bare steel redirects it downward into the range area. A wood surface must be applied to overhead baffles, because ranges with untreated baffles usually show significant damage to concrete floors and often complete penetration through wood floors.

(c) Baffles should be installed at a 25º angle as measured from the horizontal plane of the ceiling. The baffle size and placement depends on what surface areas require protection. For example, ceiling baffles are wider than side baffles. See Figures 14 and 15 for baffle placement.

(d) Unlike baffles, deflectors are installed vertically and horizontally to redirect wide-angle shots into the backstop area. Deflector shields protect pilasters, leading edges of sand traps, bottom edges of backstops, doorways, windows, ventilation registers along the wall, etc. Deflectors are not covered with wood generally, but may be. These devices are also installed at a 25º angle either to the wall surface or floor. See Figure 16 for deflector installation.

(e) To protect ceiling areas, special impenetrable shields are installed above the firing line, especially in wood frame buildings.

1 Shields should extend the entire width of the range and 12 feet forward of the firing line. Floor shields may be required on wood floors.

2 Shields must be constructed from metal sheets according to planned use. For example, 10-gauge steel covered with a minimum of 1 inch of soft wood is effective in stopping most pistol calibers.

(5) Floors, Walls, and Ceilings. Indoor range facility floors, walls, and ceilings must be impenetrable; therefore, an existing building must have a structural analysis to determine loading factors that may exceed original design specifications. Wooden buildings may require modifications to support the increased weight. Specifications for new construction call for either poured-in-place concrete, pre-cast concrete, or dense masonry block. Solid cinder block should be used in place of hollow-core block. Specifications for modifying existing buildings call for adding additional materials to prevent bullet escape, which can be done with wood and steel laminated shields. Laminated shields can be constructed onsite by placing sheet-steel or steel plates between two sheets of ¾-inch plywood. While this method is more expensive than the extended booth design, it allows for an open firing line and better visibility for the range officer. Walls should be treated beginning 3 feet to the rear of, and extending forward of,

the firing line until all vulnerable surfaces are protected. Acoustical material should be applied to the surfaces to aid in sound control.

(a) Floors. The range floor should be constructed by using a single pour and a fine, uniform-aggregate mix of concrete. Reinforcement should be No. 4 steel rods placed 12 inches on center along with 6- by 6-inch 8/8-gauge welded wire fabric. This may vary according to soil conditions. Very large floor areas may require two or more pours with expansion joints between each slab.

1 The floor should be designed to slope down toward the target line, beginning at the firing line, ¼-inch per foot.

2 The floor should be no less than 4 inches thick.

3 Floor size is governed by design. Larger size will result in higher costs for ventilation, lighting, heating, and overall building design. The decisions should be based on expected number of users versus overall cost.

(b) Floor Guards. Floor guards are provided to protect leading edges or protrusions, e.g., drains, traps or other protrusions from the floor area. Floor guards are designed to redirect errant bullets into the backstop area, which minimizes range damage.

1 Floor guards are constructed from 10-gauge steel and may be covered with wood.

2 Floor guards are installed horizontally along the floor surface parallel to the firing line.

3 Floor guards typically slope away from the firing line at a 25º angle to the horizontal.

4 Floor guards should extend only as high as necessary to protect exposed surfaces.

(c) Floor Drains. Floor drains should be constructed of cast iron soil pipe. The drain pipe should be attached to a lateral drain located 1 foot forward of the backstop floor guard. The drain pipe must lead to a filtration system approved by the cognizant environmental, safety, and health organization on the site.

(d) Walls. Poured concrete or masonry is preferred for wall construction, but wood may be used. Wall thickness must conform to acceptable engineering standards and comply with Federal, State, county and local zoning codes. Usually, no less than 3-inch

thick, reinforced walls should be constructed to prevent the exit of any projectiles.

NOTE: This specification usually requires the use of steel or similar material where wooden walls are used. The size depends on building design, geological conditions, and climate. Size includes the height, thickness, and length of the running wall.

(e) Ceiling. Ceiling material should reduce sound, protect lighting devices, reflect light and be impenetrable. Typically, ceilings include 10-gauge steel baffles, 2- by 4-feet white acoustic panels, and clear-light panels.

1 The ceiling should be a minimum of 8 feet above the floor level and have an acoustically treated, smooth surface to allow for positive air movement downrange.

2 Baffles to protect adjoining areas should be above a false ceiling or designed into the roof/ceiling structure.

(6) Shooting Booths. Commercial or locally built shooting booths may be desirable on pistol ranges; however, they are not recommended for rifle ranges. Shooting booth panels can provide an impenetrable barrier between shooters, reduce sound levels, restrict the travel of brass, and act as a spray shield when revolvers are used.

(a) Shooting booths should be omitted for ranges that use only rifles.

(b) A shooting booth should never extend more than 18 inches behind the firing line because greater extension may obstruct the range control officer's visibility.

(c) Bullets fired from any firearm used on the range must not be able to penetrate booth panels. The booth panel must be able to withstand the impact of a bullet fired at any angle to the surface and at point-blank range.

(d) Design criteria for the construction of booth panels are as follows:

1 Cover the 10-gauge steel plate with a nominal 2 inches of soft wood. In a series of tests using 10-gauge steel plate, firing all lead bullets at right angles, the plate covered with a nominal 2 inches of soft wood withstood direct hits from all standard pistol calibers up to, and including, .44 caliber magnum;

2 Use special acoustical materials to ensure that panels reduce muzzle blast effects on all shooters and range personnel;

3 Ensure that panels do not restrict airflow;

4 Ensure that panels do not restrict the range officer's visibility of the firing line; and

5 Construct panels so they extend from the floor to a minimum height of 6 feet. Panels should be ceiling height.

(7) Target Carriers and Turning Mechanisms. An indoor range can be operated more efficiently and safely by installing a target transport system. This system may be a simple, hand-made device or a completely automatic, electrically powered system. Either one will enhance safety by eliminating the need to walk downrange to replace targets. Target carrier systems speed up range operations. A turning target mechanism is available that faces the target parallel to the line of sight and then turns the target 90º to the line of sight to begin the stated time period. The target carriers should position the targets in the approximate center of the backstop.

(8) Control Booth. Range control booths must allow for maximum visibility and provide for easy access into and out of the range and ready area. The control booth should provide seclusion from and immediate access to the range environment. This design protects the range officer from frequent exposure to high sound levels and lead emissions.

(9) Communications. A communications system capable of relaying range commands distinct and separate from the sounds generated by shooting activities is required. Communications systems must account for shooters who wear two pairs of hearing protectors and persons who have substantial hearing loss.

(10) Ventilation and Filtering Systems. This section deals with the design or redesign of ventilation systems for indoor firing ranges. Administrative or engineering controls must be instituted to prevent shooters from being exposed to airborne lead levels exceeding acceptable limits. Administrative controls are used either when engineering controls fail to reduce exposure or when range use exceeds HVAC system specifications. Administrative controls are especially applicable to reducing risks on existing ranges.

(a) Administrative controls used to reduce exposure levels on an indoor range must be rigidly followed and enforced, and

compliance must be recorded in a log book for purposes of analysis and reference.

(b) The following administrative controls are provided and must be used where individuals are frequently exposed to airborne lead.

1 Provide range maintenance personnel with appropriate PPE, e.g., safety glasses and respirators.

2 Provide proper HEPA filter cleaning equipment. The equipment must be able to remove accumulated lead dust from floors, walls, and ledges and must include attachments capable of removing lead-laden sand from the backstop area.

(c) A ventilation system must be installed that will provide clean air in the user's breathing zone to reduce exposure to potentially dangerous materials to safe levels.

(d) Adopt administrative controls that monitor and control exposure time for a given user and/or assigned range personnel.

(11) Lighting.

(a) A visually safe facility should be free of excessive glare and major differences in light levels. Therefore, floors and ceilings should be designed to provide light reflection. In the event of a power outage, battery-powered emergency lighting must be provided for emergency exits.

(b) Rheostat-controlled lighting fixtures, which can reproduce near-daylight and low-light conditions, are best suited for indoor ranges. Range lighting involves three systems: general lighting, local lighting, and semi-direct lighting.

1 General lighting provides uniform light levels over the entire range area and adjoining areas and is usually installed in a symmetrical arrangement to blend with the architecture.

2 Local lighting supplements general lighting along the firing line to provide better visibility for those tasks associated with the loading and firing of firearms.

3 Semi-direct lighting distribution directs 60 to 90 percent of the lighting on the target with a small upward component to reflect from the ceiling and walls to soften shadows and generally improve range brightness. When ceilings are

white, lighting fixtures mounted too close together create excessive glare.

(c) Lamp specifications for general lighting must be adjustable to provide 0.2 to 50 foot-candles of luminance measured at a point 7 yards from the target line. Local lighting should produce 0.2 to 60 foot-candles of luminance on the firing line. Semi-direct lighting on the targets should achieve 0.2 to 100 foot-candles of luminance. Glare should be reduced or eliminated by incorporating pastel colors in the interior design.

(d) Lighting designs should also seek to balance the color of light emissions. For example, most fluorescent fixtures produce high levels of blue, which alone are not suitable for indoor ranges. If fluorescent fixtures are used, green tubes or other light sources should be installed to balance the colors.

(12) Plumbing. Plumbing requirements specify that there must be a fresh water supply for personal hygiene and for range cleaning chores. There also must be a waste removal system for normal waste material and material removed from the range. An approved filtration system must be provided for range cleaning waste. Floor drains should be connected to this alternate waste system. Restrooms, showers, and sinks should be connected to a regular sewer system.

(13) Sound Control. Sound control on indoor ranges includes two distinct components: airborne and structure-borne sound. For airborne sound, all leaks into outer areas should be sealed, which includes airtight insulation around doors, windows, HVAC ducts, walls, and ceilings. Structure-borne sound reduction is necessary to protect adjoining, occupied rooms. Acoustical material should be applied to walls, HVAC ducts, floor, and ceiling areas.

(14) Range Control. Range control provides rules and supervision that encourage safe and proper use of a range. Safety devices control the physical use of an indoor range and may include warning lights, alarm bells, switch locations, etc. For example, an indoor range with a door in the downrange area should be equipped with an alarm. The door could also be secured by a mortise lock or barred from within but must remain a fire exit. Fire codes generally prohibit bars on doors that would delay escape from a building. Emergency personnel must be able to access the doors. Any door that can be accessed from the outside must be marked with warning devices to indicate when the range is in use. When installing doors on indoor ranges, refer to Life Safety Code National Fire Protection Association (NFPA) 101.

(15) Target Carriers. Target carriers are used for the convenience of shooters to allow them to continue shooting without delay when target changes are necessary. For health considerations, target carriers keep shooters out of the high lead concentration areas and safely behind the firing line.

(16) Heaters. Protected heating units should be installed behind and above the firing position to provide a comfort zone for shooters.

(17) Gun Racks. Gun racks should be mounted behind the firing positions as an additional safety feature to reduce gun handling and to keep the range areas orderly. Appropriate material should be used to construct the gun racks, and the design must correspond to the weapons being used.

6. LIVE FIRE SHOOT HOUSE.

a. Introduction.

(1) A live fire shoot house (LFSH) is intended for use in advanced tactical training for Security Police Officers. Use of this facility includes individual tactics or Special Response Team force option training. All LFSHs must have an elevated observation control platform (EOCP). The following sections illustrate recognized construction methods for LFSHs. However, they do not eliminate the requirement for sound professional engineering design and validation.

(2) Administrative controls not directly related to design and construction must be in place during facility use. The administrative controls and engineering design allow for a reduction in physical barriers that prevent rounds from escaping the facility. Designed barriers must prevent a round fired with a vertical upward error of 15º from escaping the facility.

b. Site Selection.

(1) Site selection for an LFSH is similar to that for any range facility. Terrain features, noise, and availability of utilities and access roads must be considered, as already discussed in previous sections for indoor and outdoor ranges. The LFSH should be placed adjacent to other range facilities whenever possible so that it may utilize the same support facilities, access roads, etc.

(2) Facility design, target and shooter placement, and other administrative controls minimize the possibility of rounds being fired over the top of the walls and leaving the structure and mitigate the need for an SDZ outside the confines of the LFSH proper.

c. Design and Layout.

(1) The interior layout of the facility is based on the mission and training requirements of the site. Facility design should incorporate a wide variety of room configurations. Some of the room configurations that should be considered are: multiple floors, an L-shaped room, stairwells, rooms within a room, hallways, and closets.

(2) The floor plan design should accommodate the movement of target systems, bullet traps, and other equipment into and out of the LFSH.

(3) Exposure to airborne contaminants for a fully enclosed LFSH must be controlled by adequate ventilation. The lighting requirements are similar to those for indoor ranges.

d. Wall Construction.

(1) Wall Height. Exterior walls of the LFSH must be designed to absorb the most energetic projectile identified for use within the facility. Wall height must be a minimum of 8 feet. The wall height should allow a maximum error angle of 15º from horizontal standing shooting distance from the target and still enable a projectile to be contained by the wall, which can be described by the following equation: Wall Height is equal to the muzzle height plus 0.27 (tangent 15°) times the target distance. The following table assumes a muzzle height of 5 feet.

Distance from Muzzle to Ballistic Wall (Feet)	Wall Height (Feet)
11' 1"	8' 0"
13' 3"	8' 6"
14' 10"	9' 0"
17' 0"	9' 6"
18' 6"	10' 0"
20' 9"	10' 6"
22' 2"	11' 0"
24' 5"	11' 6"
25' 11"	12' 0"

If the distance from muzzle to ballistic wall exceeds the required wall height, other administrative, engineering or natural ballistic wall controls must be administered or considered such as shooter-to-instructor ratio, canopies, baffles, natural terrain, existing SDZ, standard operating procedures, and training.

(2) Ballistic Walls. Ballistic interior walls are the preferred method of construction. Where non-ballistic interior walls are used, additional administrative controls must be applied to target placement and team

choreography. Ballistic walls are required in all cases where containment of the round and protection of personnel is paramount.

(a) Footings. Footings must be designed using the engineering criteria that best ensures structural integrity and stability of wall construction.

(b) Composite Walls.

1 A combination of ¾-inch exterior grade plywood and steel is effective. Minimum thickness will be ¼-inch mild steel with an exterior-grade plywood separated by a minimum of ¾ inch with a maximum of 1½ inches from the steel surface.

2 Other combinations are possible. The main criterion is that the wall must stop any round fired and contain bullet fragments.

(3) Non-Ballistic Walls. These walls are constructed of materials that offer no protection to personnel or equipment in adjoining rooms. Material used for these walls must not contribute to or enhance ricochet or splatter. Additional administrative controls must be applied such as target placement and team choreography.

e. Doors. All doors must be constructed of wood with no glass. Additionally, at least a portion of the rooms must have working doors, some opening inward, some opening outward, and doors opening left and right.

NOTE: All devices in the LFSH, such as brackets and hangers, used to secure walls to floors or secure doors must be covered or protected to mitigate any tripping or ricochet hazards.

f. Ceiling or Roofs. Ceilings or roofs can be of value when the shoot house is required for year-round use in areas with severe weather conditions. Exposure to airborne contaminants must be controlled by adequate ventilation. The lighting requirements for fully enclosed shoot houses are similar to those for indoor ranges. When training exercises require target placement above the wall design, the ceiling or roof must be protected unless firing into an approved SDZ.

g. Floors.

(1) Floor construction must be selected for its ability to absorb direct fire, minimize ricochets, and provide a walking surface free of slipping/tripping hazards. Floors should provide the same ricochet protection as walls. Options include:

(a) exterior-grade plywood floor constructed in accordance with American Plywood Association guidelines over smooth finished concrete;

(b) concrete with brushed surface that minimizes slip and tripping hazards;

(c) asphalt;

(d) exterior-grade plywood;

(e) shredded bias-ply tires; and

(f) earth, free of rocks and debris that could cause ricochet.

(2) Construction joints between walls and floors must be designed to contain projectiles within the LFSH.

h. Bullet Traps.

(1) General Information.

(a) Targets used in LFSHs must be placed so that fire is directed into a bullet trap designed to capture the rounds.

(b) Bullet traps must be constructed to contain the most energetic projectile to be fired into them without dimpling/pitting the steel and contain splatter and fragments in all directions. The size and shape of a bullet trap may be altered, but materials may not be substituted.

(2) Specifications for construction.

(a) 5.56mm conventional ammunition must not be used when shooting into bullet traps without further testing and development of containment materials. Only 5.56mm non-toxic frangible ammunition can be used.

(b) Bullet trap steel must be set at a minimum 7º angle off vertical based on the most probable line of flight of the bullet. The greater the angle of the bullet trap, the less the deterioration on the steel plate. A bullet trap constructed similar to the DOE National Training Center design (see Figure 20) and then leaned against the wall of the shoot house with the base of the trap out approximately 1 foot provides adequate angle of the steel backing.

(c) Bullet trap steel must be constructed of a minimum ¼-inch, 500 Brinell hardness or equivalent rifle-grade steel. Quality

assessment and ballistic test sheets certifying the grade and quality of the steel backing plate must accompany every steel backing plate utilized.

(d) An anti-splatter shield must be used in front of the steel to prevent back splash. Two layers of 7/16-inch nylon-impregnated rubber belting material or ¼-inch self-sealing co-polymer sheeting are good examples of material to use.

(e) An air space must be left between the face of the steel and the facing material to allow fragments to collect in the rear of the trap. A 1¾ -inch air space is an accepted construction standard.

(f) Linatex™ rubber backing material between the fascia and steel backing plate is not recommended because it deteriorates rapidly when using 5.56mm frangible ammunition.

(g) Plywood under the fascia material and in front of the steel plate is not recommended because the material deteriorates rapidly with 5.56mm frangible ammunition.

(h) Bullet traps must be constructed for easy inspection of the inside of the fascia material and the front of the steel plate. Frequent inspection of the interior of the bullet traps must be conducted when rounds are fired into one general area.

(i) The fascia material must be inspected, replaced or repaired when the integrity of the fascia material allows the round to start dimpling the steel backing plate.

(j) The bullet trap steel backing plate, when used in the standard bullet trap design, must be replaced when 50 percent of the material in one general area has been chipped away.

(k) The requirement to remove from service any steel target when dimples exceed 1/16 inch does not apply. Steel backing plates must have a protective cover installed between the plate and the shooter that protects the shooter from back splash.

i. Elevated Observation Control Platform.

(1) EOCPs enhance the ability to observe and control LFSH operations. Administrative controls must be considered when constructing the EOCP. Platform construction and location is based on the training to be conducted. EOCPs must be constructed in accordance with all applicable regulations for elevated work platforms.

(2) EOCPs must be constructed to:

(a) maximize instructors' observation and control of the entry team fire and movement;

(b) facilitate communication between instructors on the EOCP and the floor;

(c) position the lowest point of the horizontal walking surface higher than the 15° vertical error for any target engaged;

(d) provide ready access;

(e) integrate instructors' movement with team flow;

(f) maximize instructors' ability to see shooters clearly at all times; and

(g) have supporting structures placed so that they pose no additional hazards such as tripping, ricochet, splatter, etc.

ATTACHMENT 1 -- RANGE DESIGN FIGURES

Figure 1. Surface Danger Zone (SDZ) for Small Arms Firing at Fixed Ground Targets

Figure 2. SDZ for Small Arms Weapons Firing at Moving Ground Targets

Figure 3. SDZ for Small Firing at Fixed Ground Targets with Rocky Soil or Targets Causing Ricochet

Figure 4. SDZ for Firing M79, M203, and M19 40 mm Grenade Launchers

Figure 5. SDZ with Impact Berm for Small Arms Firing at Fixed Ground Targets

Figure 6. Open Range with Impact Berm and Side Protection SDZ for Small Arms Firing at Fixed Ground Targets

Figure 7. SDZ for Partially Baffled Range (Small Arms Firing at Fixed Ground Targets)

Figure 8. SDZ for Fully Baffled Range (Small Arms Firing at Fixed Ground Targets)

Figure 9. Ballistic Overhead Canopy

Figure 10. Outdoor Rifle Range Layout

Figure 11. Pistol Range Layout

Figure 12. Ballistic Material

Figure 13. Ballistic Protection of Target Mechanism

Figure 14. Impact Berm for Open and Partially Baffled Ranges

Figure 15. Outdoor Bullet Trap

Figure 16. Baffle Range Profile

Figure 17. Baffle System Geometry

Figure 18. Overhead Baffle Ballistic Designs

Figure 19. Parallel Ranges

Figure 20. National Training Center Bullet Trap

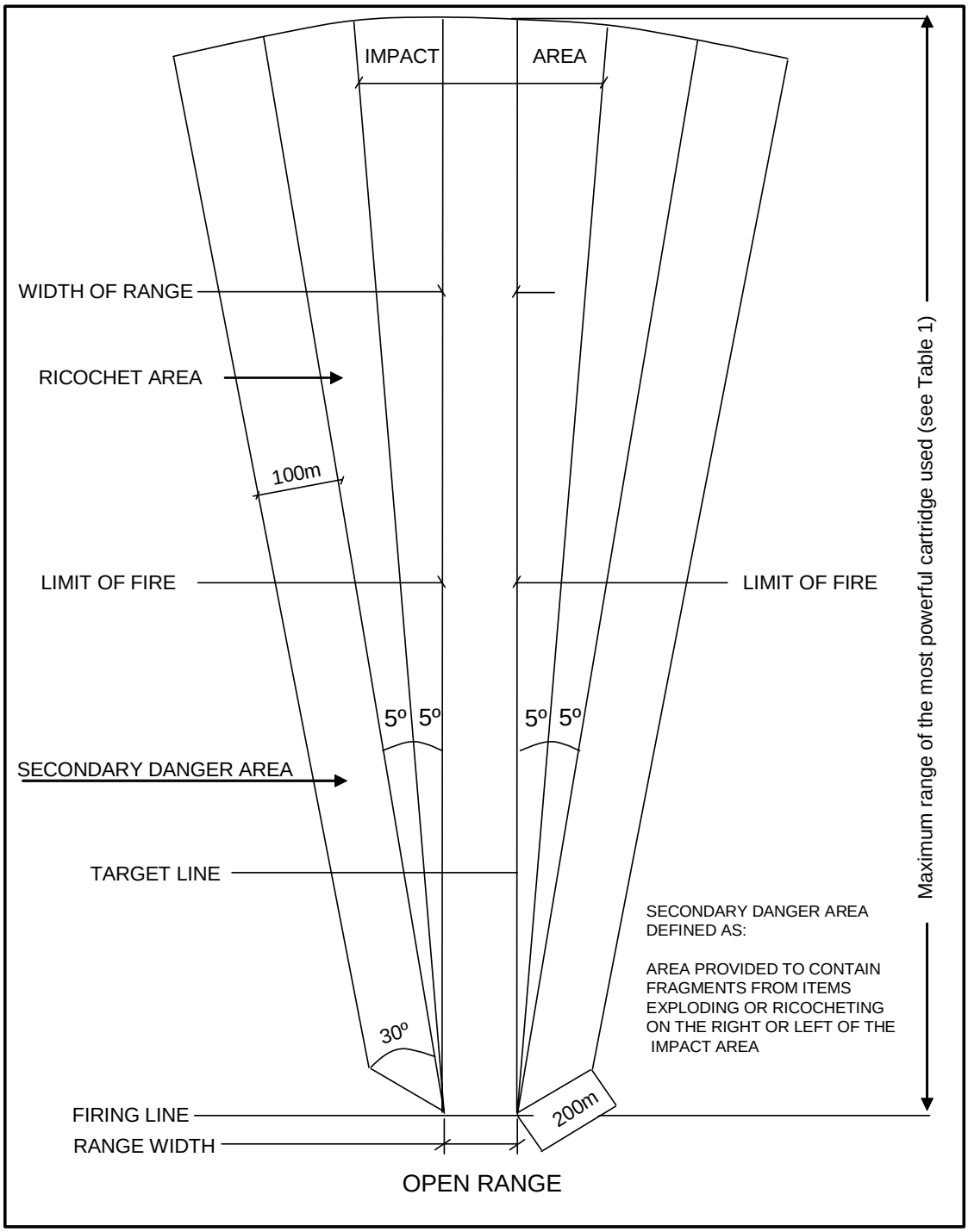


Figure 1
Surface Danger Zone for Small Arms
Firing at Fixed Ground Targets

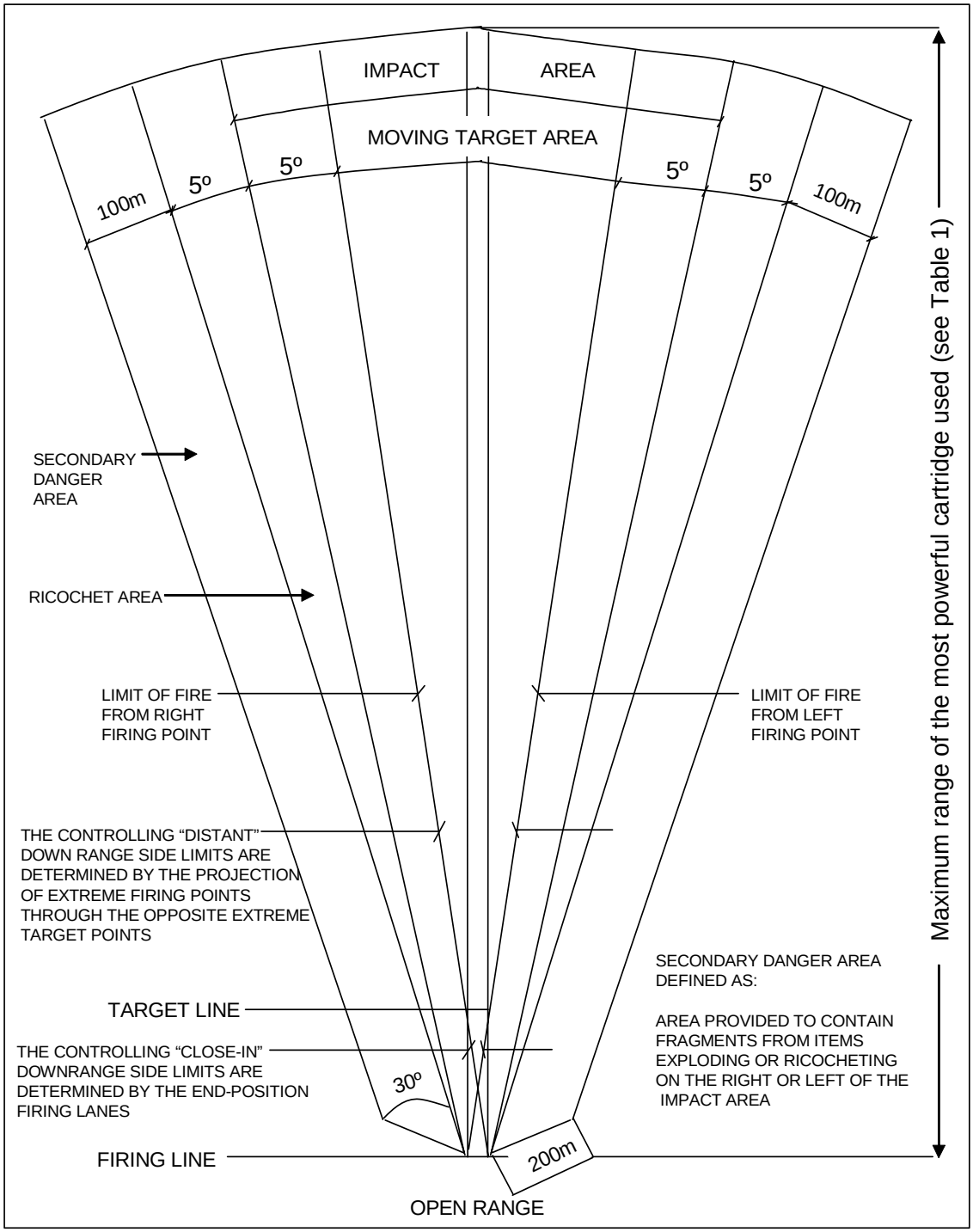


Figure 2
Surface Danger Zone for Small Arms Weapons
Firing at Moving Ground Targets

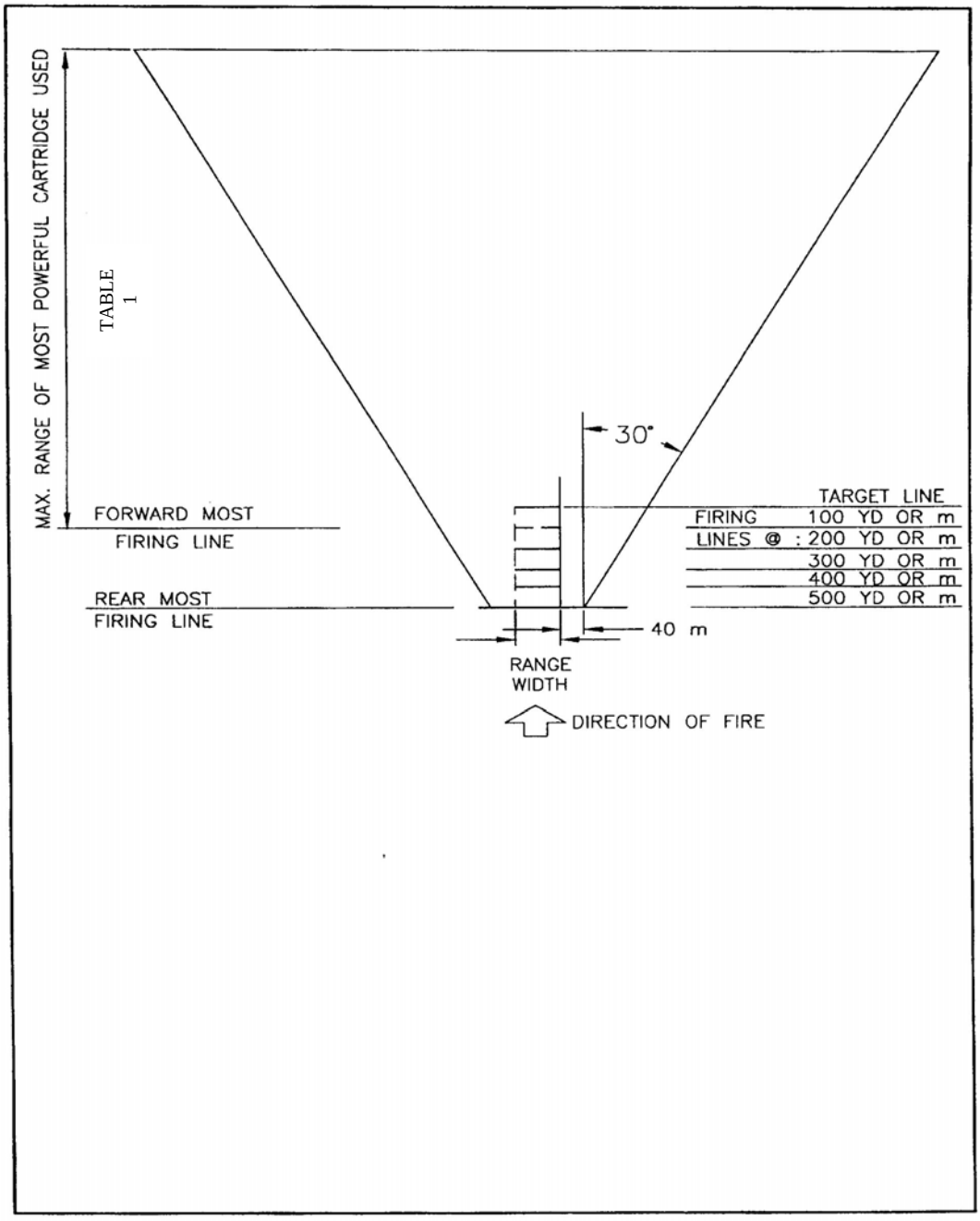


Figure 3
Surface Danger Zone for Small Arms Firing
At Fixed Ground Targets with Rocky Soil
Or Targets Causing Ricochet

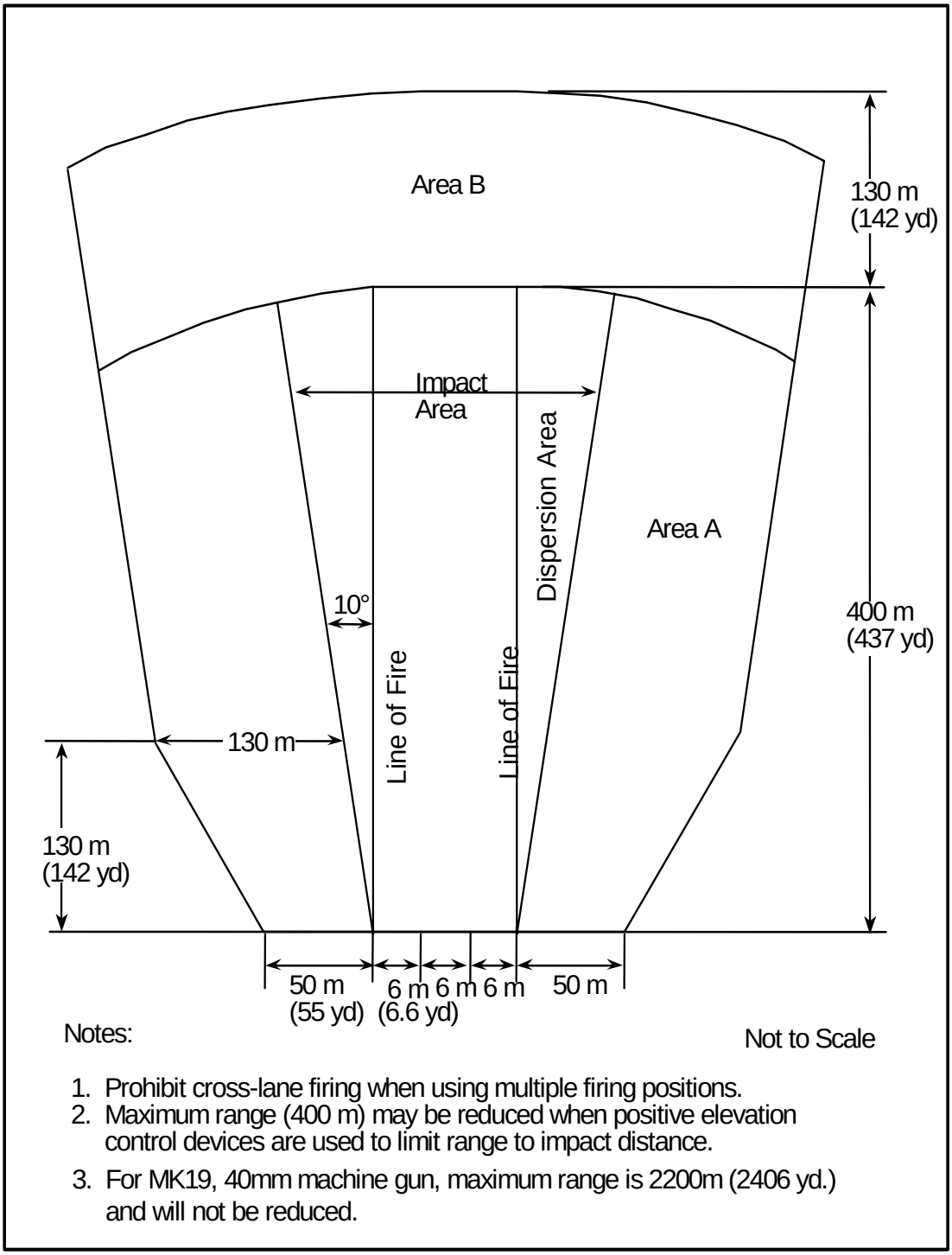


Figure 4
Surface Danger Zone for Firing
M79, M203, and M19 40mm Grenade Launchers

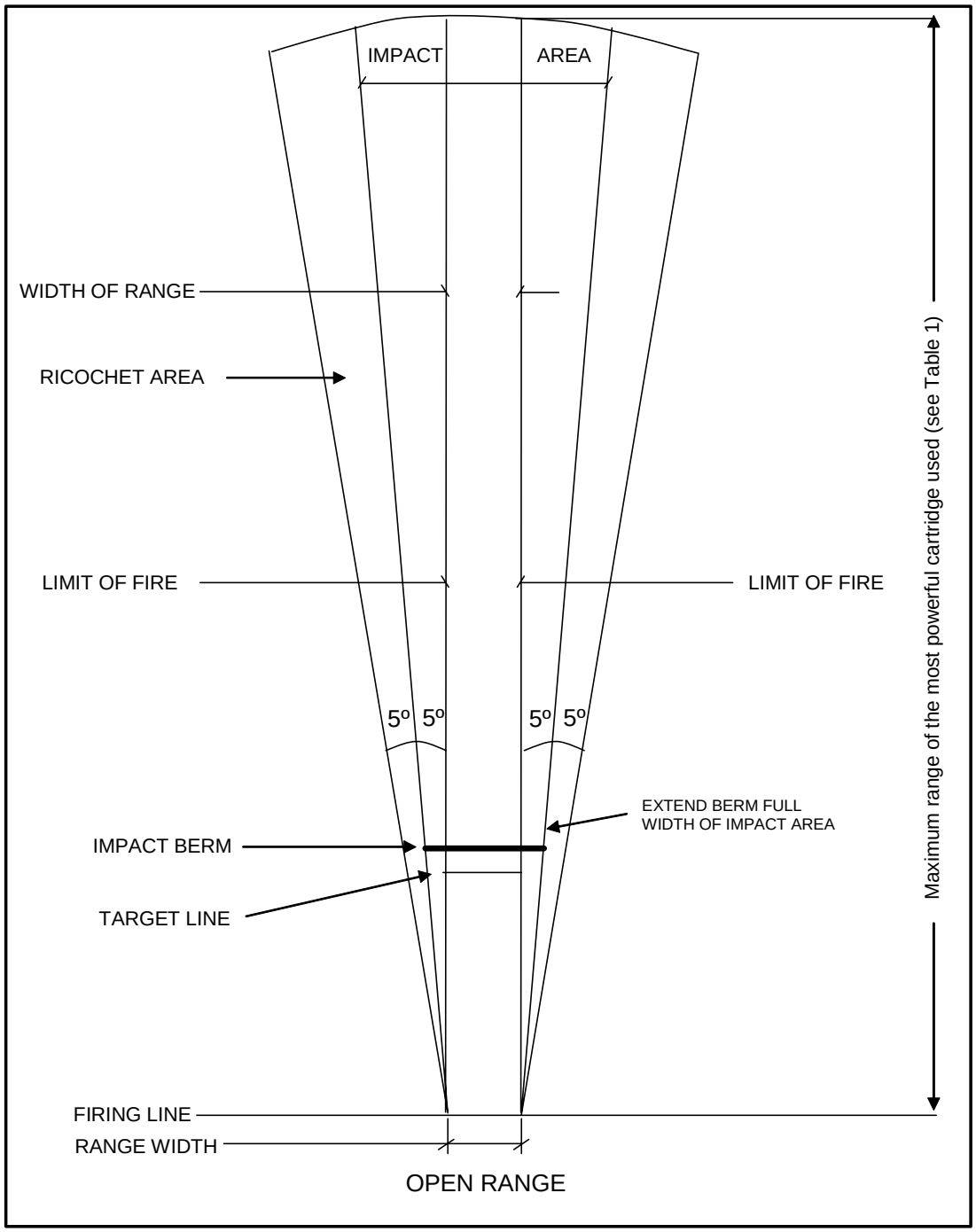


Figure 5
Surface Danger Zone with Impact Berm
for Small Arms Firing at Fixed Ground Targets

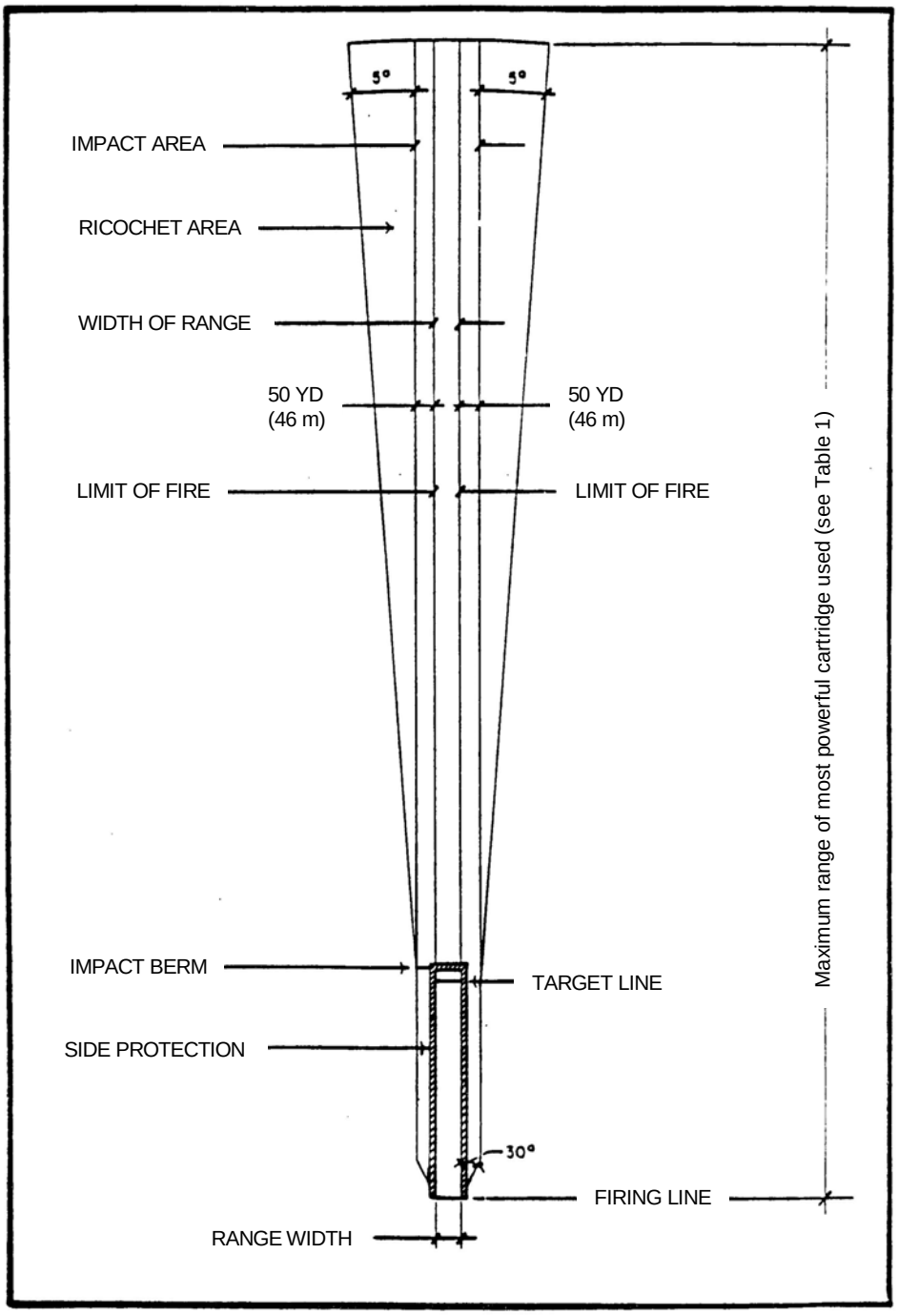


Figure 6

Open Range with Impact Berm and Side Protection Surface Danger Zone for Small Arms Firing at Fixed Ground Targets

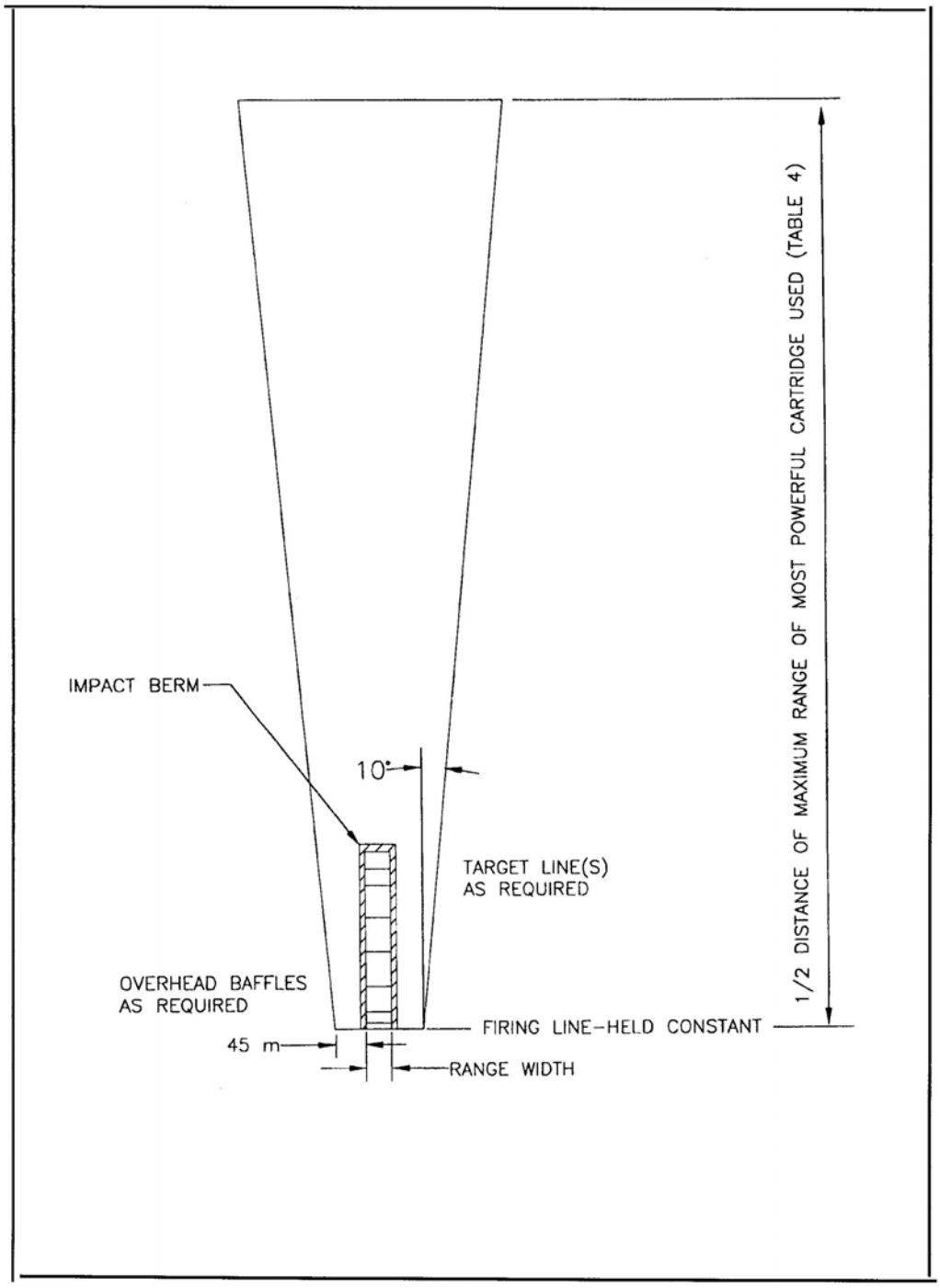


Figure 7
Surface Danger Zone for Partially Baffled Range
(Small Arms Firing at Fixed Ground Targets)

(TABLE 1)

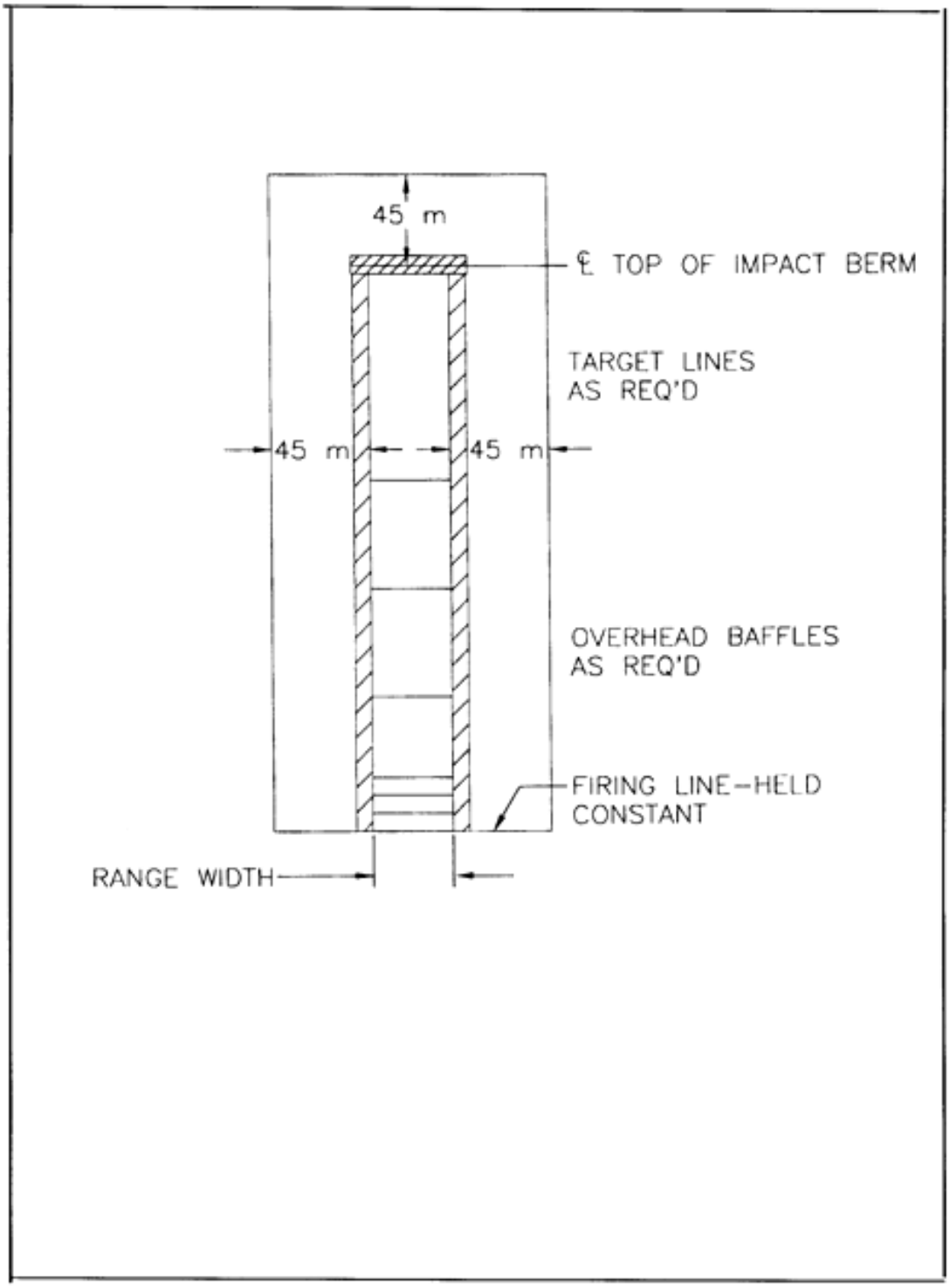


Figure 8
Surface Danger Zone for Fully Baffled Range
(Small Arms Firing at Fixed Ground Targets)

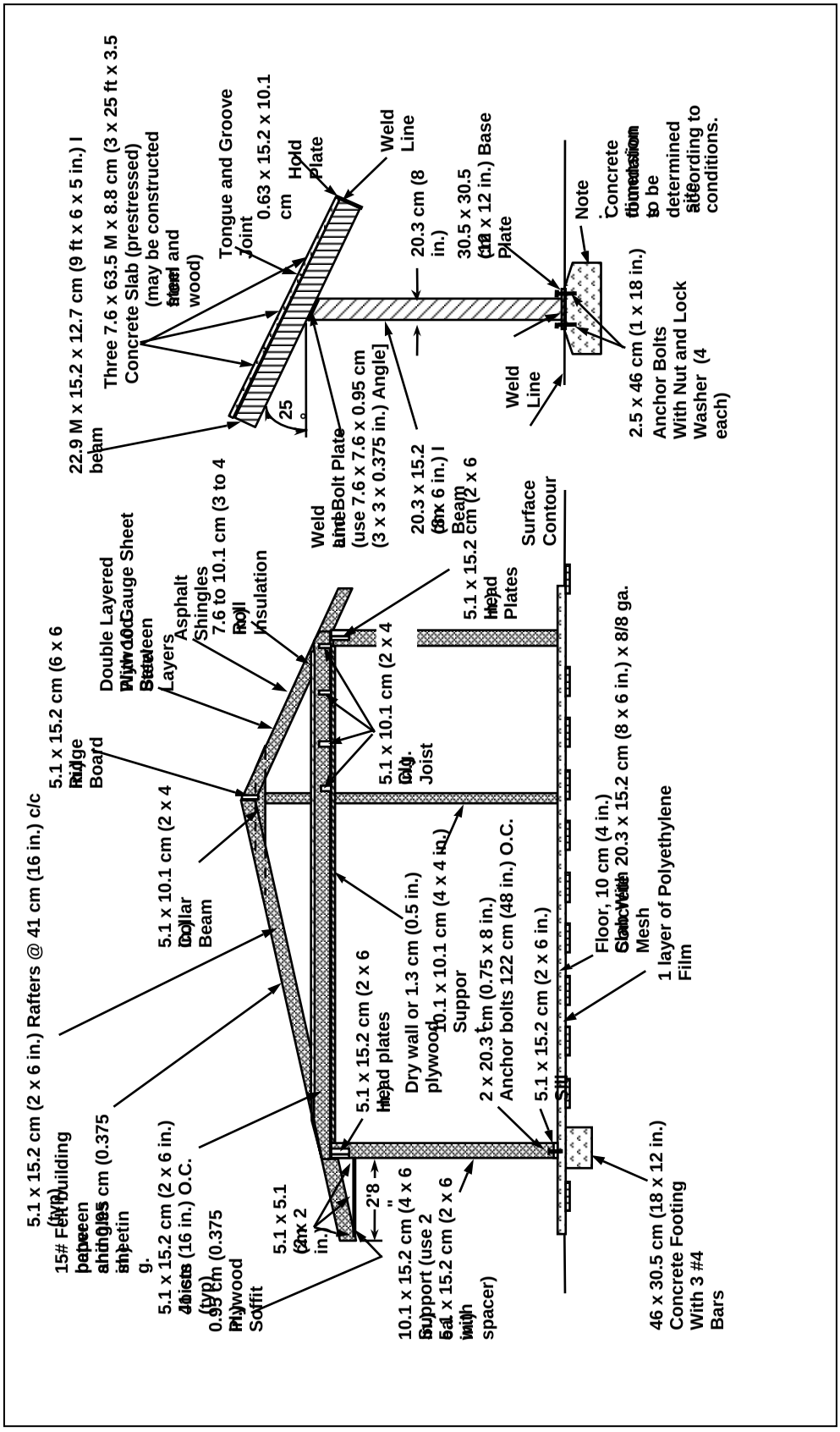


Figure 9
Ballistic Overhead Canopy

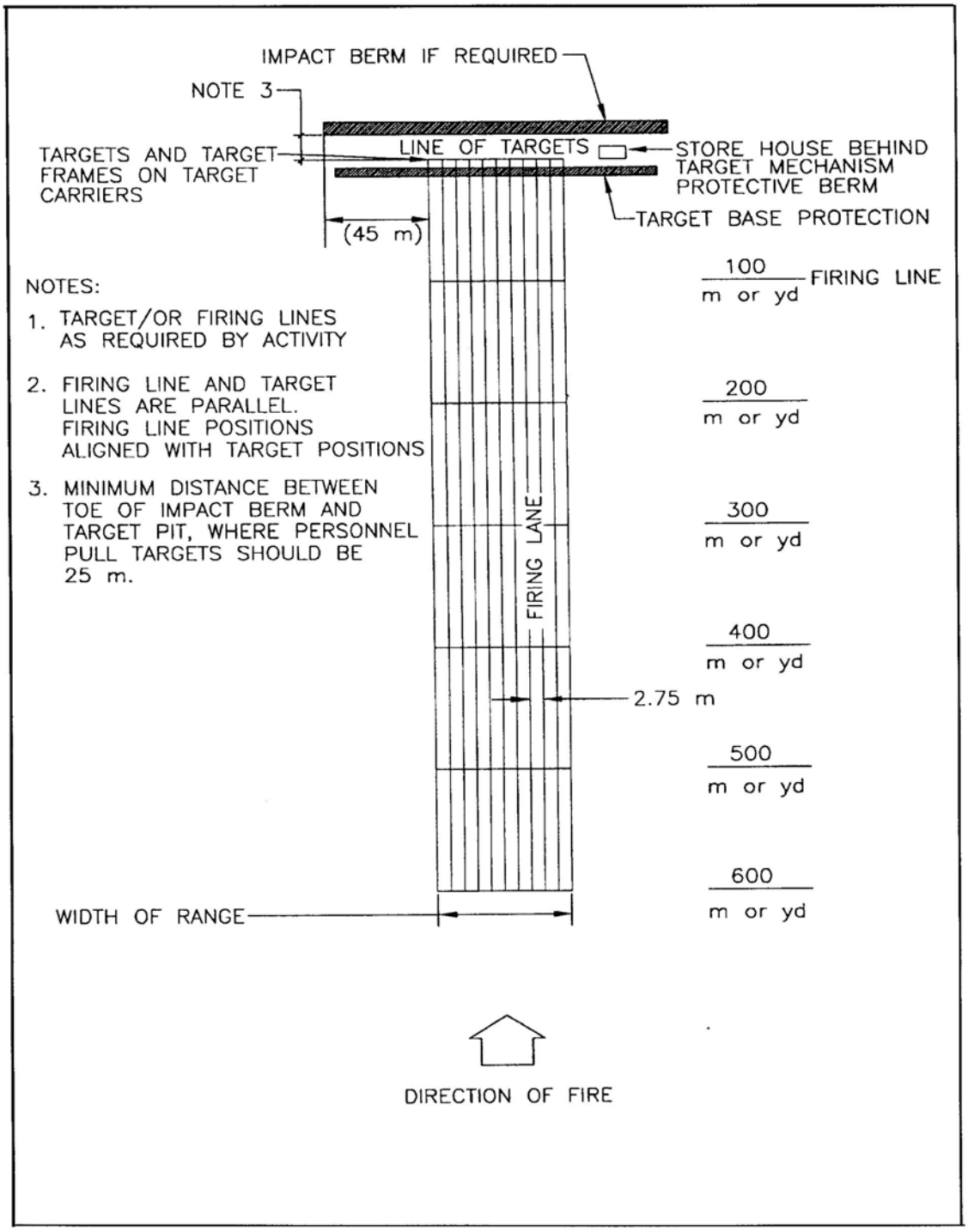


Figure 10
Outdoor Rifle Range Layout

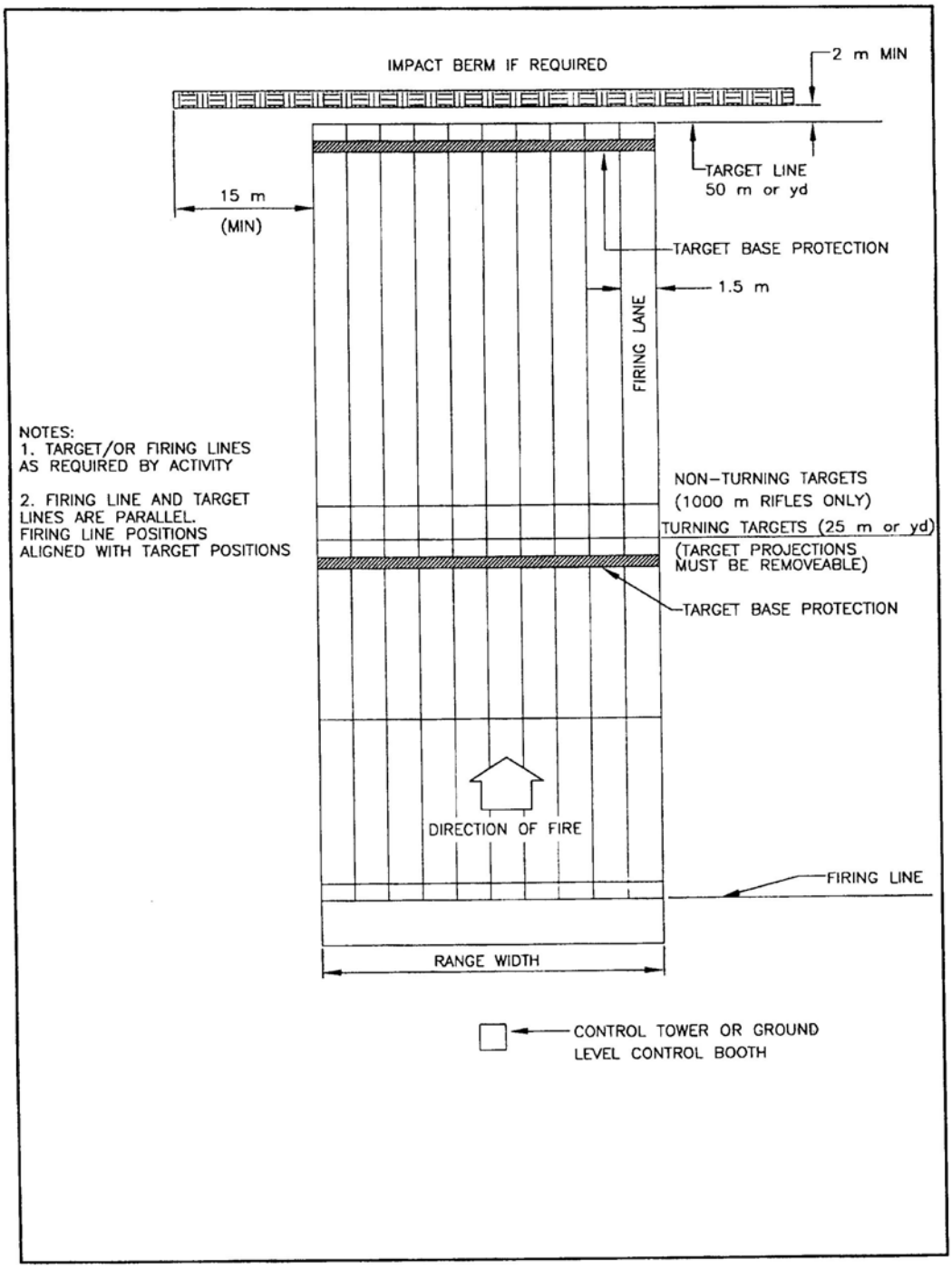


Figure 11
Pistol Range Layout

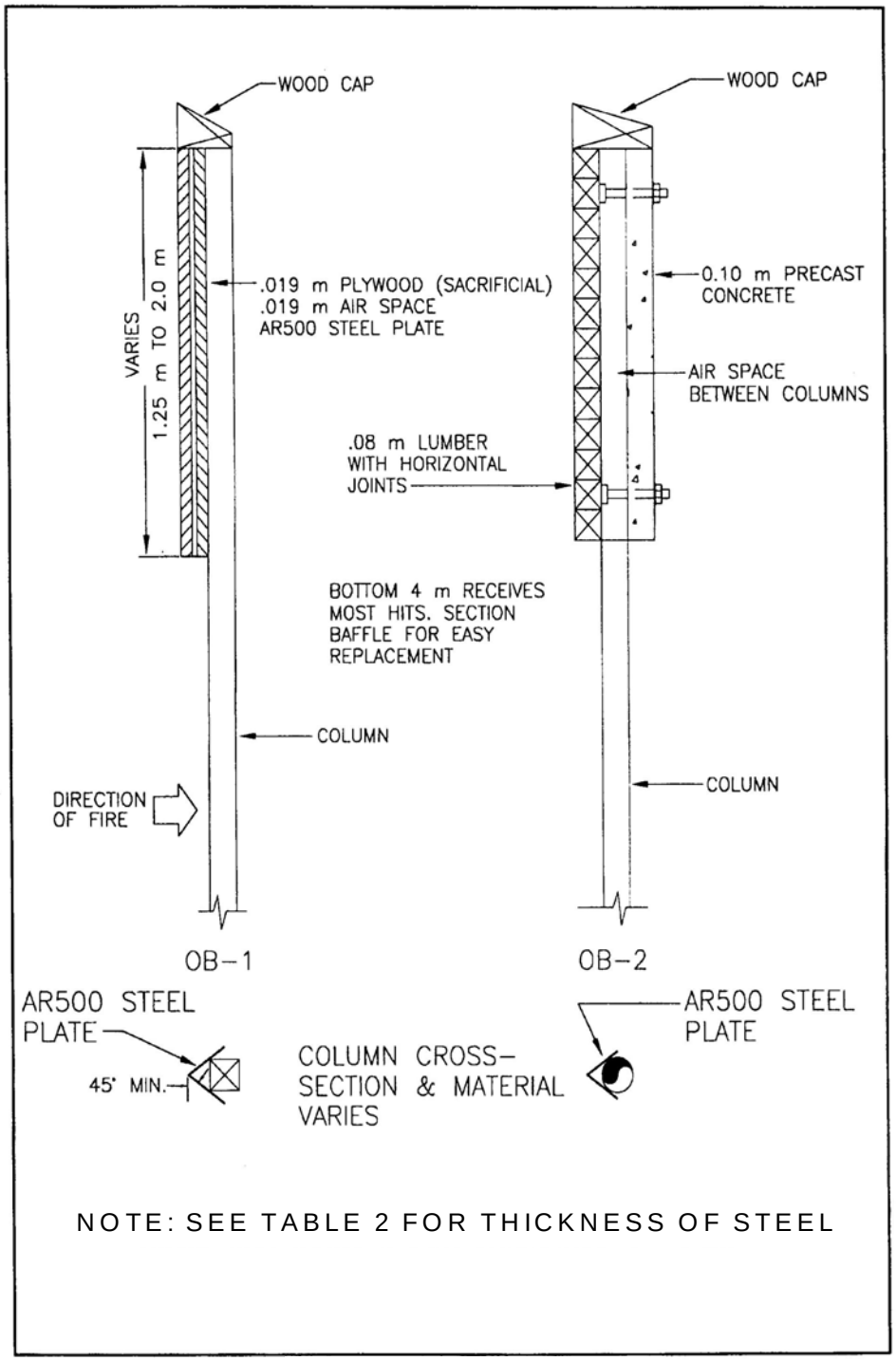


Figure 12
Ballistic Material

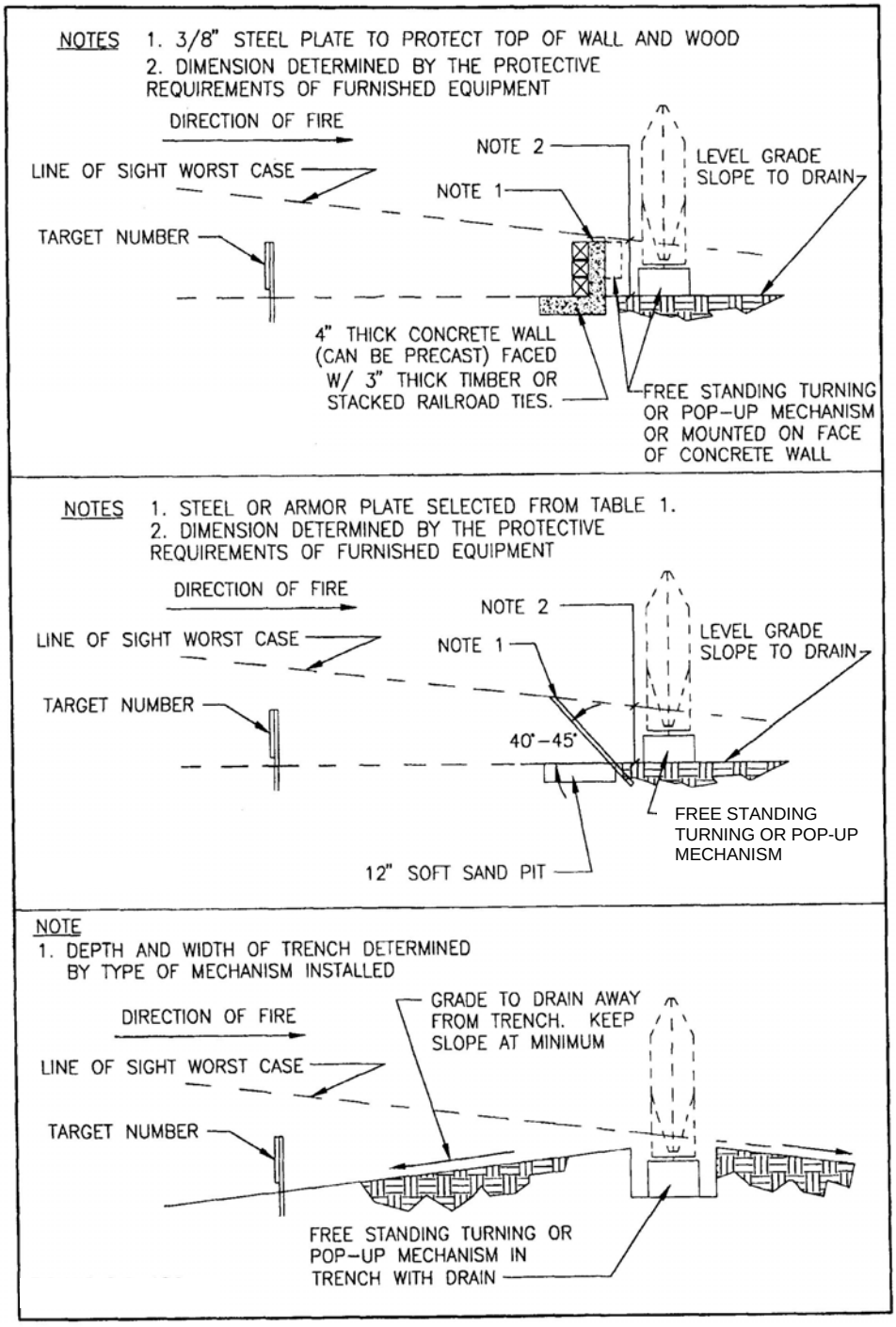
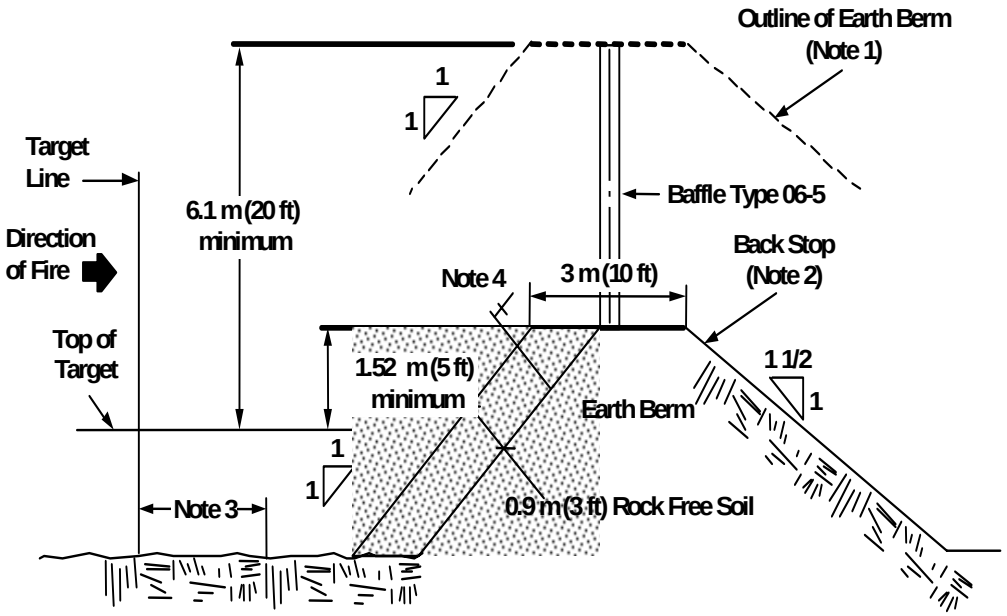


Figure 13
Ballistic Protection of Target Mechanism



Notes:

1. Outline of impact berm if all earth berm is used in lieu of combination earth berm/baffle.

2. Back slope may be increased or decreased dependent upon soil stability, erosion potential, or maintenance equipment.

3. Provide adequate distance between berm and target line for maintenance of target and slope of berm [minimum 9 m (10 yd)].

4. Preferred slope of impact berm face is 1:1 or steeper. For shallower slopes a bullet catcher is required. Top baffle must be placed as shown if used in lieu of all earth berm. Bullet catcher is 0.95 cm (3/8 in.) steel plate positioned above point of bullet impact at 90° angle to face of berm slope. Plate protrudes at least 0.6 m (2 ft) from face of berm.

Figure 14
Impact Berm for Open and
Partially Baffled Ranges

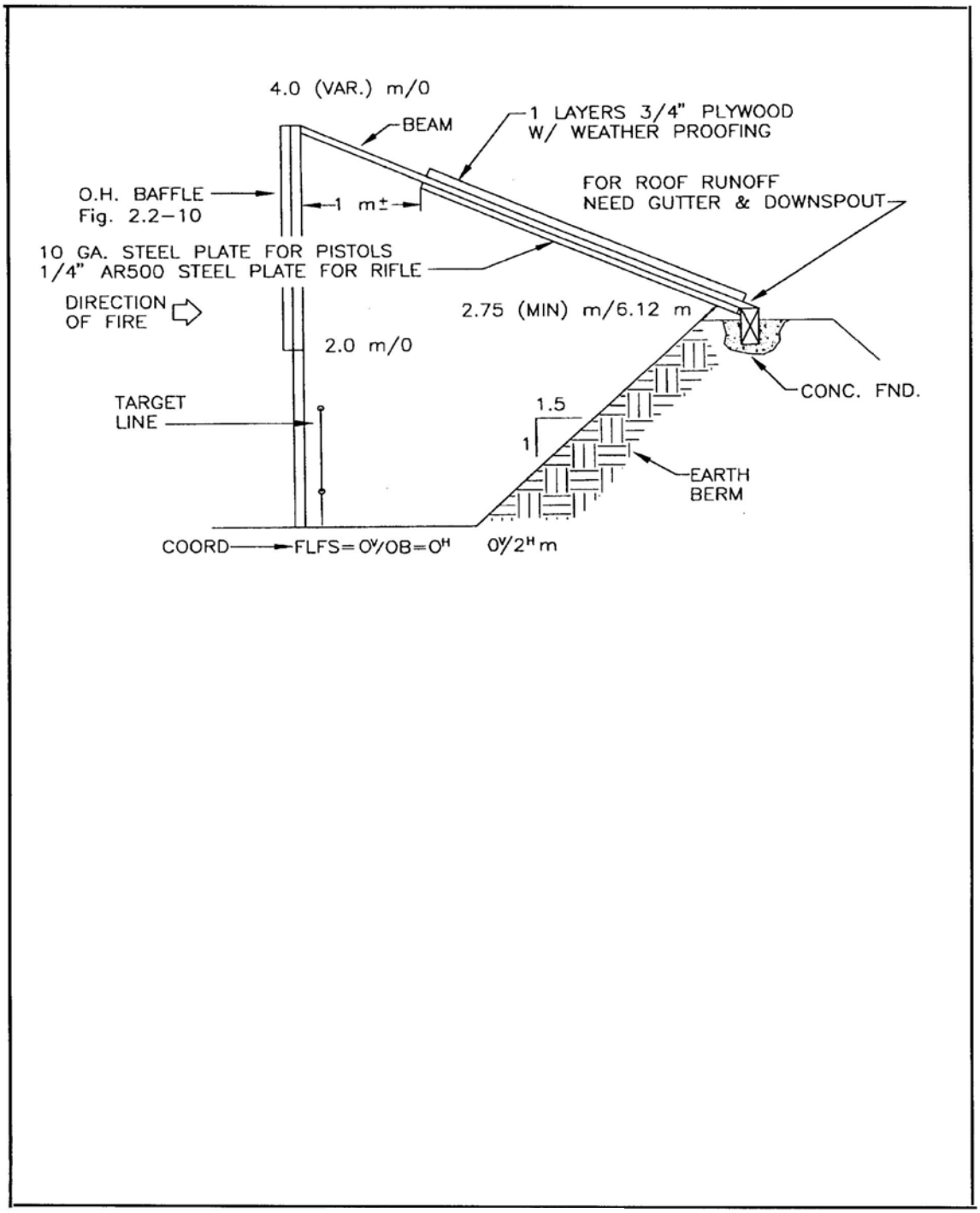


Figure 15
Outdoor Bullet Trap

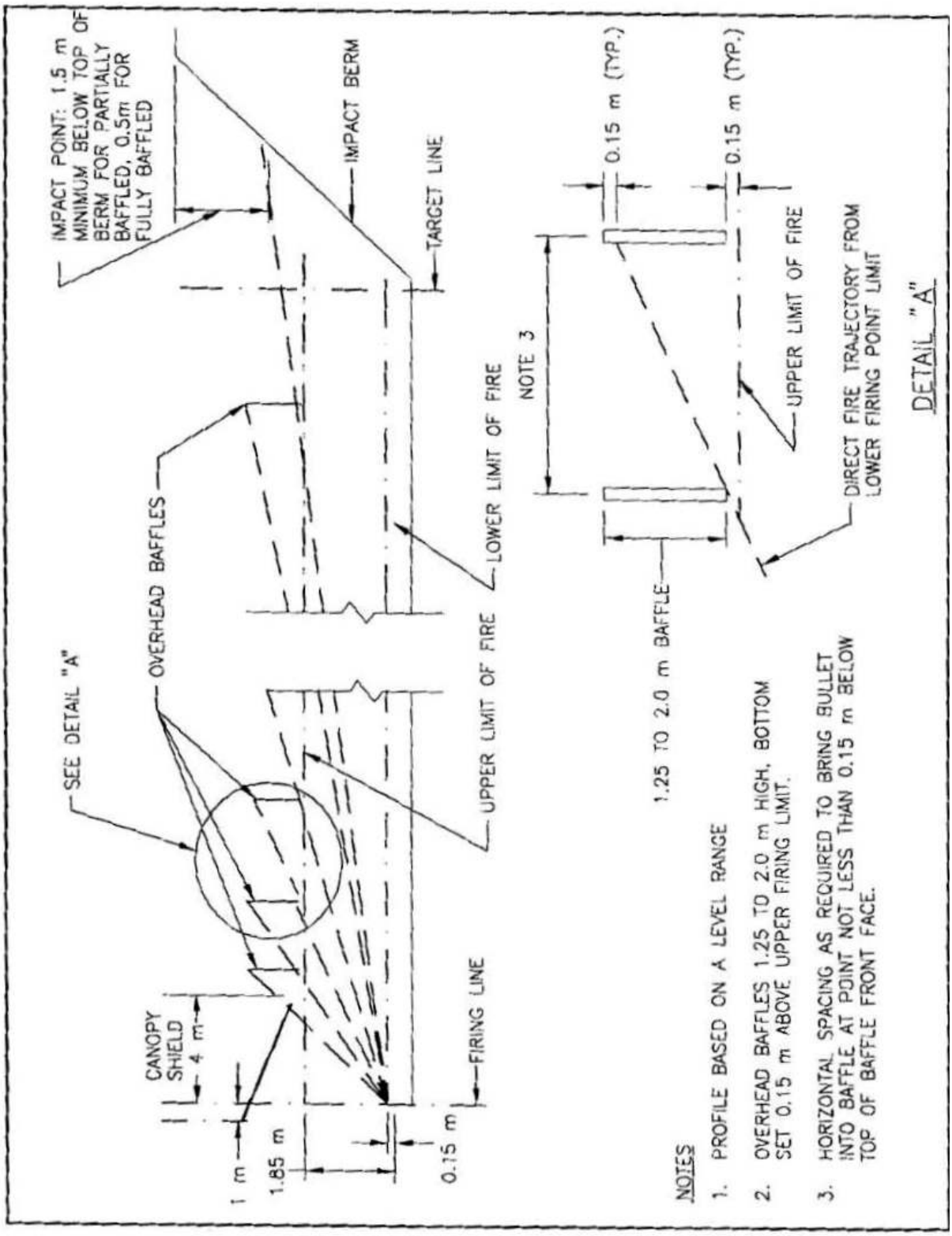
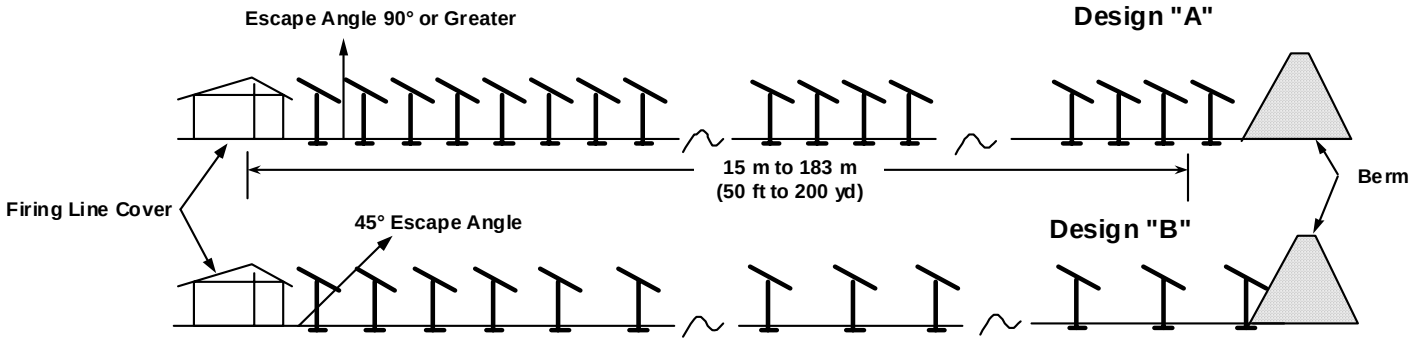


Figure 16
Baffled Range Profile



Notes:

1. These are typical examples of a baffled range.
2. Baffles are spaced according to the downrange area.
   a. Where inhabitants are less than 0.4 km (0.25 mi), use design "A."
   b. Where controlled areas extend beyond 0.4 km (0.25 mi), use Figure 13b.
3. Baffle installation may not be required where terrain features such as mountains exist.
4. When baffles may be required as encroachment occurs, plan a program of installation over a 5-year period.
5. See Figure 13b for firing line cover details.
5. See Figure 9 for firing line cover details.

Figure 17
Baffle System Geometry

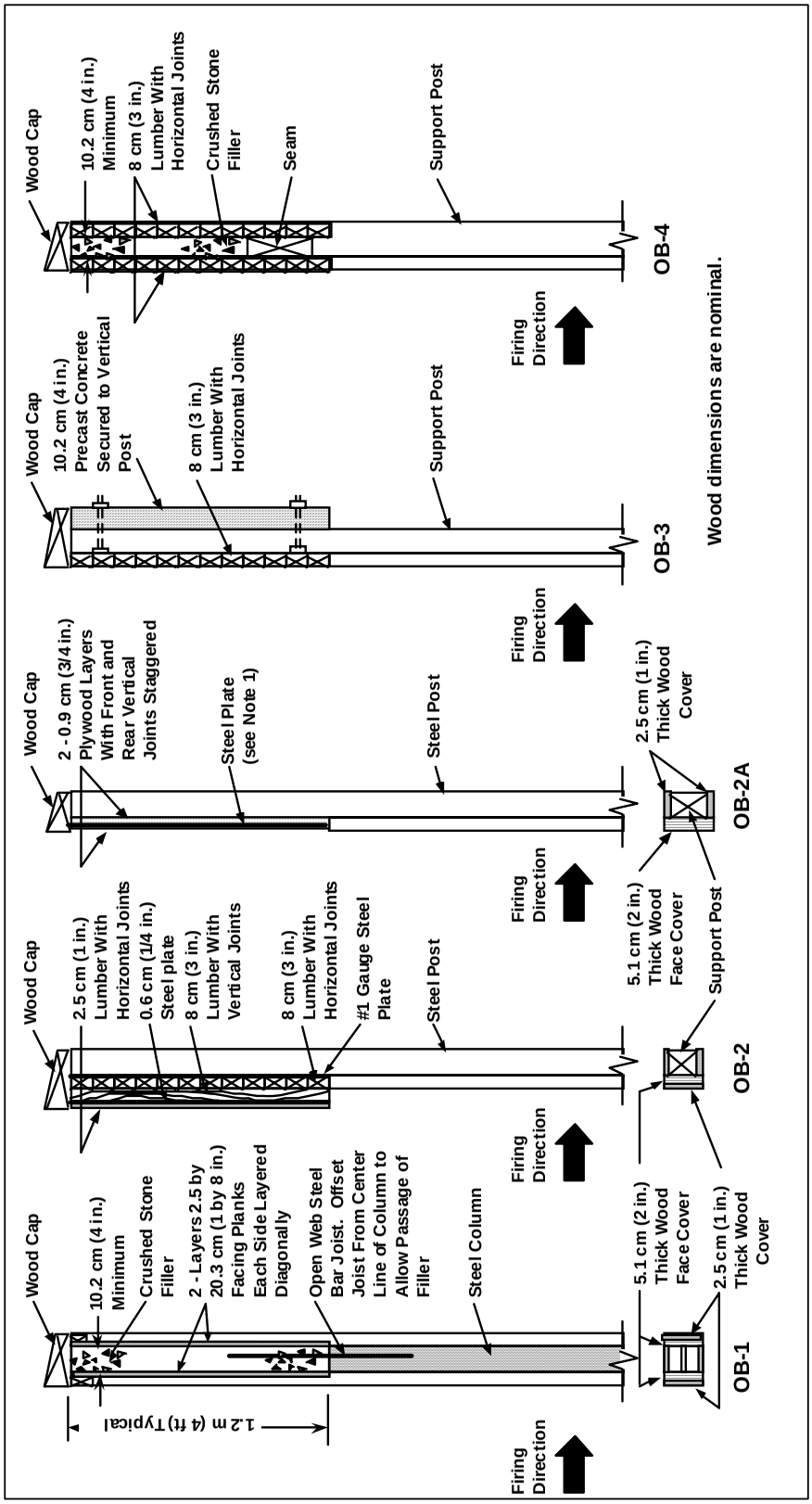


Figure 18
Overhead Baffle Ballistic Designs

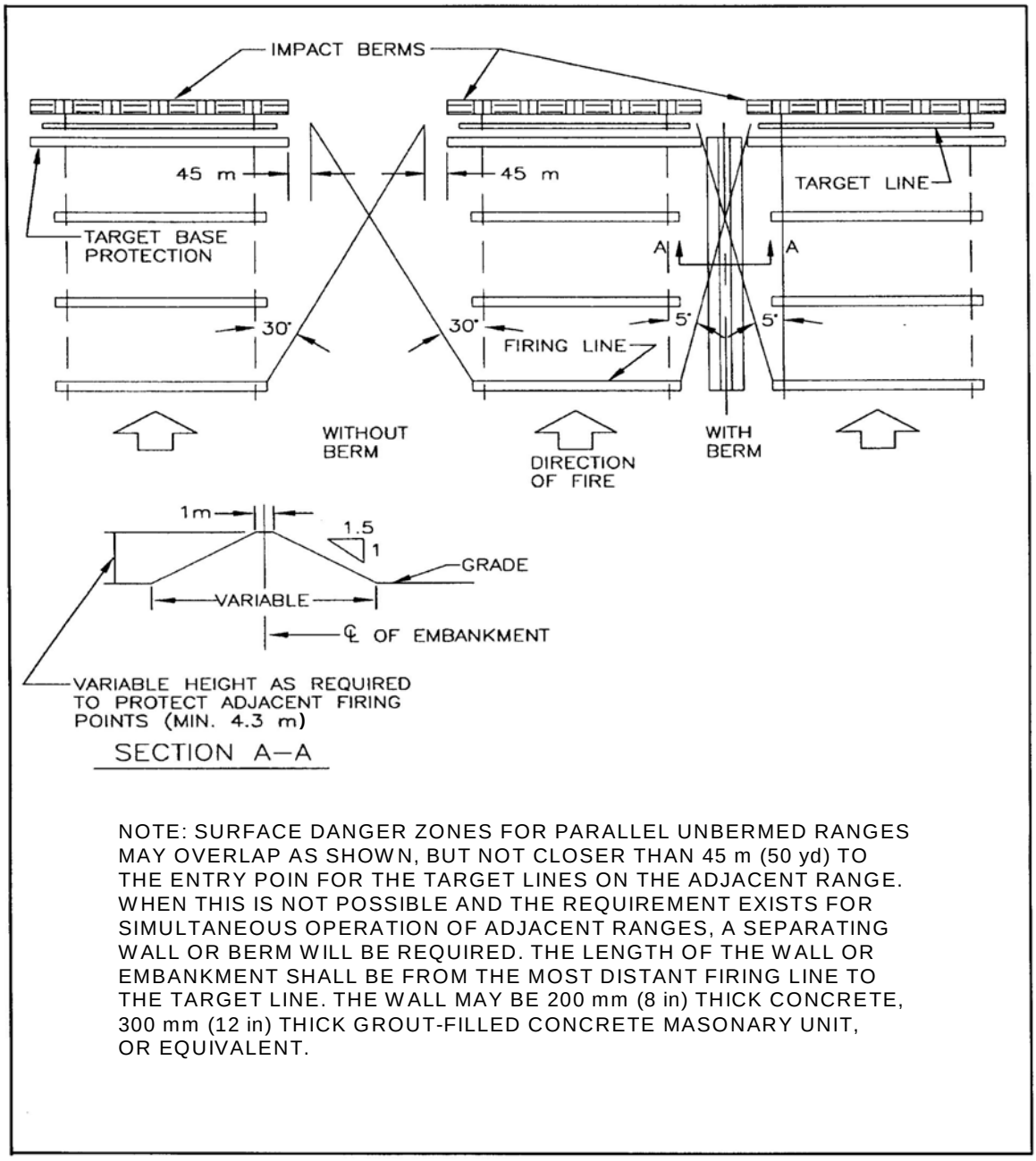
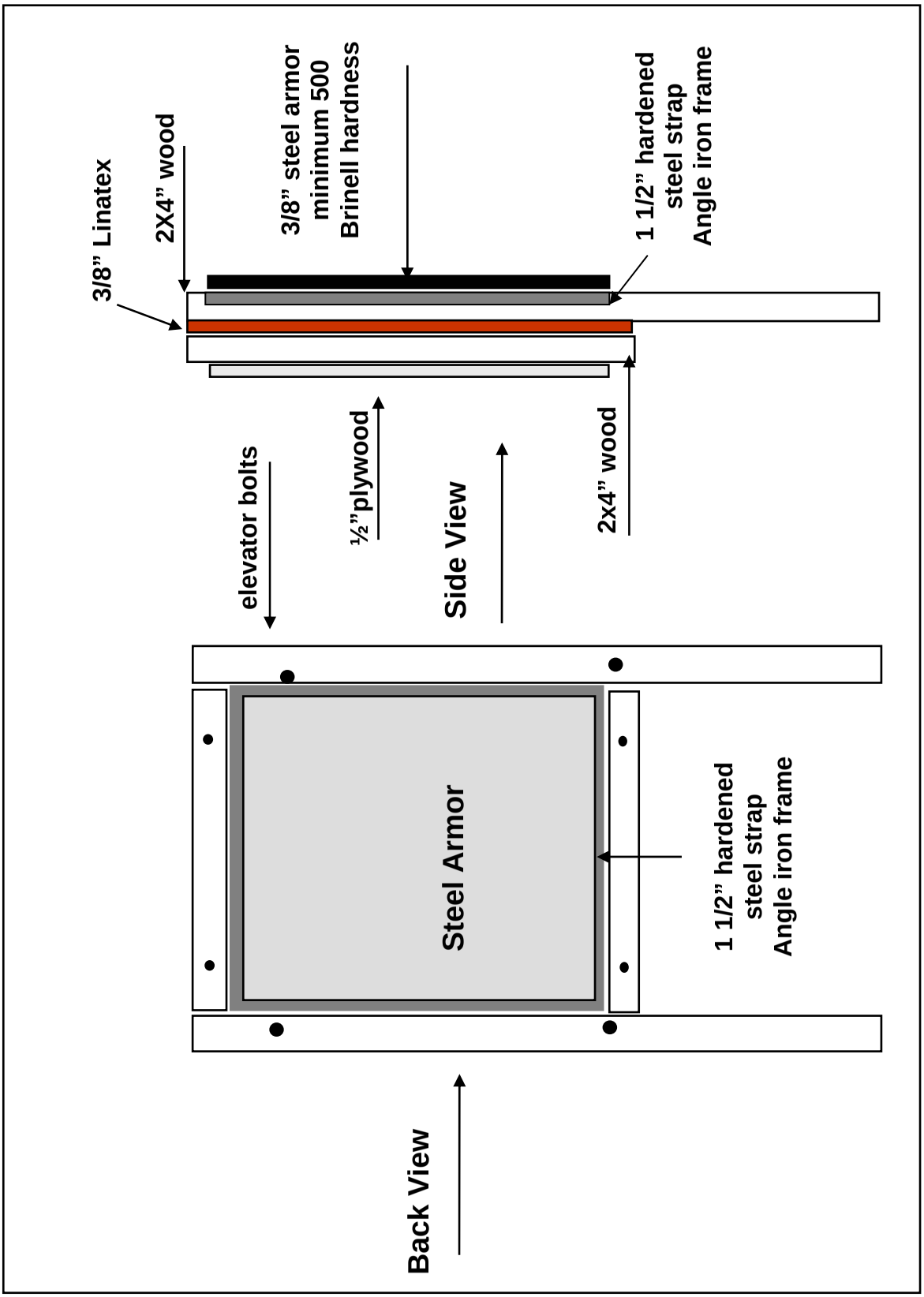


Figure 19
Parallel Ranges


3/8" Linatex
2X4" wood
3/8" steel armor
minimum 500
Brinell hardness
1 1/2" hardened
steel strap
Angle iron frame
elevator bolts
½"plywood
Side View
2x4" wood
Steel Armor
1 1/2" hardened
steel strap
Angle iron frame
Back View

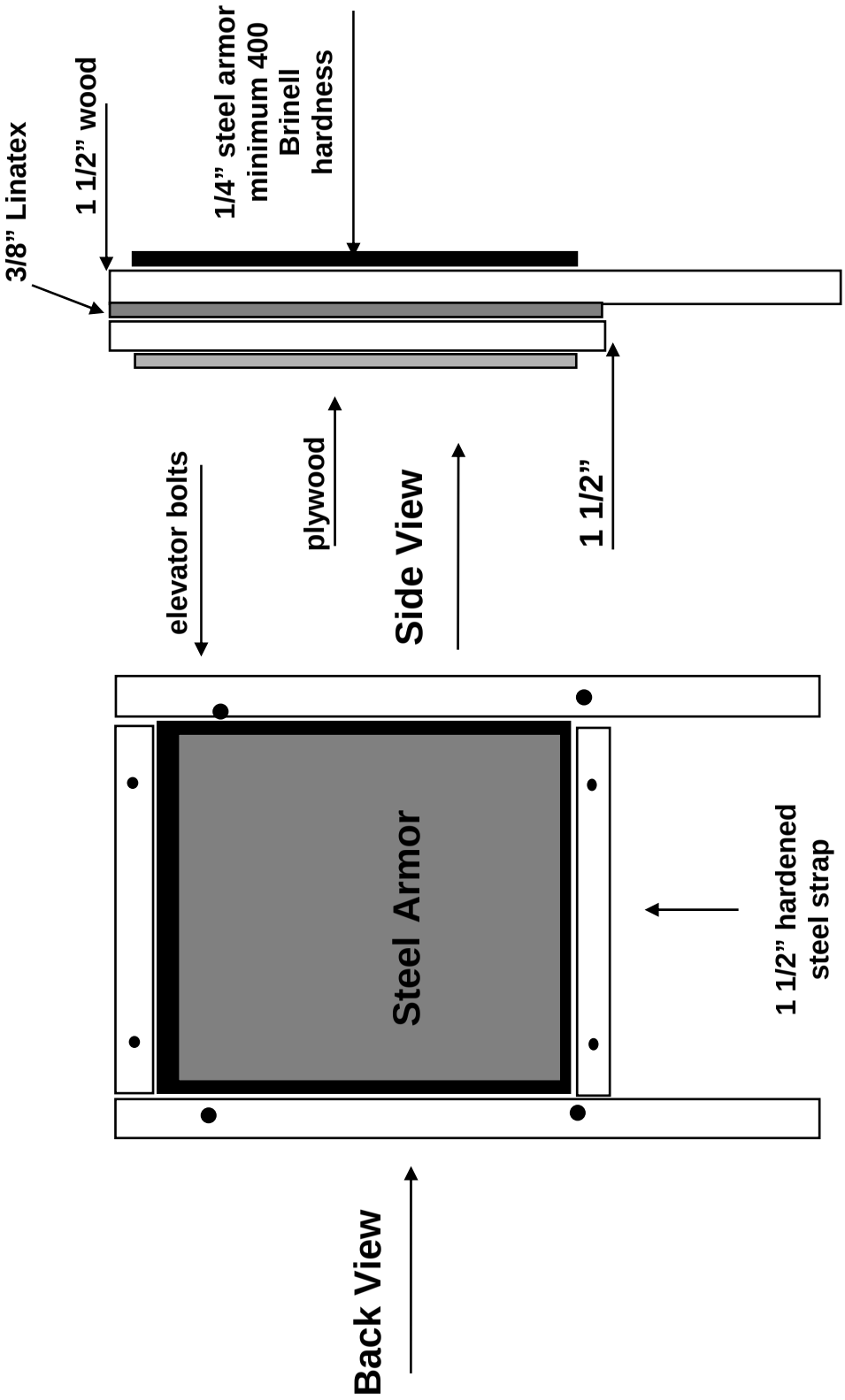


Figure 20
NTC BULLET TRAP

Sept. 26, 2011

To: City/County Planning Staff

The following comments are provided for your Memo for the FOP CUP for September 26, 2011 Planning Meeting, Staff Recommendations:

1)"Other similar events" must be more clearly defined. Perhaps "officially sanctioned county/city training activities" would be appropriate.
2) The first sentence needs to have a stipulation that defines when the noise specialist is to be hired. Perhaps "within 60 days of the County Commissioner's decision," would be the proper language.
3) "Receiving Point" should be defined. Is this where the firing is conducted, the boundaries of the property, or some other location?
4) "Around the perimeter at appropriate locations" is open to interpretation. Perhaps "but not less than every 200 yards (although this is much more lenient than either NRA or DOD requirements)" would be a reasonable stipulation.
5) The hours of operation for night Shooting should be limited to no latter than 9:30. 10:00 is too late, particularly when kids need to go to school the next day. On Sundays recreational shooting should be limited to 12:00PM till 5:00PM. (It is assumed that Law Enforcement personnel will not be training on Sunday, and local church services will be over by noon. Individual use is recreational shooting and there is little justification for causing the neighborhood to be subjected to this type of disturbance.
6) No Comment
7) No Comment
8) No Comment
9) Add "Lead levels should be measured in Washington Creek annually to assure that leaching from the range is not contaminating the waterway."
10)No Comment
11)No Comment
12)A stipulation should be added that Helicopter operations at this location are to be limited to actual Emergency requirements.

PLANNING COMMISSION REPORT
Regular Agenda - Public Hearing Item

PC Staff Report
09/26/2011

ITEM NO. 3A RSO to CN2; 3.3 ACRES ; RSO (SINGLE-DWELLING RESIDENTIAL-OFFICE) TO CN2 (NEIGHBORHOOD SHOPPING CENTER), (SLD)

Z-7-21-11: Consider a request to rezone approximately 3.3 acres from RSO (Single-Dwelling Residential-Office) to CN2 (Neighborhood Shopping Center), located at 3900 W 24th Place. Submitted by Landplan Engineering, for Corporate Holdings II, LLC, property owner of record.

STAFF RECOMMENDATION: Staff recommends approval of the request to rezone approximately 3.3 acres, from RSO (Single-Dwelling Residential-Office) to CN2 (Neighborhood Shopping Center) 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 condition:

1. As a means to implement the recommendation of the Inverness Park District Plan, the City Commission shall review and approve any site plan application prior to issuance of a building permit on the subject property.

Reason for Request: *The current zoning does not support use of C-Store, fuel sales or other retail uses. The subject property has been vacant since annexation. Continued demand for growth on the southwest side of Lawrence suggests development of the subject property to be appropriate at this time. This request will provide necessary commercial services to support development in the surrounding area.*

KEY POINTS
- Request consistent with land use recommendation in the Inverness Park District Plan.

ASSOCIATED CASES/OTHER ACTION REQUIRED
- PP-7-7-11: Preliminary Plat to divide property and remove access restriction to Crossgate Drive.
- SUP-7-4-11; development including Gas and Fuel Sales and Car Wash in CN2 District.

PLANS AND STUDIES REQURIED
- *Traffic Study* – Not required for rezoning.
- *Downstream Sanitary Sewer Analysis* – Not required for rezoning.
- *Drainage Study* – Not required for rezoning.
- *Retail Market Study* – Not required for development less than 50,000 SF.

ATTACHMENTS
- Area Map
- Map 4-1 Draft Inverness Park District Plan.
- Map 2-2 Draft Inverness Park District Plan.

PUBLIC COMMENT RECEIVED PRIOR TO PRINTING
- None to date

Project Summary:
The subject property is proposed to be rezoned to CN2 to accommodate a convenience store, gas sales and a car wash. The property is adjacent to Clinton Parkway on the north, Crossgate Drive along the east property line and W 24th Place along the south property line. A new access point to

Crossgate Drive is proposed as part of the development of this property. The request includes 3.3 acres. This request is accompanied by a Preliminary Plat and a Special Use Permit for development. The property is included in the Inverness Park District Plan, which supports neighborhood commercial use on this corner.

1. CONFORMANCE WITH THE COMPREHENSIVE PLAN

Applicant's Response: *Map 3-2 Lawrence Future Land Use of Horizon 2020 this area is shown white. The surrounding area is shown Medium Density Residential to High Density Residential. This request is consistent with the most recent draft of the Inverness Park District Plan, which recommends the commercial use of this site. See Map 4-1 of Draft Inverness Park District Plan.*

Neighborhood Commercial Centers are described in *Horizon 2020* as having the ability to contain more than a single use (Page 6-5). The Plan states; *"To insure there are a variety of commercial uses and that no one use dominates a Neighborhood Commercial Center, no one store shall occupy an area larger than 40,000 gross square feet."* The implied intent is that multiple uses are required to establish a Neighborhood Commercial Center.

The Inverness Park District Plan was recommended for approval by the Planning Commission on July 27, 2011. The City Commission approved the Plan on September 13, 2011. A list of new Neighborhood Commercial Centers is included in Chapter 6 of *Horizon 2020.* The Inverness Park District Plan will, upon final approval by the County Commission, be incorporated into *Horizon 2020* by reference and will amend Chapter 6 of *Horizon 2020* designating this corner as a Neighborhood Commercial Center. As such, this request for neighborhood commercial zoning is consistent with the Comprehensive Plan.

Staff Finding – This application is being processed on the heels of the Inverness Park District Plan with the assumption that the implementation steps noted in Section VI of the plan are executed. This request for neighborhood commercial zoning is consistent with the Comprehensive Plan.

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

Current Zoning and Land Use:	RSO (Single-Dwelling Residential-Office) District; undeveloped land.
Surrounding Zoning and Land Use:	RM15 (Multi-Dwelling Residential) District to the west, Remington Square – [Pending request for RM24; Z-8-12-10]. RM12 (Multi-Dwelling Residential) District to the north; Existing apartment development known as Parkway 4000. PUD (Alvamar Planned Unit Development) to the northeast; existing apartment development. RM24 (Multi-Dwelling Residential) District to the east; existing apartment development known as Lorimar Apartments. RSO (Single-Dwelling Residential) District to the south; undeveloped lot.

The zoning pattern for the subject property and the immediately surrounding area was established as part of a master plan for the original 160 acre tract that incorporated the existing drainage

courses and boundary street network as the development pattern. The alignment of W 24th Place was established to provide access to abutting lots with maximum separation from Clinton Parkway and the cross street intersections. The zoning districts were established to provide a land use transition south of Clinton Parkway (arterial street) and the southern portion of the development. Approval of the request will increase the variety of uses between Clinton Parkway and the developed neighborhoods to the south.

Staff Finding –The immediately surrounding uses are dominated by residential development in the form of apartment buildings and townhouses. This site has been re-designated for neighborhood commercial use through the Draft Inverness Park District Plan.

3. CHARACTER OF THE NEIGHBORHOOD

Applicant's Response: *This lot is adjacent to multi-family residential to the east and north. The area to the west is vacant but has been in the planning process for additional multi-family residential uses. The area to the south is also planned for multi-family uses. See Map 2-2 of Draft Inverness Park District Plan.*

The subject property was part of a 160 acre development that used a neighborhood approach as a framework for establishing the base zoning districts. The low density single/duplex family residential area located in the southern half of the original acreage was the first section to develop. The multi-family development has filled in and the remaining vacant areas are still being considered for various development opportunities.

The surrounding area includes a variety of housing choices and a range of development densities. Higher intensity uses are generally located along Clinton Parkway with decreasing intensity north and south of Clinton Parkway. The street profile of Clinton Parkway is such that many of the properties are lower than the street. Clinton Parkway is developed as a boulevard with a continuous green center median dividing the east and west bound traffic. This street profile also creates a boundary or edge between the north and south "neighborhood areas".

The traffic circle located at W 24th Place and Crossgate Drive provides traffic calming and intersection control. It also signals a transition to lower intensity development south of Clinton Parkway. Existing development is oriented with rear yard areas to both Clinton Parkway and Crossgate creating individual neighborhoods radiating in wedges away from the intersection.

This property is located within the boundaries of the Draft Inverness Park District Plan. The plan describes the neighborhood as:

> *The planning area consists of approximately 303 acres of land. The primary land use in the planning area is residential, with single family, duplex and multi-family uses having been developed in the past decade. The majority of the planning area is urbanized and within Lawrence, but there are approximately 70 acres which is located within unincorporated Douglas County south of 27th Street that contains a rural residential and agriculture use. Existing and future parks are also uses within the planning area. See Map 2-1. (Section II. Existing Conditions)*

The Draft Inverness Park District Plan discusses the subject property as follows:

No 3: The property on the southwest corner of Clinton Parkway and Crossgate Drive is approximately 3 acres and is zoned RSO (previously zoned RO-1B). This property has regulatory flood hazard area along the west property line. Access management along Clinton Parkway and plat restrictions along Crossgate Drive meaning this property would take access from W 24th Place. There is an existing round-a-bout at W 24th Place and Crossgate Drive.

The Lawrence-Douglas County Planning Commission supported commercial zoning for a Walgreen's at this location in 2008.

Staff Finding – The property is located on the north boundary of the Inverness Park District Plan area. The neighborhood is dominated by residential uses. Approval of the request would provide land area to accommodate additional uses to serve the Inverness Park neighborhood and the surrounding neighborhoods.

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 the subject property is located within the Draft Inverness Park District Plan. This plan supports neighborhood commercial development in the form of CN1, CN2 and CO zoning districts, but did contain a policy to require that any site plan for properties along Clinton Parkway be processed through a public process. To implement this policy of the plan, a condition is recommended to require that any site plan be considered and approved by the city commission prior to building permits being issued. The plan has been recommended for adoption by the Planning Commission at their July meeting. The Plan was considered and approved by the City Commission on September 13, 2011.

Staff Finding – The subject property is located within the Inverness Park District Plan. This plan supports neighborhood commercial development as proposed.

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

Applicant's Response: *The current draft of the Inverness Park District Plan recommends commercial use of the subject property. The plan notes that the site "…should have less impact with regards to traffic, noise, and light compared with the Inverness corner, while still providing commercial services within a walkable distance for neighborhood residents." The use of this site as a convenience store, fuel sales, and commercial out lot are suitable for the site. Hy-Vee presently operates 92 C-stores. Hy-Vee plans to design this site as the company's most environmentally-friendly C-store, including an application for LEED certification.*

This property represents one of a few remaining undeveloped parcels located within the Inverness Park area. Considerable public discussion has been provided to the Planning Commission and to staff regarding the feasibility and desirability of multi-family development in the area along W 24th Place.

The current RSO zoning allows a range of uses including:

- Residential uses both attached and detached;
- Community Facilities such as a schools and daycare centers;

- Medical Facilities including offices and clinics, office uses;
- Personal Improvement uses such as yoga centers, fine arts studios, martial arts center or diet center.

The presence of the floodplain will not prohibit development for the allowed uses anymore than the proposed use. The floodplain includes a 60' wide drainage easement that runs along the entire western edge of the property. A recent Letter of Map Revision (LOMR) set the drainage easement width. The subject property includes 2.11 acres of area outside of the regulatory floodplain.

The development of the original plat for the original 160-acre site included specific access restrictions to Clinton Parkway and to Crossgate Drive on the east side. Access to lots along Clinton Parkway was designed to be accommodated from a parallel local street (W 24th Place) along the south side of the lots.

The recently approved Inverness Park District Plan identifies an area for neighborhood commercial development. The Plan states:

> ***Commercial – Neighborhood Center***
> *The intent of the commercial use is to allow for retail and service uses. A Neighborhood Commercial Center provides for the sale of goods and services at the neighborhood level and may include mixed use structures to accommodate commercial and residential uses in one location.*
>
> *Multi-family residential uses are not appropriate for this category. The planning area contains a number of existing multi-family residential uses. Additional multi-family uses in areas designated as Neighborhood Commercial are not suitable for the area.*

The Plan goes on to state:

> *The property on the Crossgate corner is approximately 3 acres and could be developed with retail uses. This smaller property should have less impact with regards to traffic, noise, and light compared with the Inverness corner, while still providing commercial services within a walkable distance for neighborhood residents. New commercial development should provide pedestrian connects, will need to include 4-sided architecture and comply with the Commercial Design Standards.*

Staff Finding – Based on recent planning for the area the existing zoning district is not suitable for the implementation of neighborhood commercial development at the intersection of Clinton Parkway and Crossgate Drive.

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

Applicant's Response: *The property has remained vacant since being annexed in 1999, with little or no expressed interest in the site as a residential office.*

The property is currently platted and undeveloped. The current zoning is RSO (Single-Dwelling Residential Office) District. This property has been included in numerous development applications in the past. Below is a summary of zoning actions related to this property.

2006- Current:	RSO

2008:	Request to rezone Z-5-12-08 From for RSO to CN-2 (Walgreens); The Lawrence Douglas County Metropolitan Planning Commission considered this rezoning at their meeting on July 21, 2008 and forwarded a recommendation to the City Commission to recommend approval by a vote of 5 to 4. Withdrawn by applicant on December 11, 2008 prior to placement on a City Commission agenda, file closed.
2006:	Land Development Code adopted; RO-1B to RSO
1999 to 2006:	RO-1B (Residential-Office) District (Z-4-13-99).
1999:	• Annexed into the City of Lawrence A-4-4-99. • Preliminary Plat of Inverness Park Addition – 195 lot mixed use development. • Final Plat Inverness Park Plaza Addition No. 1 – Platted lots along W 24th Place.
1966 to 1999:	A (Agricultural) District.

Inverness Park Plan: Recommended for approval by the Planning Commission on July 27, 2011. City Commission scheduled to consider plan on September 13, 2011.

Staff Finding – The property is undeveloped but zoned and platted for mixed residential/office use development. Approval of this request will allow additional non-residential development options to be considered in the neighborhood.

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

Applicant's Response: *Approving this rezoning application will not adversely affect the neighboring properties. Rezoning for adjacent properties is being requested to ensure compatibility with surrounding neighborhoods.*

Detrimental effects are generally considered to be traffic, noise, and incompatible land uses. Approval of the district plan incorporates a change of land use consistent with the proposed request for CN2. Noise and other visual impacts will be addressed through appropriate site design. The proposed use requires approval of a Special Use Permit for development. These physical elements will be addressed in more detail in the SUP staff report.

Traffic is the most obvious impact that will affect the surrounding area and road network. The property abuts an arterial street (Clinton Parkway) on the north, a collector street (Crossgate Drive) on the east, and a local street (W 24th Place) on the south. The west property line is encumbered by the regulatory floodplain and a dedicated drainage easement. Direct access to Clinton Parkway is not proposed nor recommended. Direct access to Crossgate Drive is currently prohibited as part of the previous land use approvals granted for this property.

Staff Finding – Physical elements such as screening and buffering are addressed through site design requirements (such as setback and landscaping). The proposed request is consistent with land use recommendations included in the Inverness Park District Plan and provides a land use transition from Clinton Parkway on the north and the lower density residential development south of W 24th Place. Traffic activity is confined to abutting collector and local streets and is not anticipated to impact the low density areas of the neighborhood south of W 24th Place.

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: *Approval of this application will fill a need of the surrounding property owners by providing nearby access to convenience items and fuel sales. The project dovetails into Hy-Vee, Inc.'s recently expanded supermarket at Clinton Parkway and Kasold Drive. The rezoning will allow a parcel of land that is difficult to develop to provide a useful service to the surrounding property owners while providing the City with tax revenue of a developed commercial site rather than continued vacant ground.*

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 primary gain to the public is the provision of services at the neighborhood level. The location of the proposed development should result in limited intrusion or cut-through into the neighborhood from pass-by traffic. The proposed boundary of the district is limited to the boundary of the property between Clinton Parkway and W 24th Place. Approval of this request is not intended to create a commercial node that will grow beyond the immediate intersection. The area of the request is sufficiently large enough to accommodate more than a single use that could serve the neighborhood.

Staff Finding – Denial of the request will limit the opportunity to provide services at the neighborhood level as identified in the Inverness Park District Plan.

9. PROFESSIONAL STAFF RECOMMENDATION

The following table is provided to identify the general purpose statements of the existing and proposed zoning districts related to this proposed change.

District	Purpose
1966 Zoning Code RO Residence Office District (20-606) RO-1 = 1 RO-1A =2 **RO-1B = 3** RO-2 = 4	For uses on properties zoned RO on and after February 13, 1996, the RO District is designed to primarily provide mixed use areas for professional offices, medical and dental clinics and similar types of uses that are compatible with and can be located adjacent to or in combination with single, duplex, or multiple-family residential uses without undue harmful effects to the residential uses. Three residential densities are permitted in four zoning districts to provide flexibility and allow the location of: 1) high density apartment/office combinations in and near the downtown area, and high density areas lying adjacent thereto; 2) medium density residential and/or office developments in areas that are in conformance with the Comprehensive Plan and compatible with surrounding land uses; **3) a lower density district to be located adjacent to or near single-family and restrictive commercial areas and** (4) a lower density district, where residential units are restricted to single-family or duplex structures, to be located adjacent to or near single-family and restrictive commercial areas.

District	Purpose
2006 Development Code RSO, Single-Dwelling Residential Office District (20-203)	The primary purpose of the RSO District is to accommodate low to medium-intensity administrative and professional offices that are compatible with the character of low and medium-Density residential neighborhoods. The District is also intended to be used as a transitional Zoning District between higher intensity commercial areas and residential neighborhoods. The District allows Detached Dwellings, duplexes, Attached Dwellings and administrative and professional office uses, which may be combined in the same Structure (e.g., office on the Ground Floor or at the front of the Building with Dwelling Units on upper floors or toward the rear of the Building).
CN2, Neighborhood Commercial Center District (20-208)	The CN2, Neighborhood Shopping Center District, is primarily intended to implement the Comprehensive Plan's "Neighborhood Commercial Centers" policy of providing for the sale of goods and services at the neighborhood level. Neighborhood Commercial Centers are generally located at least one mile from another Commercial Center. Developments in CN2 Districts are intended for Collector/Arterial Street intersections or at Arterial/Arterial Street intersections. Development is intended on only one corner of the intersection.

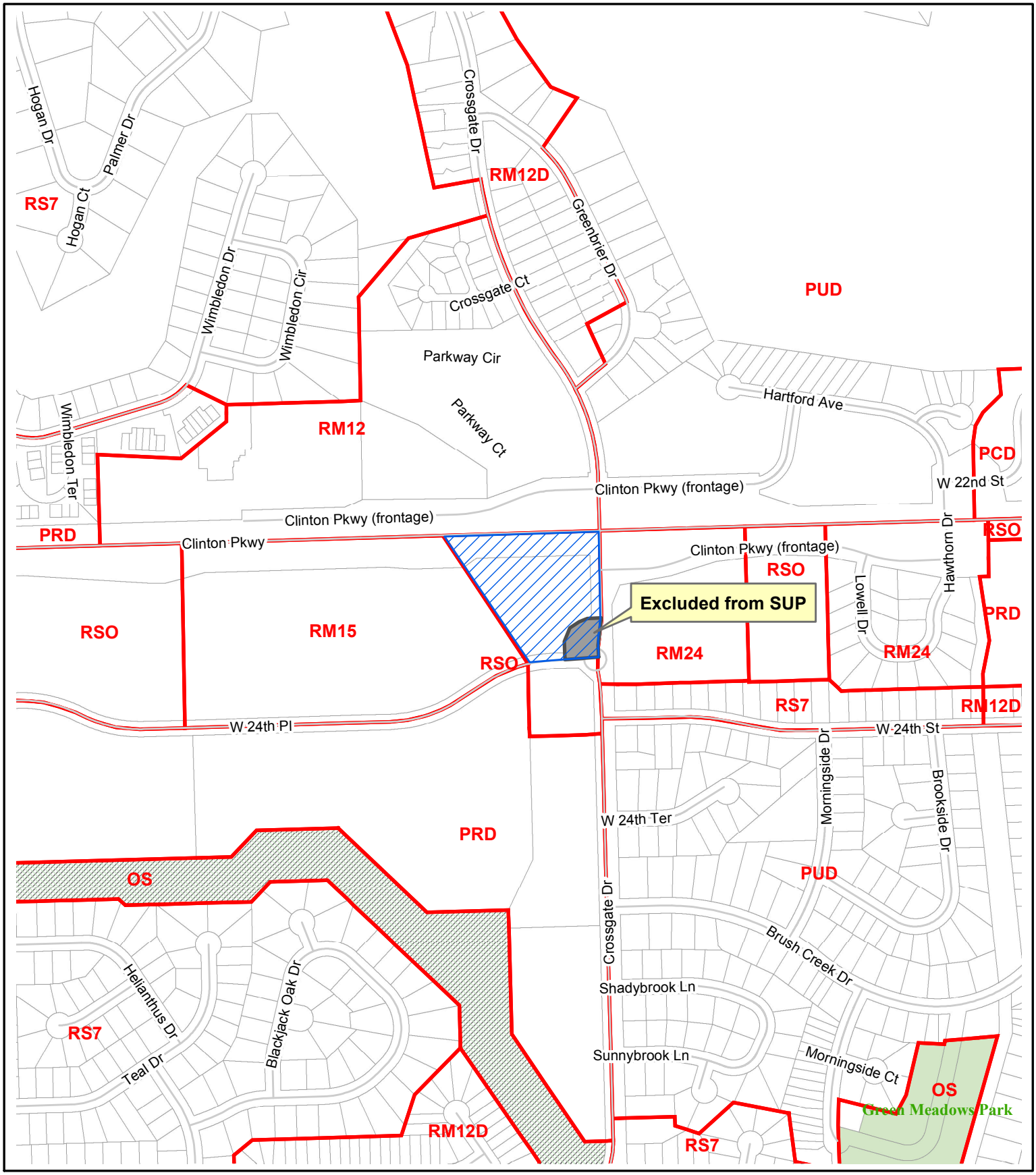
The RO-1B district (RSO District in 2006 Code) would have allowed Professional Office uses but not retail or automotive related uses. This use restriction was carried over to the RSO zoning district. The purpose statement of the CN2 district expresses the connection between the district location and the Comprehensive Plan land use recommendations. The Draft Inverness Park District Plan supports neighborhood commercial development at this location.

The plan recommends a public process for site planning the properties along Clinton Parkway such as rezoning with a Planned Development Overlay or conditional zoning such that the site plan would require City Commission Approval. The proposed request meets the basic test of compliance with the Comprehensive Plan with or without a development plan overlay.

This specific request is accompanied by a Preliminary Plat and a special use permit application that accommodates a public review process of a specific development for this property.

CONCLUSION

For the reasons noted in this report, staff supports this rezoning request to CN2 conditioned on a requirement that any use include City Commission review and approval of a site plan prior to issuance of a building permit. Any use subject to a Special Use Permit review would automatically follow this procedure.



Z-07-21-11: Rezone 3.3 acres from RSO to CN2
SUP-07-04-11: Special use permit for gas and fuel sales
3900 W 24th Place

Lawrence-Douglas County Planning Office
September 2011

N
W E
S

Area Requested

Scale: 1 Inch = 500 Feet

From: Jamie Hulse [mailto:jamiehulse@att.net]
Sent: Sunday, September 25, 2011 9:12 PM
To: Scott McCullough; Sandra Day; Dan Warner
Subject: HyVee Convenience Store/Car Wash rezoning request

Dear Planning Commissioners,

I support:

- the rezoning request from RSO to CN2 for HyVee Convenience Store/Car Wash (Lot 1), and office building (Lot 2).
- rezoning conditional upon this specific plan - reverts back to RSO if this plan is not built. (Based on previous experience with rezoning for a retirement project that never happened at W. 24th Pl & Inverness, so then The Grove was built.)
- a public process for the site planning.

*requirement of Site Plan approval by City Commission for both lots.
*requiring landscaping maintenance standards of drainage/creek area, both for flood management and safety.

- Allowing drainage area to overgrow in a natural state will block flow of water,
- and also provides place for people to hide with intent to rob/attack people getting gas or in car wash, especially during hours convenience store is closed.

- traffic pattern #4 or #5 below.

Traffic pattern options (Agenda, pp 312-316)

1. No access from Crossgate - only access from W. 24th Pl.
2. Full access from Crossgate - left & right turn (please do not support this option!)
3. 3/4 access from Crossgate - median required
4. Right turn in/right turn out only access on Crossgate
5. Right turn in from Crossgate/out turn only from W. 24th Pl.

Unfortunately, I will be in class Monday night, so will not be able to attend the Planning Commission meeting.

Sincerely,

Jamie Hulse
4403 Gretchen Ct.

PLANNING COMMISSION REPORT
NON-PUBLIC HEARING ITEM

PC Staff Report
9/26/11

ITEM NO 3b: PRELIMINARY PLAT; INVERNESS PARK PLAZA ADDITION NO. 5, A REPLAT OF LOT 1, BLOCK 1, INVERNESS PARK PLAZA ADDITION NO. 1.

PP-7-7-11: Consider a Preliminary Plat for a Replat of Lot 1, Block 1, Inverness Park Plaza Addition No. 1, for a two lot commercial development, located at 3900 W 24th Place. Submitted by Landplan Engineering, for Corporate Holdings II, LLC, property owner of record Hy-Vee, Inc contract purchaser.

STAFF RECOMMENDATION: Staff recommends approval of the Preliminary Plat of Inverness Park Plaza Addition No. 5, a replat of Lot 1, Block 1, Inverness Park Plaza Addition No. 1 and forwarding it to the City Commission for consideration of acceptance of easements and rights-of-way; subject to the following condition:

1. Provision of a revised Preliminary Plat to show the vacated easement along Crossgate Drive and the 10' pedestrian easement with dimensions.

Applicant's Reason for Request: *to accommodate proposed commercial development.*

KEY POINTS
- Preliminary plat proposes re-division of single lot into two lots.
- Development is intended for commercial development.
- Plat includes request to allow direct access to Crossgate Drive.

SUBDIVISION CITATIONS TO CONSIDER
- This application is being reviewed under the Subdivision Regulations for Lawrence and Unincorporated Douglas County, effective Jan 1, 2007.
- Section 20-810(a)(2)(i) requires subdivisions to comply with all applicable zoning district standards.

ASSOCIATED CASES
- Z-7-21-11; RSO to CN2.
- SUP-7-4-11; Gas and Fuel Sales, Food & Beverage Sales and accessory Car Wash (Cleaning).
- PF-7-4-11; Final Plat submitted concurrently with Preliminary Plat.

OTHER ACTION REQUIRED
- City Commission acceptance of easements and rights-of-way as shown on the Preliminary Plat.
- Submission and approval of applicable public improvement plans.
- Final Plat administrative review, approval, and recording at Register of Deeds Office.
- Building permits prior to construction activity.

PLANS AND STUDIES REQUIRED
- *Traffic Study* –Study provided.
- *Downstream Sanitary Sewer Analysis* – Study submitted and accepted.
- *Drainage Study* – A drainage study is not required for this project because downstream flooding is confined to the regulatory floodplain. [Stormwater Management Criteria Section 1.6.E.2.a].
- *Retail Market Study* – Not required for development less than 50,000 SF.

PUBLIC COMMENT RECEIVED PRIOR TO PRINTING

- None to date

ATTACHMENTS

- Preliminary Plat

Current Zoning and Land Use:	RSO (Single-Dwelling Residential-Office) District; undeveloped land. [Proposed rezoning to CN2-Z-07-21-11].
Surrounding Zoning and Land Use:	RM15 (Multi-Dwelling Residential) District) to the west; Remington Square – [Proposed rezoning to RM24; Z-8-12-10]. RM12 (Multi-Dwelling Residential) District to the north; Existing apartment development known as Parkway 4000. PUD (Alvamar Planned Unit Development) to the northeast; existing apartment development. RM24 (Multi-Dwelling Residential) District to the east; existing apartment development known as Lorimar Apartments. RSO (Single-Dwelling Residential) District to the south; undeveloped lot.

SITE SUMMARY

Total area: 3.324 acres
Lot 1: 2.73 acres
Lot 2: .594 acres

Request includes proposal to remove access restriction to Crossgate Drive and dedicate an interior access easement. No additional right-of-way is proposed by the applicant. However, a right-turn lane is proposed along southbound Crossgate Drive in the existing right-of-way. This improvement would widen the street and relocate the public sidewalk to a pedestrian easement.

STAFF REVIEW

The Preliminary Plat shows a proposed division of a single lot into two separate lots both adjacent to public right-of-way. Access to the lots is intended to be shared via the use of an internal access drive (easement). The property is located on the southwest corner of Clinton Parkway and Crossgate Drive. The property is bordered on the north by Clinton Parkway, an arterial street, on the east by Crossgate Drive, a collector street, and on the south by W 24th Place, a local street. The original plat included an access restriction that prohibits direct access to Crossgate Drive and Clinton Parkway.

Zoning and Land Use

The property is currently undeveloped. The purpose of the proposed zoning change and the Preliminary Plat is to create commercial lots for development. Specifically, development of a gas convenience store with car wash is proposed. The west side of the property is encumbered by the regulatory floodplain. As such a local floodplain development permit will be required for development of this property. The applicant has been advised of this requirement. The permit is an administrative review item and does not require Planning Commission action.

Streets and Access

- This revised Preliminary Plat retains the existing grid street formation originally established for the area.
- Clinton Parkway is an existing arterial street. Direct access to this street is not proposed.
- Crossgate Drive is an existing collector street.
- W24th Place is an existing local street.
- The project includes the construction of a right-turn lane southbound from Clinton Parkway to the site. This requires relocating the public sidewalk to an easement for a portion of the site.

The previous approval included a plat restriction that prohibits direct access from lots to the abutting arterial and collector streets. Approval of this request would modify that provision and allow for an access drive to Crossgate Drive. A traffic study was provided by the applicant. This study is required as part of the Subdivision Plat and Special Use Permit application process. The study identifies the level of service of some parts of the Clinton Parkway/Crossgate Drive intersection as "D" indicating that there are current delays. The plan concludes that the overall consequence of the development is a minimal change to the existing level of service at the intersection. The abutting streets were designed to accommodate the existing and projected traffic in terms of volume.

The proposed Driveway intersection is located 160' from the north property line and approximately 215' south of the south curbline of Clinton Parkway. The Development Code establishes minimum spacing standards for driveways from signalized intersections. All driveways intersecting a collector street shall be separated at least 300' from a signalized intersection and 250' from other non-signalized intersections (section 20-915 (e)(2)). In this specific application the driveway would be located within the functional area of both the signal at Clinton Parkway and Crossgate Drive and the roundabout intersection of Crossgate Drive and W 24th Place. The proposed driveway intersection is intended to optimize the spacing between the two intersections along this segment of Clinton Parkway.

The Development Code grants authority to the City Engineer to waive the spacing requirements. Such actions must be reported to the Planning Commission. If the Planning commission approves a break in the access restriction for Crossgate Drive the City Engineer is prepared to address the waiver request.

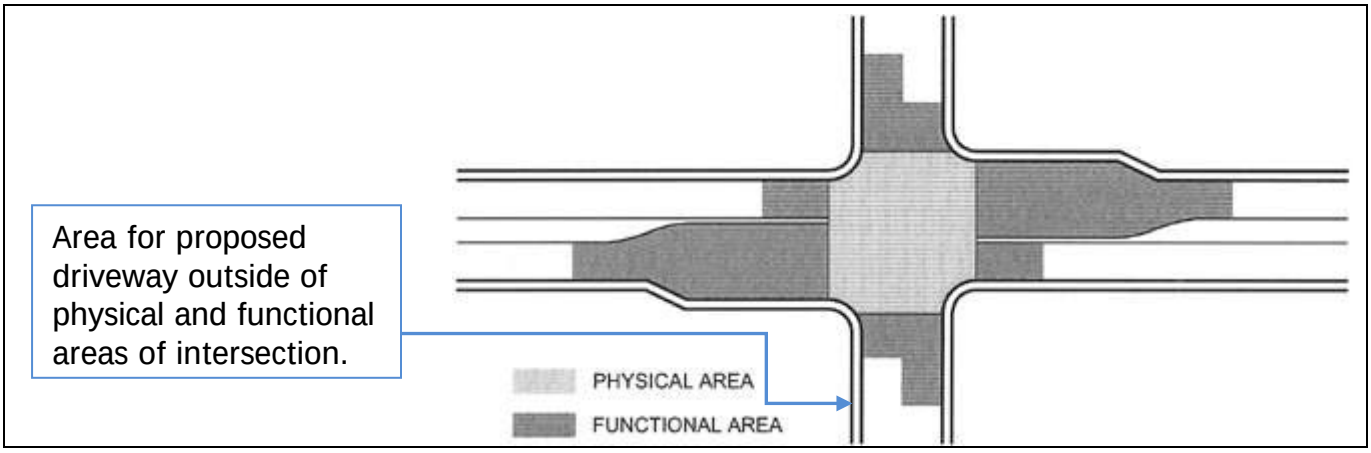
Discussion Item

The impact of removing the access restriction to Crossgate Drive and allowing either full access or some form of restricted access for the property is a significant issue to be considered.

Crossgate Drive is a collector street. A collector street is defined in Section 20-815 (d) of the Subdivision Regulations, as:

> *Street, Collector: A collector street provides for land access and traffic circulation within and between residential neighborhoods and commercial and industrial areas. They distribute traffic movements from these areas to the arterial streets. Collector streets do not typically accommodate long through trips and are not continuous for long distances.*

The applicant's traffic study submitted for the Preliminary Plat addresses the basic requirements for the subdivision. The study assessed the impact on the roadway and the need for specific improvements that would result from the proposed development. The study identified intersection functional areas where driveway intersections onto Crossgate Drive are undesirable as they interfere with the safe and efficient operations of the intersections. The figure below highlights the areas that require special consideration. The proposed access is located outside of the "functional area" noted in the study so that it should not interfere with the signal operations.



The new access is shown more than 200' south of the Clinton Parkway curb line. The study, however, does not discuss access conflict points related to specific turn movements. Left turn movements are the most critical consideration of access design because of the accident potential. Right turn movements, properly designed with deceleration and turn lanes are less critical.

From a transportation system management perspective, the ideal condition for the protection of the road network is to retain the access restriction on Crossgate and access the site from W 24th Place. This preliminary plat application represents a request for full access allowing all legal turn movements (right in/right out and left in/left out) entering and exiting the site. Full access allows all right and left turn movements into and out of the site. Alternatives to full access include from the least desirable to the most desirable:

1. Allow ¾ access restriction (allows right in, right out, and left out, but not left in movements). Requires a median on Crossgate Drive.
2. Allow Right In/Right Out access (does not allow any left turn movements). Requires a median on Crossgate Drive.
3. Allow Right In Only.
4. Retain access restriction (no driveway cut to Crossgate Drive)

The attached diagrams show the various options for full access and restricted access as well as the impact on the neighborhood.

City Staff recognizes the change in land use designation with the initial approval of the Inverness Park District Plan. Staff supports the removal of the current plat restriction to allow limited access from and to Crossgate Drive. Staff believes that the most efficient and least conflicted access to accommodate the use is a right-in/right-out movement and construction of an extended center median on Crossgate Drive. This would minimize the additional conflict points generated by the proposed uses on Crossgate Drive, but would permit full access at 24th Place, allowing vehicles to move west or east to the intersection at Inverness Drive or Crossgate Drive and then to turn either north or south from there. While a right-in/right-out access point creates the least traffic conflict points, the City Engineer would accept a ¾ access point for the uses currently requested in the accompanying SUP application as a compromise to the applicant's request for full access on Crossgate Drive. Procedurally, any waiver must be reported to the Planning Commission and any party aggrieved may appeal the action of the City Engineer within 14 days of the Planning Commission meeting at which the item appears on the agenda.

Utilities and Infrastructure

The property currently has access to public sewer and water service. Infrastructure planning previously completed anticipated development of this property. The existing sanitary sewer main does not extend to touch proposed Lot 2. Extension of the main will be required to serve both lots. A new utility easement is proposed to accommodate the extended sanitary sewer line.

Easements and Rights-of-way

This request does not alter the width of the right-of-way but does include a right turn lane on the southbound leg of Crossgate Drive. The plat has been revised to provide a pedestrian easement to accommodate the relocated sidewalk along Crossgate Drive. The existing 15' utility easement parallel to Crossgate Drive is not needed and would conflict with the placement of street trees. The easement will be vacated and replaced with a 10' pedestrian/utility easement along Crossgate Drive.

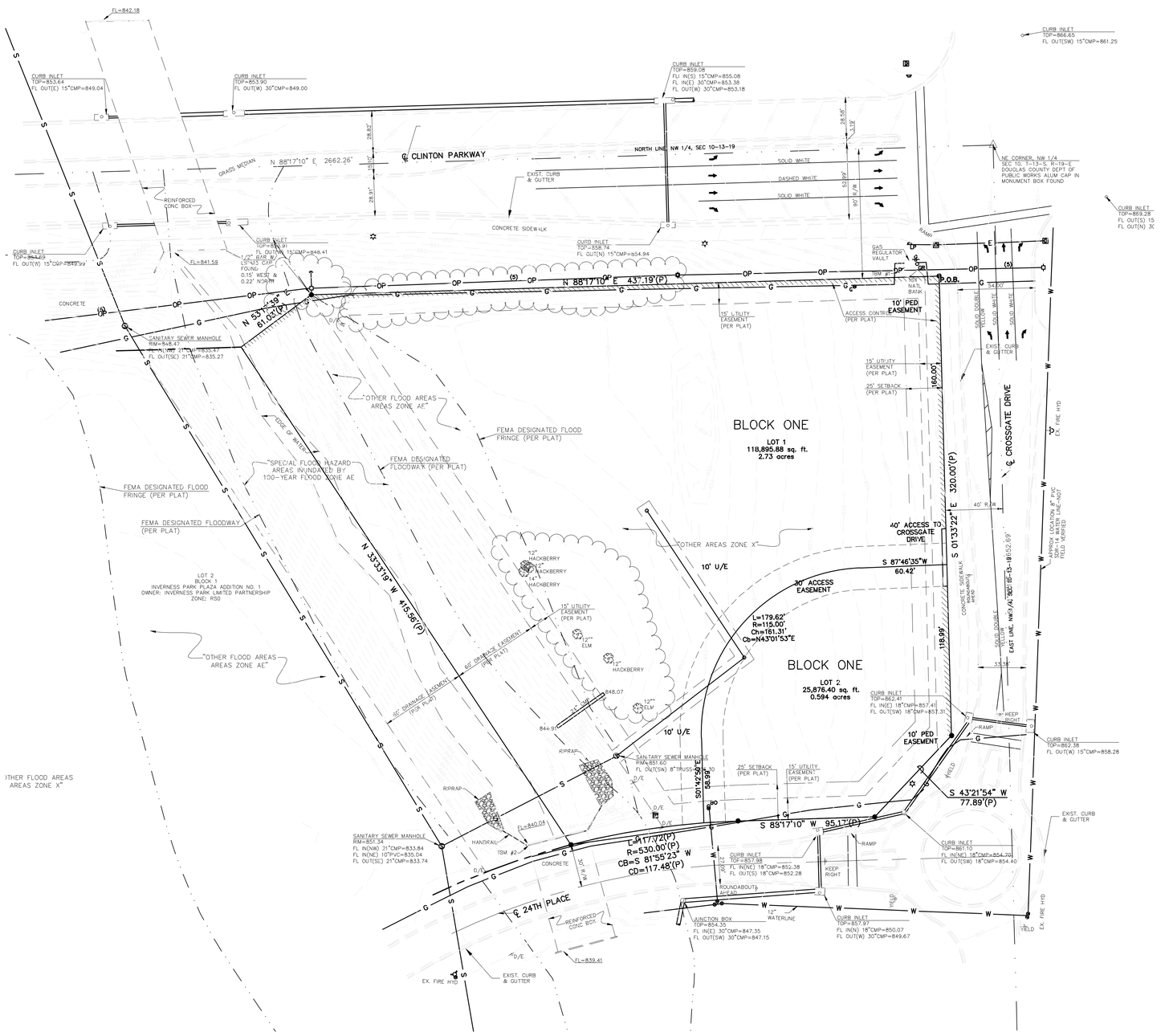
Summary

The proposed plat complies with the design standards of the Subdivision Regulations with the exception of the driveway separation from a signalized and non-signalized intersection. Approval of the proposed Preliminary Plat includes lifting access control to Crossgate Drive in order to allow the City Engineer to make a determination on waiving the driveway spacing standards for the proposed and future uses.

STAFF RECOMMENDATION

This Preliminary Plat conforms to the standards and requirements of the subdivision regulations and the land use plans for the area as noted in the body of the staff report. Staff recommends approval of the Preliminary Plat.

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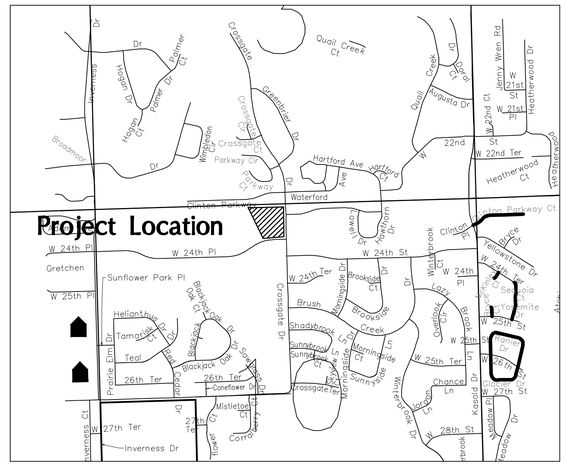


North

0 20 40 60 80

Scale: 1"=40'-0"

Location Map



North
1" = 1000'

Legal Description

THIS IS A REPLT OF LOT 1, BLOCK 1, INVERNESS PARK PLAZA ADDITION NO. 1 A SUBDIVISION IN THE CITY OF LAWRENCE, DOUGLAS COUNTY KANSAS. A TRACT OF LAND IN THE NORTHWEST QUARTER OF SECTION 10 IN TOWNSHIP 13 SOUTH, RANGE 19 EAST OF THE SIXTH PRINCIPAL MERIDIAN, DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT WHICH IS SOUTH 88°17'10" WEST, 40.00 FEET ALONG THE NORTH LINE AND SOUTH 01°33'13" EAST, 90.00 FROM THE NORTHEAST CORNER OF THE NORTHWEST QUARTER OF SAID SECTION 10; THENCE SOUTH 01°33'13" EAST, 320 FEET; THENCE SOUTH 43°21'54" WEST, 77.89 FEET; THENCE SOUTH 88°17'10" WEST, 95.17 FEET; THENCE ON A 530.00 FOOT RADIUS CURVE TO THE LEFT WITH A 117.46 FOOT CHORD BEARING SOUTH 81°55'15" WEST, AN ARC DISTANCE OF 117.70 FEET; THENCE NORTH 33°33'19" WEST, 415.56 FEET; THENCE NORTH 53°17'39" EAST, 61.03 FEET; THENCE NORTH 88°17'10" EAST, 437.19 FEET TO THE POINT OF BEGINNING CONTAINS 3.324 ACRES, MORE OR LESS.

General Notes

DEVELOPER: HY – VEE, INC.
5820 WESTON PARKWAY
WEST DES MOINES, IOWA 50266

1. OWNER: CORPORATE HOLDINGS II, LLC
444 EAST SANTA FE
OLATHE, KS 66061
2. LAND PLANNER/ ENGINEER/LAND SURVEYOR: LANDPLAN ENGINEERING, P.A.
1310 WAKARUSA DRIVE
LAWRENCE, KS 66049
3. PROPERTY ADDRESS: 3900 CROSSGATE DRIVE
LAWRENCE, KS 66049
4. TYPICAL SOIL TYPES:
MARTIN SLITY CLAY LOAM, 3 TO 7 PERCENT SLOPES
MARTIN SOILS, 3 TO 7 PERCENT SLOPES, ERODED
OSKA SILTY CLAY LOAM, 3 TO 6 PERCENT SLOPES
WOODSON SILT LOAM, 1 TO 3 PERCENT SLOPES
5. TOPOGRAPHIC INFORMATION OBTAINED FROM FIELD SURVEY PERFORMED BY KAW VALLEY ENGINEERING, JULY 2008.
6. EXISTING LAND USE: VACANT
7. PROPOSED LAND USE: C-STORE/OFFICE
8. EXISTING ZONING: RS-O
9. PROPOSED ZONING: CN2
10. THIS SITE IS LOCATED WITHIN THE FLOODPLAIN PER FEMA MAP #20045C0158D, DATED AUGUST 5, 2010. BFE = 850.00
11. THE DRAINAGE EASEMENT WILL REMIAN FREE OF ANY NATURAL OR NON-NATURAL STRUCTURES OR VEGETATIVE BARRIERS (INCLUDING BUT NOT LIMITED TO TREES, SHRUBBERY, BERMS, FENCES, AND WALLS). THE MAINTENANCE OF THE DRAINAGE EASEMENT IS THE RESPONSIBILITY OF THE OF THE PROPERTY OWNER.
12.

Site Summary

GROSS AREA:	144,793.44 SF / 3.324 AC
RIGHTS-OF-WAY AREA:	0 SF / 0 AC
NET AREA:	144,793.44 SF / 3.324 AC
AVG. LOT SIZE	72,396.72 SF / 1.66
TOTAL LOTS:	2

Benchmarks

BM #1: CHISELED "SQUARE" AT THE SOUTHEAST CORNER OF STOP LIGHT BASE AT THE NORTHWEST CORNER OF CLINTON PARKWAY AND CROSSGATE DRIVE. ELEV=864.57

TBM #1: CHISELED "SQUARE" CUT AT SOUTHWEST CORNER OF NATURAL GAS PEDESTAL AT THE SOUTHWEST QUADRANT OF CLINTON PARKWAY AND CROSSGATE DRIVE. ELEV=865.50

TBM #2: CHISELED "SQUARE" CUT ON HEADWALL OF REINFORCED CONCRETE BOX LOCATED ON THE NORTH SIDE OF 24TH PLACE AT THE SOUTHWEST CORNER OF LOT 1, BLOCK 1, INVERNESS PARK PLAZA ADDITION NO. 1. ELEV=854.45

A Preliminary Plat for A Replat of
LOT 1, BLOCK 1, INVERNESS PARK PLAZA ADD. NO.1

INVERNESS PARK PLAZA ADDITION NO. 5

Lawrence, Kansas

Civil Engineering
Landscape Architecture
Community Planning
Surveying

Landplan Engineering, P.A.
Lawrence, KS • Kansas City, MO • Junction City, KS

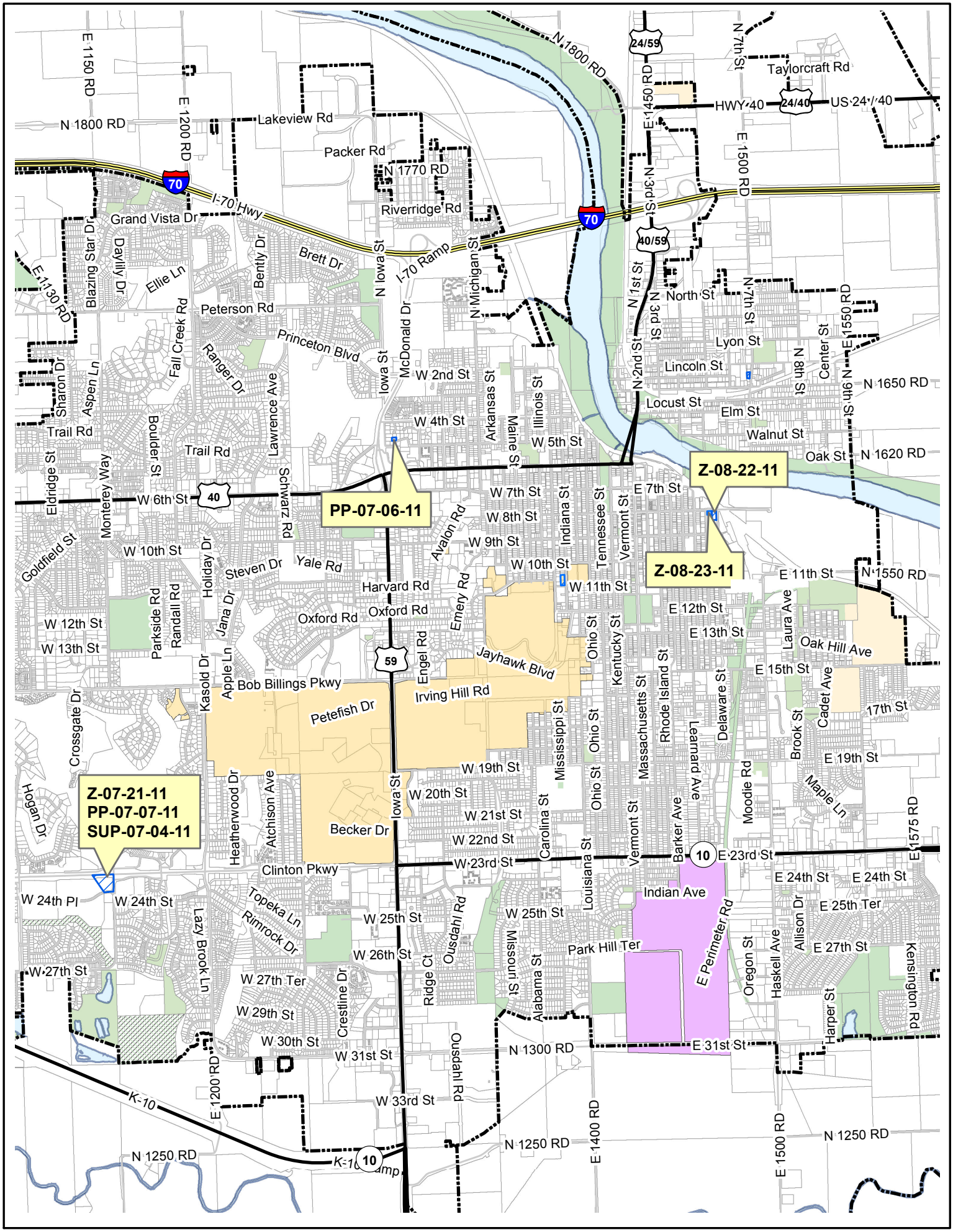
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REV	DATE	DESCRIPTION
-	8.30.11	NOTES

DATE:	6/08/11
PROJECT NO.:	2011.1110
DESIGNED BY:	CLM
DRAWN BY:	CLM
CHECKED BY:	CLM

ISSUE	SHEET NO.
	1
	OF 1 SHEETS


Z-08-22-11
Z-08-23-11
PP-07-06-11
Z-07-21-11
PP-07-07-11
SUP-07-04-11
N 1800 RD
Lakeview Rd
Packer Rd
N 1770 RD
Riverridge Rd
I-70 Hwy
I-70 Ramp
Grand Vista Dr
Brett Dr
Bently Dr
Ellie Ln
Peterson Rd
Princeton Blvd
Fall Creek Rd
Ranger Dr
Lawrence Ave
Schwarz Rd
Boulder St
Trail Rd
Sharon Dr
Aspen Ln
Eldridge St
Monterey Way
Goldfield St
W 6th St
W 7th St
W 8th St
W 9th St
W 10th St
W 11th St
W 12th St
W 13th St
Steven Dr
Yale Rd
Holiday Dr
Parkside Rd
Randall Rd
Jana Dr
Harvard Rd
Oxford Rd
Avalon Rd
Emery Rd
Engel Rd
Jayhawk Blvd
Irving Hill Rd
Bob Billings Pkwy
Petefish Dr
Apple Ln
Kasold Dr
Crossgate Dr
Hogan Dr
Heatherwood Dr
Atchison Ave
Becker Dr
Clinton Pkwy
W 19th St
W 20th St
W 21st St
W 22nd St
W 23rd St
W 24th Pl
W 24th St
W 25th St
W 26th St
W 27th St
W 27th Ter
W 29th St
W 30th St
W 31st St
W 33rd St
Topeka Ln
Rimrock Dr
Lazy Brook Ln
Crestline Dr
Ridge Ct
Ousdahl Rd
Oskahl Rd
N 1300 RD
N 1250 RD
E 1200 RD
E 1400 RD
E 1500 RD
E 1575 RD
K-10
K-10 Ramp
N Iowa St
McDonald Dr
N Michigan St
Arkansas St
Maine St
Illinois St
Indiana St
Tennessee St
Vermont St
Ohio St
Kentucky St
Mississippi St
Carolina St
Louisiana St
Massachusetts St
Rhode Island St
Delaware St
Leonard Ave
Barker Ave
Moodie Rd
Brook St
Cadet Ave
Laura Ave
Oak Hill Ave
Maple Ln
Indian Ave
E Perimeter Rd
Park Hill Ter
Allison Dr
Haskell Ave
Oregon St
Harper St
Kensington Rd
E 23rd St
E 24th St
E 25th Ter
E 27th St
E 31st St
E 1130 RD
E 1150 RD
E 1200 RD
E 1450 RD
E 1500 RD
E 1550 RD
N 1620 RD
N 1650 RD
N 1st St
N 2nd St
N 3rd St
N 7th St
N 8th St
N 9th St
North St
Lyon St
Lincoln St
Locust St
Elm St
Walnut St
Oak St
Center St
E 7th St
E 10th St
E 11th St
E 12th St
E 13th St
E 15th St
17th St
E 19th St
Taylorcraft Rd
HWY 40
US 24/40
24/59
40/59
70
59
40
10

From: Jamie Hulse [mailto:jamiehulse@att.net]
Sent: Sunday, September 25, 2011 9:12 PM
To: Scott McCullough; Sandra Day; Dan Warner
Subject: HyVee Convenience Store/Car Wash rezoning request

Dear Planning Commissioners,

I support:

- the rezoning request from RSO to CN2 for HyVee Convenience Store/Car Wash (Lot 1), and office building (Lot 2).
- rezoning conditional upon this specific plan - reverts back to RSO if this plan is not built. (Based on previous experience with rezoning for a retirement project that never happened at W. 24th Pl & Inverness, so then The Grove was built.)
- a public process for the site planning.

*requirement of Site Plan approval by City Commission for both lots.
*requiring landscaping maintenance standards of drainage/creek area, both for flood management and safety.

- Allowing drainage area to overgrow in a natural state will block flow of water,
- and also provides place for people to hide with intent to rob/attack people getting gas or in car wash, especially during hours convenience store is closed.

- traffic pattern #4 or #5 below.

Traffic pattern options (Agenda, pp 312-316)

1. No access from Crossgate - only access from W. 24th Pl.
2. Full access from Crossgate - left & right turn (please do not support this option!)
3. 3/4 access from Crossgate - median required
4. Right turn in/right turn out only access on Crossgate
5. Right turn in from Crossgate/out turn only from W. 24th Pl.

Unfortunately, I will be in class Monday night, so will not be able to attend the Planning Commission meeting.

Sincerely,

Jamie Hulse
4403 Gretchen Ct.

PLANNING COMMISSION REPORT
Regular Agenda – Public Hearing Item

PC Staff Report
9/26/11

ITEM NO. 3C: SPECIAL USE PERMIT FOR GAS AND FUEL SALES; 3900 W 29TH PLACE (SLD)

SUP-7-4-11: Consider a Special Use Permit for Gas and Fuel Sales and Cleaning (Car Wash), on approximately 2.73 acres of vacant property located at 3900 W 24th Place. Submitted by Landplan Engineering, for Corporate Holdings II, LLC, property owner of record, and Hy-Vee, Inc. as contract purchaser.

STAFF RECOMMENDATION: Planning Staff recommends approval of the Special Use Permit for Gas and Fuel Sales and Cleaning (Car Wash) at 3900 W 29th Place and forwarding the request to the City Commission with a recommendation of approval, subject to the following conditions completed prior to the release of the site plan associated with the SUP for building permits:

1. Applicant shall submit the following additional documents to the Planning Office for review and approval prior to release of the Special Use Permit for issuance of a building permit:
    a. Photometric plan per Section 20-1103 of the Development Code.
    b. Building elevations compliant with the Commercial Design Guidelines.
2. Provision of a revised drawing to show 3/4 access if approved by the City Commission
3. Prior to release of the Special Use Permit for issuance of a building permit the applicant shall provide a revised site plan to include the following changes:
    a. Provision of a note that lists the corresponding deed book and page reference for documents recorded addressing maintenance of the shared drive and trash dumpster.
    b. Provision of a note that states: *"Any undeveloped areas shall be planted with shrubs or ground cover per Section 20-1006 (b) of the Development Code."*
    c. Provision of a note that states: *"Lot 1 and Lot 2 as shown on the site plan are owned by same corporation. Owner has agreed, as a condition of approval, to plant street trees for Lots 1 and 2 upon initial development of Lot 1 and also to complete the perimeter sidewalk along W 24th Place along Lot 2 at the time of constructing it for Lot 1."*
    d. Provision of a revised General Note 8 to include reference to Section 20-1103 and to state: *"A photometric plan shall be submitted for review and approval prior to issuance of a building permit for Lot 2."*
    e. Provision of a note that states: *"The City Engineer has approved reduced access spacing from the signalized intersection of Crossgate Drive with Clinton Parkway and reduced access spacing from a non-signalized intersection of Crossgate Drive with W 24th Place."*
4. Provision of a revised drawing to show the required stormwater changes per the City Stormwater Engineer's approval to include:
    a. Verify the floodway and floodplain limits shown on the Special Use Permit. There seems to be a discrepancy between those show and those on the August 5, 2010 FIRM. Show the Water Surface Elevation of the Base Flood as determined by the Flood Insurance Study.
    b. Revise the date in *General Note #14* to read August **5**, 2010.
    c. Flare the entrance to the 4' wide concrete flume at the curb line. If possible move the flume south of its proposed location to capture runoff from the driveway of Lot.

Construct the flume and corresponding riprap to run perpendicular to the stream bank. Regrade the low area to drain so that the existing 24" CMP can be removed.

d. Per City Code Chapter IX Article 9-903(B), a stormwater pollution prevention plan (SWP3) must be provided for this project. 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.
e. Show minimum floor elevations for lots adjacent to all drainage easements.
f. The Curb and gutter section shall be separated from the approach, with expansion joint material at driveway returns.

Applicant's Reason for Request:

Current zoning does not support use of C-store, fuel sales or other retail uses. The subject property has been vacant since annexation. Continued demand for growth on the southwest side of Lawrence suggests development of the subject property to be appropriate at this time. This request will provide necessary commercial services to support development in the surrounding areas.

This request excludes proposed Lot 2 except for shared site plan elements. Lot 2 development is shown conceptually at this time and is subject to separate site plan review and approval procedures applicable to the zoning district.

Other Action Required

- City Engineer Waiver to allow reduced access spacing from the signalized intersection of Crossgate Drive with Clinton Parkway and reduced access spacing from a non signalized intersection of Crossgate Drive with W 24th Place. Publication of an ordinance that rezones the property to CN2.
- Recording of the associated Final Plat with the Register of Deeds Office.
- Submission and approval of a Floodplain Development Permit.
- Execution of a Site Plan Performance Agreement.
- Publication of an ordinance per Section 20-1306(j).
- Future development of Lot 2 will require a formal site plan process, subject to City Commission approval if the zoning is approved, in order to be approved.

KEY POINTS

- Request represents new infill development along Clinton Parkway.
- Certain improvements should be included when the first building permit is pulled for either lot to include the public sidewalk along Crossgate Drive and W 24th Place and all street trees for both Lots.
- The information shown for Lot 2 on the site plan is conceptual and is not being approved with this application though certain elements are necessary to be designed with the development of Lot One. Lot 2 data is for information purposes only and is subject to change upon formally site planning the lot in the future.
- Full access to Crossgate Drive is a concern for staff.
- Procedurally, any waiver must be reported to the Planning Commission and any party aggrieved may appeal the action of the City Engineer within 14 days of the Planning Commission meeting at which the item appears on the agenda.

FACTORS TO CONSIDER

CHARACTER OF THE AREA

- The character of the area is predominantly mixed residential including apartments, attached and detached housing and undeveloped lots. Clinton Parkway makes the northern edge of the Inverness Park Neighborhood.

CONFORMANCE WITH *HORIZON 2020*

- The proposed uses conform to land use recommendations included in the Inverness Park District Plan recently adopted by the Planning Commission and City Commission (County Commission consideration pending).

PUBLIC COMMENT RECEIVED PRIOR TO PRINTING

- None to date.

ATTACHMENTS

1. Area Map
2. Site Plan
3. Access Options
4. FHWA Technical Report
5. Prototypical Building Elevations

GENERAL INFORMATION	
Current Zoning and Land Use:	RSO (Single-Dwelling Residential-Office) District; undeveloped land. [Proposed rezoning to CN2-Z-07-21-11].
Surrounding Zoning and Land Use:	RM15 (Multi-Dwelling Residential) District) to the west; existing apartment development known as Remington Square – [Pending request for RM24; Z-8-12-10]. RM12 (Multi-Dwelling Residential) District to the north; Existing apartment development known as Parkway 4000. PUD (Alvamar Planned Unit Development) to the northeast; existing apartment development. RM24 (Multi-Dwelling Residential) District to the east; existing apartment development known as Lorimar Apartments. RSO (Single-Dwelling Residential) District to the south; undeveloped lot.

Site Summary Total area: 3.324 acres	**Lot 1**	**Lot 2 (Conceptual only)**
Lot Size:	2.73 acres (118,895.88 SF)	.594 acres (25,876.40 SF)
Building: (SF)	6,764.68	4,398
Impervious Cover: (SF)	56,704.30	10,244
Pervious Cover: (SF)	62,191.58	15,632.40

Summary of Request
This request is for the development of a gas convenience store with 8 pump islands, a 4-bay car wash and a separate lot for a future office building (not a part of this application for special use permit). *Gas and Fuel Sales* and *Cleaning (Car Wash)* are uses allowed in the CN2 District subject to Special Use Permit approval. The *Food and Beverage* use, which entails the convenience store, is permitted in the CN2 district with a limitation that it not exceed 3,000 square feet in area.

Development of Lot 2 is conceptual. The shared driveway serving both lots would be included with the initial development of the property. A separate site plan would be required for development of Lot 2 in the future.

Staff recommended that the zoning be conditioned such that site planning requires a public review and approval procedure for this property. If approved, any use subject to a site plan will require approval by the City Commission. The Special Use Permit review includes a public hearing by the Planning Commission with final decision making by the City Commission. This procedure satisfies the public review process recommended as part of the accompanying rezoning application.

Review and Decision-Making Criteria (Land Development Code Section 20-1306(i))
NOTE: This review assumes approval of the proposed CN2 District with a condition that development be subject to a public review process.

1. WHETHER THE PROPOSED USE COMPLIES WITH ALL APPLICABLE PROVISIONS OF THIS DEVELOPMENT CODE

Applicant's Response: *"Yes. This proposed use and development is consistent with the most recent Draft Inverness Park District Plan."*

Articles 6, 9, 10, and 11 of the Development Code address the site specific design standards applicable to development. The site design standards addressing setback, parking, landscaping, and lighting are discussed later in this report. Additionally, compliance with the Commercial Design Guidelines and a photometric plan are required with this project but have been deferred until after a decision on the SUP application by the City Commission per agreement between staff and applicant (the PC can defer the request to request this information if desired). Several elements do not fully comply with the minimum design standards.

1. The drive proposed to access Crossgate Drive does not meet the minimum separation standards from signalized and non-signalized intersections. The reader should refer to the Preliminary Plat report for a related discussion of this issue. Depending on the resolution of the access to Crossgate Drive a reduced separation may be approved by the City Engineer via a waiver to this standard.

2. Off-Street parking and stacking requirements result in an obstruction of vehicular travel lanes on the site. Off-Street Parking for *Gas and Fuel Sales* states:
   a. off-street parking shall be provided at a ratio of 2 spaces per pump island; and
   b. stacking shall be provided with one space ***at each end of the pump island*** per section 20-911.

   Additionally parking spaces shall not impede on-site or off-site traffic movements. As designed the proposed layout will include on-site impediments during peak times.

3. Elevations submitted do not comply with the Commercial Design Guidelines. Staff has continued to discuss this element with the applicant. They have indicated agreement to a condition of approval so that initial entitlements can be sought, determining if there is a viable project.

The proposed uses of the site comply with the Development Code. As conditioned, along with any applicable waivers related to access, the proposed development complies with the Development Code.

Staff Finding – Pending approval and publication of the CN2 zoning the proposed uses conform with the minimum use requirements of the CN2 District. As conditioned, the proposed development complies with the provisions of the Development Code regarding specific site plan elements.

2. WHETHER THE PROPOSED USE IS COMPATIBLE WITH ADJACENT USES IN TERMS OF SCALE, SITE DESIGN, AND OPERATING CHARACTERISTICS, INCLUDING HOURS OF OPERATION, TRAFFIC GENERATION, LIGHTING, NOISE, ODOR, DUST AND OTHER EXTERNAL IMPACTS

Applicant's Response: *"Yes, this proposed use in terms of scale and site design fit in the corner lot. The amount of green space that surrounds the proposed use helps to buffer the lighting and noise that could be generated by this use. The street and drainage configuration also help buffer this development. There are no adjoining single-family neighbors to this development. "*

Approval of this request will not change the base zoning district. The proposed development is comprised of single story buildings and a canopy over the gas fueling pump islands. The site is designed to orient activity toward the corner of Clinton Parkway and Crossgate Drive. The conceptual office building is oriented toward W 24th Place and Crossgate Drive. It is assumed that the office use will include typical business hours and will not impact the neighborhood. Traffic is discussed in specific detail below. Activity is generally confined to the area north of W 24th Place. Assessment of the building compatibility is deferred until final building elevations are provided to staff for review but once in compliance will be compatible with the surrounding context.

Gas convenience stores are typically lit across the site. A maximum lighting level is established in the Development Code for the canopy. Additionally, lighting levels at the property lines are not allowed to exceed specific thresholds. A lighting plan has not been submitted for this project and is reflected as a condition of approval.

The car wash and gas pumps are proposed to be operational 24/7. The convenience store is planned to have more restricted hours from 5:00 am to 11:00 pm. The gas/convenience store to the west (Wakarusa and Clinton Parkway) currently operates with a similar schedule. Some gas/convenience stores located in the community operate with 24 hour services. They are generally located along major arterial streets or within other commercial corridors. This location benefits from having an arterial street to the north, a collector street to the east, RSO zoning to the south and RM zoning and a wide drainage area to the west. If located closer to residential uses, a discussion would need to occur about limiting hours of operation for the car wash and even gas pumps; however, because of the street and other buffering, the 24/7 operation should not compromise the character of the residential uses in the larger area.

The specific development proposed is designed predominantly for automotive access. A balance of pedestrian pathways from the public sidewalks to the interior destinations will mitigate the auto-oriented nature of the development. Additional interior sidewalks are recommended for this site.

Staff Finding – The proposed use is compatible with surrounding development by virtue of its location and the protections required of the Development Code related to lighting, building aesthetics, etc. Review and approval of the development with respect to the commercial design guidelines and approval of a site specific photometric plan are required to assure compatibility with the surrounding area. The retail hours of operation are consistent with residential activity.

3. WHETHER THE PROPOSED USE WILL CAUSE SUBSTANTIAL DIMINUTION IN VALUE OF OTHER PROPERTY IN THE NEIGHBORHOOD IN WHICH IT IS TO BE LOCATED

Applicant's Response: *"No, this lot will not change the surrounding property value of residential uses. This development will provide a useful service to the surrounding property."*

This property is located on the northeast edge of the Inverness Park Neighborhood. The proposed use is consistent with the Inverness Park District Plan recently adopted by the planning and city commissions. The proposed development is north of W 24th Place keeping it out of the interior of any existing residential area. Approval of the request will result in development of a currently vacant lot and in providing convenience services to the neighborhood within walking distance. The presence of convenience goods and services within walking distance is considered beneficial to neighborhoods when properly planned.

The property has been planned for commercial use during the Inverness Park District Plan planning process. During that process, there was no evidence presented to suggest that a diminution in property value of any surrounding property would occur with commercial land uses on this property.

Staff Finding – Substantial diminution of other property values in the area is not anticipated. The proposed development is intended to transition from high intensity land use along Clinton Parkway to lower intensities land uses south of W 24th Place. The addition of convenience retail services within walking distance of the residences is expected to be beneficial for the surrounding neighborhoods and the community.

4. WHETHER PUBLIC SAFETY, TRANSPORTATION AND UTLITY FACILITIES AND SERVICES WILL BE AVAILABLE TO SERVE THE SUBJECT PROPERTY WHILE MAINTAINING SUFFICIENT LEVELS OF SERVICE FOR EXISTING DEVELOPMENT

This area is developed with existing public and private utility services. The addition of a commercial development will not diminish public services and existing infrastructure. Development of the site will require additional public improvements and the extension of the sanitary sewer to serve Lot 2. Construction of the public sidewalk along Crossgate Drive and W 24th Place, a public improvement, will provide connecting links for the surrounding neighborhood.

The City Stormwater Engineer has noted several notes that should be included on the drawing to comply with minimum standards. These notes are reflected as conditions of approval.

The significant public concern is the impact of the proposed use on the adjacent street network. The proposed development includes request for full access to Crossgate Drive and a southbound turn

lane into the site. This access is currently restricted per the current subdivision plat. The addition of a full access introduces conflict points to the roadway that do not currently exist. The ideal condition to protect the existing traffic flow is to retain the access restriction. The consideration of the preliminary plat and the decision to remove the access restriction impacts the design of the proposed driveway.

City Staff supports the removal of the current plat restrictions to allow limited access from Crossgate Drive. A complete discussion of access and staff's recommendation are discussed in detail below in the Access section of this report. Staff recommends that access be limited to a right in/right out movement and construction of an extended center median in Crossgate Drive. This would minimize the additional conflict points generated by the proposed uses. Full access at W 24th Place allows vehicles to move west or east to the intersection at Inverness Drive or Crossgate Drive and then to turn either north or south from there.

Staff Finding – Services are already available to this property. There is no substantial anticipated change in service levels for the surrounding area. Additional public improvements are required for development of this property. The introduction of possible vehicular points of conflicts to the street network is a concern of City Staff.

5. WHETHER ADEQUATE ASSURANCES OF CONTINUING MAINTENANCE HAVE BEEN PROVIDED

The site plan shows development for both Lot 1 and conceptual development for Lot 2. Certain items are shared between the lots and will require appropriate agreements to be recorded with the Register of Deeds Office to ensure maintenance of these facilities. As part of the Final Plat, the access and dumpster will be identified as shared elements for example. The document will include a deed book and reference for the associated maintenance agreements. A reference to these agreements should also be reflected on the face of the site plan for future reference.

Any undeveloped areas shall be planted with shrubs or ground cover per Section 20-1006 (b) of the Development Code. This would include Lot 2 if not initially developed. This standard is reflected as a condition of approval. The Development Code includes a mechanism for review of a Special Use that demonstrates a lack of compliance with any conditions of approval of the related site plan.

Staff Finding – Adequate assurances of continued maintenance are inherent in the use and the Special Use approval process.

6. WHETHER THE USE WILL CAUSE SIGNIFICANT ADVERSE IMPACTS ON THE NATURAL ENVIRONMENT

Applicant's Response: *"There will be no adverse impacts to the natural environment. Hy-Vee presently operates approximately 92 C-stores nationwide. Hy-Vee plans to design this site as the company's most environmentally-friendly C-store, including an application for LEED certification."*

This property was part of a larger 160 acre tract. Preliminary development actions included the construction of the local interior streets and improvement of the abutting collector street network. Basic water and sanitary sewer extensions were made to the property. Portions outside of the floodplain were farmed prior to initial development activities. Any landscaping original to the property has been disturbed.

The west side of the property is encumbered by the regulatory floodplain. A local floodplain development permit is required as part of the approval process and is an administrative review item.

Staff Finding – Alteration of vegetation occurred with the initial development of the area and the original infrastructure improvements. Much of the existing vegetation has grown up since early construction activity in the area. Review and approval of a local floodplain development permit is required for development of Lot 1. This review will ensure protection of that natural feature.

7. WHETHER IT IS APPROPRIATE TO PLACE A TIME LIMIT ON THE PERIOD OF TIME THE PROPOSED USE IS TO BE ALLOWED BY SPECIAL USE PEMRIT AND, IF SO, WHAT THAT TIME PERIOD SHOULD BE

The proposed uses are allowed in the base zoning district subject to a public review process upon publication of an ordinance rezoning this property to CN2. The proposed zoning, CN2, is a neighborhood commercial district. Uses that include intensive automotive access such as a drive-thru, are subject to the Special Use Permit review process. The development represents a significant investment that is specific to automotive related activity.

In staff's opinion, a time limit is not necessary for this special use permit. If any of the conditions of approval are not complied with, methods exist in the Development Code to revoke the permit. As most of the conditions relate to initial development, staff does not anticipate issues in the future, but does have enforcement authority should improvements need attention in the future.

Staff Finding – Staff does not recommend a time limit on the Special Use Permit.

STAFF REVIEW
The Special Use Permit is predominantly concerned with the drive-thru operations of the proposed uses for Lot 1. Several site plan elements are shared between Lot 1 and Lot 2 including interior access and solid waste disposal.

A. Site Summary
Lot 1 includes *Gas and Fuel Sales* commonly known as a gas convenience store and a 4 bay automatic *Car Wash*. Lot 2 includes a 4,398 SF office building.

Lot 1:	Lot 2: (Conceptual only)
Building: 2,837 SF (retail) 3,932 SF (car wash with 4 bays) 6,444 SF (canopy over 8 gas pumps)	Building: 4,398 SF (office Building)

B. Access and Parking
Access concerns are introduced in the Preliminary Plat Staff report. Part of the action related to the preliminary plat is a consideration of the removal of current access restrictions prohibiting direct access to Crossgate Drive. Assuming that the access restriction is removed, the design of the access driveway then must be considered next. The location of the driveway in terms of distance from an intersection and turn movements into and exiting the site are specific discussion items of this report.

The proposed site plan includes a south bound deceleration lane from Clinton Parkway into the site. Internal access to Lots 1 and 2 are provided via a shared access easement allowing direct access for both lots to Crossgate Drive and 24th Place.

Access management addresses among other things, the number and type of conflict points at a particular intersection. The intersection can be one of two public streets or a street and a driveway. By limiting the amount of access at an intersection, in this case a driveway and a collector street, the potential for crashes are reduced because the points of conflict are reduced. Property owners are most concerned with access management that limits turn movements resulting in a "circuitous travel to and from a site".[1] Each access restriction option results in some level of turn restrictions. Left turn movements are also cited with the highest incidents of crashes at driveways in the FHWA attachment.

Staff's recommendation seeks to balance the applicant's desire for full access with the public's safety interest by utilizing best management practices for intersection design.

Driveway Separation: The proposed access drive to Crossgate Drive does not meet the minimum separation standards for signalized and non-signalized collector street intersections. The reader should refer to the Preliminary Plat report for a related discussion of this issue. Depending on the resolution of the access to Crossgate Drive a reduced separation may be approved by the City Engineer through a waiver process.

The separation of the driveway from the intersection does not meet the minimum design standard of 300' (from Clinton Parkway) and 250' from W 24th Place per the Development Code. Since separation cannot be achieved, limiting left turn movements provides a best case scenario for access to this site from a vehicle conflict perspective. Staff recommends a right-in/right-out access point on Crossgate Drive to provide the business access from this street, but the City Engineer would accept a ¾ access point as a waiver to the Development Code Standards.

Procedurally, any waiver must be reported to the Planning Commission and any party aggrieved may appeal the action of the City Engineer within 14 days of the Planning Commission meeting at which the item appears on the agenda.

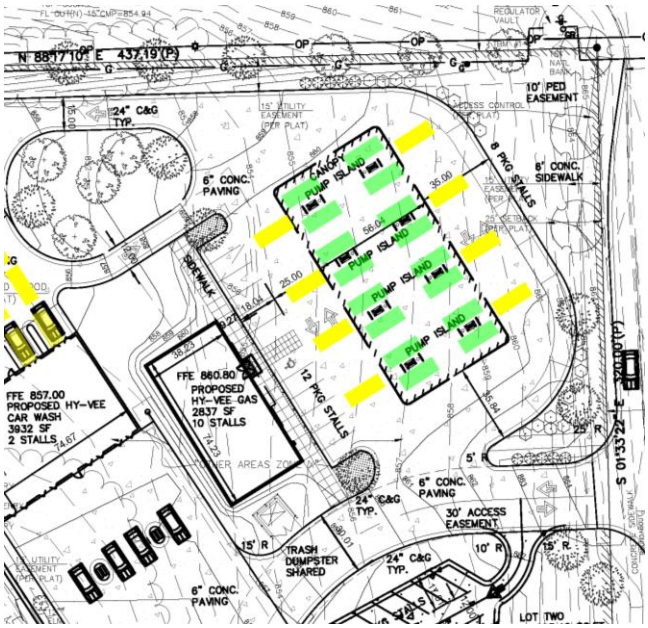
***On-site Parking*:**

Parking Summary			
Use	**Parking Requirements**	**Spaces Required**	**Spaces Provided**
Lot 1 Gas Fuel Sales:	1 per 300 SF of retail sales area + 2 per pump island + Stacking (*1 at end of each pump island*)	*2837/ 300 = 10* *8 pump island = 16* *8 pump islands = 16 or* *4 pump lanes = (8)* *Total = 34*	*26 spaces* *8 spaces* *Total 34 spaces*
Lot 1 Cleaning (Car wash):	2 spaces + Stacking (4 at each entrance)	*4 bay automated car wash =2* *Stacking Spaces =16* *Total = 18*	*2 spaces* *(100' by 80' area for stacking) 16 spaces* *Total 18 spaces*
Lot 2 (Conceptual only) Office Use:	1 space per 300SF	*4398/ 300 = 15*	*15 spaces*

Off-street parking is required for each use as set out in Article 9 of the Development Code. In addition to providing employee and customer parking certain uses are required to provide stacking

[1] FHWA Technical Summary, Access Management in the Vicinity of Intersections. Document is provided as an attachment to this report.

spaces. Gas pumps are required to provide two spaces per pump island. These spaces are generally located either side of the pump. The space between pumps is typically reserved for trash receptacles and windshield cleaning supplies or advertisement signs. It is impractical to provide one space at the end of each island. Staff has interpreted compliance with this standard to be provided at the end of each pumping lane or 8 spaces rather than 16 spaces.



As shown in the image to the left, the required off-street spaces for the gas pumps are shown in green. The required stacking spaces are shown in yellow. In this depiction the stacking space represent vehicles queued waiting to access an available pump. However, they are queued within the two-way drive lane surrounding the fueling area. The site plan shows 8 spaces along the east curb line intended to meet the stacking requirement. This space is more likely to be used as a slip lane around queued vehicles, but is an acceptable design solution given the site's layout and size. The proposed conflict occurs on site, internal to the development, and only during peak times of the day. This may create minor inconveniences for consumers visiting the site for short periods of time, but will not harm any surrounding uses or the community at-large.

C. Commercial Design Standards

Commercial Design Standards address the site development with respect to building placement and orientation to other physical features of the surrounding area as well as the building architecture.

The guidelines state *"…the streetscapes are the community's most visible public spaces. Streets play a pivotal role in determining both resident and visitor experiences and, to a great extend, help to define the character of the community. The standards and guidelines recommend that buildings within new retail developments especially out-lot or pad site buildings, be pulled forward to define the edges of public streets and internal private drives."*

Lot 1 is an auto oriented development intended for vehicular access that is quick and convenient. Pedestrian connections are secondary, but address the neighborhood connectivity. As such, the design review focuses on the architectural elements of the proposed structures and the treatment of public right-of-way and pedestrian accessibility. Lighting standards are addressed directly through the Development Code.

Building Elevations: Elevations provided to date are prototypical designs. Elevations for the building on Lot 2 have not been generated. A condition of approval related to the development of each lot is the submission of building elevations for review and approval prior to issuance of a building permit.

The prototypical building facades do not address minimum design standards and guidelines. The rear and sides of the buildings are shown as blank walls. Four sided architecture treatments are required for the buildings. This site is very open and sits lower than the street elevations meaning that it will be visible from the abutting public streets. Foundation plantings are also recommended.

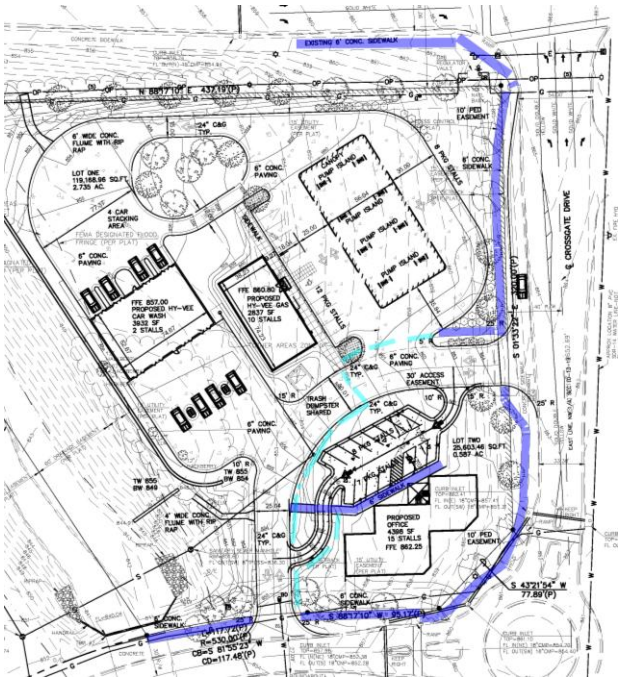
B. Facades and Exterior Walls (Page 2-31)

Purpose and Intent:

Variations in building form, mass, orientation, and scale and fenestration patterns through a combination of features, such as display windows, awnings, and entry areas, help to subdivide and proportion facades. This variation, or articulation, creates building frontages that are inviting, attractive, and in-scale to pedestrian users and passersby. Often times this articulation leads to improved visual quality and interest of a community's commercial areas, which in turn leads to improved consistency with the community's identity, character, and scale.

A key to successful façade articulation is to consider "four-sided architecture," which means that all sides of a building should be equally attractive and interesting. The rear or sides of buildings often present an unattractive view of blank walls, loading areas, storage areas, HVAC units, garbage receptacles, and other such features. Mitigation of those impacts through architectural design and detail is recommended and must be considered as part of the overall design of the development.

Pedestrian accessibility: Interior sidewalks are recommended to provide connectivity from the public sidewalks to the interior development. Pavement markings are also needed to accommodate pedestrian crossings within the interior of the development. The dark blue highlighted areas indicate the location of proposed sidewalks. The light blue highlighted areas are recommended pedestrian connections.



The Commercial Design Guidelines recommend pedestrian amenities for corner properties. As a corner property there are no pedestrian amenities proposed at this time for this project. *[Section E, Pedestrian Amenities, Page 2-21]*

The applicant has been provided general comments with regard to Commercial Design Guideline standards for this project. The provision of additional documentation for review and approval by staff is reflected as a condition of approval.

D. Landscaping and Screening

Landscaping requirements apply to Lot 1 at this time, except that the applicant has agreed to plant the required street trees for Lot 1 and 2 with the development of Lot 1.

Street Trees: Lot 1 abuts Clinton Parkway and Crossgate Drive. Lot 2 abuts Crossgate Drive and W 24th Place. Street trees are shown on the proposed site plan. Staff recommends that street trees for Lot 2 be planted within the initial phase of development. Street trees are coordinated with a master street tree plan as part of the subdivision process.

Interior Landscaping: Lot 1 includes a total of 26 regular off-street parking spaces and 8 stacking spaces. The interior landscape standard is based on the total number of required spaces exclusive of the stacking spaces. A total of 1,040 SF is required to meet this standard for Lot 1. A total of 56,704 SF of interior space is provided for Lot 1. The interior landscape is provided as a large island north of the convenience store. Islands are also provided at either end of the front row of parking adjacent to the convenience store. Additionally, the floodplain area maintains green space.

Perimeter Landscaping: Both Lot 1 and Lot 2 are designed with parking interior to the site. Perimeter parking landscaping is not required for based on the proposed design. Lot 1 includes a mix of shrubs along the eastern curb line that will screen some vehicular activity.

Mechanical Equipment Screening: Section 20-1006 of the Development Code requires that mechanical equipment be screened from adjacent properties and rights-of-way. Ground mounted equipment is not shown on the site plan. Any such equipment is required to be screened. General Note 13 provides a reference to the minimum code standards. Screening of mechanical equipment, including roof mounted equipment, will be further reviewed as part of the final elevations when available for compliance. Special consideration will be given to rooftop equipment since the property sits lower than adjacent Clinton Parkway.

Alternative Compliance: A request for alternative compliance was not made for this application.

E. Lighting

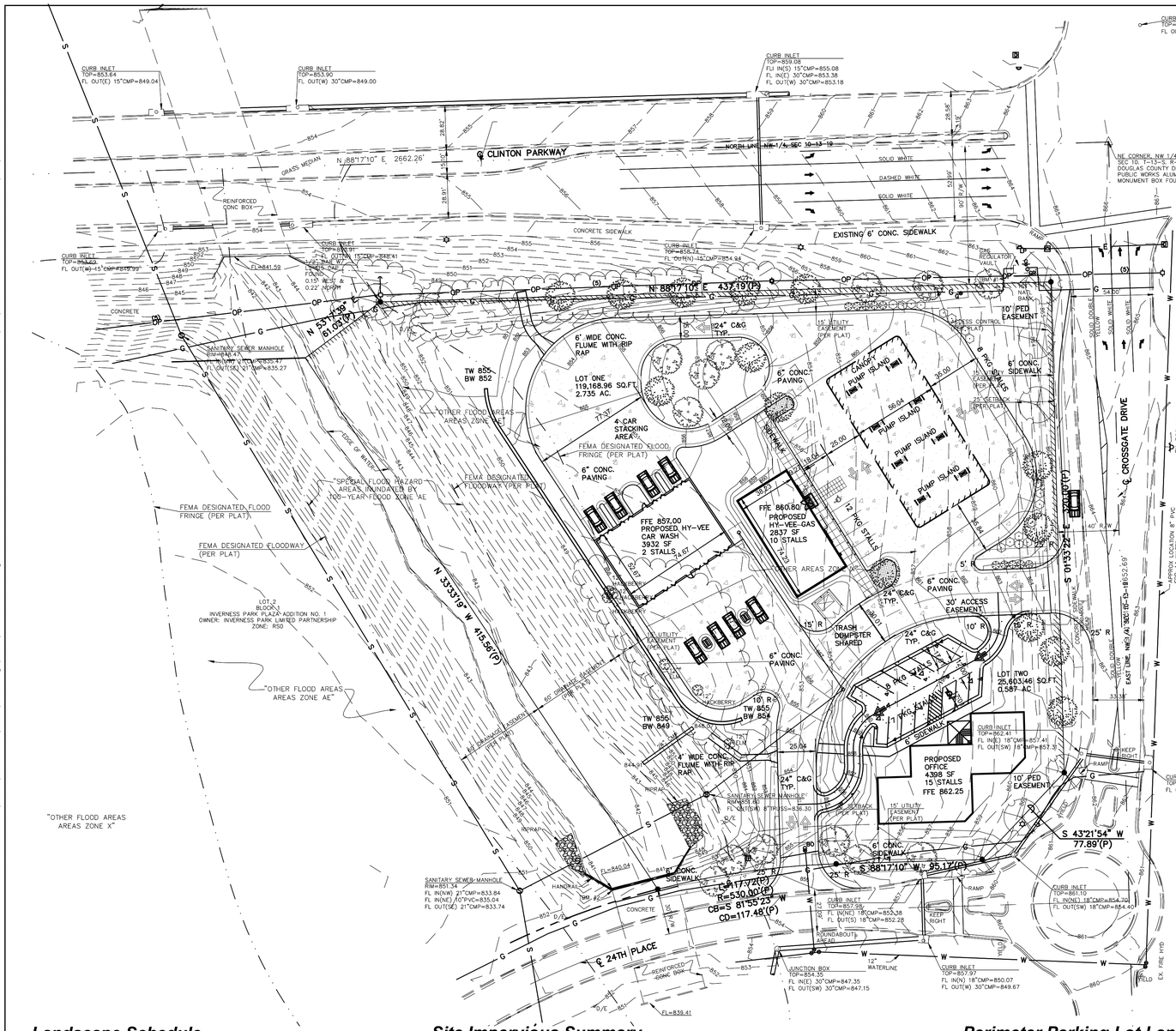
The site plan includes a general note about lighting and that it will be shielded and directed down. A minimum requirement of development is the provision of a photometric plan per Section 20-1103 of the Development Code this is reflected as a condition of approval. Staff recommends that the note be revised to include the code reference and that a specific photometric plan shall be submitted for review and approval for each lot prior to issuance of a building permit.

F. Floodplain

The west side of the property is encumbered by the regulatory floodplain. A local floodplain development permit is required as part of the approval process and is an administrative review item. No action is required by the Planning Commission with regard to the floodplain permit.

CONCLUSION

The proposed development of Lot 1 - the gas fuel station/convenience store and car wash are the primary structures to be built. Assuming the rezoning request and the preliminary plat request are approved, this proposed development is consistent with the recommended land uses for this area. Staff recommends approval of the request with the conditions noted.



Legal Description

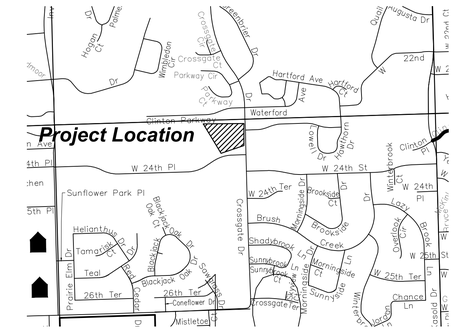
LOT 1, BLOCK 1, INVERNESS PARK PLAZA ADDITION NO. 1, A SUBDIVISION IN THE CITY OF LAWRENCE, DOUGLAS, KANSAS.

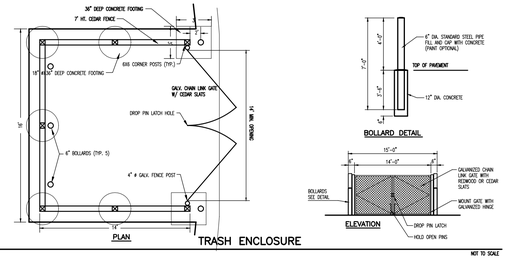
Interior Parking Lot Landscaping

THE DATA PROVIDED IN THE FOLLOWING TABLE REPRESENTS THE INTERIOR PARKING LOT LANDSCAPE PROVIDED PER PARKING LOT/PHASE.

Interior Parking Lot Landscape Requirements Number of Stalls x 60 s.f. = Required Interior Landscaping	
Lot 1	
Parking Stalls	12
Interior Parking Lot Landscape Required	720 S.F.
Interior Parking Lot Landscape Provided	5,231 S.F.
Lot 2	
Parking Stalls	15
Interior Parking Lot Landscape Required	900 S.F.
Interior Parking Lot Landscape Provided	1475 S.F.

Location Map





General Notes

1. EXISTING ZONING: RSO – SINGLE–DWELLING RESIDENTIAL OFFICE
2. PROPOSED ZONING: CN–2
3. CURRENT USE: VACANT LOT
   PROPOSED USE: C–STORE/OFFICE
4. TOPOGRAPHIC INFORMATION OBTAINED FROM KAW VALLEY ENGINEERING, 2011.
5. PROPOSED DRIVE AND PARKING AREAS TO HAVE CURB AND GUTTER TO MEET OR EXCEED CITY OF LAWRENCE MINIMUM STANDARDS.
6. ASPHALT PAVEMENT SHALL MEET OR EXCEED CITY OF LAWRENCE MINIMUM STANDARDS.
7. PROPOSED CONCRETE PAVEMENT TO BE 4" PORTLAND CEMENT CONCRETE ON COMPACTED SUBGRADE UNLESS OTHERWISE NOTED.
8. WALL MOUNTED LIGHTING SHALL BE LOCATED AT BUILDING ENTRANCES. ALL LIGHTING SHALL BE SHIELDED TO PREVENT GLARE OFF–SITE.
9. THE CITY OF LAWRENCE SHALL NOT BE RESPONSIBLE FOR DAMAGE TO PAVEMENT DUE TO THE WEIGHT OF REFUSE VEHICLES.
10. THIS SITE PLAN HAS BEEN DESIGNED TO COMPLY WITH THE PROVISIONS OF THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG) FOR BUILDING AND FACILITIES. APPENDIX A TO 28 CFR PART 36.
11. ACCESSIBLE SPACES ARE TO BE SIGNED AND STENCILED PER ORDINANCE 20–912(g).
12. PARKING LOT ISLANDS WILL BE PLANTED WITH SHRUBS OR GROUNDCOVER WHERE NO TREES ARE PLANTED.
13. PER SECTION 20–1006(b):
    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 FEET ABOVE GROUND LEVEL). SCREENING SHALL BE IN THE FORM OF LANDSCAPE PLANTINGS OR AN ARCHITECTURAL TREATMENT COMPATIBLE WITH THE ARCHITECTURE OF THE PRINCIPAL BUILDING.
14. SUBJECT PROPERTY IS SHOWN TO BE LOCATED IN "OTHER AREAS ZONE X", "OTHER FLOOD AREA ZONE X" AND "FLOODWAY AREAS IN ZONE AE" ON THE FLOOD INSURANCE RATE MAP FOR DOUGLAS COUNTY, KANSAS AND INCORPORATED AREAS.
    MAP NO. 20045C0158D, MAP REVISED AUGUST 5. 2010.
    BFE = 850.00
15. FLOODPLAIN DEVELOPMENT PERMIT(S) WILL BE REQUIRED PROIR TO APPLICATION FOR BUILDING PERMIT(S). PER CITY CODE 20–1308(a).
16. PER CITY CODE CHARTER IX ARTICLE 9–903(B), A STORMWATER POLLUTION PREVENTION PLAN (SWP3) MUST BE PROVIDED FOR THIS PROJECT.

Landscape Schedule

PROP.	KEY	PROP.	EXIST.	COMMON NAME	SCIENTIFIC NAME	SIZE	ROOT
				GROUND COVER		6,487 S.F.	N/A
	RO	7	0	NORTHERN RED OAK	QUERCUS RUBRA L.	VARIES	VARIES
	GL	14	0	GREENSPIRE LINDEN	TILIA CORDATA 'GREENSPIRE'	2.5 CAL.	B&B
	SM	13	0	BALDCYPRESS	TAXODIUM DISTICHUM	2.5 CAL.	B&B
	CH	0	0	UPRIGHT HORNBEAM	CARPINUS BETULUS 'FASTIGIATA'	2.5 CAL.	B&B
	GF	0	0	GOLDFLAME SPIREA	SPIREA X BUMALDA VAR. 'GOLDFLAME'	36"	CONT.
	DY	10	0	DENSIFORMIS YEW	TAXUS X MEDIA 'DENSIFORMIS'	24"	CONT.
	DB	20	0	DWARF BURNING BUSH	EUONYMUS ALATA	24"	CONT.
		420 S.F.	0	LIRIOPE	LIRIOPE	18" O.C.	CONT.

Site Impervious Summary

THE DATA WITHIN THE FOLLOWING TABLE REPRESENTS THE PROPOSED TOTAL QUANTITIES PER LOT/PHASE IN THE DEVELOPMENT.

Lot I	Area (Sq. Ft.)		Area (Sq. Ft.)	%
Existing Buildings	0	Proposed Buildings	6764.68	12%
Existing Pavement	0	Proposed Pavement	49939.62	88%
Existing Impervious	Subtotal: 118,895.88	Proposed Impervious	Subtotal: 56,704.30	39%
Existing Pervious	0	Proposed Pervious	62,191.58	52%
Property Area	118,895.88		118,895.88	100%
Lot II	**Area (Sq. Ft.)**		**Area (Sq. Ft.)**	**%**
Existing Buildings	0	Proposed Buildings	4398	43%
Existing Pavement	0	Proposed Pavement	5846	57%
Existing Impervious	Subtotal: 0	Proposed Impervious	Subtotal: 10,244	40%
Existing Pervious	0	Proposed Pervious	15,632.40	60%
Property Area	25,876.40		25,876.40	100%

Perimeter Parking Lot Landscaping

THE DATA PROVIDED IN THE FOLLOWING TABLE REPRESENTS THE PERIMETER PARKING LOT LANDSCAPE PROVIDED PER PARKING LOT/PHASE.

Perimeter Parking Lot Landscape Requirement 1 Shade Tree or Ornamental tree (required Street Trees may be counted toward satisfying this requirements), per 25 linear foot of parking frontage adjacent to public Right–of–Way and one of the the following: 1. A solid masonry wall 2. A berm 3. A waiver from the Planning Director all subject to the provisions listed in section 20–1004(c)(1,2 and 3)	
Lot/Phase 1	
Linear foot of parking frontage	490
Perimeter Parking Lot Landscape Required	490 l.f. / 25 =19.6 (20)
Perimeter Parking Lot Landscape Provided	20 (per provided street trees)

26 street trees)

Parking Summary LOT ONE

THE DATA WITHIN THE FOLLOWING TABLE REPRESENTS THE REQUIRED PARKING, PER USE IN THE DEVELOPMENT. GAS AND FUELING SALES, CLEANING (CAR WASH)

USE: COMMERCIAL (CN–2)	1 STALL PER 300 S.F. OF RETAIL SALE AREA + 2 STALL PER PUMP ISLAND
REQUIRED PARKING (FUELING STATION)	2837/300=10 STALLS + 16 = 26 SPACES
PROPOSED PROVIDED PARKING	26 PROPOSED STALLS
REQUIRED PARKING (CAR WASH)	2 + STACKING SPACES PER SECTION 20–911
PROPOSED PROVIDED PARKING	2 PROPOSED STALLS
ACCESSIBLE STALLS REQUIRED	1 CAR/1 VAN<50 PROVIDED STALLS
ACCESSIBLE STALLS PROVIDED	1/1 (VAN/AUTO)
BIKE PARKING REQUIRED	1 PER 10 PROVIDED STALLS
BIKE PARKING PROVIDED	5 BIKE PARKING

Parking Summary LOT TWO

THE DATA WITHIN THE FOLLOWING TABLE REPRESENTS THE REQUIRED PARKING, PER USE IN THE DEVELOPMENT. OFFICE USE

USE: COMMERCIAL (CN–2)	1 STALL PER 300 S.F. OF FLOOR AREA
REQUIRED PARKING (OFFICE USE)	4398/300=15 STALLS
PROPOSED PROVIDED PARKING	15 PROPOSED STALLS
ACCESSIBLE STALLS REQUIRED	1 CAR/1 VAN<50 PROVIDED STALLS
ACCESSIBLE STALLS PROVIDED	1/1 (VAN/AUTO)
BIKE PARKING REQUIRED	1 PER 10 PROVIDED STALLS
BIKE PARKING PROVIDED	5 BIKE PARKING

BENCHMARKS:

BM #1: CHISELED "SQUARE" AT THE SOUTHEAST CORNER OF STOP LIGHT BASE AT THE NORTHWEST CORNER OF CLINTON PARKWAY AND CROSSGATE DRIVE. ELEV=864.57

TBM #1: CHISELED "SQUARE" CUT AT SOUTHWEST CORNER OF NATURAL GAS PEDESTAL AT THE SOUTHWEST QUADRANT OF CLINTON PARKWAY AND CROSSGATE DRIVE. ELEV=865.50

TBM #2: CHISELED "SQUARE" CUT ON HEADWALL OF REINFORCED CONCRETE BOX LOCATED ON THE NORTH SIDE OF 24TH PLACE AT THE SOUTHWEST CORNER OF LOT 1, BLOCK 1, INVERNESS PARK PLAZA ADDITION NO. 1. ELEV=854.45

SCALE: 1" = 40'

40 20 0 40 80

Civil Engineering
Landscape Architecture
Community Planning
Surveying

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HY-VEE C-STORE
CLINTON PARKWAY AND CROSSGATE DRIVE
LAWRENCE, KANSAS

REV	DATE	DESCRIPTION
1	8.30.11	NOTES COMMENTS

DATE: 7.14.11
PROJECT NO.: 2011,1110
DESIGNED BY: CLM
DRAWN BY: CLM
CHECKED BY: CLM

ISSUE A

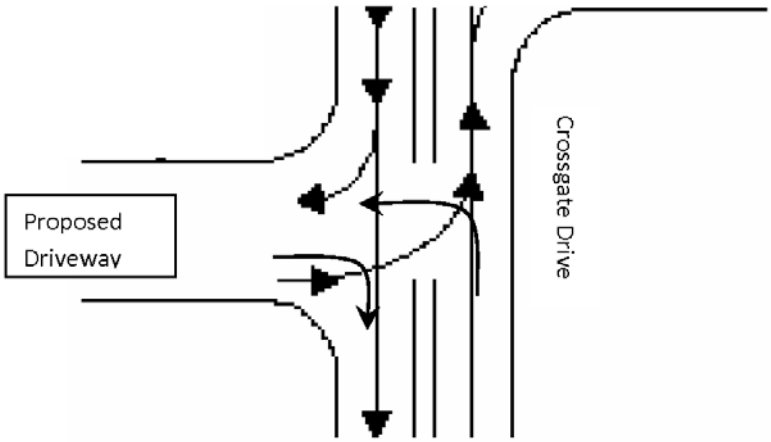
SHEET NO. 1

OF ## SHEETS

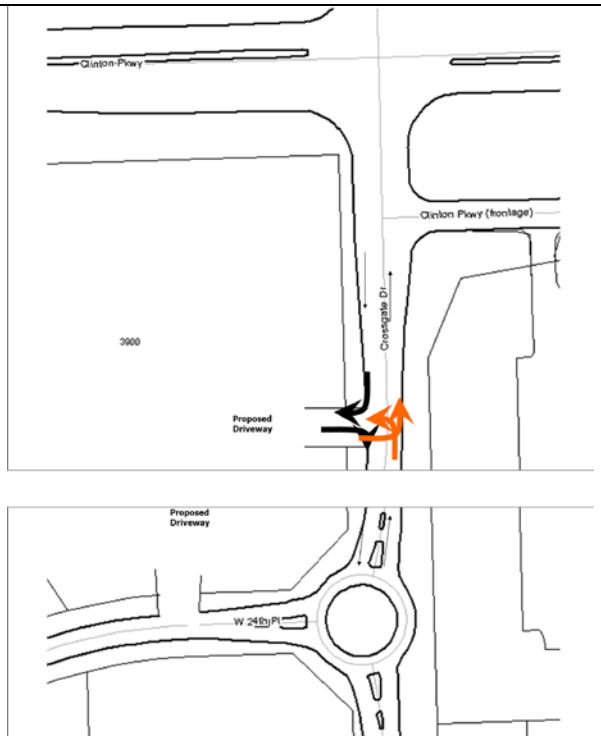
FILE NAME: S:\2011\2011110\CAD\Planning\SUP\111110 SUP.dwg LAST SAVED BY: CL Maurer SAVED DATE: 8/30/2011 3:39 PM PLOTTED: 8/30/2011 3:40 PM

Access options

Full Access



- Southbound right turn into site
- Southbound right turn from site
- Northbound left turn from site
- Northbound left turn into site.



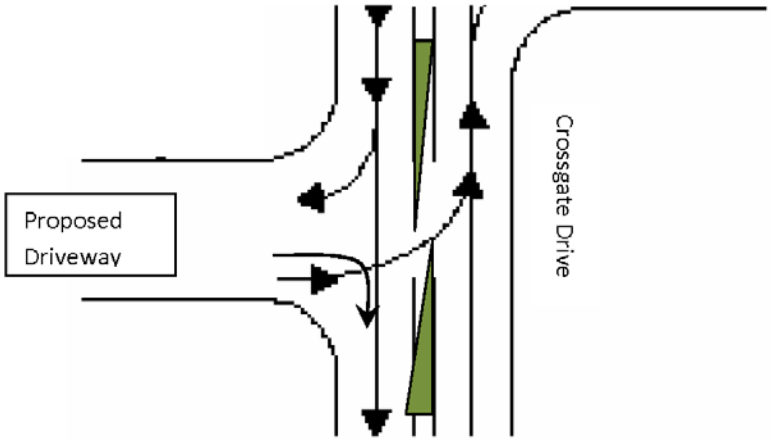


Access to Crossgate Drive.

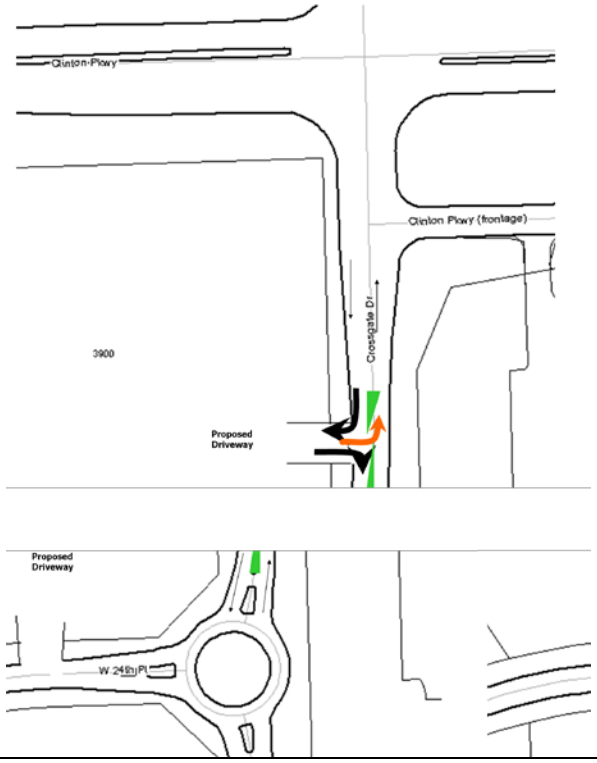
Provides a direct connection to Clinton Parkway without maneuvering through roundabout at W 24th Place.

Diagram 1

¾ Access



- Southbound right turn into site
- Southbound right turn from site
- Northbound left turn from site
- ~~Northbound left turn into site.~~





Access to Crossgate Drive.

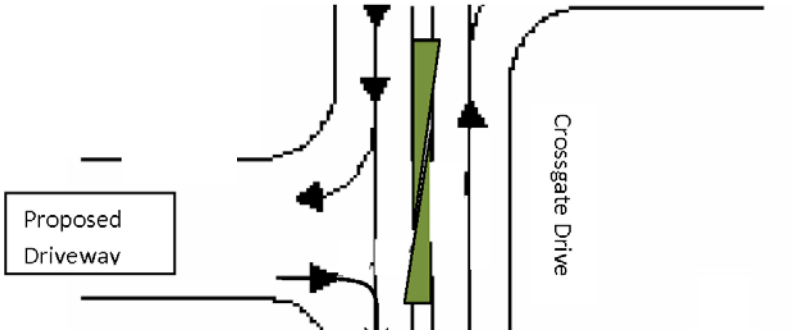
Provides direct connection to Clinton Parkway without maneuvering through roundabout at W 24th Place for northbound traffic leaving the site

Restrictes northbound drivers on Crossgate from left turn movements into site.

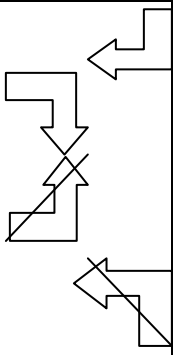
Requires median in Crossgate Drive.

Diagram 2

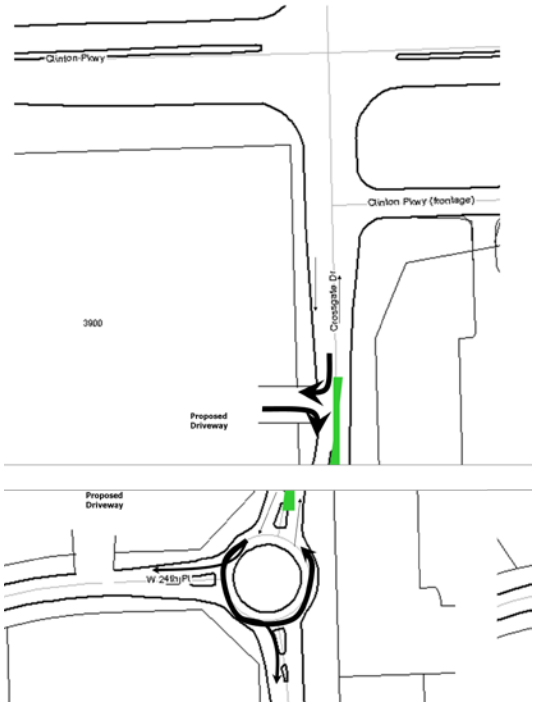
Right In/Right Out



- Southbound right turn into site
- Southbound right turn from site
- ~~Northbound left turn from site~~
- ~~Northbound left turn into site.~~



This movement is restricted with median control.



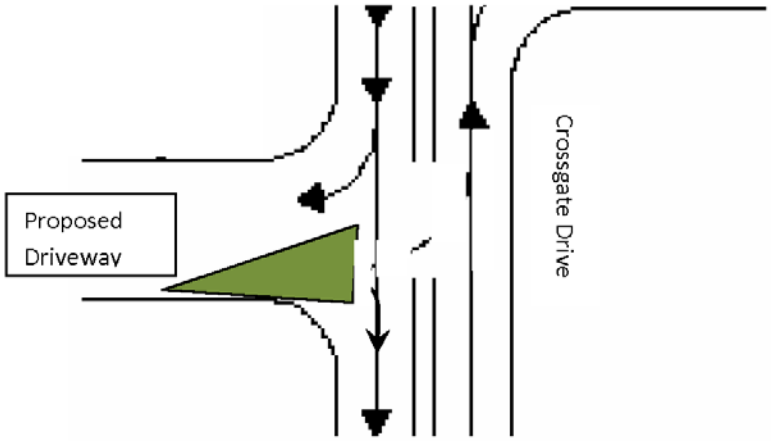




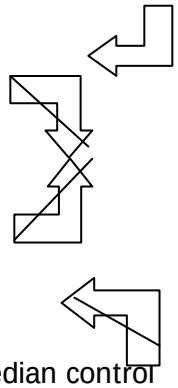
Access to Crossgate Drive - Use of roundabout at W 24th Place provides direct access to Clinton Parkway.
Access to Crossgate Drive - To avoid U-Turn around roundabout drivers could choose to use W. 24th Place or 27th Street to the SLT.

Diagram 3

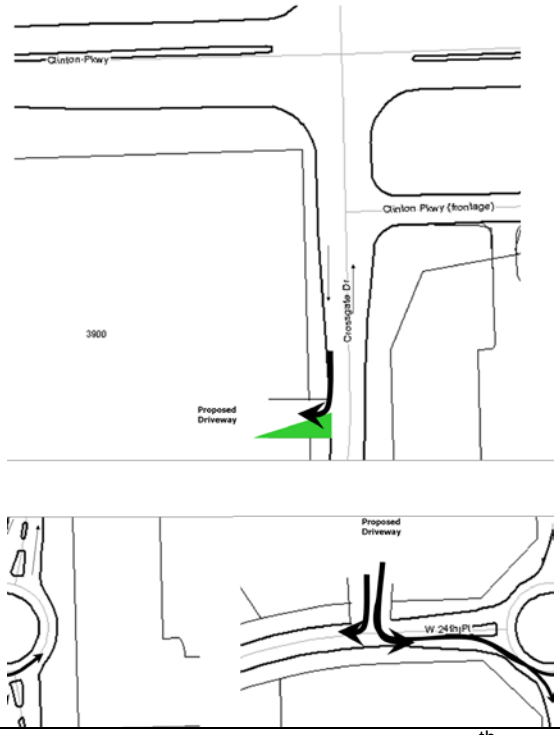
Right In Only



- Southbound right turn into site
- ~~Southbound right turn from site~~
- ~~Northbound left turn from site~~
- ~~Northbound left turn into site.~~



This movement is restricted with median control and driveway design.

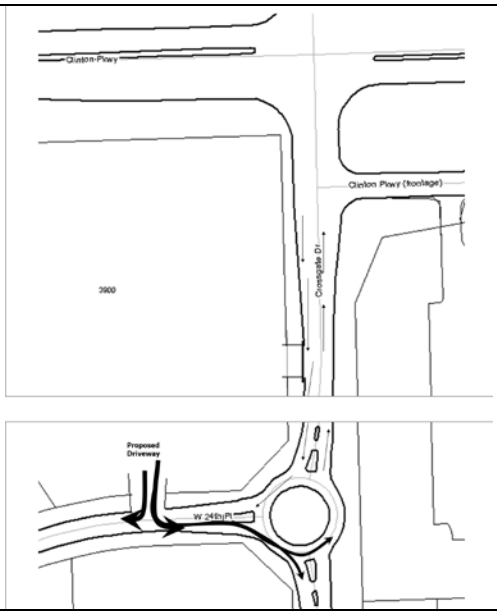




Access to Crossgate Drive – Exic site via W 24th Place, Use of Round about at W 24th Place provides driect access to Clinton Parkway.
To avoid all or part of use of round about drivers may chose altatarive routs.

Diagram 4

Access Restricted





No access to the site is permitted from Crossgate Drive in this option.

All movements are directred to W 24th Place.

Requires maneuvering through round about to proceed north bound on Crossgate Drive to Clinton Parkway **or** cut through the neighborhood on W 24th Place (avoiding the roundabout) or 27th Street to the SLT.

Technical Summary

Access Management in the Vicinity of Intersections



U.S. Department of Transportation
Federal Highway Administration

FHWA-SA-10-002

Safe Roads for a Safer Future
Investment in roadway safety saves lives

Foreword

This technical summary is designed as a reference for State and local transportation officials, Federal Highway Administration (FHWA) Division Safety Engineers, and other professionals involved in the design, selection, and implementation of access management near traditional intersections (e.g., signalized, unsignalized and stop controlled intersections). Its purpose is to provide an overview of safety considerations in the design, implementation, and management of driveways near traditional intersections in urban, suburban, and rural environments where design considerations can vary as a function of land uses, travel speeds, volumes of traffic by mode (e.g., car, pedestrian, or bicycle), and many other variables.

The technical summary does not include any discussion on roundabout intersections. More information about roundabouts is available in *Roundabouts: An Informational Guide,* published by the FHWA [1]. Section 1 of this technical summary presents an overview of access management factors that should be considered for improving safety near intersections in any setting. Section 2 presents access management considerations and treatments to improve safety near traditional intersections in suburban, urban, and rural settings. This section features a case study of an access management retrofit project in a suburban area. Section 3 points the reader to additional resources.

This publication does not supersede any publication; and is a Final version.

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Cover Photo by Ralph Bentley

Introduction

"Access management" refers to the design, implementation and management of entry and exit points (i.e., driveways, entrances or exits) between roadways and adjacent properties. These entry and exit points can be managed by careful planning regarding their location, the types of turning movements allowed, and if appropriate, medians that provide or prohibit access to the driveways. Developing and implementing effective access management strategies that promote or improve safety requires considering the location of driveways in the context of current and future access needs, current and future intersection operations, and mobility for pedestrians and bicyclists.

This technical summary is designed as a reference for State and local transportation officials, Federal Highway Administration (FHWA) Division Safety Engineers, and other professionals involved in the design, selection, and implementation of access management near traditional intersections (e.g., signalized, unsignalized and stop-controlled intersections). Its purpose is to provide an overview of safety considerations in the design, implementation, and management of driveways near traditional intersections in urban, suburban, and rural environments where design considerations can vary as a function of land uses, travel speeds, volumes of traffic by mode (e.g., car, pedestrian, or bicycle), and many other variables. The technical summary does not include any discussion on roundabout intersections. More information about roundabouts is available in *Roundabouts: An Informational Guide,* published by the FHWA [1].

Section 1 of this technical summary presents an overview of access management factors that should be considered for improving safety near intersections in any setting. Section 2 presents access management considerations and treatments to improve safety near traditional intersections in suburban, urban, and rural settings. This section features a case study of an access management retrofit project in a suburban area. Section 3 provides references.



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Section 1: General Access Management Considerations

Planning, designing, and implementing access management strategies to promote safety near intersections begins with an awareness of several considerations. These considerations are independent of the environment or setting in which the driveway is located (i.e., urban, suburban, or rural). These factors include roadway functional classification (sometimes referred to as "roadway hierarchy"[1]); the functional area of the intersection; the location and number of driveways and resulting conflict points; the use of medians; and driveway design.

By considering the following seven guidelines when developing and evaluating access management treatments, practitioners can apply access management techniques to help improve safety in the vicinity of intersections[2].

1.1 Locate Driveways on the Appropriate Roadway Functional Classification

Providing access (i.e., driveways, entrances or exits) onto roadways with the lowest traffic volumes and speeds generally improves safety near intersections. In planning, designing, and managing access, critical consideration must be given to arterial and collector streets as these streets serve both mobility and access functions. To the extent possible, it is best to manage driveways so that access is provided to and from the roadway with the lower functional classification as these roadways typically have lower traffic volumes and speeds. This helps to reduce the frequency of conflicts, which minimizes both the opportunity for crashes and the severity of those crashes, should they occur.

1.2 Limiting Driveways within the Functional Area of an Intersection Improves Safety

Figure 1 provides a schematic representation of functional and physical areas of an intersection. The physical area of an intersection is a fixed area that represents the space confined within the corners of the intersection.

The functional area of an intersection includes areas upstream and downstream of the intersection. Unlike the physical area of an intersection, the functional area of an intersection is variable. The American Association of State Highway and Transportation Officials' (AASHTO) *A Policy On Geometric Design of Highways and Streets* [2] defines the upstream functional

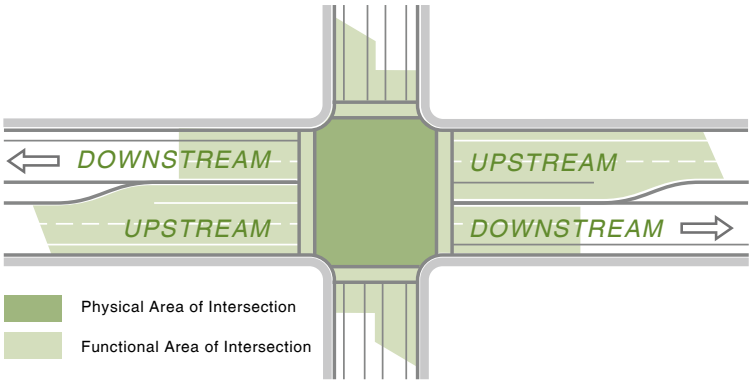


Figure 1: Functional and Physical Areas of an Intersection

1 Typical roadway functional classifications include freeway, arterial, collector, and local street—with freeways providing the highest level of mobility but the lowest level of accessibility, and local streets providing the highest level of accessibility but lowest level of mobility (assuming normal traffic).

2 These are general guidelines and may not apply to all situations. Understanding these principles can help practitioners more comprehensively evaluate options, understand tradeoffs, and make better decisions to help promote the safest possible access management treatments in the vicinity of intersections.

area of an intersection as a variable distance, influenced by: 1) distance traveled during perception-reaction time, 2) deceleration distance while the driver maneuvers to a stop, and 3) the amount of queuing at the intersection[3]. The upstream functional area is highly dependent on whether or not the traffic in the through lane is required to come to a stop at the intersection. Therefore, the functional area should be a consideration in situations where a driveway is near an intersection (due to a traffic signal or stop sign).

For example, at a stop-controlled intersection with approach speeds of 30 mph and a queue length of 125 feet (with additional assumptions for perception-reaction time and deceleration distance), the upstream functional area of the intersection is 200 feet. For a signalized intersection with identical speed and queue characteristics, the upstream functional area is 395 feet.

At that same stop-controlled intersection with a similar queue but a higher approach speed – 50 mph – the upstream functional area is 425 feet (compared to just 200 feet with 30 mph approach speeds). For a signalized intersection with identical speed and queue characteristics, the upstream functional area is 735 feet [3].

The AASHTO Policy on Geometric Design does not define the downstream functional area of the intersection as the criteria used to determine the downstream functional area can vary between jurisdictions. The *Access Management Manual* [3], published by the Transportation Research Board (TRB), notes that "stopping sight distance is one method for establishing the downstream functional distance of an intersection."

In the case of the stop-controlled intersection previously described (30 mph approach speed, 125 feet queue), the downstream functional area using the Access Management Manual's stopping sight distance calculation is 200 feet. At an approach speed of 50 mph the downstream functional area is 425 feet. When calculating downstream functional area with this method, traffic control at the intersection is not a factor.

Limiting or, where possible, eliminating driveways within the functional area of an intersection (upstream and downstream) helps reduce the number of decisions motorists must make while traveling through an intersection and improves safety in the vicinity of an intersection. A recent study evaluating crashes in the vicinity of signalized intersections in suburban areas completed by the Utah Department of Transportation [4] provides one illustration of the correlation between driveways in the functional area of intersections and increased safety risk. The study evaluated right-turn and rear-end crashes at signalized intersections in suburban areas. The study found that the existence of accesses within the upstream functional area of the intersection correlated to increased crashes and crash severity costs. The report identified an even greater increase in total crashes, crash rates, and rear-end crashes as commercial access density increased[4].

Additionally, a recent study by the Texas Transportation Institute (TTI), the "Roadway Safety Design Synthesis" [5] discusses the safety effect of driveways in rural areas. The study includes equations to calculate the Accident Modification Factor (AMF) for access control based on the number of driveways within 250 feet of a rural intersection.

1.3 Reducing the Number and Types of Conflict Points Created by a Driveway May Reduce Crashes

In general, the number and types of conflict points (i.e., the number of locations where the travel paths of two different vehicles may cross) at the intersection of a driveway and a public road influence the safety of motorists. It is desirable to minimize the number of conflict points created with existing and future driveways since more conflict points increase the risk of a crash occurring. For example, a crash due to crossing maneuvers (created by motorists turning across the roadway or making left turns) can lead to more severe crashes then merging or diverging conflicts because of the angle and speed differentials between the vehicles. As the angle and speed differentials increases, crash severity can also increase.

The number and type of conflict points at a driveway can be managed by limiting both the amount of access allowed at the driveway (e.g., full-movement, left-in/left-out, right-in/right-out, right-in only or right-out only) and

3 American Association of State Highway and Transportation Officials, A Policy On Geometric Design of Highways and Streets, 5th Edition (Washington, DC: 2004).

4 This study examined safety-related data upstream of signalized intersections within suburban areas.

the location of the driveway relative to other driveways in the area. In most cases, property owners prefer to have at least one direct, full-movement driveway from their property onto the major street (i.e., the street with higher traffic volumes) adjacent to the property. In many cases, it may occur that property owners are requesting direct, full-movement driveways to different properties on both sides of the major street. It is not always possible to align these driveways to minimize the number of conflict points, so another strategy, such as implementation of a raised median, should be considered (see Section 1.5 for information on median treatments).

Figure 2 illustrates a scenario in which it is not possible to align the full-movement driveways in a manner that would reduce conflict points. Figure 3 illustrates how construction of a raised median on the major roadway could reduce the number of conflict points in this situation. The raised median in Figure 3 limits the access to Driveways A and B to right-in/right-out movements only. Also, the number of conflicts in the vicinity of Driveways C and D in Figure 2 are reduced by relocating Driveway C to the minor road (see Figure 3). This solution limits conflict points by providing a direct, full-movement driveway (i.e., left-in/left-out/right-in/right-out) to the minor road, and by constructing a median on the major road and limiting access at Driveway D to right-in/right-out only.

Finally, in Figure 3, additional right-in/right-out only driveways are provided on the minor street (Driveways E and F) to improve the access to the properties adjacent to Driveways B and D. If possible, it is preferable to provide driveways onto the minor street instead of on the major street in order to preserve mobility on the major street. Limiting turn movements to properties adjacent to the roadway can result in circuitous travel to and from a site. For example, a motorist exiting Driveway B is limited to one direction of travel and is required to make a U-turn or use Driveway F to reach other destinations.

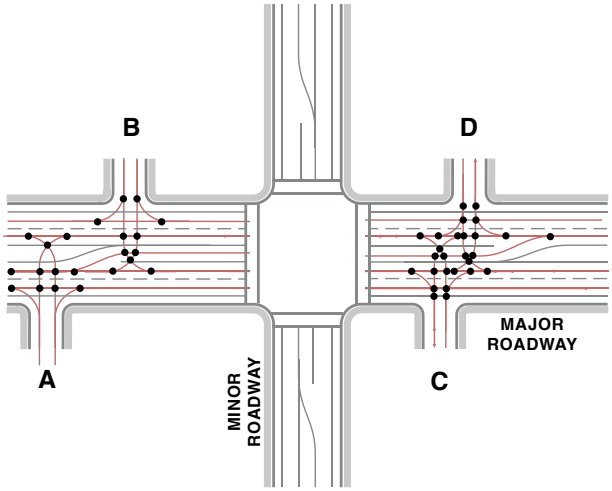


Figure 2: Typical Access Scenario at the Intersection of Two Public Roadways

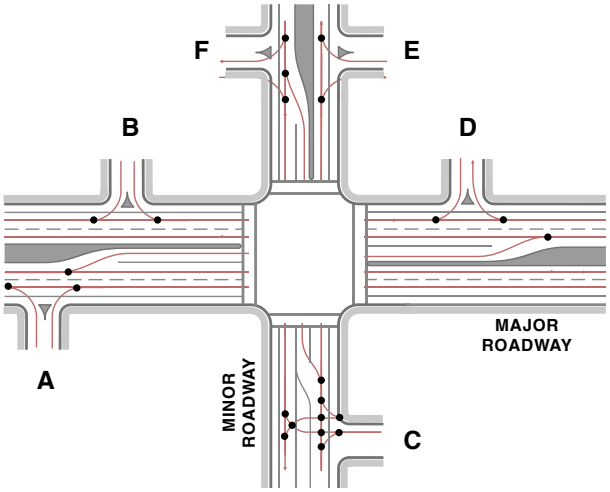


Figure 3: Desirable Access Scenario at the Intersection of Two Public Roadways

1.4 Eliminating Left-Turn Movements at Driveways is Beneficial from a Safety Perspective

Where restricting turning movements to and from a driveway is possible, it is most beneficial from a safety perspective to prohibit left-turning movements. Research suggests that approximately 72 percent of crashes at a driveway involve a left-turning vehicle [6]. As illustrated in Figure 4, approximately 34 percent of these crashes are due to an outbound vehicle turning left across through traffic. Twenty-eight percent of crashes are due to an inbound, left-turning vehicle conflicting with opposite direction through traffic, and 10 percent are

due to outbound, left-turning movements incorrectly merging into the same direction through movement. This suggests that reducing or eliminating left turns to or from driveways, combined with efforts to reduce conflict points (described in Section 1.3), enhances safety. When turn movements are restricted at driveways, roadway engineers, planners, and policy makers need to consider the tradeoffs of shifting the turning movement to another location along the roadway.

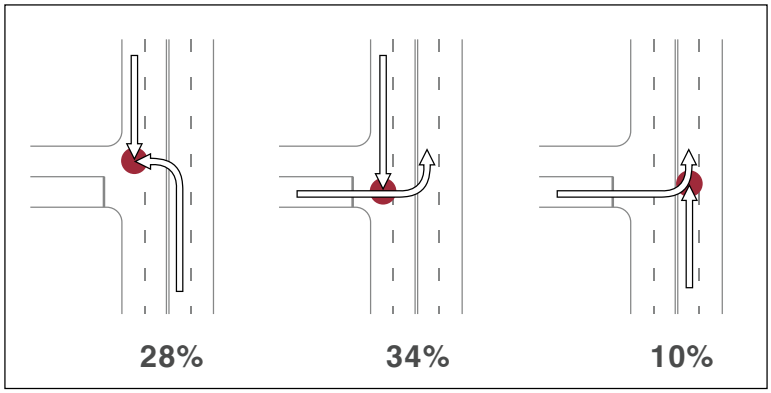


Figure 4: Crash Percentages for Turning Motorists to and from the Driveway

1.5 Median Treatments Can Impact Safety

One method to manage or limit left turns to and from driveways is with the proper use of medians. Proper use of medians has been found to improve roadway safety significantly relative to undivided roadways. National Cooperative Highway Research Program (NCHRP) *Report 420: Impacts of Access Management Techniques* [7] identifies two types of medians typically used:

- Non-traversable medians.
- Continuous two-way left-turn lanes (TWLTL).

Non-traversable medians separate opposing directions of travel, significantly reducing the potential for head-on crashes and physically eliminating or limiting where left-turns and crossing movements across the median can occur. When a non-traversable median of sufficient width is constructed, it can also provide refuge for pedestrians crossing the roadway. Non-traversable medians generally result in an overall crash reduction of approximately 35 percent as compared to undivided roadways.

TWLTLs provide for left turns in both directions of travel, except near signalized intersections where the center turn lane transitions to a conventional left-turn lane for one direction of travel. TWLTLs generally result in an overall crash reduction of approximately 33 percent as compared to undivided roadways. However, NCHRP Report 420 states that "Most studies, and the models derived from them, also suggest that safety is improved where physical medians replace TWLTLs." Factors to consider include differing roadway types, traffic volumes, travel speed, number of through lanes, and the number of left turns and crossing maneuvers.

1.6 Reducing Driveway Density Reduces Crash Rates

Research over the past decades has consistently shown that crash rates increase as driveway density increases on a roadway (i.e., number of driveways per mile). Figure 5 illustrates this trend under a variety of roadway conditions and environments across the U.S. and in Canada. Property access points should be designed, approved, and permitted within the context of the number of driveways on both sides of the street within the vicinity of the proposed access points and should not be considered in isolation. Possible strategies

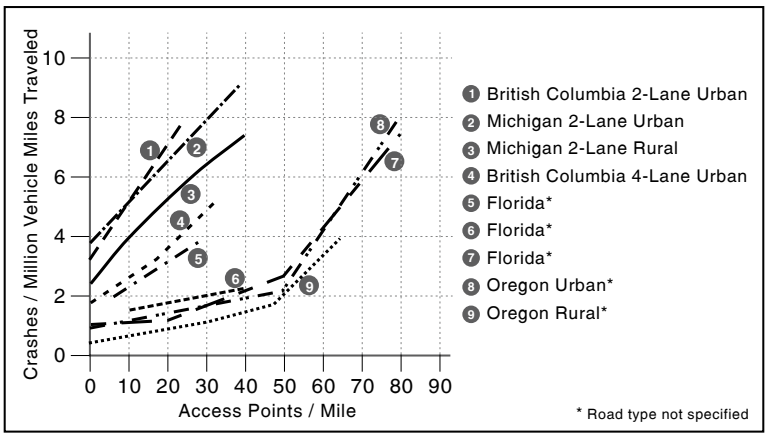


Figure 5: Effect of Access Point Density on Crash Rate

to reduce the number of driveways over time include the use of shared access to serve more than one property, the planning and development of additional roadways to provide connectivity and complementary mixed uses to minimize the need for multiple parking areas, and multiple driveways.

1.7 Properly Designed Driveways Influence Safety and Mobility at the Driveway

Driveway connections to public roads must be adequately designed to ensure safe and efficient movement of vehicles to and from the roadway, balancing safety with mobility interests. There are many elements to consider in proper driveway design, including upstream and downstream sight distance, the angle at which the driveway intersects the major road, the appropriate width of the driveway in tandem with curb radii so that vehicles can make the desired turn movement, the number of lanes (sufficient for the volume at the site), and the vertical grade and length of the driveway throat.

In general, driveways should be of sufficient length to allow motorists to completely pull off the road without interference from on-site parked vehicles, vehicle queues, or pedestrian or vehicle circulation once they enter the property adjacent to the roadway. The design of a driveway at any given location is a function of the design vehicle, travel speeds onto and off of the property, traffic volume, pedestrian and bicycle volume, and the type of traffic control (e.g., a signalized driveway should accommodate queues that may conflict with on-site turning movements). For motorists leaving a property, the vertical alignment of the driveway should be as close to level as possible where it intersects with the roadway. The driveway should be level for a sufficient distance to allow the motorist to easily stop with an unobstructed view upstream and downstream prior to entering the major roadway.

The Florida Department of Transportation (FDOT) Driveway Manual [8] provides a thorough overview of the criteria and application methods that a practitioner should consider in the design of a driveway. In addition, jurisdiction-specific design guidelines should be consulted when designing a driveway.



Photo: Ralph Bentley (used with permission)

Section 2: Special Considerations for Suburban, Urban and Rural Areas

Urban, suburban, and rural areas each present unique opportunities and challenges with respect to design, selection and implementation of access management strategies that provide the highest level of safety in the vicinity of intersections. The following sections (2.1, 2.2 and 2.3) provide an overview of some additional special considerations that apply within each of these environments. Because suburban areas offer the greatest opportunities to improve safety through access management strategies (due to development trends and traffic volumes), this discussion addresses suburban areas first, followed by a discussion of urban and rural environments.

2.1 Access Management Considerations in the Vicinity of Suburban Intersections

Suburban areas offer the greatest opportunity to positively impact safety through access management treatments for several reasons. New development and redevelopment often occurs on large parcels of land, providing planners with more flexibility and options for implementing optimal access management treatments. This can provide the opportunity for access to be considered from a systematic perspective, from the outset of a project, where stakeholders have the opportunity to plan for the appropriate number of driveways and optimum types of access (e.g., right-in/right-out only; or right-in/right-out-left-in). For example, access to developments on corner lots may be limited to a side street where traffic volumes and speeds are typically lower. Where access to a major roadway is allowed, agencies with authority over the roadways have opportunities to limit turn movements to and from the driveway with physical treatments, such as medians along the major roadway and/or median islands at locations where the driveway connects to the major roadway. Further, adjacent land uses, including residential, commercial, and industrial require significant access management planning and accommodation. Finally, while suburban areas are often lower density than urban areas, their residential and commercial centers are often connected by higher speed arterials (35 to 50 mph and occasionally up to 55 mph) than are found in urban areas, creating safety risks and opportunities through access management planning and implementation.

This section describes specific characteristics and access management challenges and opportunities associated with suburban areas and intersections, and provides a summary of potential access management treatments that can improve safety for motorists, bicyclists, and pedestrians. It also features a case study highlighting an access management retrofit project in a suburban area.

2.1.1 Characteristics of Suburban Roads and Intersections

As the distance from the urban core increases, the density of development decreases. Emphasis on residential land use grows as one moves further from the urban core. Suburban areas tend to be characterized by large-scale and residential, commercial, industrial, or retail development typically separated by larger distances than in the urban core. In developing suburban areas, parcels can be combined to accommodate larger developments, such as big box retail and strip malls. Land values often rely on spacious parking lots and convenient access to adjacent roadways.

Physical characteristics of suburban areas include medium to long block lengths that may vary from 400 feet to a half mile and signalized intersections on arterials and major collectors. Traffic characteristics of suburban areas include roadways with speeds that generally range from 35 to 50 mph (and occasionally up to 55 mph), medium to high traffic volumes (30,000 to 50,000 vehicles per day) on mainline roadways; and 5,000 to 15,000 vehicles per day on side streets and non-residential driveways. Physical characteristics include:

- Moderate to large site setbacks for structures.
- Non-traversable medians (in some cases) or continuous two-way left-turn lanes (TWLTLs) .
- Left- and right-turn lanes.
- Six or fewer traffic signals per mile.

Suburban Case Study: La Grande, Oregon

In June 1996, the Oregon Department of Transportation (ODOT) initiated a study of an unsignalized, full-access driveway (i.e., left and right turns allowed for inbound and outbound vehicles) in a suburban area. The study driveway was located on Oregon 82 (OR 82), approximately 600 feet south of Walton Road in La Grande, Oregon. La Grande has a population of approximately 12,500, and OR 82 is an undivided five-lane road. Adjacent land use development is a mix of big-box retail, commercial, and some industrial uses. The posted speed on this segment of OR 82 is 40 mph. During a 34-month period[5] between November 1994 and August 1997, ODOT crash reports show that 12 crashes occurred at this unsignalized driveway. Figure A depicts this driveway (driveway "A") and the roadway configuration during the study period, prior to implementation of any access management treatments.

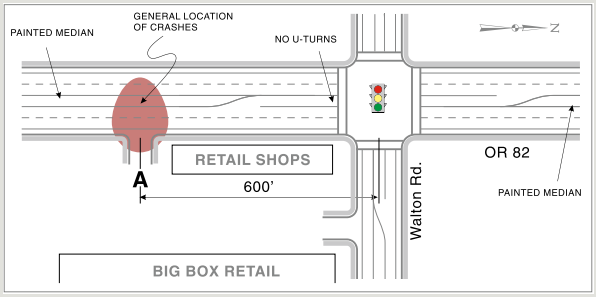


Figure A: Original Driveway and Roadway Configuration

During the study period, the average annual daily traffic volumes on OR 82 approached 17,200 in the vicinity of driveway "A." Data also showed that approximately 500 vehicles per day traveled inbound/outbound on the study driveway "A." The average crash rate was 0.66 crashes per million entering vehicles[6]. Table 1 summarizes the crashes reported during this period.

Table 1
Reported Crashes on OR 82 at Study Driveway (November 1994 to August 1997)

Total Crashes	Crash Severity			
	Fatality	Injury	PDO	Left-turn
12	0	6	6	12

PDO = Property Damage Only

All reported crashes involved left-turning vehicles. Eleven of the crashes involved vehicles turning left from the driveway onto southbound OR 82.

All of these crashes included a collision with a vehicle moving northbound on OR 82. One of the crashes involved a motorist turning left out of driveway "A" onto southbound OR 82 and colliding with a motorist traveling northbound on OR 82, who was turning right into the driveway.

After performing a review of the roadway configuration, ODOT staff recommended the following access management improvements, depicted in Figure B:

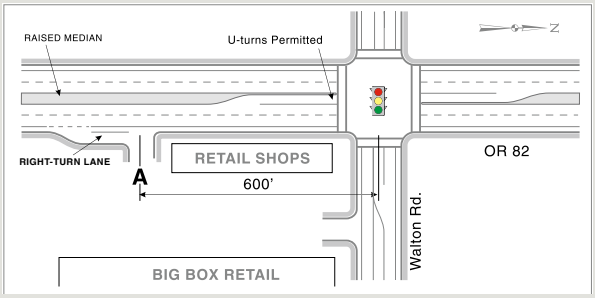


Figure B: OR 82 Roadway Configuration After Implementation of Access Management Techniques

- Restrict left turns to and from the driveway with a non-traversable median to eliminate left turns into and out of the site.
- Modify the adjacent signalized intersection to accommodate U-turns to allow motorists to access southbound OR 82, which has been eliminated at the driveway with the non-traversable median.
- Construct a northbound right-turn deceleration lane in advance of driveway "A." This treatment reduces the speed differential between motorists slowing to access the driveway and following motorists, while improving sight distance upstream from the driveway.

The proposed access management treatments were approved and funded through the State's access management fund. The State implemented the recommended improvements in August 1997.

In the ten years following implementation, only two crashes have occurred at the unsignalized driveway on OR 82 and neither involved another vehicle[7]. Given the estimated 18,900 vehicles per day on OR 82 for the 10-year period after the access management treatments were made,[8] this equates to a crash rate of approximately 0.06.

5 The 34-month study period represents the time period from when the full access driveway was approved until when ODOT completed mitigation measures.

6 Crash rate is calculated by: 1) multiplying average daily traffic by the number of years of crash data by 365 days per year, and dividing by 1,000,000 and 2) dividing the total number of crashes at the site during the study period by the million entering vehicles calculated in Step 1.

7 One crash involved a single vehicle and a fixed object, and the other involved a vehicle attempting a left turn across the raised median.

8 Based on a review of ODOT crash reports for the 10-year period from September 1, 1997, through August 31, 2007.

Traffic signal spacing in suburban areas is a function of the ability to progress two-way traffic along the mainline roadway. Signalized driveways are often not permitted in private developments but may be allowed if the spacing and timing can meet established standards to ensure adequate progression of traffic on the mainline roadway. Roadway and intersection improvement projects often are required to provide additional capacity for increasing traffic volumes.

2.1.2 Potential Access Management Treatments to Improve Safety for Motorists in Suburban Areas

The following access management techniques can help to improve motorist safety and mobility at access points implemented in the vicinity of suburban intersections:

- Locate driveways upstream of the vehicle queue caused when the downstream traffic signal is red. Figure 6 illustrates this scenario, in which site driveway "A" is located beyond the limits of the typical queue as shown with the yellow (light) vehicles, with current traffic volumes. Without changes in capacity, existing traffic queues will grow as traffic volumes increase. If possible, therefore, as development occurs, plan and locate driveways for future estimated traffic volumes. Figure 7 demonstrates potential access issues at driveway "A" if future traffic queuing conditions, as illustrated with the blue (dark) vehicles, are not anticipated.

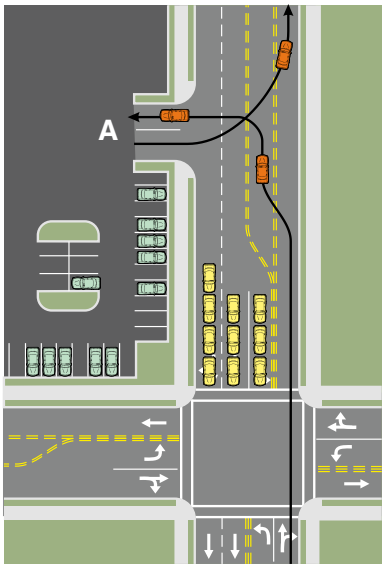


Figure 6: Driveway Location in Relation to Traffic Queues on a Major Roadway

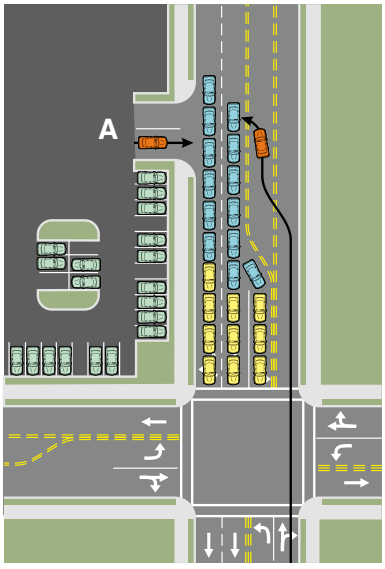


Figure 7: Driveway Location in Relation to Future Traffic Queues on a Major Roadway (Blue Vehicles Indicate Future Traffic Queues)

- Prohibit median openings to restrict driveway movements to and from the left-turn lane at a major intersection. Figure 8 illustrates the risks of allowing such a median opening. In this example, motorists turning left into the site access may conflict with the left-turning or through traffic.

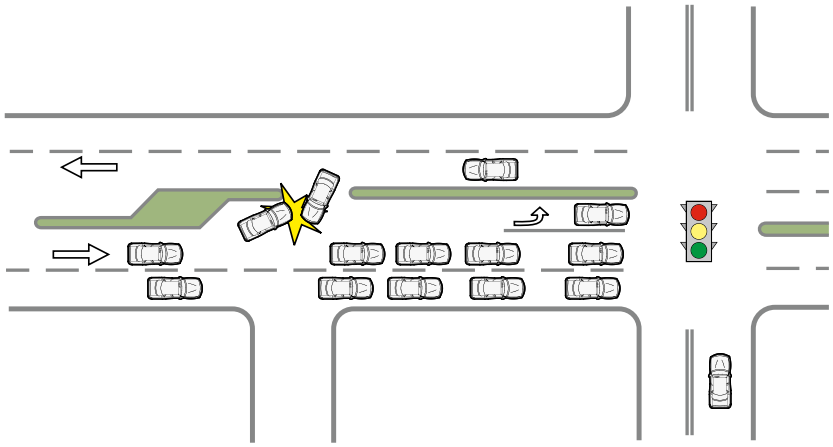


Figure 8: Avoid Median Opening Across Left-Turn Lane for Downstream Intersections (Courtesy of FDOT)

- In cases where there is a traversable median (e.g., TWLTL), aligning driveways to have a positive offset to minimize conflicts between left-turning vehicles is advantageous. Figure 9 illustrates driveway alignment with a positive offset. With a positive offset, motorists can use the two-way, left-turn lane to access either driveway with a reduced likelihood of a crash. Figure 10 demonstrates a negative offset of driveway. In Figure 10 if two motorists are using the two-way, left-turn lane at the same time, the drivers' paths would overlap (i.e., a crash may occur) as each driver tries to access the driveways.

- Where it is not possible to align driveways with a positive offset (as depicted in Figure 10), align driveways directly across the street from one another. Figure 11 illustrates this technique, which allows drivers to access either driveway without utilizing the same median area while decelerating prior to turning from the major roadway.

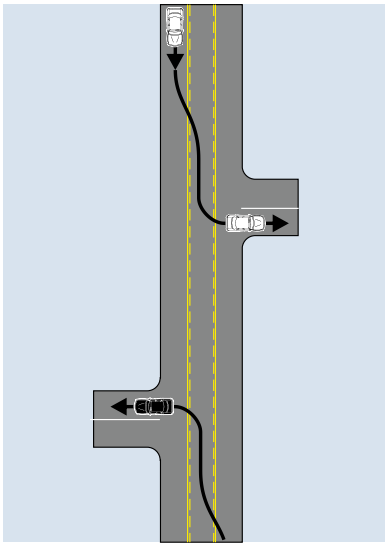


Figure 9: Locate Driveways on Opposite Sides of a Roadway to Achieve a Positive Offset

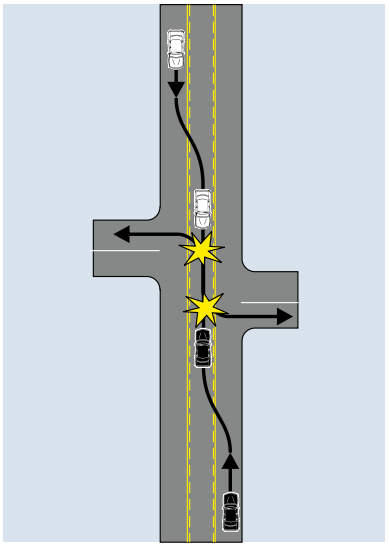


Figure 10: Avoid Locating Driveways on Opposite Sides of the Roadway that Create an Overlap for Left Turns Exiting the Major Roadway

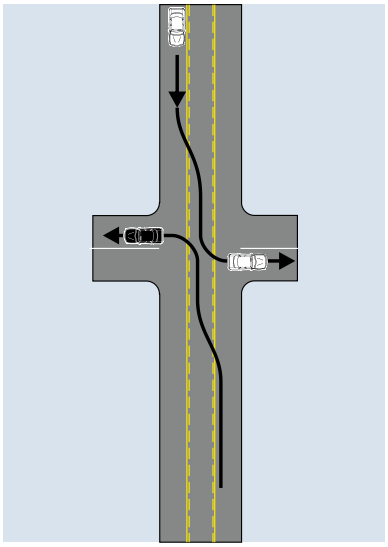


Figure 11: Align Driveways on Opposite Sides of the Roadway

2.1.3 Potential Access Management Treatments to Improve Safety for Bicyclists and Pedestrians in Suburban Areas

The following access management approaches can help to improve pedestrian and bicyclist safety as well as mobility at access points in the vicinity of urban and suburban intersections (both signalized and unsignalized):

- Provide raised medians on the major roadway to prohibit vehicles from turning left into driveways. This improves pedestrian safety by reducing the number of potential pedestrian-vehicle conflicts at a driveway.
- Construct a channelized island between the inbound and outbound movements at right-turn-only driveways to provide a pedestrian refuge across the driveway.
- Minimize the width of the driveway as much as possible in order to reduce pedestrian crossing distances (i.e., reduce exposure).
- Place sidewalks and pedestrian driveway crossings so that pedestrians are visible to the drivers, and drivers are visible to the pedestrians. Do not block pedestrian-driver sight-lines with landscaping or signage.
- Include bike lanes and signage, as appropriate, to alert bicyclists that motorists may be entering or exiting a driveway and to alert motorists that bicyclists may be crossing the driveway.

2.2 Access Management Considerations in the Vicinity of Urban Intersections

Implementing access management treatments in urban areas can be difficult to achieve because of some of the constraints in urban areas and the amount of time planning and implementation can consume for local jurisdictions. This section describes specific characteristics and design challenges associated with access management near urban intersections (Section 2.2.1), and provides a summary of potential access management treatments that can improve the safety for motorists (Section 2.2.2), bicyclists, and pedestrians (Section 2.2.3).

2.2.1 Characteristics of Urban Roads and Intersections

Urban areas (including central business districts) are typically characterized by dense, multi-modal, fully built-out transportation systems. Adjacent land uses are typically high-density office, commercial, and retail developments with minimal setbacks from the street. Parking is usually along roadways, in parking structures, and in some cases available via surface parking lots. Older businesses often rely on on-site parking;

therefore, eliminating driveways on these properties can significantly impact business operations.

Physical characteristics of urban environments include short block lengths (200 to 350 feet), two-way streets with some left-turn lanes, six or more traffic signals per mile, and minimal site setbacks. Where there are driveways to and from the streets, the driveways have small radii and width, and curbs and gutters exist in almost all areas. Intersections are controlled with a mix of signalized or unsignalized intersections while the driveways are generally unsignalized.

Traffic characteristics include low to medium driveway volumes (500 to 5,000 vehicles per day), medium to high adjacent street traffic volumes (20,000 to 50,000 vehicles per day), and coordinated, fixed signal timing. Pedestrians, bicycles, and buses often are present, and speeds generally are equal to or below 30 mph.

One-way couplets are often found within the urban area and provide access management benefits. One-way streets limit driveways to right-in/right-out only or left-in/left-out only turning maneuvers and reduce the number of crossing conflict points and the spacing required between adjacent driveways. One-way streets also reduce the need for intersection sight distance downstream of a driveway as there is no oncoming vehicular traffic. One-way streets can also be beneficial for pedestrians crossing the street as they only need to look for oncoming traffic in one direction.

Based on a speed of 30 mph, the upstream functional area of an urban signalized intersection often exceeds the length of a typical urban block. For this reason, engineers in urban areas often cannot avoid placing driveways within functional areas of intersections. Furthermore, on-street parking and other sources of friction within an intersection's functional area, including bus pull-outs and areas for truck loading/unloading, can diminish the benefits otherwise associated with placing driveways outside of the functional area of an intersection.

2.2.2 Potential Access Management Treatments to Improve Motorist Safety Near Urban Intersections

The following access management approaches can help to improve motorist safety and mobility at access points implemented in the vicinity of urban area intersections. The techniques apply whether or not the urban intersection is signalized:

- Develop a right-turn lane for inbound vehicles on the through road in advance of the site driveway by removing a section of on-street parking; this removes the turning vehicle from the flow of traffic.
- Avoid locating on-site parking bays near site driveways. This allows motorists to drive completely onto the property without having to stop for other motorists completing on-site parking maneuvers, as illustrated in Figure 12. Parking maneuvers near the site driveway can also result in delays for inbound motorists, creating queues that extend back into the major roadway. Figure 13 illustrates an unobstructed driveway, which allows motorists to exit the roadway unimpeded by other motorists maneuvering in the driveway.
- Replace gated parking entries with alternate ticketing options to decrease the driver's entrance time into the driveway and off the main roadway, thus reducing the likelihood of queues on the main roadway.
- Locate loading and bus bays on the far side of the driveway to maximize sight distance for motorists exiting a driveway.
- Place driveways on lower volume roadways (side streets or alleys) wherever possible (Figure 3).

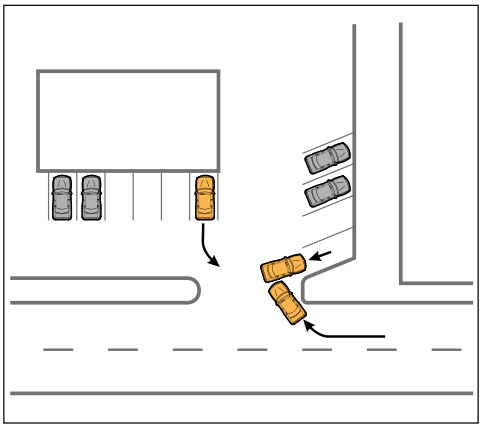


Figure 12: Parking Maneuvers Close to the Roadway Result in Delays for the Inbound Motorist

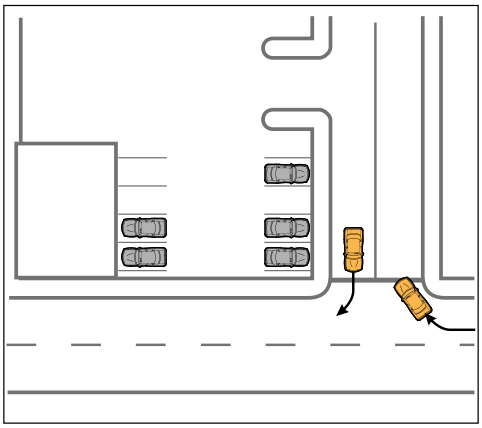


Figure 13: Unobstructed and Clearly Defined Driveways Allow Easy Access for Inbound Motorists

- Sign and stripe for right-turn, outbound movements only, wherever possible. It is not always possible to enforce this condition without geometric restrictions (i.e., raised channelization) to eliminate outbound, left-turning conflicts.
- Place driveways on one-way streets where possible. This results in right-in/right-out only or left-in/left-out only driveways and therefore fewer conflict points.
- Place driveways that serve left-turning, inbound vehicles near the center of the block to minimize interaction with upstream and downstream intersection queues, thus reducing the potential for left-turn related crashes.
- Position driveways as far upstream from intersections as possible to provide motorists leaving a property with distance along the roadway to make any necessary lane changes for traveling through the downstream intersection (e.g., maneuvering into an intersection left- or right-turn lane).

2.2.3 Potential Access Management Treatments to Improve Safety for Pedestrians and Bicyclists in Urban Areas.

In addition to the access management treatments identified in 2.1.3, the following access management approaches can help to improve pedestrian and bicyclist safety and mobility at access points in the vicinity of urban intersections. The techniques apply whether or not the urban intersection is signalized:

- Use colored pavement across driveways in combination with crosswalk markings, and audio/visual treatments for exiting vehicles with limited sight distance. Such treatments include a signal and/or flashing sign that is activated to alert pedestrians a vehicle is about to cross the sidewalk from an adjacent parking area.
- Restrict inbound vehicle speeds by designing the driveway access with appropriately designed radii.
- Smaller driveway radii of 25 to 35 feet are more sensitive to pedestrian movements [5] because motorists have to slow down to complete the turn. However, on-street parking and bike lanes can increase the effective driveway radius, so care should be taken to balance vehicle and pedestrian safety.

2.3 Access Management Considerations in the Vicinity of Rural Intersections

Rural areas, in general, have fewer access management needs in the vicinity of rural intersections than urban or suburban areas. Intersections with county roads are generally infrequent, and these roads often have fairly low traffic volumes. The majority of driveways in the vicinity of intersections serve low traffic generators such as single family homes and/or farms. Large property frontages adjacent to the roadway allow the regulating jurisdiction to locate a driveway a significant distance from the intersection. However, rural intersections can have intersecting high-speed roadways, which can create access management risks.

This section describes specific characteristics and access management challenges and opportunities associated with rural areas and intersections, and provides a summary of potential access management treatments that can improve the safety of motorists, bicyclists, and pedestrians.

2.3.1 Characteristics of Rural Roads and Intersections

Rural areas are characterized by low-density commercial development, such as gas stations and small convenience stores, industrial land and farm land, as well as, in some cases, large expanses of private or publicly-owned undeveloped property. Large property frontages along rural roadways allow jurisdictions to adequately space driveways, though topographical and environmental constraints (e.g., steep hills, wetlands, or rivers) may impact where driveways can be located.

Physical characteristics of rural roads include divided or undivided two-lane and multilane highways; paved and unpaved shoulders; and infrequent full-access, unsignalized, and on occasion, signalized intersections. Traffic characteristics include speeds of 50 mph and higher. Pedestrian and bicycle volumes are typically the lowest on rural roads as compared to urban and suburban roadways. Rural areas may be subject to development in the future. TTI has published research on rural intersections that relates driveway frequency

to crash frequency. Researchers estimate that a rural signalized intersection with no driveways within 250 feet "will be associated with 13 percent fewer crashes than an intersection with three driveways (say, two driveways on one major-approach and one on the other approach)."

Researchers also estimate that a rural unsignalized intersection with no driveways within 250 feet will be associated with 20 percent fewer crashes than an intersection with three driveways [9].

2.3.2 Potential Access Management Treatments to Improve Safety for Motorists in Rural Areas

The following access management approaches can help to improve motorist safety and mobility at access points implemented in the vicinity of intersections in rural areas:

- Early participation by jurisdictional staff and all stakeholders in planning processes can help assure that access requests do not become problematic for regulating jurisdictions. As development occurs in rural areas, a potential concern is development of subdivisions or partitions of large properties near rural intersections that could create a demand for additional access to the major roadway. Early communication and coordination with property owners can help to establish the location and number of driveways that can be permitted to the major roadway as part of the land subdivision process.
- Provide adequate throat depth and on-site circulation for vehicles to easily exit a major roadway. This will minimize speed differential between through vehicles and vehicles slowing to turn into a driveway.
- Pave the shoulders near driveways to provide additional entry and exit width and, hence, higher entry and exit speeds to help minimize speed differentials between through vehicles and vehicles turning onto or off of the roadway within the functional area of an intersection.
- In situations where there are higher traffic generators in the vicinity of rural intersections, frontage roads that parallel the major roadway may also be employed as a means to provide access to each of the adjacent properties. This solution can help to eliminate several access points to the major roadway as access to each development is achieved via the frontage/backage road rather than to the major roadway. In instances where the intersecting roadway has high traffic volumes, the jurisdiction may elect to implement some type of grade-separated facility rather than allow the installation of a traffic signal on a high-speed corridor.

2.3.3 Potential Treatments to Improve Safety for Pedestrians, and Bicyclists in Rural Areas

In rural areas, where there is no sidewalk, pedestrians and bicyclists benefit from roadway shoulders that are at least 4 feet wide or wider, paved and well maintained. As access and intersection modifications are considered in these environments, to the extent possible, shoulder widths should be maintained in order to provide facilities for non-auto travelers. Figure 14 depicts an example of a paved shoulder for bicycles or pedestrians on a rural road.



Photo: Kittelson & Associates, Inc. (used with permission)

Figure 14: Paved shoulder for bicycles or pedestrians

Section 3: References

The following documents were referenced in the development of this technical summary.

1. *Roundabouts: An Informational Guide,* Report FHWA-RD-00-067. FHWA, U.S. Department of Transportation, June 2000. This comprehensive guide is anticipated to be published in 2010. It will include the most recent research and findings for the design and implementation of roundabouts in the U.S.

2. *A Policy on Geometric Design of Highways and Streets, AASHTO 2004.* Commonly referred to as the "Green Book," this manual provides the transportation professional with a wide array of guidelines for the design and operation of roadways and streets.

3. *Access Management Manual,* Transportation Research Board. Washington, D.C. 2003. A comprehensive overview on access management, the *Access Management Manual* provides information on how to develop a State or local access management program. The manual also includes sections on corridor management, land development, access location and spacing criteria, medians, public involvement, right-of-way and legal concerns, driveway applications and permitting processes, and case studies.

4. G. Schultz, C. Allen, and D. Eggett. *Crashes in the Vicinity of Major Crossroads,* Brigham Young University, Department of Civil and Environmental Engineering for the Utah Department of Transportation, December 2008. The study focuses on the evaluation of crashes in the vicinity of signalized -intersections in suburban areas.

5. J. Bonneson, K. Zimmerman, and K. Fitzpatrick, *Roadway Safety Design Synthesis,* Texas Transportation Institute, November 2005. This document describes the effect of key design components on street and highway safety.

6. *Analysis of Crossing Path Crashes,* U.S. Department of Transportation. July 2001. This 76-page report examines crossing path crashes within the physical area of an intersection, including contributing factors to the crashes and a section on pedestrian and bicyclists' crashes at intersections.

7. *Report 420, Impacts of Access Management Techniques*, Transportation Research Board. Washington, D.C. 1999. This 170-page report presents access management techniques and provides methods for estimating the safety and operational effects of different techniques. The report was a precursor to the 2003 Access Management Manual.

8. *Florida Driveway Information Guide,* Florida Department of Transportation, September 2008 (http://www.dot.state.fl.us/planning/systems/sm/accman/pdfs/driveway2008.pdf). This guide provides a comprehensive overview on issues related to driveways including information on appropriate connection radii and flare, driveway width, grade and length, sight distance considerations, optimum location for a driveway, and pedestrian considerations.

9. J. Bonneson, K. Zimmerman, and K. Fitzpatrick, *Roadway Safety Design Synthesis,* Texas Department of Transportation, 2005. The synthesis includes safety information related to freeways, interchange ramps, rural highways and intersections and urban streets and intersections.

The following web sites offer two of the most comprehensive portals available for online access management information:

- FHWA Access Management Web site: http://www.ops.fhwa.dot.gov/access_mgmt/resources.htm

The web site provides links to FHWA resources and publications published on access management topics, including videos/CDs; brochures, including the *Benefits of Access Management* (2003); the publication *Safe Access is Good for Business* (2006), with accompanying CD; contact information for the National Highway Institute 3-day classroom course "Access Management, Location and Design"; and a link to the *Access Management Manual* at the TRB Bookstore. The FHWA materials and classroom course will be especially beneficial for those involved in public outreach and coordination and those desiring to learn more about the technical and legal aspects of an access management program.

- TRB Access Management Committee: http://www.accessmanagement.info/

The site includes information on all of the access management related publications that have been developed within the United States and many other countries in the past two decades. The site provides links to published research (including NCHRP reports); guides and handbooks for the practitioner; outreach materials; papers, PowerPoint and video presentations from past access management conferences; information on upcoming conferences and future research needs; and policies and programs from international, state, and local agencies.

For More Information

Ed Rice
Intersection Safety Team Leader,
FHWA Office of Safety

202.366.9064
ed.rice@dot.gov

Visit FHWA's intersection safety web site to download this and other technical outreach products highlighting proven intersection safety treatments from across the country:

http://safety.fhwa.dot.gov/intersection

U.S. Department of Transportation
Federal Highway Administration

FHWA-SA-10-002

February 2010

A3.0

EXTERIOR ELEVATIONS

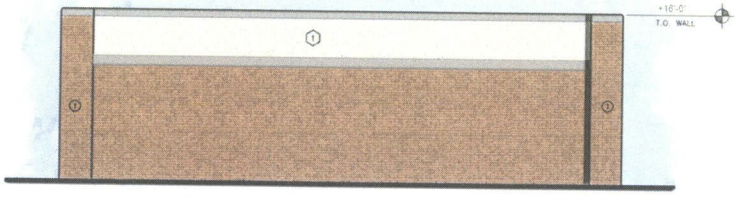
LOCATION:

TYPICAL C-STORE

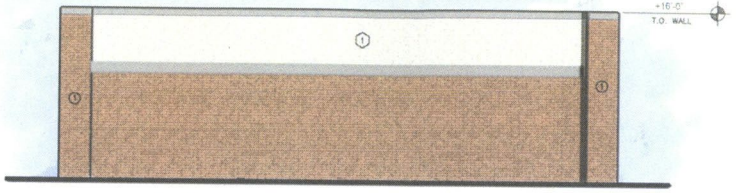
Hy-Vee EMPLOYEE OWNED

HY-VEE, INC.
5820 WESTOWN PARKWAY
WEST DES MOINES, IOWA 50266
TELEPHONE (515) 267-2800
FAX (515) 267-2936

REVISION



WEST ELEVATION
SCALE: 3/16" = 1'-0"



EAST ELEVATION
SCALE: 3/16" = 1'-0"

FACADE MATERIAL CALCULATIONS

SOUTH ELEVATION
F. G. FACADE AREA 1274 SF
MASONRY 356 SF
GLASS 427 SF
ARCHIT. PT. PAN. PRECAST 153 SF
EIFS 267 SF
METAL 49 SF
DOORS 24 SF
MASONRY/GLASS/PRECAST 934 = 73.3%

EAST ELEVATION
F.G. FACADE AREA 879 SF
MASONRY 546 SF
ARCHITECTURAL PRECAST 168 SF
EIFS 32 SF
METAL 32 SF
MASONRY/GLASS/PRECAST 714 = 81.2%

NORTH ELEVATION
F. G. FACADE AREA 1274 SF
MASONRY 356 SF
GLASS 427 SF
ARCHITECTURAL PRECAST 153 SF
EIFS 267 SF
METAL 49 SF
DOORS 24 SF
MASONRY/GLASS/PRECAST 934 = 73.3%

WEST ELEVATION
F. G. FACADE AREA 879 SF
MASONRY 546 SF
ARCHITECTURAL PRECAST 168 SF
EIFS 133 SF
METAL 32 SF
MASONRY/GLASS/PRECAST 714 = 81.2%

MASONRY COLORS

1. KING SIZE FLESH BRICK - 1" SH. #533 (KANSAS BRICK & TILE) MORTAR COLOR: IGH (SOLOMON GRAY CHEM. SERVICE INC.) RUNNING BOND, PATT AN.

2. CAST STONE - A. - EDWARDS CAST STONE SILL COLOR: "SHADE" MORTAR COLOR

ARCHITECTURAL PRECAST CONCRETE PANELS

SANDBLAST C. PRE CAST PANELS

E.I.F.S. COLORS

1. COLOR #1 SIGN COLOR SENERGY #7 4958 =
2. COLOR #2 SIGN SENE GY T 5641 =
3. COLOR #3 SIGN =

E.I.F.S. EXPANSION JOINTS SAME LOCATION @ MASONRY JOINT

GLASS TYPES

1. 1" INSPAREN VISION GLASS

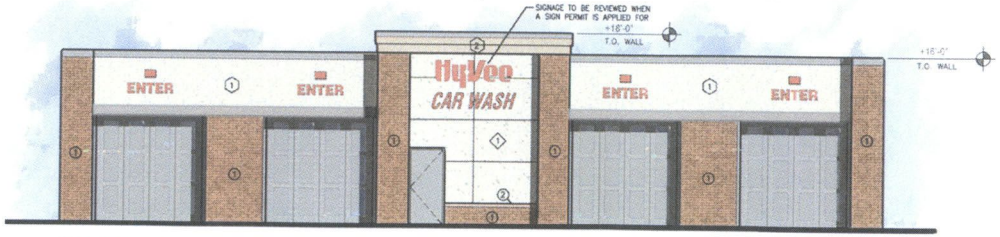
EXTERIOR HOLLOW METAL DOORS AND FRAMES

PAINT ALL EXPOSED HOLLOW METAL DOORS AND FRAMES
1. MATCH ADJACENT WALL COLOR

PAN ALL E RIOR CURB BOLLARDS TO MATCH MAIN BRICK COLOR



NORTH ELEVATION
SCALE: 3/16" = 1'-0"



SOUTH ELEVATION
SCALE: 3/16" = 1'-0"

REVISION

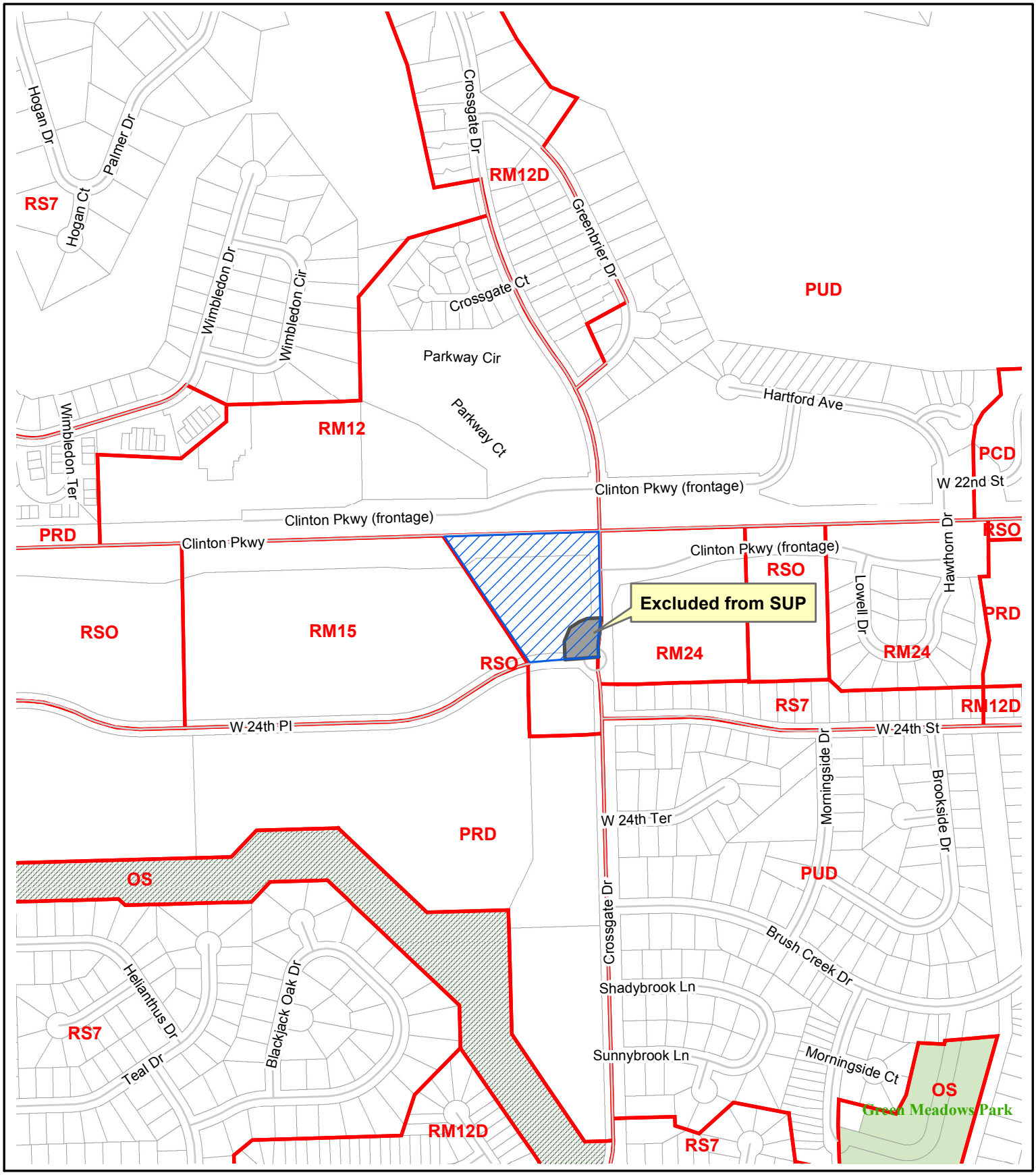
LOCATION
TYPICAL CAR WASH

HY-VEE, INC.
5820 WEST 16TH PARKWAY
WEST DES MOINES, IOWA 50266
TELEPHONE (515) 267-2800
FAX (515) 267-2930
EMPLOYEE OWNED

EXTERIOR ELEVATIONS

Drawn	DATE
JDS	06.30.2011

A6.0



Z-07-21-11: Rezone 3.3 acres from RSO to CN2
SUP-07-04-11: Special use permit for gas and fuel sales
3900 W 24th Place

Lawrence-Douglas County Planning Office
September 2011

N
W E
S

Area Requested

Scale: 1 Inch = 500 Feet

From: Jamie Hulse [mailto:jamiehulse@att.net]
Sent: Sunday, September 25, 2011 9:12 PM
To: Scott McCullough; Sandra Day; Dan Warner
Subject: HyVee Convenience Store/Car Wash rezoning request

Dear Planning Commissioners,

I support:

- the rezoning request from RSO to CN2 for HyVee Convenience Store/Car Wash (Lot 1), and office building (Lot 2).
- rezoning conditional upon this specific plan - reverts back to RSO if this plan is not built. (Based on previous experience with rezoning for a retirement project that never happened at W. 24th Pl & Inverness, so then The Grove was built.)
- a public process for the site planning.

*requirement of Site Plan approval by City Commission for both lots.
*requiring landscaping maintenance standards of drainage/creek area, both for flood management and safety.

- Allowing drainage area to overgrow in a natural state will block flow of water,
- and also provides place for people to hide with intent to rob/attack people getting gas or in car wash, especially during hours convenience store is closed.

- traffic pattern #4 or #5 below.

Traffic pattern options (Agenda, pp 312-316)

1. No access from Crossgate - only access from W. 24th Pl.
2. Full access from Crossgate - left & right turn (please do not support this option!)
3. 3/4 access from Crossgate - median required
4. Right turn in/right turn out only access on Crossgate
5. Right turn in from Crossgate/out turn only from W. 24th Pl.

Unfortunately, I will be in class Monday night, so will not be able to attend the Planning Commission meeting.

Sincerely,

Jamie Hulse
4403 Gretchen Ct.

PLANNING COMMISSION REPORT
Regular Agenda -- Public Hearing Item

PC Staff Report
9/26/11

ITEM NO. 4 TEXT AMENDMENT TO ARTICLE 3 OF THE CITY OF LAWRENCE DEVELOPMENT CODE; INCLUDING REVISING THE DESIGN GUIDELINES OF THE 8TH AND PENNSYLVANIA URBAN CONSERVATION OVERLAY DISTRICT (SM)

TA-8-13-11: Consider text amendment to the 8th and Pennsylvania Urban Conservation Overlay District, including the *Design Guidelines 8th and Penn Neighborhood Redevelopment Zone*, in order to accommodate a residential proposal for property located at 619 E. 8th Street that exceeds the density limit currently noted in the guidelines. *Initiated by City Commission on 8/9/11.*

RECOMMENDATION: Staff recommends that the Planning Commission forward a recommendation for approval of the proposed amendments contained in TA-8-13-11 to the City of Lawrence Land Development Code, including the *Design Guidelines 8th and Penn Neighborhood Redevelopment Zone*, to the City Commission based on the findings of fact outlined in the staff report.

Reason for Request: To accommodate the redevelopment of the Poehler Mercantile Company building located at 8th Street and Delaware.

Key Points:
- This proposal is compatible with the planned redevelopment of the 8th and Penn area.
- The proposal meets the challenge of a changing condition in how the Poehler building is likely to be redeveloped.

PUBLIC COMMENT RECEIVED PRIOR TO PRINTING
- None

OVERVIEW OF PROPOSED AMENDMENT
Several properties, as shown below in a defined area surrounding the intersection of 8th and Pennsylvania Streets, are zoned with a base zoning district that also includes an Urban Conservation Overlay (UC-O) District, known as the "8th and Pennsylvania Urban Conservation Overlay District". The UC-O was established in the mid-2000s to accommodate a developer's plan to redevelop the area with a mixture of commercial, office and residential uses.



A UC-O District allows the City and a developer to tailor the development standards applicable to an area so that development of appropriate size, orientation, and setting can be built within a neighborhood or area. The "*Design Guidelines 8th and Penn Neighborhood Redevelopment Zone*" is the document used to establish revised standards for development that are different than the base zoning standards. The standards for this area are noted on page 12 of the guidelines (attached).

Other standards, such as density, parking, height, etc, were also modified with the overlay district and currently govern development in the area. The standards were intended to accommodate mixed use redevelopment of the area and the historic Poehler building is considered a character defining structure in the district. The guidelines have been adopted into the Lawrence Land Development Code in Article 3, specifically Sections 20-308(h), 20-308(i), and 20-310, as follows:

20-308 URBAN CONSERVATION OVERLAY DISTRICT

(h) **UC Districts Established**
The following UC Districts are established:

Conservation District Name	Boundaries
Downtown Urban Conservation Overlay District	See Ord. No. 7395
8th & Pennsylvania Urban Conservation Overlay District	See Ord. No 8053

(i) **UC District Development/Design Standards Established**

The following UC District Development/Design Standards and Administrative Policies are established:

Conservation District Name	Development Standards and Administrative Policies
Downtown Urban Conservation Overlay District	Downtown Design Guidelines 2009
8th and Pennsylvania Urban Conservation Overlay District	Design Guidelines 8th and Penn Neighborhood Redevelopment Zone 2006

20-310 INCORPORATION BY REFERENCE OF "THE DESIGN GUIDELINES 8TH AND PENN NEIGHBORHOOD REDEVELOPMENT ZONE"

The "The Design Guidelines 8th and Penn Neighborhood Redevelopment Zone" prepared compiled, published and promulgated by the City of Lawrence, Kansas is hereby adopted and incorporated by reference as if fully set forth herein, and shall be known as the "The Design Guidelines 8th and Penn Neighborhood Redevelopment Zone." At least one copy of said text amendments shall be marked or stamped as "Official Copy as Adopted by Ordinance No. 8363 and to which shall be attached a copy of this ordinance, and filed with the City Clerk, to be open to inspection and available to the public at all reasonable business hours. The police department, municipal judge, and all administrative departments of the City charged with the enforcement of the ordinance shall be supplied, at the cost of the city, such number of official copies of such "The Design Guidelines 8th and Penn Neighborhood Redevelopment Zone".

Upon approval of the revised "*Design Guidelines 8th and Penn Neighborhood Redevelopment Zone*", these code sections will also be updated to revise the appropriate ordinance numbers and dates and are part of this amendment. The proposed revisions to the guidelines are attached.

An important element of the guidelines is a standard that limits retail use to no more than 25% of the development in the district. The original proposed mix of uses is outlined in Appendix B at the end of the document. A requirement of the guidelines is that the table in Appendix B be updated and included on each site plan application; therefore, there is no reason to amend Appendix B with this text amendment since it will be in flux as development on other properties occurs in the future. The proposed development calculates existing and projected retail use at approximately 17% where the original proposal had it above 24%.

Staff is currently processing several applications to implement redevelopment of the 8th and Penn area for an applicant that is different than the one that initiated the guidelines for the area. This new applicant desires to use the Poehler building for only residential purposes where the original plan included residential and commercial purposes. The current proposal includes 49 housing units in the Poehler building where only 24 units were originally proposed and used to determine the density for the overlay district.

In order to permit the processing of an accompanying base district rezoning request that would accommodate the new plan for the Poehler building, the standards of the guidelines must be revised to permit the proposed density and perhaps other elements of the new plan. The language of the guidelines will be revised and processed through the Historic Resources Commission and Planning Commission for a recommendation with a decision made by the City Commission.

CONFORMANCE WITH THE COMPREHENSIVE PLAN

Horizon 2020 promotes a balanced mix of housing within the community which would allow for a wide

range of housing types and residential densities. The plan offers descriptions and density ranges for very low-density to high-density residential development. The high-density residential development identifies an overall density of 16-21 dwelling units per acre. This property is unique in that on-street parking is permitted to be used to satisfy parking requirements. Because of this, less private land is needed to support the structure and use. The Poehler building is proposed to lie on .56 acres after completing a replat of the land to remove the adjacent parking lot and is proposed to be redeveloped with 49 units. This equates to a density of 88 (rounded up) dwelling units per net residential acre. At the time of adopting the 8th and Penn district and guidelines, *Horizon 2020* did not support the type of mixed use development proposed. The comprehensive plan was amended at the same time to include language in Chapter 6 that supports Mixed-Use Redevelopment Centers in areas of the city, "where existing structures are underutilized, have experienced a high turnover rate, or have remained vacant for an extended period of time." (Policy 3.4, Chapter 6) The 8th and Penn area is recognized as such an area. While the Poehler building may be converted to a single-use residential structure, the area will remain a mixture of uses. The proposal conforms to the comprehensive plan.

CRITERIA FOR REVIEW AND DECISION-MAKING

Section 20-1302(f) provides review and decision-making criteria on proposed text amendments. It states that review bodies shall consider at least the following factors:

1) Whether the proposed text amendment corrects an error or inconsistency in the Development Code or meets the challenge of a changing condition; and

Applicant Response:
This is a staff initiated request on behalf of the applicant's proposal to redevelop the Poehler building. The developer has not been asked to submit responses to the criteria.

Staff Response:
Staff believes that while there is no error or inconsistency in the guidelines, there is a changing condition of the redevelopment plan in that the current applicant has the opportunity to use affordable housing credits to develop the Poehler building as a single-use residential building with mostly affordable units. The original plan anticipated that the Poehler building would be mixed use and included multiple levels of retail as well as residential uses. The original plan had fewer dwelling units anticipated and the current development proposal exceeds the density of the guidelines. It should be noted that the density set in the guidelines were intended to support the residential density of the Poehler building as it was designed to hold under the original development plan. This amendment seeks to accomplish the same objective by addressing the changing condition of seeking a greater number of units.

2) Whether the proposed text amendment is consistent with the Comprehensive Plan and the stated purpose of this Development Code (Sec. 20-104).

Applicant Response:
This is a staff initiated request on behalf of the applicant's proposal to redevelop the Poehler building. The developer has not been asked to submit responses to the criteria.

Staff Response:
As noted above, *Horizon 2020* supports redeveloping certain areas in the city in need of redevelopment. *Horizon 2020* outlines an overall density range of 16-21 dwelling units per acre for high-density residential districts. The proposal, at 88 dwelling units per net residential acre, is significantly higher than the highest density outlined in the plan; however, the amendment would

accommodate only one building that is the cornerstone of the redevelopment of the 8th and Penn area and the density could be viewed significantly lower when considering the adjacent parking on the lot to the south and the parking on the streets. The remainder of the district would remain under the guideline standard of 34 dwelling units per net residential acre. While the proposal is not in conformance with the comprehensive plan policies for density ranges, the 8th and Penn district is recognized by the plan to be unique and has had extensive public review. It has been determined that redevelopment of the Poehler building is beneficial for the area.

Historic Resources Review

Section 20-308(d) of the Development Code requires review of the guidelines by the Historic Resources Commission. The Commission met on September 15 to consider the proposed revisions and voted unanimously to recommend approval of the revisions to the City Commission. There was discussion regarding staff's proposed language related to the height of structures in the overlay area. This language is simply meant to clarify the height standards in the overlay district, as it was identified that the existing language was in need of clarification to review future projects and provide a clear, prescriptive standard to owners in the district.

Staff Review

This text amendment was initiated to support what staff believes will be a beneficial development proposal for the East Lawrence neighborhood. The revisions accommodate one building while holding all other development to a 34 dwelling unit per acre maximum. The amendment will not, in staff's opinion, reduce the goal of redeveloping the 8th and Penn area as a mixed use district since non-residential zoning will remain for portions of the district.

Staff Recommendation

Staff recommends that the Planning Commission forward a recommendation for approval of the proposed amendments contained within TA-8-13-11 to the City of Lawrence Land Development Code to the City Commission.

DESIGN GUIDELINES
8TH AND PENN NEIGHBORHOOD REDEVELOPMENT ZONE

24 OCTOBER, 2006
REVISED ???, 2011



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EXECUTIVE SUMMARY

The 8th and Penn Neighborhood Redevelopment Zone is located in the historic East Lawrence manufacturing and railroad freight area and is part of the East Lawrence residential neighborhood. The proximity of the Kansas River made the historic industrial zone an ideal location for rail lines and associated freighting and manufacturing facilities. The redevelopment zone is composed of buildings, structures, and streetscapes that developed over a period of time and that had a variety of uses. Today, as in the past, there is a heterogeneous mix of warehouse and commercial/industrial facilities dating to the 1880s, large open spaces once used for rail yards and warehousing facilities, and several large, modern light industrial facilities. Although many of the older buildings and structures retain an individually distinct character and identity, their design patterns also contribute to the overall appearance of the area. Immediately adjacent to the west and south of the redevelopment zone are historic residential neighborhoods. These commercial/industrial and residential enclaves are separated by blocks that have lost their historic residential use and now are made up of vacant lots and/or a mix of commercial uses.

As in many communities, new residential and commercial growth presents unique challenges for this type of older mixed-use neighborhood. While individual buildings may have the potential to attract new businesses, if the area as a whole is to become viable, it must compete with other local and regional development zones. Experience demonstrates areas that create and/or retain a unique visual character that combines the historic and the new to enhance an existing "sense of place" are the most successful competitors.

The City of Lawrence has initiated a number of strategies to preserve, rehabilitate, and enhance the appearance of its older neighborhoods. This approach recognizes that conservation of buildings, neighborhoods, and sites of historic value is one of the best tools for recovering the worth of past investments while fueling a new economic force. To accommodate revitalization of this neighborhood and to merge old and new land uses, the redevelopment project will include changing the base zoning to C-5 and creating an Urban Conservation Overlay District (UC-O District) in accordance with the ordinances of the City of Lawrence, Kansas. There are historic resources located in the 8th and Penn Neighborhood Redevelopment Zone that are eligible for listing in the National Register of Historic Places and the Register of Historic Kansas Places. With the anticipated listing of these properties, all work (rehabilitation and new construction) in the redevelopment zone will be reviewed in accordance with the Kansas Historic Preservation Act of 1977, as amended,[1] and, possibly, Section 106 of the National Preservation Act of 1966, as amended,[2] to consider and mitigate the impact of development and adaptive reuse on the historic resources. It is also anticipated that the owners of qualifying historic buildings will participate in federal and state rehabilitation tax credit programs.

Because of these goals, the following design guidelines incorporate the "Secretary of the Interior's Standards for Rehabilitation of Historic Properties", which apply not only to rehabilitation for the adaptive reuse of historic and older buildings, but also to new construction and site development. The Secretary's Standards are currently incorporated into federal, state, and local compliance ordinances and laws, and have been upheld by state and federal courts as a reasonable standard by which to guide protection of cultural resources.

[1] The Kansas statute requires that the State Historic Preservation Office and/or its local designee review and comment on proposed projects (such as this project) undertaken by other parties, but requiring issuance of a lease, permit, license, or other entitlement for use from the State of Kansas or any political subdivision of the State of Kansas that would affect a property and/or the environs of a property listed in the National Register of Historic Places or the Register of Historic Kansas Places.
[2] This will occur if the project involves an undertaking by a federal agency, such as funding, financing, grants, issuance of permits, and so forth.

These design guidelines will be incorporated into an Urban Conservation Overlay District zoning ordinance to ensure compliance with local, state, and federal preservation laws and will thereby provide a consistent set of standards specific to the built environment and physical conditions of the redevelopment zone.

The goal in utilizing these guidelines is not to reproduce a historical period or theme approach. The intent is to identify and protect historic resources and to utilize significant common historic patterns in the existing built environment that will contribute to a sense of place, while retaining and enhancing the existing historic fabric and visual character of the development zone. Inherent in these guidelines is the provision of direction to property owners and developers to ensure that changes to properties — rehabilitation, renovation, demolition, and new construction — enhance and complement the unique character of East Lawrence. The intended purpose of using these guidelines is to help accomplish the following:

1. Foster economic viability by encouraging redevelopment and new development.

2. Regulate exterior scale, massing, design, arrangement, texture, and materials within the conservation zone in order to not only promote compatibility within the development zone, but also to create linkages with the surrounding neighborhoods.

3. Preserve and protect the historic and architectural value of buildings, structures, sites, districts, and objects listed in, or eligible for, the National Register of Historic Places, the Register of Kansas Historic Places, and the Lawrence Register of Historic Places.

4. Maintain the unique identity of East Lawrence.

5. Meet the Kansas State Law requirements as set forth in KSA 75-2724 and any amendments hereafter and Chapter 22 of the City of Lawrence Code and any amendments hereafter related to environs review.

6. Build upon historical character and foster diversity while meeting the goals of the *Horizon 2020 Comprehensive Plan* and the *East Lawrence Neighborhood Revitalization Plan.*

FIGURE 1: 8TH AND PENN NEIGHBORHOOD REDEVELOPMENT ZONE



FIGURE 2: 8TH AND PENN NEIGHBORHOOD REDEVELOPMENT ZONE (ENLARGED)



ENVIRONS OVERVIEW

The first step in creating an attractive, cohesive sense of place that reflects the historic heterogeneous land uses in the 8th and Penn Neighborhood Redevelopment Zone is to identify character-defining elements and patterns created by these elements that currently provide a sense of place and identity. An analysis of the historic land use and the existing built environment revealed four (4) zones, each with distinctive history and appearance.

ZONE 1: HISTORIC DISTRICT

The centerpiece of the redevelopment zone is the group of masonry manufacturing buildings bounded by East 8th Street on the north, Pennsylvania Street on the west, Delaware Street on the east, and East 9th Street on the south that is eligible for listing as a historic district in the National Register of Historic Places. These industrial buildings range from one story to four stories in height and date from the 1880's through the 1920s. The buildings are ideal candidates for rehabilitation into mixed adaptive uses that will allow them to retain the necessary level of historic architectural integrity to continue to contribute to an understanding of the historic district's associations with commerce and architecture in Lawrence. These buildings are eligible for participation in federal and state rehabilitation tax credit programs.

ZONE 2: STREETSCAPES AND ALLEYS

The redevelopment zone retains many of the elements that defined its historic streetscapes and alleyways. These features and spaces compose the grid of streets, alleys, and sidewalks, as well as the off-axis railroad right-of-way. The majority of the public right-of-way areas are the spaces and infrastructure between the buildings' façades on both sides of the streets and generally includes the following:

1. Pedestrian spaces between the buildings and street curbs, including landscaping, lighting fixtures, informational signage, pavement materials, and steps accessing residences and driveways to rear lots, alleyways, or off-street parking areas

2. The street which contains lanes of traffic, crosswalks, and vehicle parking adjacent to the curbs

3. Alleyways

4. Railroad right-of-way and associated alignment

Other than the railroad right-of-way features and spaces, these streetscape and alley features are a continuation of the City's traditional platted grid of street and alley systems of the neighborhoods to the south and west of the redevelopment zone. As a whole, this grid contains important historic character-defining spaces, structures, and materials. The retention of these features will contribute to a visual transition and linkage between the adjacent historic residential streetscapes and the new development in the redevelopment zone. At the same time, retention, restoration, and enhancement augment the character of the East Lawrence Industrial Historic District (Zone 1).

ZONE 3: 800 PENNSYLVANIA MIXED-USE ZONE

The streetscape and lots bordering the industrial/manufacturing zone in the block bounded by East 8th on the North, Pennsylvania Street on the east, the alley between Pennsylvania Street and New Jersey Street, and East 9th Street on the south was historically a residential street.[3] The loss of its historic residential character is due to demolition and the expansion of commercial/industrial buildings westward. This zone is adjacent to two intact residential areas — one west of New Jersey Street and one south of East 9th Street — that are part of the large East Lawrence historic residential neighborhood. Within Zone 3, there do not appear to be any historic buildings with sufficient integrity to communicate associations with the period of significance of the National Register East

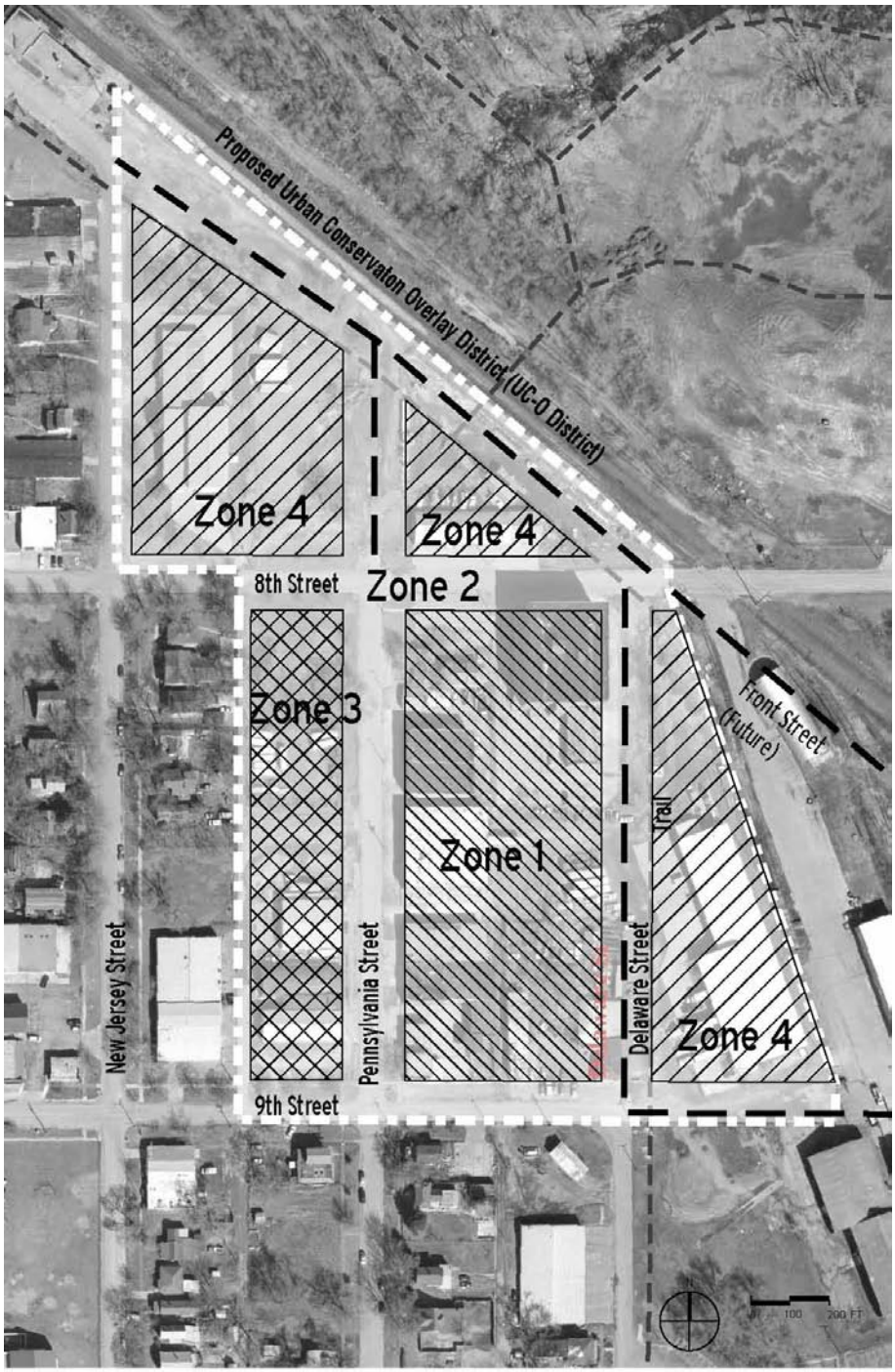
[3] The residential streetscape is intact in the Sanborn Fire Insurance Company map of 1927, a date that generally coincides with the end of the period of significance of the National Register East Lawrence Industrial Historic District.

Lawrence Industrial Historic District that comprises Zone 1 or with the residential resources on New Jersey Street. Zone 3 has the potential to become a transition zone between the existing single-family residential neighborhoods on the boundary of the redevelopment zone to the new commercial and residential uses planned in the redevelopment zone. In particular, this zone is ideal for development into higher density residential and limited commercial uses.

ZONE 4: EXISTING AND NEW CONSTRUCTION ZONE

This zone is composed of several irregularly shaped parcels that are adjacent to the railroad right-of-way and have traditionally served as areas for light manufacturing, storage, and railroad-related activities. Open space and temporary and permanent storage and manufacturing facilities defined these areas historically. Most of the buildings were large facilities of one to two stories in height aligned to both the historic street grid and the railroad's diagonal right-of-way and associated infrastructure. The infrastructure of this zone is industrial, featuring random curbing and no sidewalks. Within Zone 4, there do not appear to be any historic buildings dating to the period of significance of the buildings found in Zone 1 or to the residential enclave to the west. There are, however, buildings that are more than fifty years of age. Among them are Quonset Hut buildings dating to the World War II period and erected for industrial purposes. These areas within Zone 4 provide opportunities for new types of development that would retain open spaces and enhance the visual connection to the railroad right-of-way.

FIGURE 3: ZONE OVERVIEW



LAND USE PLAN

ZONING: LAND USE AND DEVELOPMENT STANDARDS

As stated in the *East Lawrence Neighborhood Revitalization Plan*, the unique character of the East Lawrence residential neighborhood is, in part, the coexistence of commercial, manufacturing and residential uses of land. In other words, this neighborhood has traditionally been a mixed-use community. Redevelopment and new development within the East Lawrence neighborhood should respect and expand this mixed-use tradition. The redevelopment concept for the 8th and Penn Neighborhood Redevelopment Zone proposes to do that through creating a horizontal and vertical mixture of land uses including residential, professional offices, inner-neighborhood commercial uses, and retail operations. Unfortunately at this time the Lawrence Zoning Code provides limited means and districts that provide for this type of development. Currently the only feasible way under the Lawrence Code to develop a mixed-use project in the 8th and Penn Neighborhood Redevelopment Zone is through a two-step procedure, including 1) the property in question must be rezoned to a base zoning district that controls the land uses within the district and 2) an Urban Conservation Overlay District ("UC-O District") must be created that will control the design and development standards of the district.

LAND USE ALLOCATION

As the impetus to rezone the property and create a UC-O District for the 8th and Penn Neighborhood Redevelopment Zone is premised on creating a vital mixed-used neighborhood, it is important that restrictions be crafted that insure this vision comes to light. Namely, neither the Developer, City, nor the East Lawrence Neighborhood Association, desires this property to be developed for "big box" retail uses or as an area that is principally retail in use.

As such, retail uses shall be limited to a maximum of 25% of the net floor area for the UC-O District (See Appendix B). In addition, as the Poehler Mercantile Company building is to serve as the anchor and focus of the UC-O District, in no case shall a single retail shop or tenant occupy net floor area in excess of 16,000 square feet at ground floor level. A single retail shop or tenant may occupy in excess of 16,000 if they occupy multiple floors.

As currently drafted, the City of Lawrence Code provides limited zoning districts in which mixed-use development, including residential, professional offices, inner neighborhood commercial uses, and retail operations, may occur. Of these available districts, the City of Lawrence planning staff determined C-5, limited commercial district, the most appropriate zoning district for the 8th and Pennsylvania Neighborhood Redevelopment. While C-5 is the appropriate zoning for this redevelopment, this does not currently comply with *Horizon 2020*. As a result, there is currently a text amendment submitted to correct this omission. As such, Zones 1, 2 and 3 will be rezoned to a C-5 zoning district. This underlying base zoning will control the use of land, buildings, and structures within Zones 1, 2, 3 and 4.

2011 Update – The planning documents noted in the preceding paragraph were updated either during or after adoption of the guidelines. Zoning was modified to the Commercial Strip district (CS) and Horizon 2020 was amended to support the development.

DESIGN AND DEVELOPMENT STANDARDS

Mixed-use development cannot easily meet the requirements of traditional zoning districts. Successful mixed-use development can only thrive in areas that not only allow for the mixture of land uses, but also allow development of adequate density so that "critical mass" may be achieved. The development standards found in traditional zoning districts are antithetical to creating this critical mass. Development standards that were drafted on the premise of low-density development that segregates and buffers differing land uses from each other through lot size regulations, large setbacks, height and density regulations, and parking minimums limit the development of mixed-use projects. The Lawrence Code recognized this problem and has provided a solution – the UC-O District. A UC-O District allows the City and a developer to tailor the development standards applicable to an area so that

mixed-use development of appropriate size, orientation, and setting can be built within a neighborhood or area. The Lawrence Code provides that upon creation of a UC-O District the specific development and design standards approved by the Historic Resource Committee, the City Commission and City Planning will guide development and redevelopment within the district. The Lawrence Code further provides that when development and design standards of the underlying base zoning district conflict with the development and design standards of the UC-O District, the standards of the UC-O District will govern.

The following development standards shall apply **to any new development** within this UC-O District:

LOT AREA AND YARD REGULATIONS

Standard	CS	IG	8th & Penn UC-O
Min. Site Area	-	5,000 sq.ft.	NA
Max. Site Area	-	–	NA
Min. Lot Area (sq. ft.)	5,000 [5]	5,000	1872
Min. Lot Width (ft.)	100 [5]	50	16'
Front [9]	25 [5]	[1]	NONE
Side (Exterior) [2] [9]	[3]/20 [5]	[1]	NONE
Side (Interior–adj. R) [9]	10 [5]	[1]	NONE
Side (Interior–adj. Non-R)	0	[1]	NONE
Rear [4] [9]	20/25 [5]	[1]	NONE
Max. Front Setback	NA	NA	15'
Max. Lot Coverage (%)	80 [5]	85[5]	NA
Max. Impervious Lot Cover (%)	80 [5]	75[5]	NA
Area (sq. ft.)	50[5]	–	NA
Dimensions (ft.)	5[5]	–	NA
Max. Height (ft.)	35 [5]	75	NA
Abutting Street Right –of-Way			
Across from R District	NA	50'	NA
Across from Non-R District	NA	25 / 50**	NA
Abutting Other Lot Lines			
Abutting R District	NA	50'	NA
Abutting Non-R District	NA	15'	NA

**Arterial / Collector

*This table (taken from the City of Lawrence Land Development Code 20-601) illustrates the difference in allowable setbacks between a typical C-~~5~~**S** development, and development in the 8th and Penn UC-O District.*

The elimination of the lot size and setback requirement allows development to obtain an urban density, similar to the commercial nature of historic zone 1, and promotes the creation of a defined street edge. Large setbacks and lot sizes are not conducive to the pedestrian friendly environment appropriate to this location. In the case of setbacks, it should be noted that during the site plan review process the City Planning staff may deem setbacks necessary to mitigate impacts.

BUILDING HEIGHT

The historic Poehler Mercantile Company building will serve as a visual anchor and reference point for the UC-O District. In keeping with the history of the area, the Poehler building is to remain the tallest structure in the District. **Rooftop appurtenances, such as cellular and radio antenna, chimneys, mechanical equipment and screening, etc. shall be limited to a height not to exceed 10'-0" above the tallest point of the existing roof of the building.**

To achieve that goal, all other buildings and structures**, including stand-alone cellular towers,** within the UC-O District shall have a maximum of three stories and 40'-0" above grade. ~~This height restriction would apply to all buildings in the UC-O District and structured cell towers. Cell towers with removable structures would also be allowed in the UC-O District and may exceed this height requirement.~~ **Rooftop appurtenances, such as cellular and radio antenna, chimneys, mechanical equipment and screening, etc. shall be limited to a height not to exceed 50'-0" above grade.**

DENSITY

Mixed-use development requires adequate residential density so that critical mass may be achieved. As such, **and except for the Poehler Mercantile Company building itself,** the dwelling unit density shall not exceed thirty-four (34) units per net residential acre, as defined in the City of Lawrence Code Section 20-1007, or subsequent applicable City standards. Thirty-Four (34) units per acre were derived from the square footage of the Poehler Building divided by the number of residential units it is designed to hold **if it were developed with a mix of uses**. This number was compared to, and is lower than, the thirty-five (35) units per residential acre allowed in Lawrence Code for Planned Commercial Developments, Section 20-1008. **Because the Poehler Building may develop solely with residential uses, the density for the Poehler building shall be unlimited and regulated by the number of parking spaces provided to support its residential use.**

BUILDING SETBACK

The minimum setback from right-of-way, property, or lot lines allowed in the UC-O District is zero (0). The maximum front yard setback from right-of-way, property lines, or lot lines allowed in the UC-O District is 15'-0". New development that is roughly coplanar with adjacent buildings and structures is encouraged.

In Zone 4, parking lots or primary buildings shall have a zero foot set back.

PARKING

Parking in the 8th and Penn Neighborhood Redevelopment Zone will be designed to reflect the desired mixed-use pedestrian scale character of the Redevelopment Zone. One of the virtues of a mixed-use development is that parking areas can be shared by different users at different times. For example, a residential parking space could be used by an office user while the home owner is away during working hours. This results in a neighborhood that is active, more comfortable for the pedestrian, and better for the environment. The mix of uses proposed in the 8th and Penn Neighborhood Redevelopment Zone allows for a reduction in the parking requirements, typical for zoning districts and land uses more closely associated with heavy vehicular traffic. This reduction creates a more pedestrian friendly district as the residents will not have to cross large expanses of parking to reach their destination. In addition, this will be more environmentally sensitive due to the reduction of heat islands and light pollution commonly caused by large, open parking lots.

Parking density for office/retail/commercial property shall consist of one (1) on- or off-street parking stall for every five hundred (500) square feet of floor area, or one (1) space for each 1.5 employees, which ever is larger. For food related uses, the requirement shall be 1 space per 250 square feet of space. This is consistent with the 1966 City of Lawrence Code for parking, Group 17. Accessible parking stalls will be provided in accordance with the Americans with Disabilities Act Accessibility Guidelines (ADAAG). It is estimated that there will be 46,500 square feet of retail space and 24,500 square feet of office space for an estimated parking requirement of 348 spaces.

Parking density for residential property shall consist of one (1) on- or off-street parking stall for every residential unit. For units with 2 bedrooms or more, 2 spaces per unit. This is consistent with the 1966 City of Lawrence Code for parking, Group 2-F. Accessible parking stalls will be provided in accordance with the Americans with Disabilities Act Accessibility Guidelines (ADAAG).

Parking lots shall be setback from the lot line a minimum of three (3) feet to provide room for a vegetated buffer or other type of approved screening. Existing parking in historic Zone 1, and alley ways in all zones, shall be exempt from these requirements.

All off-street parking areas in Zones 3 and 4, and those containing five or more vehicles, shall be effectively screened on each side that adjoins or is across the street from any residential district with a view-reducing barrier. This barrier shall be at least three feet but not more than six feet in height.

Parking lot lighting shall be consistent with section 20-14A03 of the Lawrence Zoning Guidelines, or subsequent applicable City standards, and is discussed further on page 18, in the Lighting section of the Design Guidelines. In order to limit lighting impacts on adjacent residential properties, low bollard lighting will be utilized in parking areas adjacent to these properties in lieu of standard pole lighting.

DESIGN GUIDELINES

In addition to the development standards above, the following design guidelines are proposed to preserve the existing character-defining elements through rehabilitation and to enhance the surrounding areas with compatible new construction that capitalizes on the heterogeneous nature of the zone while also creating a cohesive entity that visually links with the adjacent neighborhoods. Thus, the purpose of these guidelines is to sensitively mediate the forces of change, create an opportunity for architectural innovation and problem solving, and enhance the existing neighborhood fabric. Given the varied nature of the project area, the chosen approach is to apply the Secretary of the Interior's Standards for Rehabilitation where applicable to each of the zones identified in the environs review.

Based on over 120 years of evolving preservation methodology involving the identification, evaluation, and protection of historic and cultural resources in Europe and America, "The Secretary of the Interior's Standards for the Treatment of Historic Properties" provides a set of common-sense principles to encourage consistent preservation practices. The Secretary's Standards for Rehabilitation may be applied to adaptive use of historic buildings, sites, structures, objects, districts, and cultural landscapes as well as to new construction and alterations affecting historic buildings as well as the environs of historic resources.

THE SECRETARY OF THE INTERIOR'S STANDARDS FOR REHABILITATION OF HISTORIC PROPERTIES

1. A (historic) property shall be used for its historic purpose or shall be placed in a new use that requires minimal changes to the defining characteristics of the building and its site and environment. (Applicable to Zone 1)

2. The historic character of a property will be retained and preserved. The removal of historic materials or alterations of features and spaces that characterize a property will be avoided. (Applicable to Zones 1 and 2)

3. Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings shall not be undertaken. (Applicable to Zones 1, 2, 3 and 4)

4. Most properties change over time: those changes that have acquired historic significance in their own right shall be retained and preserved. (Applicable to Zones 1 and 2)

5. Distinctive features, finishes, and construction techniques that are examples of craftsmanship that characterize a property shall be preserved. (Applicable to Zones 1 and 2)

6. Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, the visual qualities and, where possible, materials. Replacement of missing features shall be sustained by documentary, physical, or pictorial evidence. (Applicable to Zone 1)

7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible. (Applicable to Zone 1)

8. Significant archaeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken. (Applicable to Zones 1, 2, 3 and 4)

9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing size, scale, and architectural features to protect the historic integrity of the property and its environment. (Applicable in varying degrees to Zones 1, 2, 3 and 4)

10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired. (Applicable to Zone 1)

APPLICATION OF DESIGN GUIDELINES

Design guidelines serve as a communication tool in educating property owners and developers as to the community expectations for new construction and renovations of existing buildings. They will also serve as a guide for local, state, and national staff in reviewing various types of applications for alterations prior to the issuance of permits, as well as for utilizing incentives such as the federal and state rehabilitation tax credits. Given the architectural variety, multiple uses, and anticipated development over an extended period of time, the review of proposed alterations and new construction in the 8th and Penn Neighborhood Redevelopment Zone will be conducted on a case-by-case basis.

These guidelines are not meant to serve as a checklist for "good" design. Nor are they meant to be applied in such a stringent manner as to prevent creative design alternatives. However, it is the intent of these guidelines to provide guidance to the regulatory authorities to ensure that new construction and renovation is consistent with the character-defining elements identified in the guidelines.

REVIEW PRINCIPLES

The guidelines shall apply only to the exterior of buildings and to portions of existing and proposed buildings visible from the pedestrian level from public rights-of-way, including alleyways.

Existing buildings will be identified as "contributing" or "non-contributing" to the East Lawrence Industrial Historic District, as part of the National Register Listing. Contributing buildings should be more carefully reviewed than those buildings that have been identified as non-contributing to the National Register East Lawrence Industrial Historic District.

While economic costs are not a primary factor in the review process, cost will be considered in relation to the adherence of these guidelines.

It is not the intent of these guidelines to require existing buildings, structures, and sites to be in full compliance with these guidelines. Existing buildings that contain non-conforming elements are encouraged to make alterations that will improve the overall appearance of the building. As non-conforming buildings are altered, the proposed alterations shall be in compliance with these guidelines.

City staff will use these guidelines to review proposed projects in a consistent, fair, and equitable manner. If staff believes a proposed project does not meet the intent of the guidelines, the applicant may appeal first to the Historic Resources Commission, and, if necessary, to the City Commission. All new development, or redevelopment, within the UC-O District, shall require a site plan application and, when applicable, replat and/or rezone applications. Historic Resources Commission, Planning Commission, and City Commission review shall be required, when applicable, along with the standard site plan review. In addition to the typical documents required for submission during Site Plan Review, the submittor will also include any and all revisions to Appendix B of this document.

GENERAL GUIDELINES

NEIGHBORHOOD CONTEXT

The *East Lawrence Neighborhood Revitalization Plan* addresses a geographical area of diverse land uses and neighborhoods and includes the 8th and Penn Neighborhood Redevelopment Zone. The Plan's goal is the revitalization and rehabilitation of its historic resources, as well as strengthening East Lawrence's attractiveness and its diversity. These UC-O District guidelines enhance and further refine the general design guidelines and principles of the *East Lawrence Neighborhood Revitalization Plan.*

STORMWATER
The guiding principles for water quantity and quality goals include:

1. Preserve existing significant natural features
2. Maximize infiltration and minimize imperviousness
3. Select Best Management Practice that favor sheet flow and on-site infiltration of storm water versus piping or channeling
4. Apply "soft-engineered" solutions of plants, swales, and topographic depressions versus "hard-engineered" solutions of concrete channels, curb inlets and storm sewers
5. Utilize native plant species that are adapted to the microclimate of their proposed site placement
6. Incorporate Best Management Practice into the proposed architecture (e.g., water cisterns, pervious parking, roof water collection)

LINKAGES
Pedestrian linkages shall be accessible to people with disabilities. Pedestrian linkages should offer a variety of visual and textural stimuli, should provide locations for rest and some relief from sun, wind, rain and snow, and should be designed for safety in terms of slopes, materials, and visibility. Pedestrian linkages should incorporate some distinctive materials or landscaping in common to help create a visually coherent space and to help connect it to surrounding areas.



An effective pedestrian linkage that is accessible, safe, and interesting

PARKING
In general, surface parking lots should be located at the rear or sides of structures. Larger surface lots should be subdivided with landscaped islands that include trees. Pedestrian walkways adjacent to parking and driveways should be visually and spatially separated through the use of additional site elements, which could include bollards, lighting, landscaping, and special pavement treatments. In order to maintain the historic and industrial integrity of the area, some interior landscaping should be provided. However, surface parking areas shall not be required to

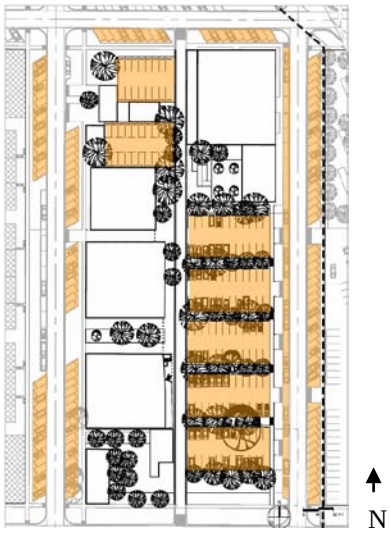
meet the landscaping provisions set forth in 20-14A04.6, 20-1205, and 20-1217 of the City of Lawrence Zoning Code, or subsequent applicable City standards.

Gravel parking and pervious paving should be designed to let water infiltrate and be temporarily stored below the surface to reduce or eliminate runoff and allow the surface to be used for parking or pedestrian traffic. This environmental method of surface water run-off control reduces the amount of contaminants exiting the site by allowing the water to permeate the ground surface. This reduction in site run-off, in turn, decreases the amount of contaminants leaving the site and entering into the city stormwater system or nearby river.

Unless otherwise noted, all parking lot sizes, drive lanes, accessible stall counts, and other design features shall be consistent with the City of Lawrence Code, Section 20-1205, or subsequent applicable City standards.



Example of Parking (recommended) – vegetated islands improve lot appearance.



Example of Parking Strategy – small lots at the rear or side of structures, and landscaped planters divide larger parking areas.



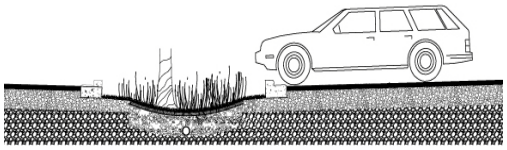
Example of street parking (recommended)



Example of compacted gravel system



Example of bio-swale



Site Section at parking with bio-swale

LIGHTING

The lighting should consist of artificial sources of illumination, particularly street lighting, pedestrian-level lighting, and lighting of signs and architectural features. The intent of the lighting plan will be to:

1. Enable people within a development zone or passing by to see well enough to find their destinations and to conduct their activities safely

2. Enliven and set the overall mood of a development zone

3. Increase the sense of security without negatively impacting surrounding residences

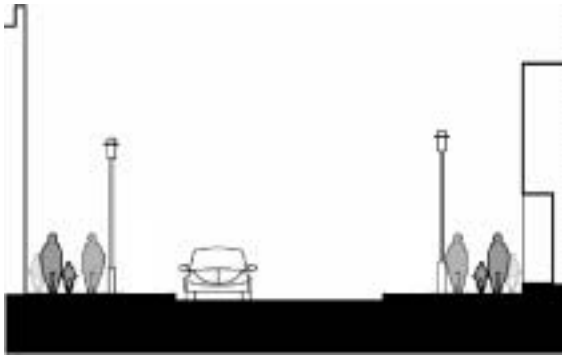
This will be addressed on three levels within the described zones:

1. Street and parking lighting (described in Zone 2)
2. Pedestrian lighting (described in Zone 3)
3. Building lighting (described in Zones 1 & 4)

Lighting should reflect the historic industrial/residential use, but provide sufficient illumination to promote health and safety and attract and accommodate pedestrian traffic. In order to limit lighting impacts on adjacent residential properties, low bollard lighting will be utilized in parking areas adjacent to these properties in lieu of standard pole lighting. Light fixtures shall be simple contemporary designs with no references to a particular historic era, and should be consistent throughout the redevelopment zone. All exterior fixtures will be fully shielded, include non-reflective, non-swivel heads mounted at a 45 degree angle, and be confined to net acreage.



Streetlights with zero up light



Site Section through street

SIDEWALK DINING AREAS

Creation of sidewalk dining areas shall be in accordance with the City of Lawrence "Guidelines for Sidewalk Dining Areas" as revised and approved in 2005. Placement of sidewalk dining areas shall be such that they do not restrict egress to and from building or public right-of-way.

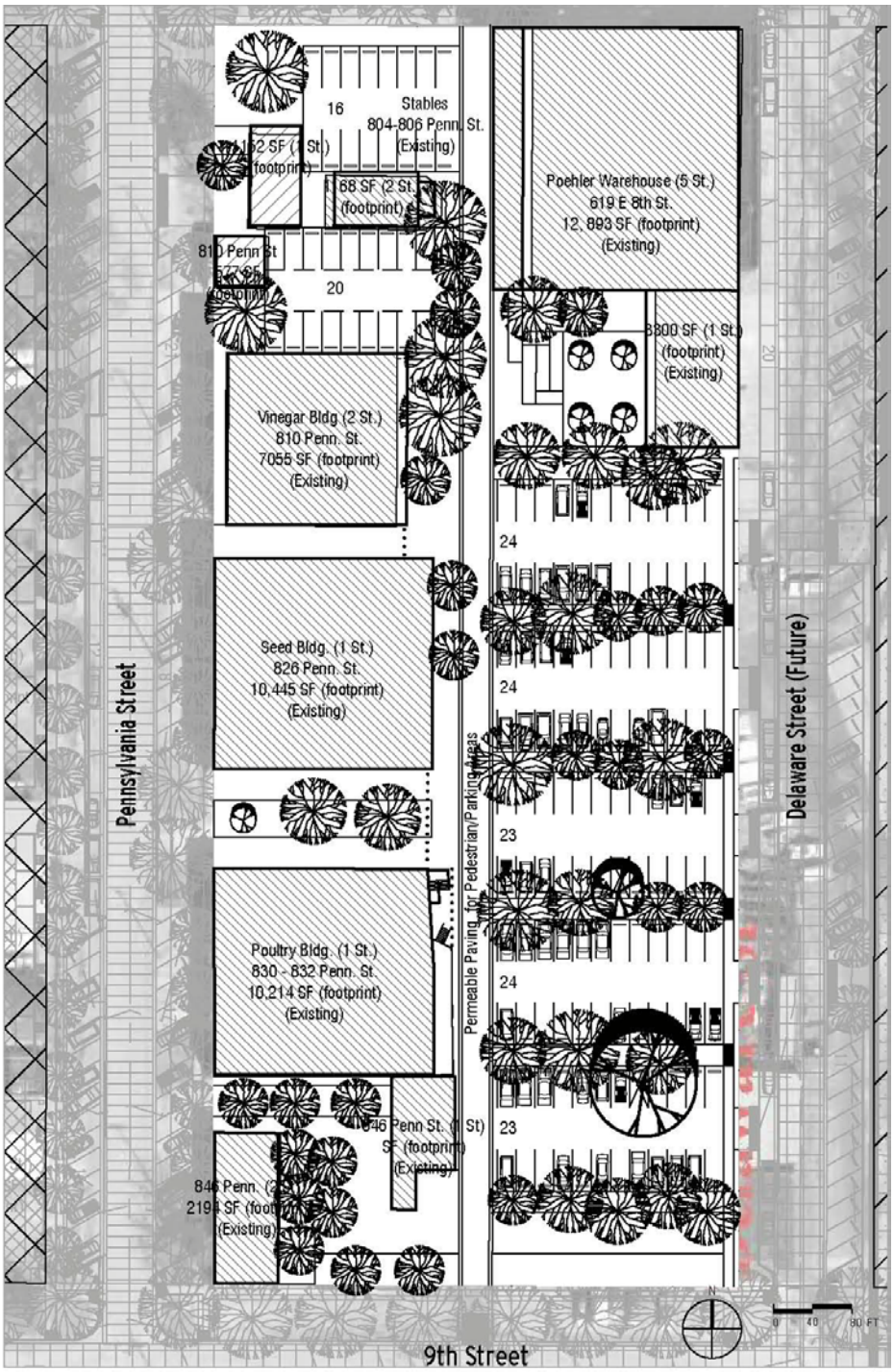
DEMOLITION

Demolition should be the result of a holistic planning and development process. Properties listed in the National Register of Historic Places, the Register of Historic Kansas Places, or the Lawrence Register of Historic Places are subject to additional review as required by KSA 75-2724 and/or Chapter 22, Code of the City of Lawrence. Moreover, demolition of properties within the environs of listed properties is also subject to review. Historic tax credit programs include the anticipated demolition as part of the compliance review process. Federal agencies must consider the impact of demolition on project undertakings as well.

Any demolition request not related to public safety shall be accompanied by additional documentation indicating the existing condition of the building and the proposed use for the site. Documentation shall include proposed elevations and an explanation of why it is not feasible to use the existing structure/building.

Demolition permits shall be reviewed by the Historic Resource Commission. If the permit is denied by the Historic Resource Commission, it may be appealed to the City Commission.

FIGURE 4: ZONE 1 HISTORIC DISTRICT — RECOMMENDED SITE IMPROVEMENTS



LAND USE PLAN

ZONE 1: HISTORIC DISTRICT

NEIGHBORHOOD CONTEXT

The boundaries of Zone 1 coincide with the boundaries of the National Register East Lawrence Industrial Historic District, correspond to the lot lines, and do not include the sidewalks, verges, and curbs that are included in Zone 2. The commercial/industrial buildings and spaces in Zone 1 determine both the functional and visual character of the 8th and Penn Neighborhood Redevelopment Area. Dating from the 1870s through the 1920s, they include examples of detached industrial buildings from almost every decade of the late nineteenth century through the onset of the Great Depression in the twentieth century. The goal in rehabilitating these buildings and structures is to preserve or recapture the original character of the buildings and their setting by adapting proposed changes to the building's character-defining features.

ARCHITECTURAL CHARACTERISTICS AND MATERIALS

ROOF SYSTEMS

A weather-tight roof is basic to the preservation of a building or structure. Because of the historic/commercial industrial character of Zone 1, the roof forms and materials associated with a building's historic use is very important. In Zone 1, the building function and form dictated the roof form and the desire for a fireproof building determined the choice of materials.

The roof forms found in Zone 1 include flat roofs, gable roofs, and shed roofs. Based on the existing building roofs and historic photographs, historic building materials and treatments included built-up composition roofs as well as sheet metal, galvanized iron, corrugated metal, and standing seam metal roofs. Historically, sheet metals (lead, copper, zinc, tin plate, and terne plate [iron dipped in an alloy of lead and tin]) and galvanized iron were common roofing materials in commercial/industrial areas and are appropriate substitute materials when the original is unknown or in new construction within Zone 1.

Although the coping on parapet walls is part of a masonry feature, it is often considered in the discussion of roofing materials. Terra-cotta and clay coping historically occurred in Zone 1. There is no evidence of the use of stone or metal coping.

If the roof is flat and is not visible from the public right-of-way, there are economic and physical advantages to substituting a built-up composition roof or other modern roofing system for what might have been a flat metal roof. If the roof is visible, substitute materials should match as closely as possible the scale, texture, and coloration of the historic roofing material, if known. If unknown, lead-coated copper, terne-coated steel, and aluminum/zinc-coated steel can successfully replace tin, terne plate, zinc, or lead roofing materials. Wood, tile, and slate roofing material are not appropriate. Terra-cotta and clay tile coping continue to be the appropriate materials for coping.





Roof Types in Zone 1

Recommended	**Not Recommended**
Examining and determining the composition of the existing roof and any evidence of the earlier roof. Consulting with an architect, engineer, or roofing professional to understand the scope and detailing of the roof project and ensuring proper supervision of roofers and/or maintenance personnel.	Hiring a roofing contractor without receiving a preliminary analysis of the existing conditions and scope-of-work by other professionals.
Retaining the shape, materials, and colors of the original roof that are visible from the public right-of-way. Maintaining architectural details such as cresting, parapets, and cornices.	When repairing or replacing a roof, avoid using new roof forms, materials, colors, or elements that are visible from the public right-of-way.
Replacing roof materials with similar materials that reflect the scale and texture of the traditional roof materials when they are visible from the public right-of-way.	
Designing and constructing a new roof feature using visual documentation when a historic feature is completely missing. Using a new design for a missing historic feature that is compatible with the size, scale, material, and color of the building.	Creating a false historical appearance or introducing a new roof feature that is incompatible in size, scale, material, or color.
Installing mechanical and service equipment such as air conditioning, transformers, or solar collectors on the roof so that they are inconspicuous from the public right-of-way and do not damage or obscure important building features.	Installing mechanical or service equipment so that it damages the building elements or obscures important building features.
Patching roof leaks with materials similar to those of the roof construction.	Patching roof leaks with caulks or sealants as a means of long-term repair.
Retaining the original roofline and parapet features	
Resurfacing of flat/built-up roofing materials	




Because of the simple industrial design, the parapet and cornice treatment at the roofline are often one of the most important architectural elements of industrial buildings.

See also: Technical Preservation Services, Heritage Preservation Services Division, National Park Service *Preservation Brief 4: Roofing for Historic Buildings*.

CONCRETE




Existing concrete – Zone 1

Different types of concrete are found in Zone 1. Unreinforced concrete is a composite material containing aggregates (sand, gravel, crushed shell, or rock) held together by a cement combined with water to form a pliant mass that hardens as the concrete dries out ("cures"). Reinforced concrete is concrete strengthened by the inclusion of metal bars. Both unreinforced and reinforced concrete can be cast-in-place or precast. Cast-in-place concrete is poured on site into a formwork that is removed after the concrete sets. Precast concrete is molded off site into building components.

In Zone 1, concrete appears in foundations, supporting columns, sidewalks and driveways, curbing, loading docks, elevated exterior walkways, stair systems, and window sills.





Existing concrete – Zone 1

The condition of the historic concrete elements found in Zone 1 reflects a wide range of conditions.

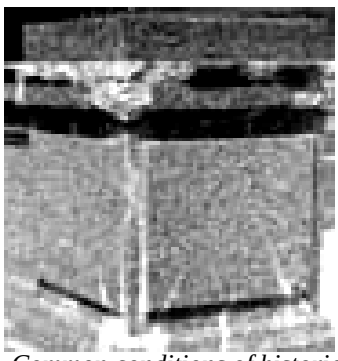
1. **Cracking** occurs over time in virtually all concrete. Cracks can be either active or inactive. Active cracks widen, deepen, or expand through the concrete. Dormant cracks remain unchanged. Some dormant cracks pose no danger to the stability of the concrete element; however, cracks of any type provide channels for moisture penetration, which usually causes further damage.

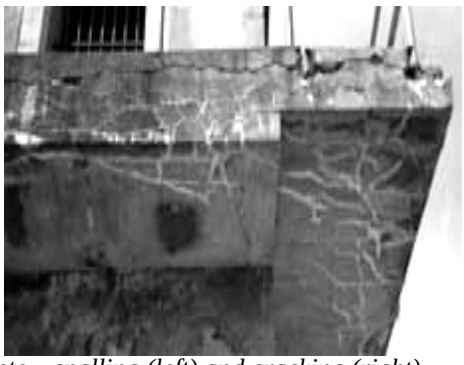
2. **Erosion** is the weathering of the concrete surface by weather and environmental pollutants.

3. **Corrosion,** caused by the rusting of the reinforcing bars in concrete, can be a serious problem. Rust, which occupies significantly more space than the original metal, causes expansive forces within the concrete, initiating cracking and spalling. Loss of concrete diminishes the load-carrying capacity of the concrete structure.

4. **Spalling**, which is the loss of surface material in patches of varying size, is caused by a number of conditions including moisture penetration.

5. **Deflection**, which is the bending or sagging of concrete beams, columns, joists, or slabs, can seriously affect both the strength and structural soundness of concrete.





Common conditions of historic concrete – spalling (left) and cracking (right)

Recommended	Not Recommended
Undertaking repairs only after the completion of planning and analysis by a structural engineer or architect.	Using temporary solutions that can expose a building to further and more serious deterioration.
Filling in cracks with new material that matches the historic material. Using patching materials that are compatible with the existing concrete as well as with subsequent surface treatments such as paint or stucco.	Patching hairline cracks. Patching concrete without removing the source of deterioration.
If replacement is necessary, removing loose, deteriorated concrete and cutting damaged concrete back to remove the source of deterioration. Removing rust from exposed rebar with a wire brush or sandblasting and coating with an epoxy. Installing a compatible patch that dovetails into the existing sound concrete so that it will bond satisfactorily with and match the original concrete.	

See also: Technical Preservation Services, Heritage Preservation Services Division, National Park Service *Preservation Brief 15: Preservation of Historic Concrete: Problems and General Approaches.*

BRICK AND STONE MASONRY

The masonry features found in Zone 1 include brick, stone, and combinations thereof. Other than the painted sign on the Poehler Building and portions of the façade on 804 Pennsylvania, all exterior masonry surfaces are unpainted.

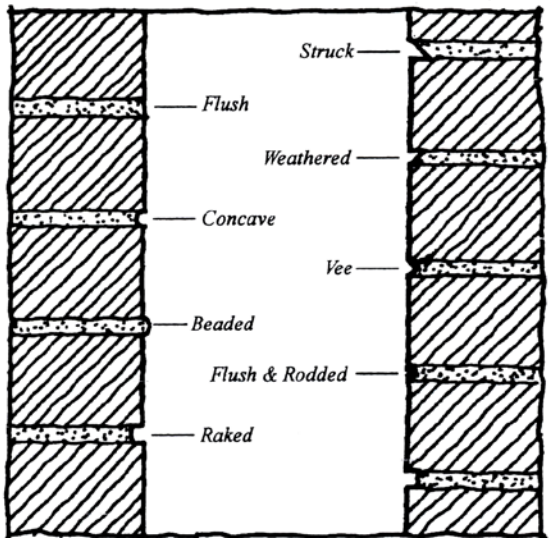


Existing brick and stone masonry – Zone 1

Recommended	Not Recommended
Retaining and preserving masonry features that are important in defining the overall character of a building such as walls, brackets, cornices, window surrounds, door surrounds, steps, columns, and details.	Removing or radically changing important masonry features. Applying paint or other coatings for purely cosmetic purposes to surfaces that were originally unpainted or uncoated.
Providing proper drainage so that water does not stand or accumulate on masonry surfaces.	Failing to treat causes of mortar joint deterioration such as leaking roofs or gutters, settling of the building, capillary action, or extreme weather exposure.
	Applying paint or other coatings to masonry that has been historically unpainted or uncoated.
Cleaning masonry only when necessary to halt deterioration or to remove graffiti or bad stains with the gentlest method possible, such as using low-pressure water (<400 psi), mild detergents, and natural bristle brushes. Conducting masonry surface cleaning tests when cleaning is necessary. Observing tests over a sufficient period of time so that both immediate and long-term effects are known, enabling selection of the gentlest method possible.	Cleaning masonry surfaces when they are not heavily soiled to create a new appearance and needlessly introducing chemicals or moisture into the original materials. Using abrasive or mechanical cleaning such as sandblasting that destroys the masonry. These methods allow water to penetrate the masonry and can result in severe damage to the brick or stone. Masonry damaged in this manner will deteriorate faster in the future. Cleaning masonry surfaces without conducting surface cleaning tests or allowing sufficient time to evaluate the immediate and long-term effects of the cleaning method.
Repairing cracks or missing bricks to prevent water infiltration and further damage. Removing only deteriorated portions of brick in such a way as to avoid destroying adjacent masonry.	Removing mortar from sound joints, then repointing the entire building to achieve a uniform appearance.
Applying new mortar with the same strength, color, and texture as the original mortar. Testing the original mortar to determine its original composition.	Using ready-mix mortars that have a high Portland cement content that, because it is stronger than old brick, will cause shifting and cracks.
Applying new mortar so that the joints match the original joints in width and profile.	Covering existing masonry with siding.

Recommended

Not Recommended



New mortar should be applied so that the new joints match the original in width and profile

Applying surface treatments such as "breathable" water-repellent coatings to masonry only after re-pointing and only if masonry repairs have failed to arrest water penetration problems.

Applying waterproof or water repellent treatments as a substitute for masonry pointing and repairs. Covering brick or stone with stucco or non-porous coatings. Coatings often act as sealants that block the transfer of water.

Repairing masonry by patching or piecing in.

Replacing an entire masonry feature when limited replacement is appropriate.

Replacing the original material with the same material or a compatible substitute material.

Using a substitute replacement material that does not match the original material.

Covering masonry walls with a non-synthetic cement stucco, synthetic stucco-like coating, or siding of any material.

Recommended

Not Recommended

Leaving historic painted signage on masonry walls.

Removing paint from buildings that were historically painted

Cleaning masonry walls using the gentlest means possible.

Sandblasting, applying caustic solutions, and/or high-pressure water blasting.

Pressure cleaning historic brick or stone with water or water and a non-ionic detergent at a range of 100 to 400 psi from a

distance of 3 to 12 inches after testing to find the least abrasive level.	
Hand cleaning glazed architectural terra-cotta and tile coping with a natural bristle brush using non-ionic detergent and water.	
Removing loose or deteriorated paint only to the next sound layer using the gentlest method possible prior to repainting.	
Repairing causes of leaks, water infiltration, capillary action, and/or condensation	
Using vapor permeable water-repellent coatings in selected areas only after a reasonable period of time has passed since a building has been made watertight and has dried out completely and only if moisture appears actually to be penetrating through the repointed and repaired masonry walls.	Using vapor permeable or "breathable" water-repellent coatings. Using waterproof coatings that seal the surface from liquid water and water vapor.
Cleaning masonry, when necessary to prevent biological growth, with low-pressure water (30 to 100 psi) and a natural- or synthetic-bristled scrub brush.	
Removing graffiti as soon as possible by using non-abrasive chemical cleaners after careful testing.	Using anti-graffiti or barrier coatings.

REPLACEMENT OF MISSING MASONRY FEATURES



False brick "quoining" introduces design elements not found in the historic industrial district

Recommended

Designing and installing a new masonry feature such as steps or a door surround using accurate documentation of the appearance of the original feature. When there is no documentation of the original element, new designs should be compatible with the building in size, scale, material, and color.

Not Recommended

Creating a false historical appearance by using historical treatments based on other buildings or conjecture. Introducing a new feature that is incompatible with the building in size, scale, material, and color.





Above: c. 1950 photograph of masonry openings and concrete docks, Barteldes Seed Company. Below: Current condition of the same entrance.

See also: Technical Preservation Services, Heritage Preservation Services Division, National Park Service *Preservation Brief 1: Assessing Cleaning and Water-Repellent Treatments for Historic Masonry Buildings; Preservation Brief 2: Repointing Mortar Joints in Historic Masonry Buildings; Preservation Brief 6: Dangers of Abrasive Cleaning to Historic Buildings; Preservation Brief 7: The Preservation of Historic Glazed Architectural Terra-Cotta; Preservation Brief 38: Removing Graffiti from Historic Masonry;* and *Preservation Brief 42: The Maintenance, Repair and Replacement of Historic Cast Stone.*

SIDING

No buildings in Zone 1 have siding

Recommended	Not Recommended
	Covering the building's original wall materials with siding.

WOOD MATERIALS

Wood is used for structural members and flooring in some of the older buildings in Zone 1. It is also used in window and door framing, sashes, and in some soffit areas. It was seldom used for roofing shingles.

There are no wood roofs or siding in Zone 1. Wood appears in window frames and sashes; in pedestrian, garage, and loading dock doors; and as structural supports and flooring. All replacement elements should be in-kind. No synthetic materials should be used in new construction to replicate traditional wood features.

Recommended	Not Recommended
When damaged beyond repair, replacing all wood elements in-kind.	Replacing wood elements with synthetic materials.
Removing vegetation that grows too close to wood surfaces.	
Keeping wood joinery adequately sealed, primed, and painted to avoid water penetration.	
Priming all exposed wood surfaces before painting.	
Providing proper drainage and ventilation to minimize rot.	
Maintaining a slope on horizontal wood surfaces, such as entrance floors or sills, to ensure that water does not collect.	
Recaulking joints where moisture might penetrate. Removing old caulk and dirt prior to recaulking.	

See also: Technical Preservation Services, Heritage Preservation Services Division, National Park Service's *Preservation Brief 9: The Repair of Historic Wooden Windows* and *Preservation Brief #10: Exterior Paint Problems on Historic Woodwork*.

ARCHITECTURAL METAL FEATURES

In addition to the use of sheet metal as a roofing material as discussed in the Roofing section of these guidelines, galvanized iron, iron, and steel are also found in Zone 1. Historic and non-historic uses include fire escapes, lintels and loading dock door frames and dock edging, all of which were historically iron. Window frames and muntins utilized steel and galvanized iron. Downspouts were generally corrugated metal. Replacement should be in-kind in both contributing and non-contributing buildings and structures. New construction should use traditional materials.



Existing metal features – Zone 1

Recommended	**Not Recommended**
Retaining and preserving architectural metal features that are important in defining the architectural character of a building.	Removing or radically changing important metal features. Removing a major part of the metal feature instead of repairing or replacing only the deteriorated metal. Removing metal features and then reconstructing the façade with new material in order to create an "improved" appearance.
Providing proper drainage so that water does not accumulate on surfaces.	Failing to treat the causes of corrosion, such as moisture from leaking roofs or gutters.
Cleaning architectural metals to remove corrosion prior to repainting or applying other appropriate protective coatings. Identifying the type of metal prior to cleaning. Cleaning metals using the gentlest method possible as determined by research and/or testing. Applying an appropriate protective coating when necessary.	Using cleaning methods that alter or damage the color, texture, and/or finish of the metal. Removing the patina that a metal acquired over a period of time (the patina may be a protective coating on some metals).
	Placing incompatible metals together without providing a reliable separation material to prevent galvanic corrosion. For example, copper corrodes cast iron, steel, tin, and aluminum. Exposing metals originally intended to be

protected from the environment. Applying paint or other coatings to metals such as copper, bronze, aluminum, or stainless steel that were originally exposed.

Repairing metal features by patching, splicing, or otherwise reinforcing the metal. When damaged beyond repair, replacing the damaged portions with materials that match the original in size, scale, material, and color.

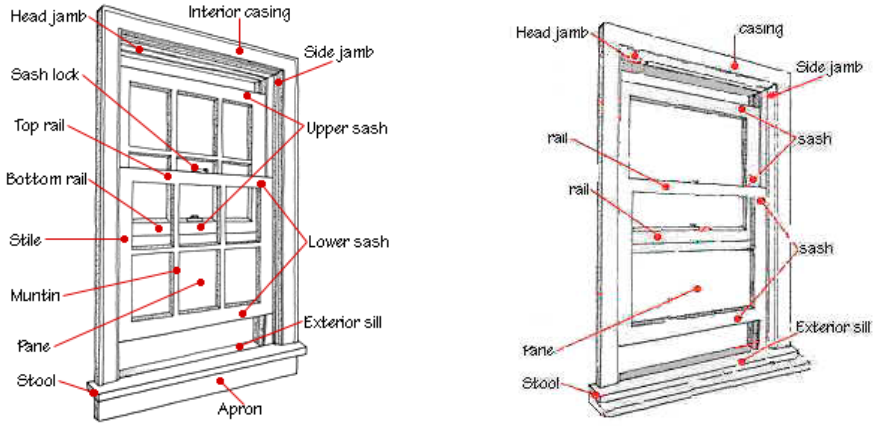
Replacing an entire feature when repair or replacement of only the damaged element is possible. Removing a metal feature that has irreparable damage and not replacing it. Replacing a metal feature with a new metal feature that does not have the same visual appearance as the original or introducing a new metal feature that is incompatible in size, scale, material, and color.

Reproducing in-kind a missing feature or when there is no documentation of the original feature, replacing the missing feature with a new design that is compatible with the size, scale, material, and color of the building.

See also: Technical Preservation Services, Heritage Preservation Services Division, National Park Service's *Preservation Brief 13: The Repair and Thermal Upgrading of Historic Steel Windows* and *Preservation Brief 27: The Maintenance and Repair of Architectural Cast Iron.*

WINDOWS

Serving as both an interior and exterior feature, windows are always a key element in the building's character. They reflect changes in technology and period of time. The historic functional and decorative features include frames, sashes, muntins, glazing, sills, heads, hood molds, moldings, and shutters. The dimensions and proportions of window parts greatly influence the overall appearance of the window. Lead abatement or thermal performance may be accomplished without the loss of historic windows and is not justification for replacement.



Typical window components found in late nineteenth and early twentieth century double-hung sash units

Both wood and metal windows occur in the buildings and structures in Zone 1 and have double-hung sash, casement, fixed pane, and awning units. When the design and materials of the original windows cannot be ascertained, wood, wood-clad metal and metal windows are compatible window materials for replacement windows

and windows used in new construction. Synthetic materials, including vinyl windows, are not acceptable as replacement windows or as windows in new infill construction because of their inability to meet the traditional sash proportions due to their construction materials.

Recommended	**Not Recommended**
	Using vinyl window units.
Conducting an in-depth survey of the conditions of existing windows early in the rehabilitation planning process so that repair and upgrading methods and possible replacement options can be fully explored.	Replacing windows that can be repaired. Replacing windows solely because of peeling paint, broken glass, stuck sashes, and high air infiltration. Removing or radically changing windows that are important in defining the character of a building.
Retaining and repairing the original windows and their character-defining elements whenever possible. Repair may include incremental replacement of individual elements such as sills or sashes by patching, splicing, consolidating, or reinforcing with in-kind or compatible substitute materials.	Changing the number, location, size, and glazing pattern of windows by blocking-in windows or installing replacement sashes that do not fit the original window opening.
Using low profile boxed skylights installed between rafters when not visible from the public-right-of-way.	Using bubble or Plexiglas skylights that protrude from the roof plane.
Retaining and repairing the original windows and their character-defining elements whenever possible. Repair may include incremental replacement of individual elements such as sills or sashes by patching, splicing, consolidating, or reinforcing with in-kind or compatible substitute materials.	

Recommended



Repair and retain character of original window when possible

Accomplishing thermal upgrade by using exterior or interior storm windows that have minimal visual intrusiveness.

When damage can be avoided, modifying existing historic windows to allow reglazing with insulated glass.

Making windows weather tight by caulking and replacing or installing weather stripping.

When original window openings are altered, restoring them to their original configuration and detail.

When damaged beyond repair, replacing the original windows with windows that match the originals in profile, size, color, configuration, materials, and glazing.

Not Recommended



Typical historic industrial window treatments found in Zone 1

Using storm windows that are smaller than the window opening. Using storm windows that allow moisture to accumulate and damage the window frame.

Changing the appearance of a window through the use of inappropriate designs, materials, finishes, or colors that notably change the sashes, depth of reveal, muntin configuration and reflectively, and color of the glazing (such as the use of mirrored or tinted glass) or the appearance of the frame. Using shutters.

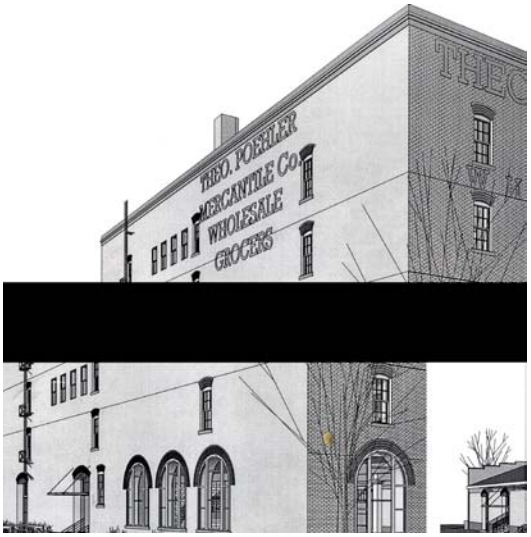
Stripping windows of historic material such as wood, cast iron, and bronze.

Using a replacement window that does not match the original

Recommended	Not Recommended
	 *Incompatible new window lower right resulting in loss of the building's historic character.*
	Obscuring original window elements with signs, metal, or other materials. Using through-window air conditioning units on primarily façades.
Using replacement glazing that is consistent in color and reflectivity with the glazing originally used at the building.	Using tinted glass that does not appear as transparent from public-right-of-way.
	Rising metal screens or bars covering window openings
Using true divided lights.	
Using replacement windows that capture the visual effect of how the original window operated.	
Basing the replacement of non-historic or missing windows on photographic documentation, extant units in the building, or ensuring that they are consistent with the historic character of the building.	Creating a false historical appearance because the replacement window is based on insufficient historical, pictorial, and/or physical documentation. Introducing a new design that is incompatible with the historic character of the building.
Providing a setback in the design of dropped ceilings when they are required for a new use to allow for the full height of the window openings.	Inserting new floors or furred-down ceilings that cut across the glazed areas of windows so that the exterior form and appearance of the windows are changed.
Limiting the installation of additional windows to secondary, non-character-defining elevations to occur only when required by the new use to allow natural light and air or when other important adaptations are necessary for the building's new use.	Installing new windows, including frames, sashes, and muntin configurations that are incompatible with the buildings historic appearance or that obscure, damage, or destroy character-defining features.
When required by a new use, creating new window openings and using new window units that are simple and visually subservient to the original openings and units, and that are visually distinguishable from the original window openings and units.	Creating new window openings and using new window units that duplicate the fenestration pattern and detailing of a character-defining elevation.

Recommended

When adding new window openings and unit, using a simpler, slightly different glazing configuration.



Preserves historic signage and does not alter the more formal front bays, reserving alterations to the utilitarian portion of the façade above loading docks. Note smaller and simpler window design compared to the originals.

Not Recommended

Creating new window openings and using new window units that replicate the historic windows.

Installing vinyl window systems

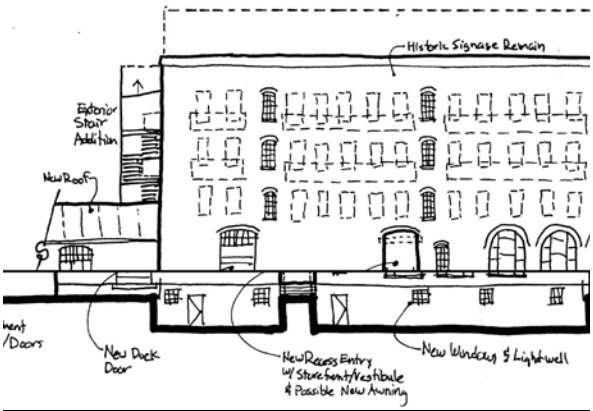


Diagram above has too many new openings and calls for balconies spanning the width of the new openings.

See also: Technical Preservation Services, Heritage Preservation Services Division, National Park Service *Preservation Brief 3: Conserving Energy in Historic Buildings; Preservation Brief 9: The Repair of Historic Wooden Windows; Preservation Brief 10: Exterior Paint Problems on Historic Woodwork; Preservation Brief 13: The Repair and Thermal Upgrading of Historic Steel Windows;* and the following National Park Service Interpreting the Secretary of the Interior's Standards for Rehabilitation (ITS) Bulletins: *ITS Number 14: Adding New Openings: New Openings in Secondary Elevations or Introducing New Windows in Blank Walls* and *ITS Number 21: Adding New Openings: Adding New Openings on Secondary Elevations.*

ENTRANCE DOORS

With a few exceptions, entrance doors in Zone 1 were functional non-retail commercial designs. Adaptive reuse of buildings for residential or retail use will require choosing replacement doors that are complimentary to the industrial character of the buildings.

Entrance doors were historically wood or metal. Appropriate substitute materials should be wood or metal when the original material is unknown or for new construction, with the use of vinyl or synthetic materials not appropriate in Zone 1.

Recommended

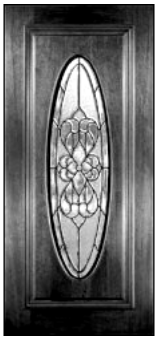


Retaining and repairing original doors. Maintaining original door hardware in good working order.

Preserving and retaining the original proportions of the door and the door opening.

Replicating the original door if it is damaged beyond repair and there is physical, pictorial, or photographic documentation as to its original appearance. If there is no documentation of the door's original appearance, replace it with a new unit that is compatible with the style and character of the historic building.

Not Recommended



Using residential doors in functional industrial entrances.

Using generic historical stylistic reproductions that create the appearance of another period of time.

See also: National Park Service Interpreting the Secretary of the Interior's Standards for Rehabilitation (ITS) Bulletin: *ITS Number 4: Exterior Doors: Inappropriate Replacement Doors.*

GARAGE AND LOADING DOCK DOORS

In industrial buildings that utilized loading docks and garages, the openings were commonly fitted with wood or metal segmental doors that rode on overhead tracks or roll-up mental doors. Sometimes these buildings used double-hinged, sliding, and other types of doors.



Examples of garage/loading dock doors – Zone 1



Example of garage/loading dock doors – Zone 1

Recommended

Replicating an original door if it is damaged beyond repair or is missing and there is physical, pictorial, or photographic documentation as to its original appearance; or, if required for the new use, installing a new glazing system that resembles the segmented panels of the historic doors. \

Retaining and repairing the building's original door(s) and /or door opening(s).



Original door opening is retained. The new infill incorporates an entrance and half "closed" garage door as well as transparent glazing is an appropriate treatment where there is no documentation of the original door.

Retaining corner guards and bumper guards. Modifications such as replacing some of the upper wood panels with glass in order to provide natural light.

If there is no documentation of the door's original appearance, replacing the door with a new unit that is compatible with the style and character of the historic building.

Not Recommended

Installing a replacement door that reflects historic residential garage door designs.

Altering the size of the original openings with infill. Removing character-defining elements. Altering a historic pattern of adjacent pedestrian-vehicular entrances with a new storefront design.



The infill storefront in the building above creates the false impression of an original retail store rather than the historical industrial use of the building

Recommended	**Not Recommended**
Installing new glazing patterns that replicate the typical historic arrangement of intersecting stiles and rails found on the industrial garage and loading dock doors. This approach also clearly differentiates fenestration patterns for windows and doors.	

See also: National Park Service Interpreting the Secretary of the Interior's Standards for Rehabilitation (ITS) Bulletins: *ITS Number 2: Garage Door Openings: New Infill for Historic Garage Openings* and *ITS Number 16: Loading Door Openings: New Infill for Historic Loading Door Openings.*

ALTERATIONS TO REAR AND SECONDARY ELEVATIONS

In industrial and warehouse areas, secondary elevations often played an important role in the functional design of the building or structure. Features such as loading docks, vehicular entrances, and pedestrian/worker entrances related to the function of the building and are important character-defining elements. Secondary façades are somewhat less formal than primary façades. Often, materials and designs are plainer, window placement may be irregular, ornament is seldom used, and the façade's division into base, middle, and top may be less clear. New uses that introduce the public to these elevations should preserve the utilitarian nature of these elevations and their adjoining exterior spaces.

The most significant loss of historic features is the filling of original openings with brick or concrete block and the alteration/addition of loading dock entrances. There is a significant loss of the original loading docks, which were originally made of stone piers and post-and-beam construction. Concrete loading docks commonly appeared in the first decades of the twentieth century. Depending on the date of construction, either is appropriate for replacement or new construction.



Industrial character of rear and secondary elevations

Recommended

Determining if secondary elevations retain defining architectural and functional characteristics that visually communicate the building's historic building type.

Making minimal changes to the secondary elevation features that define the building's original architectural and/or functional property type.



Original façade

Maintaining consistent patterns and using consistent materials between the ground floor and the upper floors, and incorporating a simple definition at the roofline.

Restoring existing openings that have been previously filled in or blocked.

Maintaining a clear separation between the loading areas and the pedestrian access areas for the sake of appearance and safety.

Utilizing masonry materials with a simple texture, minimal ornamentation, and informal door and window placement.

Designing and locating security gates, grills, and alarm boxes out of sight or in such a way that during non-business hours the building and surrounding area maintain their appearance as a safe and attractive pedestrian environment.

Locating and screening air conditioner equipment so that signage, sound, and exhaust air are not intrusive to newly defined public spaces.

Minimizing the intrusion of trash receptacles, utility lines, meter boxes, downspouts, and other functional hardware.

Not Recommended

Making changes to the visual characteristics of a secondary elevation that communicate a new use that is different from the original use.



Changes to visual character

See also National Park Service Interpreting the Secretary of the Interior's Standards for Rehabilitation (ITS) Bulletin: ITS Number 33: Alterations to Rear Elevations.

NEW ADDITIONS

It may be necessary to add extra space to a historic building that is being rehabilitated to satisfy new use requirements. The best adaptive use design is always one that requires the least amount of change to the historic building. However, new spaces to house certain practical functions that were not part of the historic use, such as mechanical equipment, an elevator shaft, or a stair tower, or even new spaces to provide more rentable or occupiable space to make the project economically viable may be acceptable reasons for new additions. The Secretary of the Interior's Standards for Rehabilitation permit new additions to historic buildings if the additions meet certain criteria. Common to these criteria are the general concepts of similarity and subordination. Because of the size and placement of the buildings in Zone 1, their spatial relationship is important to communicating their historic associations. New additions to primary and secondary elevations should be avoided whenever possible. If necessary they should be clearly ancillary and subservient to the size, scale, massing of the preexisting building. Historic photographs as well as Sanborn Fire Insurance Company maps available in local research collections document the location, size, and, sometimes, materials of pre-existing structures and serve as an excellent guide in determining the location of new construction.

Recommended	**Not Recommended**
Designing and constructing new additions that preserve the historic character of the building by visibly retaining significant historic materials and features.	Designing and constructing new additions that result in the diminution or loss of the historic character of the resource, including its design, materials, workmanship, location, or setting.
Determining if the building can meet new use requirements by altering non-character-defining interior spaces rather than by constructing a new addition to the building.	Whenever possible, avoid designs and plans that cannot accommodate new uses without exterior additions.
Utilizing a design that is visually distinguishable from the historic building, but that is clearly subservient to the historic building.	Designing and constructing additions that create a false sense of history by closely replicating the exact form, material, style, and detailing of the historic building in such a way that the new addition appears to be part of the historic building.
Locating an attached exterior addition at the rear or on an inconspicuous side of a historic building.	Designing and constructing additions that are highly visible from the public right-of-way.
Limiting the size and scale of an addition in relationship to the historic building.	Designing and constructing a new addition so that its size and scale in relation to the historic building are out of proportion, thus diminishing the historic character of the historic building.

Recommended



This small glass connector between two historic buildings is appropriately set back. A similar approach may also be made between a historic building and an addition

Constructing a new addition so that there is the least possible loss of historic materials and so that character-defining features are not obscured, damaged, or destroyed. Utilizing elevator or stair towers that have a high degree of transparency and that expose the building's original materials and features.

Using small, recessed, transparent connector "hyphens" that expose original materials and features and distinguish the historic building from the new addition.

Restore existing openings that have previously been filled in or blocked

Placing new additions such as balconies, greenhouses, and other special use additions on secondary elevations, and limiting their size and scale in relationship to the historic building.

Not Recommended



Stair tower could have been incorporated in the building by enclosing existing stair well. Location of the new stairwell on a highly visible façade is inappropriate as is use of materials and scale and massing

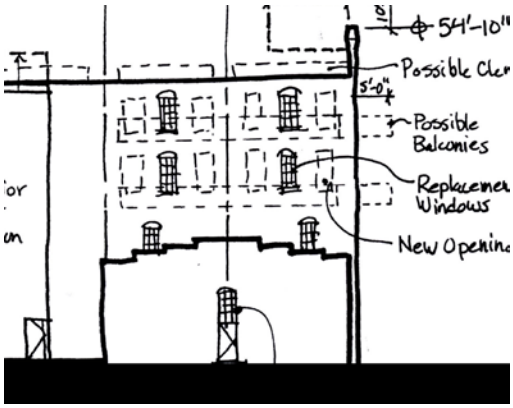
Attaching a new addition so that the character-defining features of the historic building are obscured, damaged, or destroyed.

Designing and constructing new additions such as balconies or penthouse additions that obscure, damage, or destroy character-defining features of the historic building.

Recommended

Designing an additional penthouse story, rooftop garden, or greenhouse, when required, that is clearly subservient to the historic building, set back at least one full bay from the building's tall wall planes, and is as inconspicuous as possible when viewed from the street from within a several-block radius.

Not Recommended



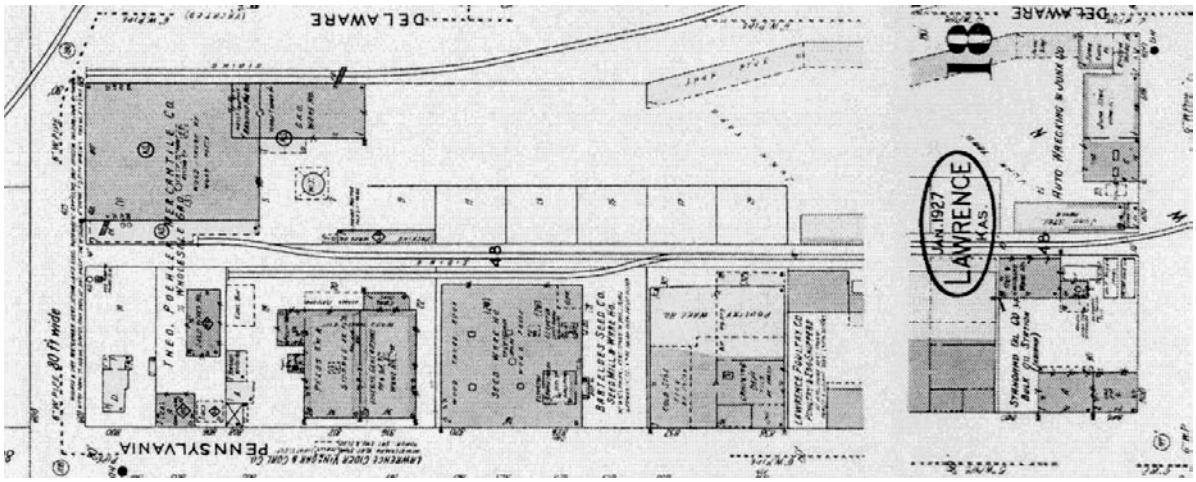
Sketch shows balconies that span the width of the elevation. A recommended alternative would be to limit the number of balconies and to have these span only one or two openings. The balcony should be painted to match the masonry wall.

Designing and constructing roof-top additions that dramatically change the historic appearance of the building. Constructing additional stories to the building so that the historic appearance of the building is radically changed.

See also Technical Preservation Services, Heritage Preservation Services Division, National Park Service Preservation Brief 14 New Exterior Additions to Historic Buildings: Preservation Concerns; National Park Service Interpreting the Secretary of the Interior's Standards for Rehabilitation (ITS) Bulletins: ITS Number 3: New Additions to Mid-size Historic Buildings 1; National Park Service Interpreting the Secretary of the Interior's Standards for Rehabilitation (ITS) Bulletins: ITS Number 10: Stair Tower Additions Exterior Stair/Elevator Tower Additions; National Park Service Interpreting the Secretary of the Interior's Standards for Rehabilitation (ITS) Bulletins: ITS Number 18: New Additions to Mid-size Historic buildings 2; National Park Service Interpreting the Secretary of the Interior's Standards for Rehabilitation (ITS) Bulletins: ITS Number 33; Alterations to Rear Elevations.

NEW INFILL CONSTRUCTION

The arrangement of elements and spaces that define a historic district contribute to a unique sense of place. These elements combine several factors such as building materials, color, size, shape, placement of buildings and spatial relationships. To preserve these qualities, new construction should be compatible with the existing character-defining architectural and landscape elements of Zone 1. At the same time, new construction can and should be differentiated from older buildings by virtue of its own contemporary stylistic elements. New construction includes new buildings erected in previously undeveloped spaces and "infill" replacement buildings.



Old and new construction

Recommended

Limiting new construction in historically open spaces to the southeast quadrant of the zone or placing it in accordance with historic building patterns documented in Sanborn Fire Insurance Company maps.

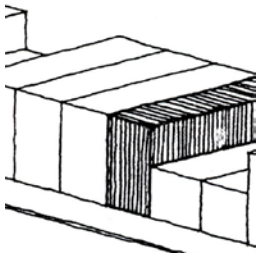
Retaining the footprint, size, scale, and height and massing of the original building when constructing replacement buildings

Not Recommended

Recommended

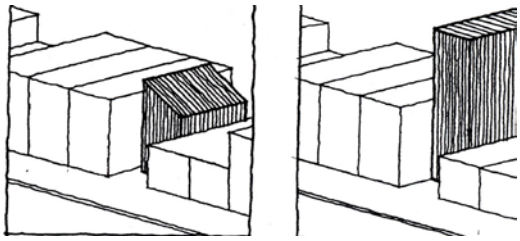
Not Recommended

Locating front walls on the same plane as the façades of adjacent buildings and matching the rhythm of spacing between buildings and the rhythm of entrances and other projections or recesses to sidewalks.



Appropriate integration

Utilizing new designs with inappropriate alignment, setback, spacing, massing, proportion, and scale.



Inappropriate alignment and setback

Erecting buildings of one or two stories. The height and scale of new buildings should match the height of adjacent historic buildings on the streetscape.

Matching the type, size, proportion, and pattern of openings on the primary façade and loading dock façades to that of the adjacent buildings. Storefront façades in new construction should reference the industrial loading dock entrances and doors in size and glazing.



Appropriate infill façade

Using materials, texture, and color that relate to and harmonize with those on nearby historic buildings and structures.

Introducing materials and colors that do not relate to the traditional materials found in the National Register East Lawrence Industrial Historic District.

Continuing of the use of similar roof shapes, types, and materials.

Using roof shapes, pitches, and materials not found in the National Register East Lawrence Industrial District.

SITE AND SETTING — EXTERIOR FEATURES AND OPEN SPACE

The Setting of Zone 1 is a heterogonous mix of buildings, structures, and spaces that evolved over an extended period of time. The relationship of these components and the random vegetation patterns and features contribute to a unique sense of place. The primary buildings and structures are oriented to the major streets, with the functional orientation of their loading docks to an alley that bisects the zone. As important as the buildings and structures is the large open space in the southeast quarter of the block that is covered with a mixture of dirt, gravel, and vegetation. This area has traditionally been open space with the exception of the presence of assorted shed structures along 9th Street and the alley when the space served as a junkyard.

Common materials found in the setting are concrete, asphalt, dirt, brick, and stone. Common landscape features include wire, chain link, and board fencing; railroad rails, curbing, grasses, and a Cottonwood tree. All communicate the continuing industrial character of the zone.





Existing exterior features and open space

Setting

Recommended	**Not Recommended**
Identifying, retaining, and preserving building and landscape features that are important in defining the historic character of the site and setting.	Creating a false sense of history by introducing landscape features that are based on conjecture or that impact an understanding of the industrial nature of the site or setting.
Retaining the historic relationship between buildings and landscape features such as alleys, open space, work areas, pathways, driveways, and so forth.	Removing or radically changing the features of the site and setting that are important in defining the historic character of the site or the National Register East Lawrence Industrial Historic District.
Creating subtle visual distinctions through the use of different hard surface materials between the historic spaces/materials and new space uses such as parking areas.	Destroying the relationship between the buildings and structures and the landscape features by widening existing streets or constructing inappropriately located new streets or parking facilities.
Designing new parking areas that are as unobtrusive as possible to minimize the effect of the historic spatial arrangement and character of the setting. Constructing shared	Using vacant lots that once held buildings or structures for unauthorized or spontaneous automobile parking.

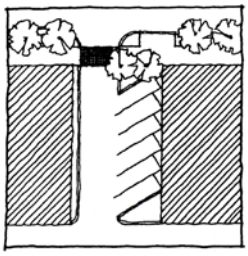
Recommended	Not Recommended
parking in traditionally open spaces.	
Removing non-significant buildings, structures, additions, or landscape features that detract from the historic setting.	Removing or relocating significant historic primary and secondary buildings and structures or character-defining landscape features, destroying their historic relationship.
Retaining historic secondary ancillary buildings and structures such as garages and outbuildings. Retaining and preserving all character-defining features of outbuildings, including foundations, steps, roof forms, windows, doors, architectural trim, and materials. If replacement of an element is necessary, replace only the deteriorated item with one that matches the original in size, scale, proportion, material, texture, and detail.	Constructing prefabricated buildings or storage structures.
Using new construction that is compatible with the historic character of the setting in terms of size, scale, design, material, color, and texture.	Introducing new building or landscape features that are out of scale or are otherwise inappropriate to the historic character of the setting.
Revealing landscape features such as alleys and pathways that have been covered by paving or other materials over time.	
Using screening devices for trash receptacles and storage units that visually blend into the rear façades.	
Painting, or screening, mechanical units and service equipment to blend with the overall exterior color of the building, in accordance with City standards. Placing such equipment near secondary elevations out of view from the public right-of-way.	
Screening dumpster units on all four sides with material that blends in with the main commercial building wall adjacent to the location of the dumpster. The height of the screening device should match that of the dumpster and the access door. Clustering dumpsters adjacent to alleys.	
Utilizing satellite dishes one diameter in size or smaller and placing them in locations not visible from the public right-of-way.	Installing antennae and/or satellite dishes in places visible from the public right-of-way.
Installing removable cellular tower poles, which may be attached to the roofs of buildings, but must be set back one bay from the perimeter wall?	Installing cellular towers.
Additional landscape screening may be required by City staff to lessen impact of parking, lighting, or noise on neighboring residential properties.	

Landscape

Historically, Zone 1 did not have planned landscaping. Thus, the introduction of landscaping should be minimal and part of an overall design to denote the boundaries of the zone and to direct pedestrian traffic. Natural plants of the region, in particular of the East Lawrence area, should be utilized.

Recommended

Landscaping the perimeters of parking areas with trees and low plantings to provide pedestrian linkages, to reinforce the traditional grid system of the original street and alleys, and to screen the view of vehicles and surface paving.



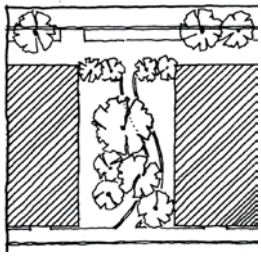
Planting trees and shrubs at the peripheral edges of a vacant lot to reinforce the traditional edge between the absent building wall and the sidewalk. The edges should coincide with the setback and configuration of adjacent buildings.

Maintaining traditional alleyways, lot delineations, and open spaces.

Introducing discreet, coordinated interpretive signage throughout the zone to educate visitors about the history of the buildings in Zone 1 and that of the surrounding areas.

Not Recommended

Introducing formal or exotic landscape designs that are inappropriate to the industrial setting.



Installing plantings near the buildings, destroying the open, partially hard-surfaced industrial site.

Using chain link or wood fences and/or other devices that discourage an understanding of the historic setting and its functional features.

PARKING

Vehicular parking historically occurred at the sides of buildings and on the street. Traditional open spaces provide opportunities for surface parking lots by maintaining the historic spatial relationships between buildings. Gravel or asphalt paving generally covered parking areas. In one or two instances, drives and parking areas with high traffic had concrete drive-through and/or parking spaces. These traditional materials continue to be appropriate as do other hard surface and gravel treatments. Drainage is a problem in this area and a combination of pervious and non-pervious treatments that designate historic space uses as well as assist in the control of water runoff is desirable.

Recommended	**Not Recommended**
Locating surface parking lots in traditional open spaces.	
Subdividing larger surface lots with landscaped islands that include trees.	
Visually and spatially separating pedestrian walkways adjacent to parking and driveways through the use of additional site elements, including bollards, lighting, landscaping, and special pavement treatments.	

LIGHTING

The purpose of exterior lighting is to highlight the building entrance and its signage, as well as parking and public use areas, when natural light is insufficient or not present in a historic district. The level of lighting must reflect the building's historic use and must provide sufficient illumination to promote health and safety and to attract the pedestrian traffic required by the building's new use. Lighting types recommended in other zones apply to Zone 1 and should be consistent throughout the redevelopment area.

Unless noted otherwise, lighting in Zone 1 will be consistent with City of Lawrence Code Section 20-14A01 through Section 20-14A03, or subsequent applicable City standards. Parking lighting shall have a maximum initial illumination value no greater than 0.20 horizontal footcandles at the zone boundary. No more than 5 percent of fixture lumens are emitted at an angle of 90 degrees or higher from nadir (straight down) with the exception of minor building lighting. These lighting requirements are adapted from IESNA RP-33-99.

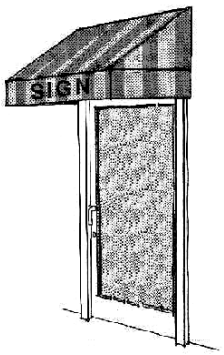
Recommended	**Not Recommended**
Using light fixtures that are as inconspicuous as possible and that are compatible with the industrial character of Zone 1.	Using conduits that are visible from the public right-of-way.
Using dark sky fixtures.	Using fluorescent light fixtures and high intensity discharge lighting.
Using incandescent lights to illuminate small projecting and flat signboards.	

Recommended	Not Recommended
	Using internally lit signs.
Designing the light source for signs as a part of the sign or hiding it from view.	Using neon lighting that accentuates any shape or form of any of the building's elements.

AWNINGS

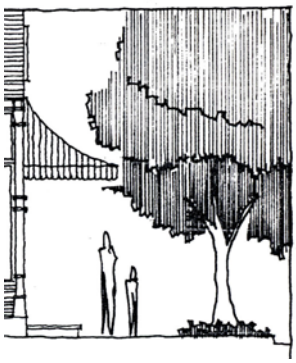
While the commercial/industrial buildings in Zone 1 did not have a retail function or storefronts, most were businesses that had a customer service area and offices on the first story near the entrance. The need to protect these areas from the heat and glare of sunlight (particularly on the west elevations along Pennsylvania Street) may have included canvas awnings above individual window openings on the first story. New uses may require similar protection from the elements in the entrance areas.

Recommended	Not Recommended
Using fixed awnings of metal or synthetic materials that are compatible with the industrial character of the zone.	Using awnings not compatible with the character of the zone.





Recommended



Using installations that do not damage the building or visually block or impair its distinctive architectural features.

Selecting colors, pattern, form, and materials that relate to and complement the surrounding buildings.

Not Recommended



Because of industrial character of buildings, typical storefront treatments that span the width of the façade are not appropriate. Each opening should have its own awning.

Using of materials, colors, and designs that detract from the character of the building.

See also Technical Preservation Services, Heritage Preservation Services Division, National Park Service *Preservation Brief 44 The Use of Awnings on Historic Buildings: Repairs, Replacement and New Design;* National Park Service Interpreting the Secretary of the Interior's Standards for Rehabilitation (ITS) Bulletins: ITS *Number 27: Awnings: Adding Awnings to Historic Storefronts and Entrances.*

ACCESS

Originally, historic buildings were not designed to accommodate the needs of people with disabilities. Federal law requires that historic buildings occupied by employees or residents and visited for business or private purposes meet accessibility requirements for individuals with disabilities under the Americans with Disabilities Act (ADA) of 1990.

Recommended

Providing building access through a primary pubic entrance. If access through a primary entrance cannot occur without causing permanent damage to the character-defining features of the historic entrance, at least one entrance used by the public should be made accessible. Appropriate directional signage should be installed to direct disabled individuals from the primary historic entrance to the accessible entrance.

Installing mechanical wheelchair lifts or submergible lifts in unobtrusive locations with cover from the elements.

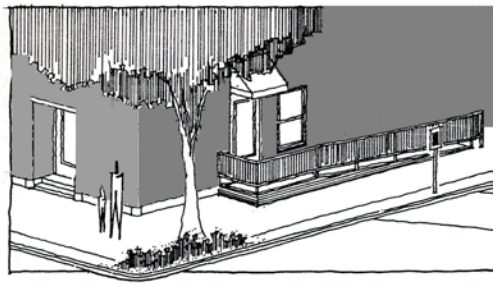
Not Recommended

Using rear or service entrances as the only means of entering the building for individuals with disabilities.

Recommended

Installing ramps along side elevations that are designed and located to minimize the loss of any historic features at the connection point to the building. Installing ramps behind historic features such as walls, railings, or landscaping to minimize the visual effect from the public right-of-way.

Not Recommended



Ramps should be installed on side elevations or behind historic features to minimize visual effect.

See also Technical Preservation Services, Heritage Preservation Services Division, National Park Service Preservation Brief 32 Making Historic Properties Accessible

SIGNAGE

The primary purpose of signage is to identify the business name and location. Sign location is an important element in the adaptation of new uses for industrial/warehouse facilities. Generally, each building should have a primary sign noting the name and location, and secondary signage with information about hours of operation and building use. Because of the need to retain the industrial character of the setting of Zone 1 and the fact that the commercial buildings do not have a sign frieze typical of retail storefronts, the following guidelines limit the types of signage options.



Appropriate signage

Recommended

Using signs that respect the size, scale, and design of the historic building and are pedestrian scaled; signs that do not obscure significant features of the historic building and neighboring buildings; and sign materials compatible with and characteristic of the building's period and style, including the following primary sign forms: (1) a single plaque on a flat surface on the first story wall plane near the entrance; (2) a projecting pendant sign mounted on a flat wall plane above the primary entrance; or (3) signage printed on awnings

Using simple legible primary signs containing only the name of the business and no secondary or incidental information.



Selecting colors, materials, and a lettering style that relates to and complements the historic building and the surrounding buildings. In general, each sign should contain a maximum of three colors, two materials, and one lettering style.

Using signs attached to building that do not damage the historic fabric and that ensure the safety of pedestrians. Installing fittings that penetrate mortar joints rather than brick with properly calculated and distributed sign loads.

Not Recommended

Using large, flashy signs designed to attract automobiles from a distance.



Using small, poorly proportioned signs with an inferior quality of design, materials, and execution.

Mounting signs on a roof.

Using signs on windows and/or doors that overpower the other building signs.

Using several signs and messages that compete with one another.

Recommended

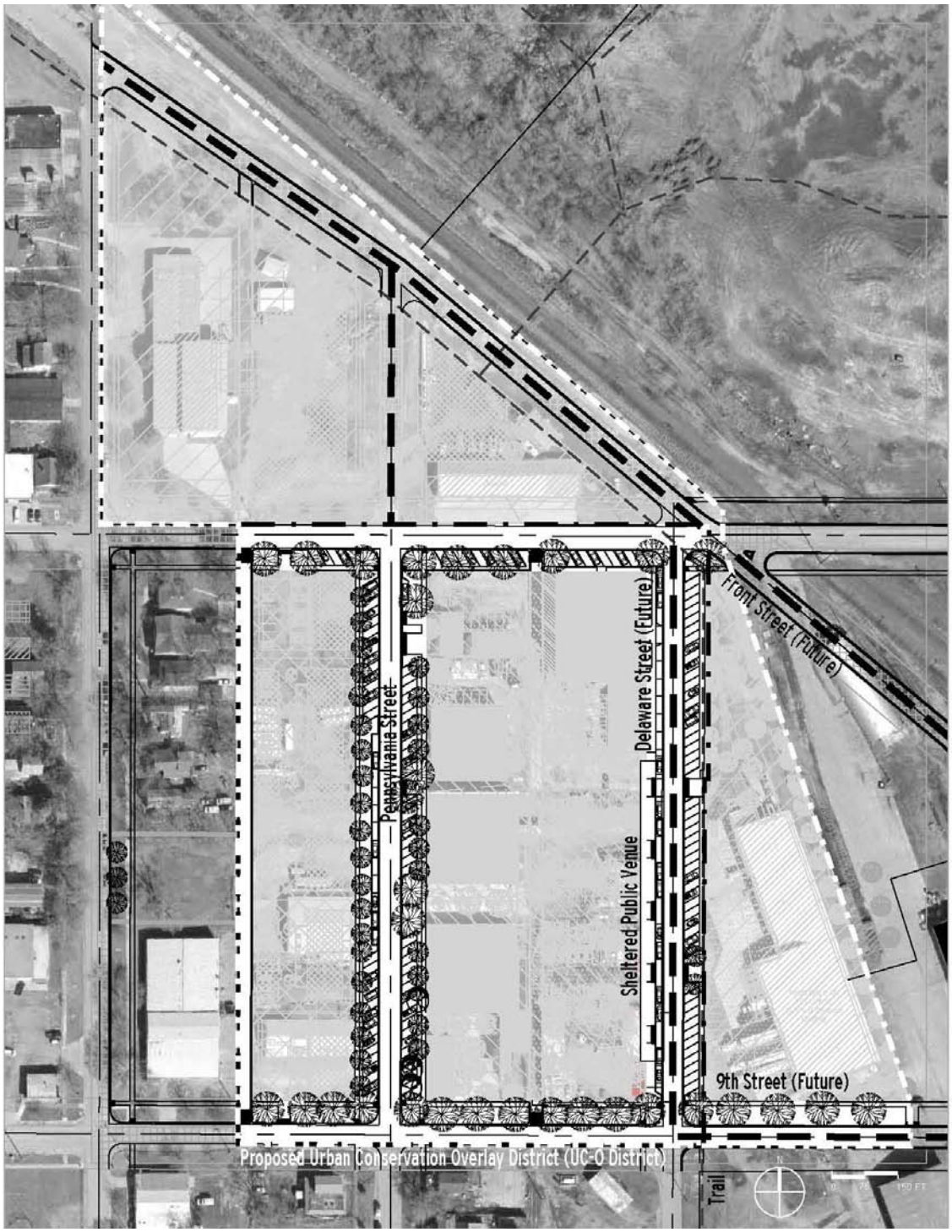
Using signs painted on windows and doors for secondary information that do not obscure visibility from inside or outside the building.



Not Recommended

See also: Technical Preservation Services, Heritage Preservation Services Division, National Park Service Preservation Brief 25 The Preservation of Historic Signs

FIGURE 5: ZONE 2 STREETSCAPES AND ALLEYS



LAND USE PLAN

ZONE 2: STREETSCAPES AND ALLEYS

NEIGHBORHOOD CONTEXT

The historic patterns of streets and alleys form the basis for the visual patterns that traditionally defined the redevelopment zone. This existing grid layout of streets and alleyways also serve as links that extend into adjoining neighborhoods and beyond. These features and spaces compose the grid of streets, alleys, and sidewalks, as well as the off-axis railroad right-of-way. Today, this public right-of-way zone plays an important role in defining the relationship between the manufacturing zone and the adjacent residential streets. Physical inspection of the zone and an analysis of historic photographs and maps indicate that these zones have significant loss of material and features. Reestablishment and retention of these established patterns is important in maintaining the visual character and identity of the historic manufacturing zone of East Lawrence.

ACCESS

Recommended	Not Recommended
Retaining all alley dimensions and driveway access to alleys.	
Retaining/reestablishing the width and number of vehicular traffic lanes to match existing conditions or the established grid in East Lawrence.	
Providing curb cuts for ADA accessibility at street crossings.	

STREETSCAPE

Recommended	Not Recommended
Removing built-up street overlay and exposing original brick.	
Reestablishing the grass verge between the sidewalks and curbs at the corners of East 8th and Pennsylvania Streets, East 8th and Delaware Streets, East 9th and Pennsylvania Streets, and East 9th and Delaware Streets.	
While retaining the grassy verge zones at the corners, pave the traditional verge zone for parking with a material different from that of the street, thus delineating the original street width and street/curb/verge configuration.	
Retaining the historic parking zone on the north side of the Poehler Building on East 8th Street.	
Retain the historic parking zone on the west side of the 804/806 building on Pennsylvania.	
Constructing concrete and/or brick sidewalks to match the materials of those found in the adjoining neighborhoods along Pennsylvania and East 9th Street.	

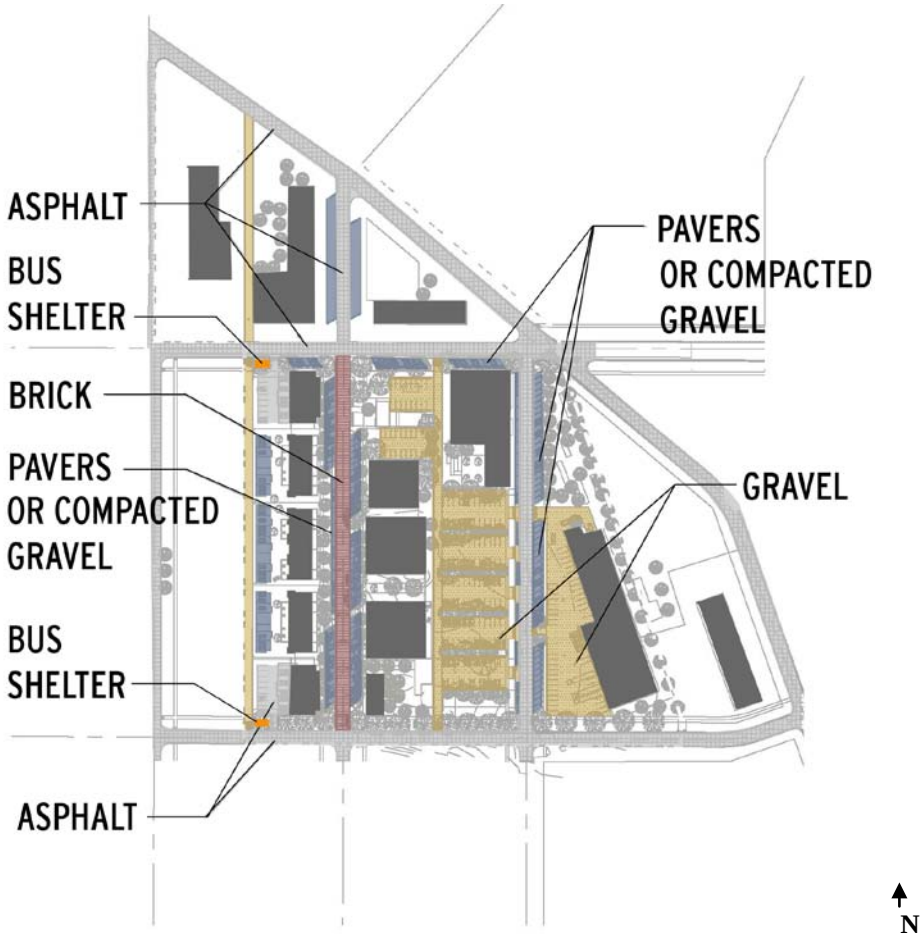
Recommended

In Zone 1, Existing sidewalks shall remain. Repairs to existing sidewalks on Pennsylvania and Delaware Streets that conform to the dimensions of those shown on Pennsylvania and Delaware Streets, respectively, from the 1927 Sanborn Fire Insurance Company maps. New sidewalks in Zone 1 shall conform to City Standards. In Zones 3 & 4 sidewalks shall be constructed to a minimum width of 5'-0"

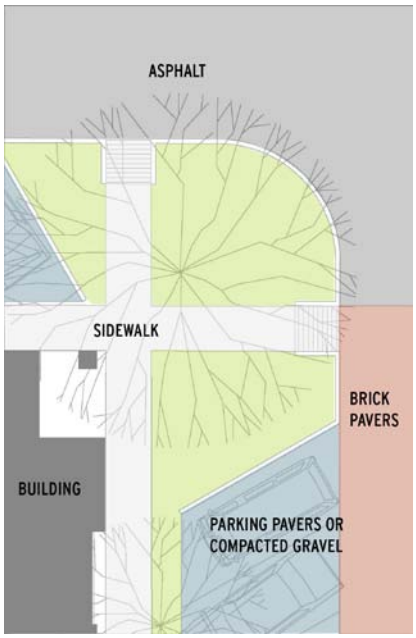
Establishing a sheltered bus venue on the west side of Delaware Street.

Establishing sheltered bus venues that are compatible with the listed properties and their environs.

Not Recommended



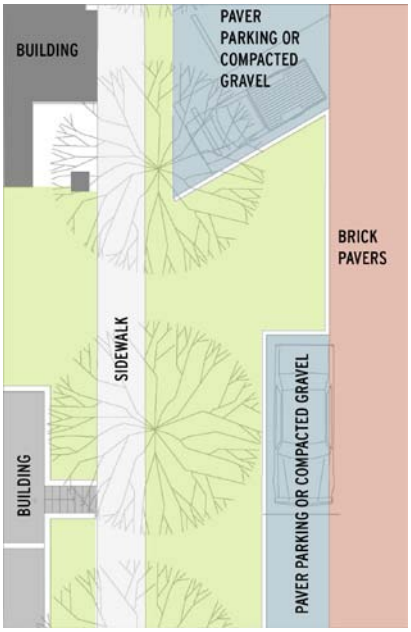
Paving Design



Pedestrian/Parking Surfaces – Corner Condition

Condition

Show here at the west corner of 8th and Pennsylvania



Pedestrian/Parking Surfaces – Mid Block

Shown here mid-block between 8th and 9th on the west side of Pennsylvania

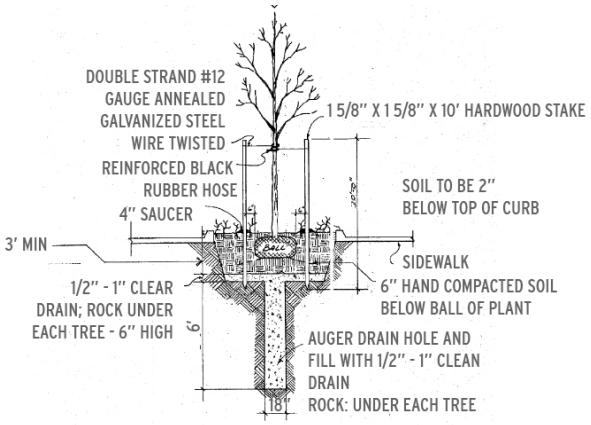
LANDSCAPE

The existing landscaping in Zone 2 primarily consists of unmaintained shrubs and weeds. Since most of Zone 2 borders the historical Zone 1, care should be given to not diverge from the industrial feel of the area. Historic conditions supersede the Design Guidelines for landscaping requirements in Zone 1.

Recommended	**Not Recommended**
In addition to restoring portions of the traditional grass verges, planting street trees in the verge zones to define the separation between the sidewalk and the street. Creating a clear walking zone of at least ten feet between the trees and buildings, and maintaining a mature branching height of at least twelve feet above the street.	Planting trees that produce large amounts of fruit or flowers. Planting small trees that will be less than thirty-six feet tall at maturity. Planting trees that are not native to the zone or that have marginal success in the zone. Planting trees with branches that break easily.
Planting trees large enough to add substantial greenery and shade, with a three-inch caliper at a minimum.	Installing artificial trees, shrubs, turf, or plants.
Using plantings that reinforce the city grid and cohesiveness of the area.	

Using native trees approved by City of Lawrence Parks and Recreation Department. (See Appendix)

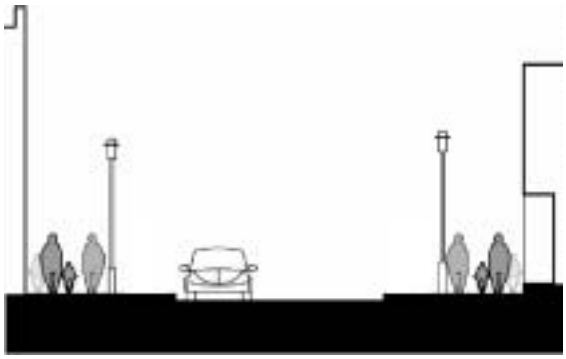
Planting a quantity of trees that complies with the minimum number required set forth in the City Standards.



Tree Well detail for 6" curb

LIGHTING

Unless noted otherwise, lighting for Zone 2 will be consistent with the City of Lawrence Code, sections 20-14A01 through Section 20-14A03. Street and pedestrian walkway lighting shall have a maximum initial illumination value of no greater than 0.20 horizontal footcandles at the zone boundary. No more than 5 percent of designed fixture lumens to be emitted at an angle of 90 degrees or higher from nadir (straight down) at the zone boundary. For zone boundaries that abut the public right of way, light trespass requirements may be met relative to the curb line in lieu of the zone boundary.



Recommended

Installing simple, contemporary, or generic pedestrian-scale street lights.

Not Recommended

Installing street lights with a historic appearance that replicate those used in retail and residential zones.

Pedestrian scale lighting

'Dark Sky' style lighting fixtures.

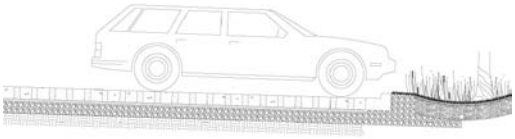
PARKING

Existing parking facilities are currently comprised of some unpaved on-street parking, primarily as roadside locations.

Recommended

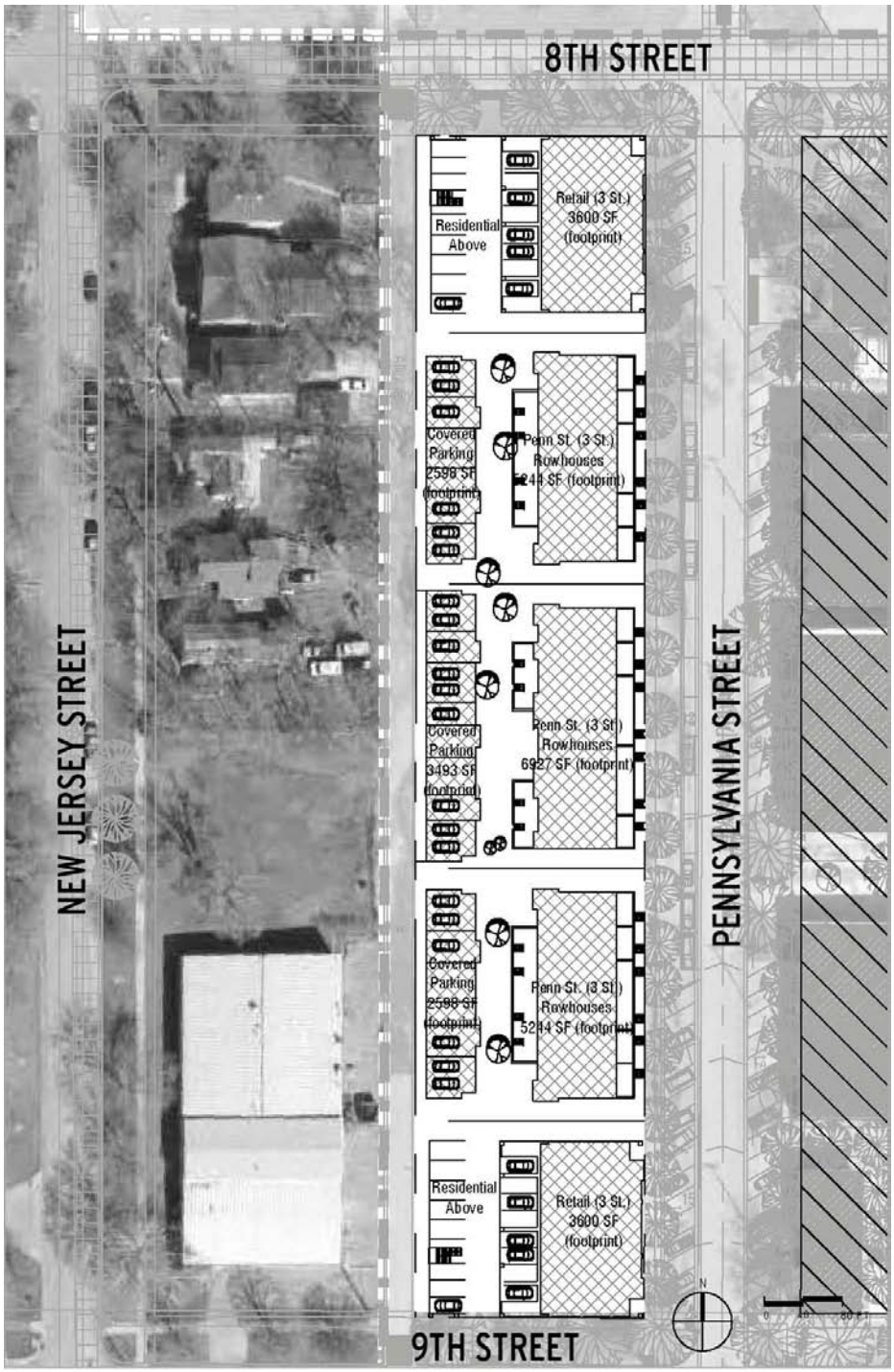
Visually and spatially separating on-street parking from pedestrian walkways or plazas through the use of additional site elements, including landscaping and special pavement treatments.

Not Recommended



Site section at On-street Parking

FIGURE 6: ZONE 3 800 PENNSYLVANIA MIXED-USE ZONE



LAND USE PLAN

ZONE 3: 800 PENNSYLVANIA MIXED-USE ZONE

NEIGHBORHOOD CONTEXT

This zone is adjacent to the historic residential neighborhoods of East Lawrence and was once part of the residential enclave, but none of the original setting or residences remain. This zone should function as a buffer or transition zone between the residential neighborhoods to the west and south and the mixed-use of the historic industrial complex and new development. This zone should be reserved for new construction. Contemporary methods of design and construction have to be coordinated with the existing surroundings dating from the late nineteenth century. A continuous sense of space should be conveyed using traditional and new materials in new ways. *New construction should relate to the setback, size, form, patterns, texture, materials, and color of the features that characterize the environs of all listed properties. Where there are inconsistent or varied patterns the new construction should fall within the range of typical patterns in the environs of the listed properties. Future environs review within the conservation zone should be in the context of the character defining features of the listed properties.

SUSTAINABILITY

As a zone dedicated to new construction, this zone has the most potential for integration of sustainable building practices. Including aspects of green architecture into the building design early on is recommended, and will have the best chance for success.

Recommended

Having mixed residential/retail commercial use.

Not Recommended

Having commercial use only.





Examples of Mixed-use

**This language is taken directly from the "Standards and Guidelines for Evaluating the Effect of Projects on Environs".*

RESIDENTIAL BUILDINGS

ARCHITECTURAL CHARACTERISTICS AND MATERIALS

Recommended	**Not Recommended**
Maintaining the massing character of the two- to three-story buildings in the area. Massing and building styles that compliment the height, width, and depth of the residential lots in the adjacent neighborhood and/or the original lot width.	Dividing single-family residences into multi-family dwelling units.
Arranging architectural elements in a regular and repetitive pattern. Patterns can be found within individual buildings, such as the arrangement of windows, or in groupings of buildings along a street.	
Arranging of open space in a regular and repetitive pattern.	
Maintaining proportions and relationships between doors and windows that are compatible in placement and scale with the architectural character of the single family residences in the adjacent residential neighborhood.	
Maintaining individual or shared entrance porches on residential buildings designated to provide semi-public space for neighborhood interaction.	



Example of Housing Density and Fenestration

Maintaining consistency in the use of materials and textures.	Using synthetic building materials and/or poor quality building materials.
Using traditional building materials found in East Lawrence.	
Using traditional colors found in the buildings of East Lawrence.	

Recommended	Not Recommended
Using architectural details that add visual interest to a building and that define the character of a building.	Replicating historic architectural details associated with a particular style in such as way as to create a false sense of history by reproducing a historic house design.
Using roof shapes and architectural characteristics that reference the traditional industrial/commercial built environment of East Lawrence, but incorporate a clear differentiation of old and new.	
Having rear façades of residential buildings that include porches and decks and that create a transition from a residential to a commercial/industrial mixed-use appearance.	

BUILT TO LINES AND SETBACKS

Recommended	Not Recommended
	Constructing new buildings with inappropriate alignment setback and spacing, massing, proportion, or pattern that is out of character with the residential and small commercial buildings found in East Lawrence.
Locating the front walls of residential buildings on the same plane and matching the rhythm of spacing (or lack thereof) between buildings and the rhythm of entrances and other projections or recesses to sidewalks.	
Having individual or shared entrance porches on residential buildings with individual sizes and locations that merges with and compliments the architectural diversity of East Lawrence.	

LANDSCAPE

Recommended	Not Recommended
Having front yards with lawn, shrubbery, and tree plantings, typically found in East Lawrence.	Introducing landscape features such as front yard fencing, statuary, walls, benches, yard lights, and so forth that were not traditionally found on the streetscapes of East Lawrence.

PARKING

Proposed parking for the residential portions of Zone 3 will be consistent in design and scale for the zone to serve as the transition zone between the historical properties in Zone 1 and the single family residential areas on New Jersey. Parking will be limited to single story structures that will be served by the alleyway.

Recommended	Not Recommended
Using the rear portion of a lot accessed by an alley for parking spaces/structures.	
Providing some green space at the rear of buildings.	
Separating parking zones/structures from residential buildings with landscaped pathways.	
Having parking structures that are subservient in size, scale, massing, and materials that create the impression of ancillary residential outbuildings.	
Designing parking structures to be compatible with neighboring buildings, including materials.	
Breaking up the overall massing of the parking structure with architectural details.	
Low bollard lighting will be used to limit lighting impacts to adjacent residential areas.	

LIGHTING

Unless noted otherwise, lighting for Zone 3 will be consistent with the City of Lawrence Code, sections 20-14A01 through Section 20-14A03, or subsequent applicable City standards. Residential lighting will have a maximum initial illumination value of no greater than 0.10 horizontal footcandles at the zone boundary. No more than 5 percent of the total designed fixture lumens are at an angle of 90 degrees or higher from nadir (straight down). In order to limit lighting impacts on adjacent residential properties, low bollard lighting will be utilized in parking areas adjacent to these properties in lieu of standard pole lighting.

Recommended	Not Recommended
Having exterior residential lighting at building entrances.	

COMMERCIAL/RETAIL CORNER BUILDINGS

ARCHITECTURAL CHARACTERISTICS AND MATERIALS

Recommended	Not Recommended
Having corner business buildings that reference the original lot configuration through the use of vertical bays. If the building is bigger than two traditional lots, differentiating the bays to create the visual impression of an assembly of small commercial buildings.	Having corner commercial buildings larger than the three original lot sizes.

Recommended

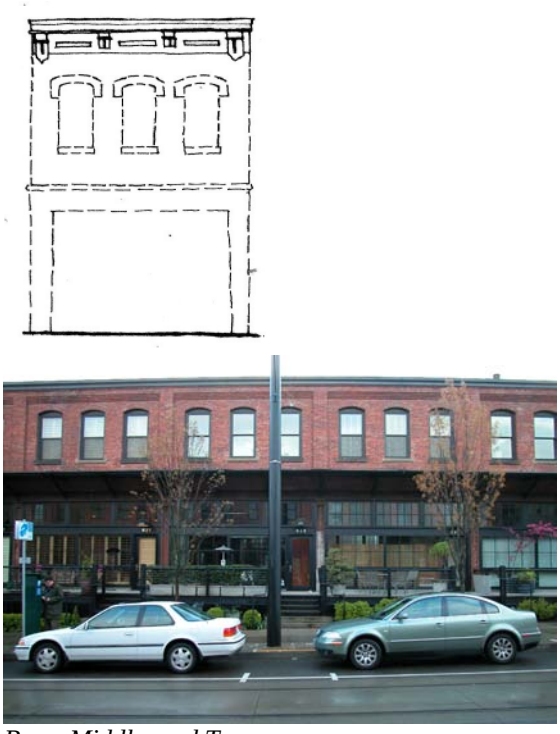


Typical Corner Building

Using a corner entrance in combination with traditional entrances to create variety in fenestration.

Using traditional brick walls, but differentiating in design, color, texture, and pattern between commercial buildings to create a heterogeneous treatment.

Having a clear system of base, middle, and top; visual referencing of traditional storefront components (i.e., bulkhead, display window, sign frieze, second-story fenestration, and cornice/parapet).



Base, Middle, and Top

Not Recommended

Designing commercial buildings that as a whole present the impression of suburban development patterns and design treatments rather than the heterogeneous appearance of evolution over a period of time on a lot-by-lot basis.

BUILT TO LINES AND SETBACKS

Recommended

Locating the front walls of residential buildings on the same plane and matching the rhythm of spacing (or lack thereof) between buildings and the rhythm of entrances and other projections or recesses to sidewalks.

Having individual or shared entrance porches on residential buildings with individual sizes and locations that merge with and compliment the architectural diversity of East Lawrence.

Avoid

Constructing new buildings with inappropriate alignment setback and spacing, massing, proportion, or pattern that is out of character with the residential and small commercial buildings found in East Lawrence.

SIGNAGE

Recommended

Using new signs that respect the size, scale, and design of the building (1) on a flat sign located in the frieze above the display window; (2) on a single plaque on the flat surface on the first-story wall plane near the entrance; (3) a projecting pendant sign mounted on the flat wall plane above the primary entrance; or (4) awning signs.

Using signs designed on a pedestrian scale.

Using one simple legible primary sign containing only the name of the business and no secondary or incidental information.

Using secondary signage painted on glass in windows and

Not Recommended

Using small, poorly proportioned signs with an inferior quality of design, materials, and execution.

Mounting signs on a roof.



Roof Mounted Sign

Using large, flashy signs designed to attract automobiles from a distance.

Using several signs and messages that compete with one another.

Recommended

doors for secondary information that does not obscure visibility from inside or outside the building.

Selecting colors, materials, and a lettering style that relates to and complements the building and contains a maximum of three colors, two materials, and one lettering style.

Not Recommended

ACCESS

Recommended

Providing access to the parking lots only from the main streets.

Not Recommended

Access to commercial buildings from alley ways or vehicular routes that abut single family residences.

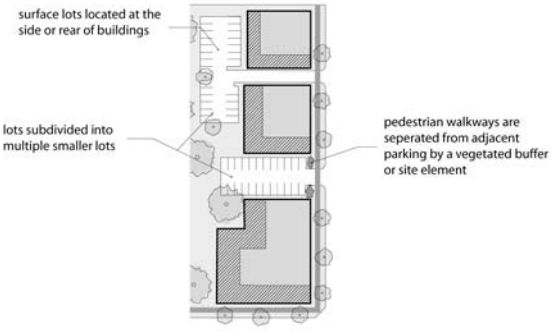
PARKING

Proposed parking for the residential portions of Zone 3 will be consistent with the requirements of the City of Lawrence Code, sections 20-1205, or subsequent applicable City standards. Parking for commercial, retail and mixed-use uses shall be served from a public street in lieu of an alleyway.

Recommended

Locating surface parking lots at the sides or rear of buildings or structures.

Having multiple small parking lots rather than single large parking lots.



Multiple Small Parking Lots

Subdividing larger surface lots with landscaped islands that have trees.

Visually and spatially separating pedestrian walkways adjacent to parking and driveways through the use of additional site elements, including bollards, lighting, landscaping, and special

Not Recommended

pavement treatments.

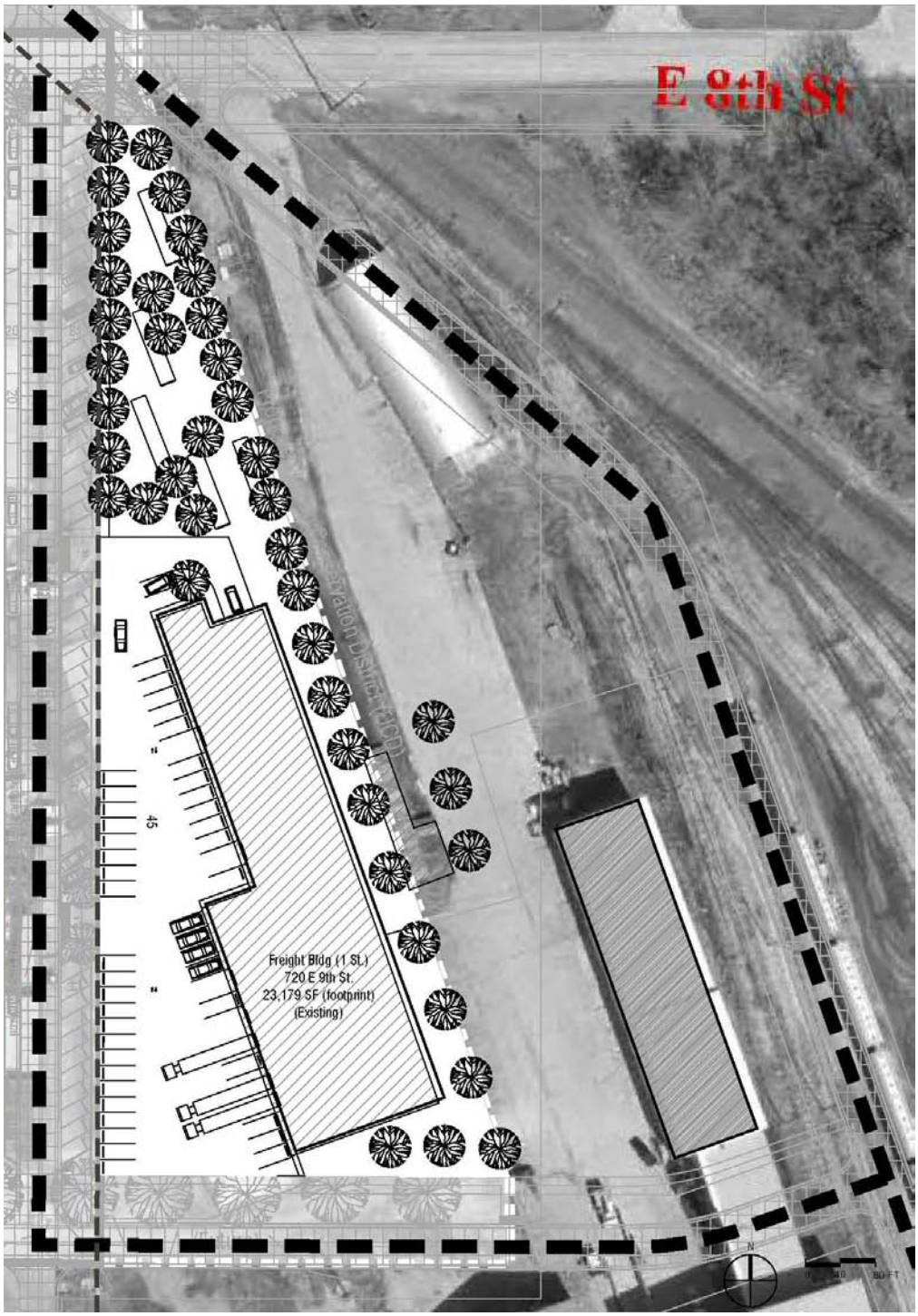
Low bollard lighting will be used to limit lighting impacts to adjacent residential areas.

LIGHTING

Unless noted otherwise, lighting in Zone 3 will be consistent with City of Lawrence Code Section 20-14A01 through Section 20-14A03, or subsequent applicable City standards. Parking lighting shall have a maximum initial illumination value no greater than 0.10 horizontal footcandles at the zone boundary. Nor more than 5 percent of fixture lumens are emitted at an angle of 90 degrees or higher from nadir (straight down) with the exception of minor building lighting. These lighting requirements are adapted from IESNA RP-33-99. In order to limit lighting impacts on adjacent residential properties, low bollard lighting will be utilized in parking areas adjacent to these properties in lieu of standard pole lighting.

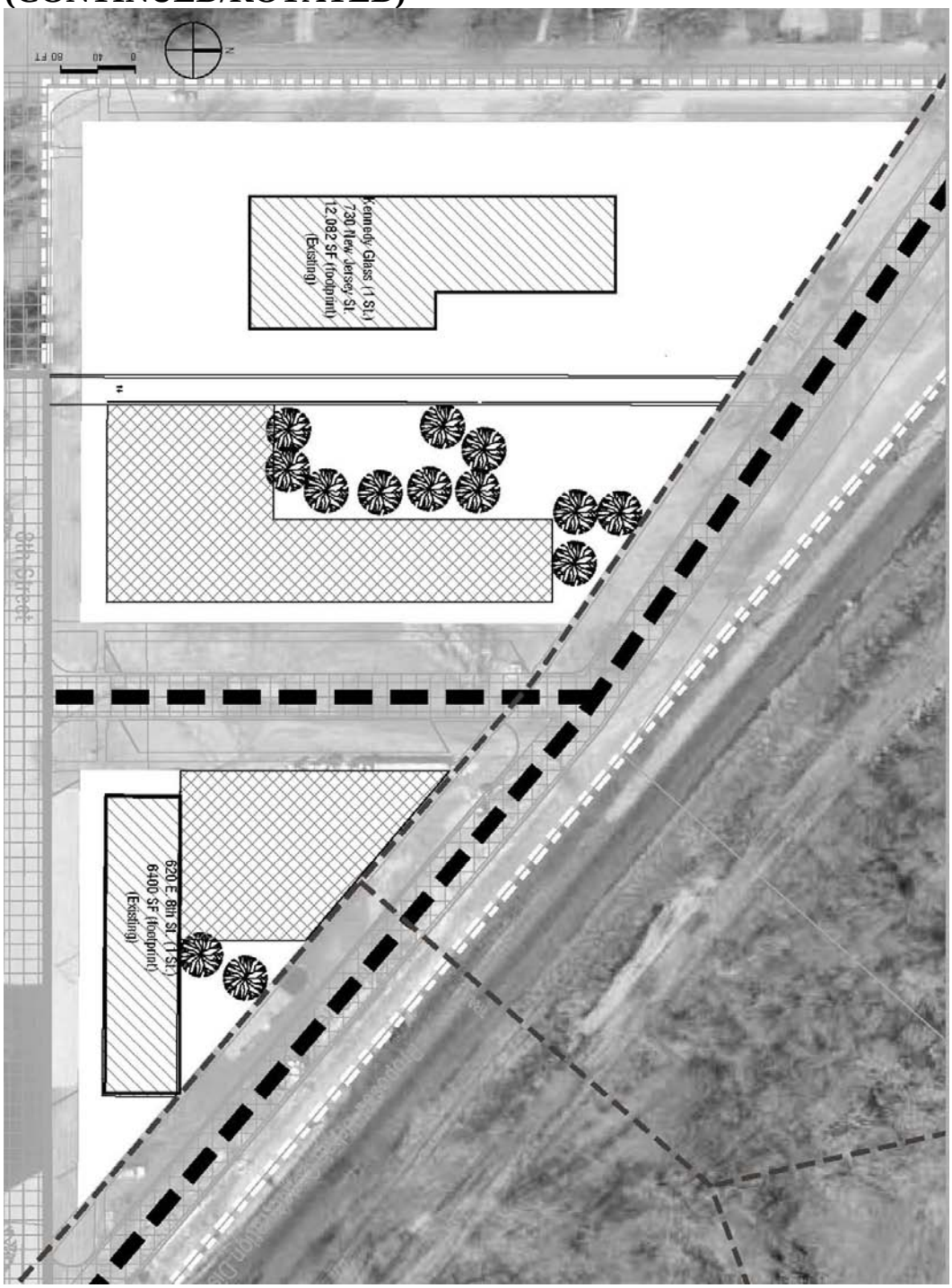
Recommended	**Not Recommended**
Using light fixtures that are as inconspicuous as possible with the exception of lighting compatible with the district.	Using conduits that are visible from the public right-of-way.
Using incandescent lights to illuminate small projecting and flat signboards and ambient light to illuminate the overall façade.	Using fluorescent light fixtures and high intensity discharge lighting.
Designing the light source for signs as a part of the sign or hiding it from view.	Using neon lighting that accentuates any shape or form of any of the building's elements.

FIGURE 7: ZONE 4 EXISTING AND NEW CONSTRUCTION ZONE



LAND USE PLAN

FIGURE 8: ZONE 4: EXISTING AND NEW CONSTRUCTION ZONE (CONTINUED/ROTATED)



ZONE 4: EXISTING AND NEW CONSTRUCTION ZONE

NEIGHBORHOOD CONTEXT

This zone is characterized by trapezoidal lots with alignments to both the traditional street grid system and the railroad right-of-way. The parcels were historically characterized by a lack of density, buildings of all sizes, and large amounts of open space, particularly in zones adjacent to railroad right-of-way. They contain several World War II-era Quonset Huts. This zone provides opportunities for new types of development that would retain open spaces and enhance the visual connection to the railroad right-of-way.

Due to its location, Zone 4 is a transitional buffer zone between the Historic and Residential Zones in the UC-O District and the more industrial uses of the railroad, concrete plant, and other potential future developments east of the UC-O District. As a result, the design, scale, massing, and lot openness of the zone should reflect this transitional nature.

SUSTAINABILITY

As a new construction zone, this zone has the most potential for integration of sustainable building practices. Including aspects of green architecture into the building design early on is recommended, and will have the best chance for success.

INFRASTRUCTURE

New construction in this zone will necessitate the need for new street and infrastructure additions, as well. Any additions of this character shall be consistent with those design guidelines established Zone 2, Streetscapes and Alleyways.

ARCHITECTURAL CHARACTERISTICS AND MATERIALS

Recommended	**Not Recommended**
Retaining the Quonset Huts in adaptive re-use when economically feasible.	Constructing buildings of the size, scale, and density of the residential zones in East Lawrence.
Incorporating new construction that uses mid- to large-scale buildings. Constructing buildings that reference the street grid or the railroad alignment.	
Continuing new mixed-use residential commercial development patterns established in Zone 3 in the zone north of East 8th Street between New Jersey and Pennsylvania Streets, creating a buffer zone or locating large industrial size buildings within surrounding open space.	
Building scale should be consistent with the zoned usage.	"Big Box" architecture.
Building materials and fenestration should be consistent with building use but complementary to the surrounding zones.	

LANDSCAPE

Recommended	Not Recommended
Retaining traditional open spaces.	

ACCESS

Recommended	Not Recommended
Locating dual access drives for service and delivery vehicles so that they do not disrupt pedestrian or vehicular circulation and do not visually detract from the front of the buildings by shifting them to parking areas or providing alley access.	Access routes for delivery vehicles that create routes directly through the residential areas.
Designing and locating access drives so that they prevent headlights from shining into adjacent residential zones.	

PARKING

Recommended	Not Recommended
Locating surface parking lots on all sides of the primary buildings and structures.	
Retention of existing on-street parking in front of existing Zone 4 buildings.	
Parking design should be consistent with other zones in the UC-O District.	Large surface lots.
Low bollard lighting will be used to limit lighting impacts to adjacent residential areas.	

SIGNAGE

Recommended	Not Recommended
Having all signs conform with the Sign Code provisions of Article 7 of the Code of the City of Lawrence	
Depending upon the building's use, signs may be oriented toward both pedestrian and vehicular traffic.	
Having storefront façades that do not extend past the storefront cornice line. Locating storefront signs in the zone	

between the display windows and the roofline or the second story. Signs for multiple storefronts within the same building should align with each other.

Using signs that reflect the overall symmetry of the building



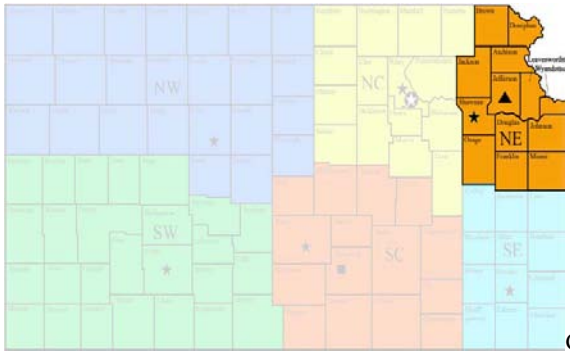
Examples of storefront signage

LIGHTING

Unless noted otherwise, lighting in Zone 4 will be consistent with City of Lawrence Code Section 20-14A01 through Section 20-14A03, or subsequent applicable City standards. Parking lighting shall have a maximum initial illumination value no greater than 0.20 horizontal footcandles at the zone boundary. Nor more than 5 percent of fixture lumens are emitted at an angle of 90 degrees or higher from nadir (straight down) with the exception of minor building lighting. These lighting requirements are adapted from IESNA RP-33-99. In order to limit lighting impacts on adjacent residential properties, low bollard lighting will be utilized in parking areas adjacent to these properties in lieu of standard pole lighting.

APPENDIX A

Preferred Trees for Northeast Kansas



Growing trees successfully depends on the selection of the right trees for the intended site. It is important to match the growing conditions and space available on the site with the cultural requirements and projected size of each tree to be planted. The following four charts on the following pages show the tolerances of individual trees to various environmental conditions as well as the major landscape attributes of each tree. Not all recommended trees for planting in Northeast Kansas are included. The preferred trees listed were recommended by industry professionals such as city foresters, local tree boards, county and horticulture extension agents, commercial arborists and retail/production nursery interests.

KEY TO USING THIS INFORMATION:

TREE SPECIES AND CULTIVARS**:** The names of the trees are listed in the center of four different charts. Three of the charts list deciduous trees according to average mature height [a plus (+) indicates they may grow slightly larger.] The fourth chart lists evergreen trees. If improved cultivars of the trees are available and recommended, they are listed. Cultivars often possess improved plant characteristics like better fall color; a unique form; more attractive flowers, fruit or bark; greater heat tolerance; or increased pest resistance. Many trees are available in single and multi-stemmed form. Multi-stemmed forms are more likely to be damaged from snow, ice, or wind.

ENVIRONMENTAL TOLERANCES: The left side of each chart indicates whether the tree is tolerant to various environmental conditions including full sun, light shade, alkaline soil, drought or wet soil. Each chart also shows how resistant each tree is to insect and disease pests. A "**G**" (for good) under the appropriate column indicates the tree is strongly tolerant of the characteristic indicated. An "**F**" (for fair) signifies that the tree shows some tolerance. A blank space in a column indicates the tree is not tolerant and should not be subjected to that environmental condition. Specific information on the "alkaline soil" and "pests" categories follows:

ALKALINE SOIL: (**G**) = tree may tolerate soils with a pH up to 8.0 or more; (**F**) = tree generally will

tolerate an alkaline soil up to a pH of 7.5; (blank) = tree may not tolerate alkaline soils; do not plant in alkaline soils to avoid the problem of iron or manganese chlorosis.

PESTS: (**G**) = tree is usually free of insect and disease problems; (**F**) = tree encounters insect or disease pests on an infrequent basis and often is not permanently damaged; (blank) = tree may suffer from pests which may permanently damage or kill the tree and/or the tree may exhibit minor insect and disease problems on a frequent basis which may affect the aesthetics of the tree or insects may commonly be a nuisance.

LANDSCAPE ATTRIBUTES: The right side of each chart includes average mature height and spread of each tree. The size is sometimes highly variable due to the size and shape of different cultivars planted and variability among growing sites. The landscape attributes of flowers, fruit, autumn color and ornamental bark are also listed.

DESIRABLE FLOWERS: (**G**) = the flowers are showy, adding unique ornamental interest to the landscape; (**F**) = the flowers are not particularly showy, but may possess other desirable characteristics such as fragrance; (blank) = the flowers are generally considered insignificant.

SHOWY OR USEFUL FRUIT: (**G**) = fruits are generally aesthetically pleasing; (**F**) = fruits or nuts are not considered unusually showy, but may provide other interest or benefits such as attracting wildlife; (blank) = no showy or useful fruit.

AUTUMN FOLIAGE COLOR: (**G**) = the autumn leaf color is typically quite good (may vary with individual trees, cultivars and environmental conditions, however); (**F**) = the fall color may provide interest in some years; (blank) = autumn foliage color is generally not considered an asset of this particular tree.

ORNAMENTAL BARK: (**G**) = the bark or twigs are considered to be exceptionally ornamental; (**F**) = the bark or twigs (on at least some cultivars) lend interest to the landscape (good color, texture, etc.); (blank) = the bark or twigs are not generally considered to be ornamental.

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ENVIRONMENT (tolerant of)							LANDSCAPE ATTRIBUTES			
FULL SUN	LIGHT SHADE	ALKALINE SOIL (HIGH pH)	DROUGHT	WET SOIL	PESTS (RESISTANT TO)	SMALL DECIDUOUS TREES (usually under 20 feet at maturity) Trees with mature height 20 feet or less can be used within 15 feet on either side of utility lines.	MATURE HEIGHT	MATURE SPREAD	DESIRABLE FLOWERS	SHOWY OR USEFUL FRUIT
	G				F	Japanese Maple (Acer palmatum) Protect from summer wind and heat exposure.	15-25	15-25		

G	F	F	G	F	F	Amur Maple (Acer tataricum var. ginnala) **Cultivars:** 'Compactum', 'Flame' and other improved selections	15-20	15-20		
G	G					Serviceberry **(**Amelanchier x grandiflora) **Cultivar:** 'Autumn Brilliance'. Choose superior cultivars and native species.	15-25	15-20	G	G
G	F	G	F		F	Eastern Redbud (Cercis canadensis) **Cultivars**: 'Alba', 'Forest Pansy'	20-25+	20-25+	G	
G	F	G	F		F	Oklahoma Redbud (Cercis canadensis subspecies texensis 'Oklahoma')	15-20+	15-20+	G	
G	G				F	Chinese Fringetree (Chionanthus retusus)	15-25	10-25	G	G
G	G				F	White Fringetree (Chionanthus virginicus)	10-20	10-20	G	
G		F	F		F	Common Smoketree (Cotinus spp.) Purple and green leaf cultivars available	10-15	10-15	G	
G	F	G	G		F	Winterberry Euonymus (Euonymus bungeanus)	15-20+	10		G
	G				G	Star Magnolia (Magnolia stellata) Protect from summer wind and heat exposure.	15-20	10-15	G	
	G			F	G	Sweetbay Magnolia (Magnolia virginiana) Protect from summer wind and heat exposure.	10-30	10-20	F	

G		F	F			Flowering Crabapple (Malus spp.) Many cultivars available. Choose disease resistant cultivars only. Superior cultivars include: 'Prairiefire', 'Adirondack', 'Adams', 'Sargeant', Also refer to KSU Research and Extension Crabapple Publication MF-875.	varies	varies	G	G
G	F				F	Chokecherry (Prunus virginiana) **Cultivar:** 'Canada Red Select'	15-25	10-15	G	G
G		G	F		F	Japanese Tree Lilac (Syringa reticulata) **Cultivar:** 'Ivory Silk'	20-25	15-25	G	

ENVIRONMENT (tolerant of)							LANDSCAPE ATTRIBUTES			
FULL SUN	LIGHT SHADE	ALKALINE SOIL (HIGH pH)	DROUGHT	WET SOIL	PESTS (RESISTANT TO)	MEDIUM DECIDUOUS TREES (usually 20 to 40 feet at maturity)	MATURE HEIGHT	MATURE SPREAD	DESIRABLE FLOWERS	SHOWY OR USEFUL FRUIT
G	F	F	F	F	F	Trident Maple (Acer buergeiranum) Some trees could suffer winter injury.	20-35	20-30		
G	G	F	G		G	Hedge Maple (Acer campestre) **Cultivar**: Queen Elizabeth™('Evelyn')	25-35	25-35		
F	F	F			G	Paperbark Maple (Acer griseum)	20-30	15-30		
G	F	F	F		G	Shantung (Purpleblow) Maple (Acer truncatum) **Cultivars**-hybrid with A. platanoides: 'Keithsform' (Norwegian Sunset™),	25-30	25-30		

						'Warrensred' (Pacific Sunset™).				
F	G				F	American Hornbeam (Carpinus caroliniana)	20-30	20-30		

G		F			G	American Yellowwood (Cladrastis kentukea)	30-50	40-55	F		F	
G		G	G			Goldenraintree (Koelreuteria paniculata)	30-40	30-40	G	G	F	
G		G	G	F	G	Osage Orange (Maclura pomifera) **Cultivars**: 'Wichita', 'Whiteshield. Fruitless and thornless cultivars recommended for most community plantings.	30-40+	20-40			G	F
F	G					Saucer Magnolia (Magnolia x soulangiana) Protect from summer wind and heat exposure.	20-30	15-25	G			
G		F	F			Flowering Crabapple (Malus species) Many cultivars available. Choose disease resistant cultivars only. Superior cultivars include: 'Centurion'; 'Ralph Shay'; Siberian Crab (M. baccata 'Jackii'); 'Spring Snow'; 'Van Eseltine'; White Angel™ ('Inglis'); 'Red Splendor'. Also refer to KSU Research and Extension Crabapple Publication MF-875.	varies	varies	G	G		F
G	G	F	F		G	Hophornbeam (Ironwood) (Ostrya virginiana)	25-40	20-30		F	F	F
G		F	G		F	Callery Pear (Pyrus calleryana) Several improved cultivars available. Superior cultivars include: 'Chanticleer' (also labeled 'Cleveland Select'), 'Capital', 'Aristocrat', 'Redspire'. 'Bradford' is not a recommended cultivar.	30-40+	10-45	G	F	G	
G		G	G		G	Chinkapin Oak (Quercus muehlenbergii)	35-40+	40-45		F	F	
G		G	G		G	Western Soapberry (Sapindus drummondii)	25-40+	25-30	G	G	G	F

ENVIRONMENT (tolerant of)						LANDSCAPE ATTRIBUTES				
FULL SUN	LIGHT SHADE	ALKALINE SOIL (HIGH pH)	DROUGHT	WET SOIL	PESTS (RESISTANT TO)	LARGE and VERY LARGE DECIDUOUS TREES (usually 40 feet and larger at maturity)	MATURE HEIGHT	MATURE SPREAD	DESIRABLE FLOWERS	SHOWY OR USEFUL FRUIT
G	F	F				Freeman Maple (Acer x freemanii) **Cultivar:** 'Armstrong'; 'Jeffersred' (Autumn Blaze ®); Autumn Fantasy ™. Poisonous to horses.	50-60	40-50		
G	F	G	G			Norway Maple (Acer platanoides) Several cultivars available. Superior cultivars include: 'Emerald Queen',	40-50	40-50		

						'Superform' (Green leaf cultivars) and "Fairview', 'Crimson King', 'Royal Red' (Red leaf cultivars).				
G	F			G		Red Maple (Acer rubrum) **Cultivars**: Red Sunset ® ('Franksred'); October Glory ®; 'Autumn Flame'; Burgundy Belle ® 'Magnificent Magenta' and columnar forms; Poisonous to horses.	40-60	35-50	F	
G	G	F				Sugar Maple (Acer saccharum) **Cultivars:** 'Commemoration'; 'Legacy'; Caddo; 'Fall Fiesta'; 'Bonfire'; all are more heat tolerant/leaf tatter resistant cultivars.	40-60+	30-50		
G				G	F	River Birch (Betula nigra) **Cultivar**: 'Heritage'	40-60	40-50	F	
G	F		F		F	European Hornbeam (Carpinus betulus) Upright cultivars available.	40-60	30-40+		
G		F	G		F	Persimmon (Diospyros virginiana)	35-50+	20-35	F	G
G		G	G		G	Ginkgo (Ginkgo biloba) **Cultivars:** 'Autumn Gold'; 'Princeton Sentry'; 'Magyar'. Male cultivars recommended for most community plantings.	50-60+	25-40		
G		G	G	F		Thornless Honeylocust (Gleditsia triacanthos var. inermis) **Cultivars**: 'Shademaster', 'Skyline', 'Imperial'.	40-60+	30-50		
G		G	G	F	G	Kentucky Coffeetree (Gymnocladus dioicus) Seedless cultivars available.	50-60+	30-45		F
G				G		Sweetgum (Liquidambar	50-75	35-50		F

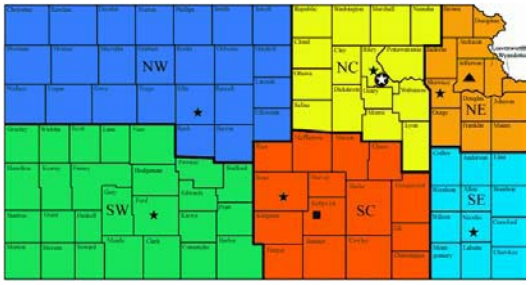
						styraciflua)				
G	F			G		Black Tupelo (Black Gum) (Nyssa sylvatica)	30-50	20-30		
G	F	G	F	G		London Planetree (Platanus x acerifolia)	60-80	50-60		F

						Cultivar: 'Bloodgood'.						
G		F	G		G	Sawtooth Oak (Quercus acutissima)	35-40+	30-45		F	F	
G						White Oak (Quercus alba)	60-80	40-60		F	G	
G			F	G	F	Swamp White Oak (Quercus bicolor)	50-60	40-60		F	G	F
G			G	F	F	Shingle Oak (Quercus imbricaria)	50-60	40-60		F	F	
G		G	G	F		Bur Oak (Quercus macrocarpa)	60-80	50-70		F		
G			F	F	G	Willow Oak (Quercus phellos)	40-60	30-40			F	
G						Chestnut Oak (Quercus prinus)	60-70	60-70				
G		G	F		F	English Oak (Quercus robur)	40-60+	45-65		F		
G					F	Red Oak (Quercus rubra)	60-75	40-60		F	G	
G		F	F	F	F	Shumard Red Oak (Quercus shumardii)	60-80	40-60		F	G	
G			G	G	G	Baldcypress (Taxodium distichum)	50-70+	20-50		F	G	F
G	F	F			F	American Linden (Tilia americana) **Cultivars**: 'Redmond'	50-60+	35-40	F		F	
G	F	G			F	Littleleaf Linden (Tilia cordata) **Cultivars**: 'Greenspire'.	50-60	25-40	F		F	
G	F	G	G	F	F	Lacebark Elm (Ulmus parvifolia) **Cultivars: '**Emeri I' (Athena®); **'**Emer II' (Allee®); Bosque™; 'Emerald Prairie'; 'Frontier'.	40-60	35-50		F	F	G

ENVIRONMENT (tolerant of)								LANDSCAPE ATTRIBUTES				
FULL SUN	LIGHT SHADE	ALKALINE SOIL (HIGH pH)	DROUGHT	WET SOIL	PESTS (RESISTANT TO)	EVERGREEN TREES		MATURE HEIGHT	MATURE SPREAD	DESIRABLE FLOWERS	SHOWY OR USEFUL FRUIT	AUTUMN FOLIAGE COLOR	ORNAMENTAL BARK
G	G G	G G G				**Upright Chinese Juniper** (Juniperus chinensis) Many cultivars available. See your KSU-County Extension office or local nursery for the best recommendations. **Eastern Red Cedar** (Juniperus virginiana) Many cultivars available**.** Superior cultivars include: 'Canaertii' (Canaert Red Cedar), 'Taylor', 'Burkii'; **Black Hills Spruce** (Picea glauca 'Densata') **Norway Spruce** (Picea abies) **Limber Pine** (Pinus flexilis) **Cultivar**: 'Vanderwolf's Pryamid'		varies	varies 10-	G G F F F	F
G	F							30-40+	30 15-20				F
G								30-40+	25-30 15-				
G								40-60	30				
G								30-40					

This publication is coordinated and updated by the Kansas Forest Service. For further information and assistance, or to provide feedback and recommendations to the preferred tree listing please contact:

Kim Bomberger, NE / NC District Community Forester Preferred tree lists are available for other areas of the state.
Kansas Forest Service Visit us on the web for more information. 2610 Claflin Road Manhattan, KS 66502 785-532-3315
kbomberg@oznet.ksu.edu



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APPENDIX B

8th and Penn Neighborhood Redevelopment Density						
	Bldg	Stories	Residential (Sq Ft)	Units	Retail (Sq Ft)	Office (Sq Ft)
Existing Buildings	720 E. 9th					
	806 Penn	1			1115	
	804 Penn	2			1369	
	Poehler (Main)	1				15508
	2nd floor + basement	2				12893
	Residential		25700	24		
	810 Penn	2			6627	
	826 Penn	1			10444	
	830-832 Penn	1				10220
	846 Penn West	2			2651	
	846 Penn East	1			1556	
	Totals		25700	24	23762	38621

	Bldg	Stories	Residential (Sq Ft)	Units	Retail (Sq Ft)	Office (Sq Ft)
Projected	8th and Penn	3			3600	
	9th and Penn	3			3600	
	Penn Row Phase II	3	11230	10		
	Penn Row Phase III	3	11230	10		
	Penn Row Phase IV	3	11230	10		
	Totals		33690	30	7200	0
	Overall Totals		59390	54	30962	38621

Total Development Area (Residential area + Retail area + Office area)	128973
Percentage Retail (not to exceed 25%; see page 11 of this document)	24.0%

Note: Built, unoccupied space shall be calculated as non-retail space for the purpose of determining a percentage of retail development for the 8th and Penn UC-O District.

Note: A revised Appendix B shall be submitted with each plan review as stated in the Review Principles section (pg. 16) of this document.

LAWRENCE HISTORIC RESOURCES COMMISSION
ITEM NO. 7a: DR-8-136-11
STAFF REPORT

A. SUMMARY

DR-8-136-11 Consider text amendment to the 8th and Pennsylvania Urban Conservation Overly District, including the *Design Guidelines 8th and Penn Neighborhood Redevelopment Zone*, in order to accommodate a residential proposal for property located at 619 E. 8th Street that exceeds the density limit currently noted in the guidelines. The Lawrence City Commission initiated this text amendment on August 9, 2011.

B. PROJECT DESCRIPTION

The applicant is requesting to amend *The Design Guidelines 8th and Penn Neighborhood Redevelopment Zone* to allow for a new redevelopment proposal that includes the rehabilitation of the Poehler Building at 619 E 8th Street, the duplex at 806 Pennsylvania Street, and the Vinegar Building at 810 Pennsylvania Street. Specifically, *The Design Guidelines 8th and Penn Neighborhood Redevelopment Zone* would be amended to change the maximum density allowed for the Poehler Building. (See attached design guidelines document with proposed changes in red.) In addition, information for clarification has been included in the proposed changes to the document.

C. STANDARDS FOR REVIEW

For Certified Local Government Review of projects involving listed properties, the Historic Resources Commission has typically used the Secretary of the Interior's Standards to evaluate the proposed project. Therefore, the following standards apply to the proposed project:

> *1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.*
>
> *2. The historic character of a property shall be retained and preserved. The removal of historic material or alteration of features and spaces that characterize a property shall be avoided.*
>
> *3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.*
>
> *4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.*
>
> *5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a historic property shall be preserved.*
>
> *6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match*

the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.

7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.

8. Significant archaeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.

9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.

10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historical property and its environment would be unimpaired.

CHAPTER 20-308 OF THE LAND DEVELOPMENT CODE
20-308URBAN CONSERVATION OVERLAY DISTRICT

(a) **Purpose**
The UC, Urban Conservation Overlay District, is intended to:

(1) encourage development that conforms to the size, orientation and setting of existing Buildings in a neighborhood or area;

(2) reduce the need for zoning variances for development that conforms to the size, orientation and setting of existing Buildings in a neighborhood or area;

(3) provide Building Setbacks, Lot dimensions and related physical characteristics;

(4) foster development that is compatible with the Scale and physical character of original Buildings in a neighborhood or area through the use of Development/Design Standards and guidelines; and

(5) conserve the cultural resources, historic resources and property values within an identified neighborhood or area.

(b) **Selection Criteria**
A UC District shall be a geographically defined area that has a significant concentration, linkage or continuity of sites that are unified by physical

development, architecture or historical development patterns. To be eligible for UC zoning, the area shall comply with the following criteria:

(1) the general pattern of development, including Streets, Lots and Buildings, shall have been established at least 25 years prior to the Effective Date;

(2) the area shall possess built environmental characteristics that create an identifiable setting, character and association;

(3) the designated area shall be a contiguous area of at least five (5) acres in size. Areas of less than five (5) acres may be designated as an UC Overlay District only when they abut an existing five (5) acre or greater UC Overlay District.

(c) **Establishment of District**

UC Zoning Districts are established in accordance with the Zoning Map Amendment procedures of Section 20-1303, except as modified by the following provisions:

(1) an application to establish a UC District may be initiated by the Historic Resources Commission, the Planning Commission or the City Commission;

(2) applications may also be initiated by petition when signed either by the Owner of at least 51% of the area within the proposed UC District or by at least 51% of total number of Landowners within the proposed District;

(3) the Historic Resources Commission and the Planning Commission shall hold public hearings, and submit written recommendations to the City Commission, regarding each application to establish a UC District;

(4) the Historic Resources Commission is responsible for reviewing UC zoning applications for compliance with the selection criteria of Section 20-308(b) and for recommending development/design standards and guidelines for the District;

(5) the Planning Commission is responsible for reviewing UC applications for its planning and zoning implications; and

(6) the City Commission is responsible for making a final decision to approve or deny the Overlay District Zoning.

(d) **Procedure**

Upon receipt of an application for UC zoning or upon initiation of a UC zoning application by the City Commission, Planning Commission or Historic Resources Commission, the following procedures apply:

(1) unless otherwise expressly stated, the zoning map amendment procedures of Section 20-1303 apply;

(2) public hearings on UC zoning applications shall be held by the Historic Resources Commission and the Planning Commission prior to consideration by the City Commission; and

(3) the Historic Resources Commission shall make a recommendation that UC District zoning be approved, approved with conditions or denied. The Historic Resources Commission's recommendation shall be submitted to the Planning Commission and City Commission. The item shall be placed on the Planning Commission agenda after receipt of the Historic Resources Commission's recommendation. The recommendation shall be accompanied by a report containing the following information:

(i) an explanation of how the area meets or does not meet the selection criteria contained in Section 20-308(b);

(ii) in the case of an area found to meet the criteria in Section 20-308(b):

a. a description of the general pattern of development, including Streets, Lots and Buildings in the area; and

b. Development/Design Standards to guide development within the District;

(iii) a map showing the recommended boundaries of the UC District; and

(iv) a record of the proceedings before the Historic Resources Commission;

(e) **Allowed Uses**

UC District Classifications do not affect the use of land, Buildings or Structures. The use regulations of the Base District control.

(f) **Development/Design Standards**

In establishing a UC District, the Historic Resources Commission or Planning Commission are authorized to propose, and the City Commission is authorized to adopt, by ordinance, District-Specific Development and Design Standards (referred to herein as "Development/Design Standards") to guide development and redevelopment within UC Districts:

(1) when Development/Design Standards have been adopted, all Alterations within the designated UC District shall comply with those standards. For the purposes of this section, "Alteration" means any Development Activity that changes one or more of the "Exterior Architectural Features" of a Structure, as the latter term is defined in Chapter 22 of the City Code;

(2) when there are conflicts between the Development/Design Standards of the Base District and adopted UC District Development/Design standards, the UC Development/Design Standards will govern;

(3) the Development/Design Standards will be administered by City staff in accordance with adopted administrative policy.

(g) **Appeals**

(1) Notwithstanding the procedure set forth in Section 20-1311, a person aggrieved by a decision of the City staff, determining whether the Development/Design Standards have been met, may file a written appeal with the Historic Resources Commission. The appeal shall be filed within ten (10) Working Days after the decision has been rendered.

(2) A person aggrieved by a decision of the Historic Resources Commission, determining whether the Development/Design Standards have been met, may file a written appeal with the City Commission. The appeal shall be filed within ten (10) Working Days after the decision has been rendered.

(3) the City Commission is the final decision-making authority in determining whether a proposed project meets the adopted Development/Design Standards.

(4) the Board of Zoning Appeals has no authority to grant interpretations, exceptions or variances from the adopted Development/Design Standards.

(5) within thirty days after the City Commission's final decision, in passing upon an appeal pursuant to this Section, any person aggrieved by the decision may file an action in District Court to determine the reasonableness of the decision.

(h) **UC Districts Established**

The following UC Districts are established:

Conservation District Name	Boundaries
Downtown Urban Conservation Overlay District	See Ord. No. 7395
8th & Pennsylvania Urban Conservation Overlay District	See Ord. No 8053

(i) **UC District Development/Design Standards Established**

The following UC District Development/Design Standards and Administrative Policies are established:

Conservation District Name	Development Standards and Administrative Policies
Downtown Urban Conservation Overlay District	Downtown Design Guidelines 2009
8th and Pennsylvania Urban Conservation Overlay District	Design Guidelines 8th and Penn Neighborhood Redevelopment Zone 2006

20-309INCORPORATION BY REFERENCE OF "THE DOWNTOWN DESIGN GUIDELINES 2009 EDITION"

The "Downtown Design Guidelines December 16, 2008 Edition" prepared compiled, published and promulgated by the City of Lawrence, Kansas is hereby adopted and incorporated by reference as if fully set forth herein, and shall be known as the "Downtown Design Guidelines 2009 Edition". At least one copy of said text amendments shall be marked or stamped as "Official Copy as Adopted by Ordinance No. 8363 and to which shall be attached a copy of this ordinance, and filed with the City Clerk, to be open to inspection and available to the public at all reasonable business hours. The police department, municipal judge, and all administrative departments of the City charged with the enforcement of the ordinance shall be supplied, at the cost of the city, such number of official copies of such "Downtown Design Guidelines, 2009 Edition" marked as may be deemed expedient.

20-310INCORPORATION BY REFERENCE OF "THE DESIGN GUIDELINES 8TH AND PENN NEIGHBORHOOD REDEVELOPMENT ZONE"

The "The Design Guidelines 8th and Penn Neighborhood Redevelopment Zone"

prepared compiled, published and promulgated by the City of Lawrence, Kansas is hereby adopted and incorporated by reference as if fully set forth herein, and shall be known as the "The Design Guidelines 8th and Penn Neighborhood Redevelopment Zone" At least one copy of said text amendments shall be marked or stamped as "Official Copy as Adopted by Ordinance No. 8363 and to which shall be attached a copy of this ordinance, and filed with the City Clerk, to be open to inspection and available to the public at all reasonable business hours. The police department, municipal judge, and all administrative departments of the City charged with the enforcement of the ordinance shall be supplied, at the cost of the city, such number of official copies of such "The Design Guidelines 8th and Penn Neighborhood Redevelopment Zone".

D. STAFF ANALYSIS

The Historic Resources Commission approved the UCO and *The Design Guidelines 8th and Penn Neighborhood Redevelopment Zone* in 2006 and forwarded a recommendation for approval to the Lawrence Douglas County Metropolitan Planning Commission and the Lawrence City Commission. The *Design Guidelines 8th and Penn Neighborhood Redevelopment Zone* were specifically tailored for a redevelopment project that was proposed at that time. The redevelopment project did not occur and the majority of the properties have been vacant and/or underutilized since 2006.

A new redevelopment plan has been proposed for a portion of the 8th and Pennsylvania Overlay District. The current plan would rehabilitate the Poehler Building as 49 residential units, continue the use of the existing duplex located at 806 Pennsylvania Street, and rehabilitate the Vinegar Building at 810 Pennsylvania Street as artist studio and office space. In order to accomplish this development process, the maximum density established by *The Design Guidelines 8th and Penn Neighborhood Redevelopment Zone* needs to be amended. The density identified in *The Design Guidelines 8th and Penn Neighborhood Redevelopment Zone* was set by the proposed uses –which included commercial and office uses -- of the Poehler Building in the 2006 development proposal. The current development proposal includes only the residential use. The following text (shown in red) is proposed to amend the document:

DENSITY

Mixed-use development requires adequate residential density so that critical mass may be achieved. As such, **and except for the Poehler Mercantile Company building itself,** the dwelling unit density shall not exceed thirty-four (34) units per net residential acre, as defined in the City of Lawrence Code Section 20-1007, or subsequent applicable City standards. Thirty-Four (34) units per acre were derived from the square footage of the Poehler Building divided by the number of residential units it is designed to hold **if it were developed with a mix of uses**. This number was compared to, and is lower than, the thirty-five (35) units per residential acre allowed in Lawrence Code for Planned Commercial Developments, Section 20-1008. **Because the Poehler Building may develop solely with residential uses, the density for the Poehler building shall be unlimited and regulated by the number of parking spaces provided to support its residential use.**

The proposed language allows for the increase in density of the Poehler Building while limiting the density of the remaining district.

Other proposed changes to the document include clarification of the current Land Development Code zoning classifications and the following changes to the height limitations for the district as

related to the Poehler Building.

BUILDING HEIGHT

The historic Poehler Mercantile Company building will serve as a visual anchor and reference point for the UC-O District. In keeping with the history of the area, the Poehler building is to remain the tallest structure in the District. **Rooftop appurtenances, such as cellular and radio antenna, chimneys, mechanical equipment and screening, etc. shall be limited to a height not to exceed 10'-0" above the tallest point of the existing roof of the building.**

To achieve that goal, all other buildings and structures**, including stand-alone cellular towers,** within the UC-O District shall have a maximum of three stories and 40'-0" above grade. ~~This height restriction would apply to all buildings in the UC-O District and structured cell towers. Cell towers with removable structures would also be allowed in the UC-O District and may exceed this height requirement.~~ **Rooftop appurtenances, such as cellular and radio antenna, chimneys, mechanical equipment and screening, etc. shall be limited to a height not to exceed 50'-0" above grade.**

The proposed changes to *The Design Guidelines 8th and Penn Neighborhood Redevelopment Zone* meet the intent of the established UCO and allow for the new development proposal. Staff is of the opinion the proposed changes meet the Secretary of the Interior's Standards for Rehabilitation and the criteria established in the City of Lawrence Land Development Code. The proposed changes to *The Design Guidelines 8th and Penn Neighborhood Redevelopment Zone* do not alter the previous finding of the HRC that this area meets the criteria established in the Land Development Code.

Description of How the Area Meets the Selection Criteria:

- **The general pattern of development, including streets, lots and buildings, must have been established at least 25 years prior to creation of the district.**

  According to the National Register of Historic Places multiple property documentation form for the City of Lawrence, Kansas and the National Register of Historic Places district nomination for the East Lawrence Industrial Historic District, the general pattern of development was established with the platting of the Original Townsite in 1854. The East Lawrence Industrial Historic District development began in 1864 and was clearly visible by 1905, according to Sanborn Fire Insurance Company Maps.

- **The area must possess built environmental characteristics that create an identifiable setting, character, and association.**

  The National Register of Historic Places multiple property documentation form, the National Register of Historic Places district nomination for the East Lawrence Industrial Historic District, and the East Lawrence Neighborhood Plan finds that the proposed area creates an identifiable setting, character and particular association.

- **The area must be covered by an approved neighborhood or area plan.**

  The proposed area is covered by the *East Lawrence Neighborhood Revitalization Plan* (2000) and *East Lawrence Neighborhood Plan (1979)*

- **The designated area must be a contiguous area of at least 5 acres in area. Areas of less than 5 acres may be designated if they abut an existing UC-O district.**

The proposed area exceeds the 5 acre minimum.

Commission Finding:
Development of the subject area began in 1854 with the establishment of platted lots and dedicated rights of way. The general pattern of development, including streets, lots and buildings, of the subject area were established prior to 1981.

The subject area is known as part of East Lawrence Industrial area and has specific environmental characteristics that create an identifiable setting and character. These characteristics have been described in the National Register of Historic Places district nomination for the East Lawrence Industrial Historic District.

The proposed area is covered by the East Lawrence Neighborhood Revitalization Plan (2000) and East Lawrence Neighborhood Plan (1979), and contains more than 5 acres.

The proposed area meets the selection criteria.

E. STAFF RECOMMENDATION

Staff recommends that the Commission forward a recommendation for approval to the Lawrence City Commission for the proposed amendments to *The Design Guidelines 8th and Penn Neighborhood Redevelopment Zone* as outlined in this staff report and the attached *The Design Guidelines 8th and Penn Neighborhood Redevelopment Zone* document.

9/15/11 HISTORIC RESOURCES ACTION SUMMARY - DRAFT

ITEM NO. 7 8th and Pennsylvania Urban Conservation Overlay District

7a DR-8-136-11 Text Amendment to *The Design Guidelines 8th and Penn Neighborhood Redevelopment Zone;* Certified Local Government Review and 8th and Pennsylvania Conservation Overlay District Review. The Lawrence City Commission initiated this text amendment on August 9, 2011.

STAFF PRESENTATION
Ms. Braddock Zollner presented the item.

APPLICANT PRESENTATION
There was no applicant presentation.

PUBLIC COMMENT
KT Walsh, East Lawrence Neighborhood Association President, stated she supported the text amendment for the 8th and Pennsylvania redevelopment.

COMMISSION DISCUSSION
Foster asked what the extra height added to the roof would be used for.

Tony Krsnich, East Lawrence Historic Partners, stated the extra height would be used to add a 60 watt solar panel on top of the roof. He stated the solar panel would not be seen from the street below.

ACTION TAKEN
Motioned by Commissioner Meyer, seconded by Commissioner Tuttle, to approve the text amendment t for the 8th and Pennsylvania redevelopment.

Motion carried unanimously, 7-0

7b DR-08-118-11 619 E 8th Street; Site Plan; Certified Local Government Review and 8th and Pennsylvania Conservation Overlay District Review. The property is a contributing structure to the East Lawrence Industrial Historic District, National Register of Historic Places and is located in the 8th and Penn Urban Conservation Overlay District. Submitted by Darron Ammann of Bartlett & West Inc., for the property owner of record.

7c DR-08-119-11 806 Pennsylvania Street; Site Plan; Certified Local Government Review and 8th and Pennsylvania Conservation Overlay District Review. The property is a contributing structure to the East Lawrence Industrial Historic District, National Register of Historic Places and is located in the 8th and Penn Urban Conservation Overlay District. Submitted by Darron Ammann of Bartlett & West Inc., for the property owner of record.

7d DR-08-120-11 810 Pennsylvania Street; Site Plan; Certified Local Government Review, Certificate of Appropriateness Review and 8th and Pennsylvania Conservation Overlay District Review. The property is a contributing structure to the East Lawrence Industrial Historic District, National Register of Historic Places and is located in the 8th and Penn Urban Conservation Overlay District. Submitted by Darron Ammann of Bartlett & West Inc., for the property owner of record.

7e DR-08-121-11 Delaware Street; Parking Lot; Certified Local Government Review and 8th and Pennsylvania Conservation Overlay District Review. The property is located in the East Lawrence Industrial Historic District, National Register of Historic Places and the 8th and Penn Urban Conservation Overlay District. Submitted by Darron Ammann of Bartlett & West Inc., for the property owner of record.

7f DR-08-123-11 619 E 8th Street; Minor Subdivision; Certified Local Government Review and 8th and Pennsylvania Conservation Overlay District Review. The property is located in

the East Lawrence Industrial Historic District, National Register of Historic Places and the 8th and Penn Urban Conservation Overlay District. Submitted by Darron Ammann of Bartlett & West Inc., for the property owner of record.

7g DR-08-124-11 806, 810, 826 Pennsylvania Streets; Minor Subdivision; Certified Local Government Review, Certificate of Appropriateness Review and East Lawrence Conservation Overlay District Review. The property is located in the East Lawrence Industrial Historic District, National Register of Historic Places and the 8th and Penn Urban Conservation Overlay District. Submitted by Darron Ammann of Bartlett & West Inc., for the property owner of record.

7h DR-8-138-11 619 East 8th Street; Rezoning; Certified Local Government Review and 8th and Pennsylvania Conservation Overlay District Review. The property is a contributing structure to the East Lawrence Industrial Historic District, National Register of Historic Places and is located in the 8th and Penn Urban Conservation Overlay District. Submitted by Darron Ammann of Bartlett & West Inc., for the property owner of record.

7i DR-8-139-11 804-806 Pennsylvania Street; Rezoning; Certified Local Government Review and 8th and Pennsylvania Conservation Overlay District Review. The property is a contributing structure to the East Lawrence Industrial Historic District, National Register of Historic Places and is located in the 8th and Penn Urban Conservation Overlay District. Submitted by Darron Ammann of Bartlett & West Inc., for the property owner of record.

ACTION TAKEN

Motioned by Commissioner Meyer, seconded by Commissioner Foster, to affirm the administrative reviews for the 8th and Pennsylvania redevelopment.

Motion carried unanimously, 7-0

PLANNING COMMISSION REPORT
Regular Agenda - Public Hearing Item

PC Staff Report
9/26/11

ITEM NO. 5A CS TO RM32; .56 ACRES; 619 E. 8th STREET (MKM)

Z-8-22-11: Consider a request to rezone approximately .56 acres from CS (Strip Commercial) to RM32 (Multi-Dwelling Residential) within the 8th & Pennsylvania Urban Conservation Overlay District, located at 619 E 8th Street. Submitted by Bartlett & West, Inc., for Ohio Mortgage Investors, LLC property owner of record.

STAFF RECOMMENDATION: Staff recommends approval of the request to rezone approximately .56 acres located at 619 E. 8th Street from CS to RM32 based on the findings presented in the staff report and forwarding it to the City Commission with a recommendation for approval.

Reason for Request: *"Rezoning of the existing property to make it compatible with the residential living intent of the structure.*

KEY POINTS

- The property is part of the East Lawrence Industrial District, State and National Register of Historic Places; therefore, the Historic Resources Commission (HRC) must review the rezoning request under the State Preservation Law (K.S.A. 75-2724, as amended).
- The subject property is regulated in part by the *8th and Penn Neighborhood Redevelopment Zone Design Guidelines* and was part of the *8th and Penn District Neighborhood Revitalization Plan*, which was adopted by the City Commission in 2007 with Ordinance 8093.
- The subject property and the area around the subject property has been master planned through the design guideline process. The use of on-street parking to support redevelopment of the area is permitted by the guidelines**.**
- The proposed 49-unit multi-dwelling structure is consistent with the planning to date except that the building will not be mixed use in nature. However, buildings surrounding the residential building will maintain CS zoning and will provide for nonresidential uses.

ATTACHMENTS

Attachment A Site Plan for the conversion of the 5 story Poehler building at 619 E 8th Street to a 49 unit multi-dwelling residential building. (SP-8-45-11)
Attachment B *8th and Penn Neighborhood Redevelopment Zone Design Guidelines*

ASSOCIATED CASES/OTHER ACTION REQUIRED

Other action required:

- Historic Resource Commission approval. The HRC confirmed the approval of the rezoning at their September 15, 2011 meeting.
- City Commission approval of the rezoning request and publication of Ordinance.

Associated cases:

- Administrative approval and recording of Minor Subdivision (MS-8-4-11) to divide the existing lot with the building and parking lot into two separate lots, one containing the building and one with the parking lot.
- Administrative approval of site plan (SP-8-45-11) for conversion of the building to a 49 unit multi-dwelling residence.
- Historic Resources Commission approval of minor subdivision (MS-8-4-11) and site plan (SP-8-45-11). Any conditions of approval placed on these items by the Historic Resources Commission must be met before the recording of the minor subdivision with the Register of Deeds or the release of the site plan to Development Services for building permits.

PUBLIC COMMENT RECEIVED PRIOR TO PRINTING

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

Project Summary:

This request is for rezoning of one 24,394 sq ft lot located at 619 E. 8th Street from the CS (Commercial Strip) District to the RM32 (Multi-Dwelling Residential) District. (Figure 2, page 10) The existing Design Guidelines permit 34 dwelling units per acre reflecting the original concept proposed with the Urban Conservation Overlay District. The RM32 District is a 'high-density' district, permitting up to 32 dwelling units per acre. The proposed development includes 49 dwelling units on .56 acres for a density of 87.5 dwelling units an acre. This high density is, in part, a result of the decision to develop the entire building residentially rather than developing a portion of the building with retail uses. It is also a result of the reduction of the lot area resulting from the division of the existing lot into 2 lots to separate the parking lot from the residential building.

The lot is being divided to accommodate the financing of parking lot improvements and ownership. Prior to this subdivision, the lot contained 1.04 acres and developing the building with 49 units would have resulted in a density of 47.1 dwelling units per acre. A text amendment has been initiated to the *8th and Penn Neighborhood Redevelopment Zone Design Guidelines* to permit the Poehler Building to develop at any residential density that can be accommodated with the available parking. The development of the property will comply with the density requirements in place at the time and the text amendment is not necessary for the rezoning or residential development of this property.

The rezoning is intended to support a development proposal for a 49-unit multi-dwelling structure, of which 46 units are to be maintained as affordable units in order to qualify for the Low Income Housing Tax Credit program (LIHTC) which is administered by the Kansas Housing Resources Commission. The Kansas Housing Resources Commission states on their website (www.kshousingcorp.org) that in exchange for the financing provided through the credit, the property owners agree to keep rents affordable over a 30-year period for families with incomes at or below 60 percent of the local median income. Sixteen of the units will be one-bedroom and 33 of the units will be two-bedroom. Of these 49 units, 46 are proposed to be affordable, as defined by the Kansas Housing Resources Commission.

Parking requirements are proposed to be met with parking on the adjacent lot to the south and with on-street parking on 8th Street and Delaware Street. The use of on-street parking to meet the parking requirement is not typical but is permitted with the *8th and Penn Neighborhood*

Redevelopment Zone Design Guidelines. The site plan which has been submitted for this lot illustrates the proposed development and is included with this report as Attachment A.

1. CONFORMANCE WITH THE COMPREHENSIVE PLAN

Applicant's Response:

"The proposed request is within conformance of allowable uses set by the 8th and Penn Neighborhood Design Guidelines and also Horizon 2020."

Horizon 2020 promotes a balanced mix of housing within the community which would allow for a wide range of housing types and residential densities. The plan offers descriptions and density ranges for very low-density to high-density residential development. The high-density residential development identifies an overall density of 16-21 dwelling units per acre. This property is unique in that on-street parking is permitted to be used to satisfy parking requirements. Because of this, less private land is needed to support the structure and use. The Poehler building is proposed to lie on .56 acres after completing a replat of the land to remove the adjacent parking lot and is proposed to be redeveloped with 49 units. This equates to a density of 88 dwelling units per net residential acre. At the time of adopting the 8th and Penn district and guidelines, *Horizon 2020* did not support the type of mixed use development proposed. The comprehensive plan was amended at the same time to include language in Chapter 6 that supports Mixed-Use Redevelopment Centers in areas of the city, "where existing structures are underutilized, have experienced a high turnover rate, or have remained vacant for an extended period of time." (Policy 3.4, Chapter 6) The 8th and Penn area is recognized as such an area. While the Poehler building may be converted to a single-use residential structure, the area will remain a mixture of uses. The proposal conforms to the comprehensive plan.

Staff Finding – The proposed RM32 zoning conforms to the recommendations in the comprehensive plan.

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

Current Zoning and Land Use:	CS-UC (Commercial Strip and 8th and Pennsylvania Urban Conservation Overlay) District; vacant building.
Surrounding Zoning and Land Use:	To the north and east: IG-UC (General Industrial and 8th and Pennsylvania Urban Conservation Overlay) District; manufacturing, rail.
	To the south and west: CS-UC (Commercial Strip and 8th and Pennsylvania Urban Conservation Overlay) District; parking to the south; duplex units to the west.

The subject property and the property to the south and west are not only located within an Urban Conservation Overlay zone, but the base zoning C-5 [converted to CS] was conditioned via the adopting ordinance (Ord 8054). Per the conditions of the zoning, the following uses are prohibited in the CS district:

1. Bars [unless 55% of gross receipts are derived from food sales as outlined in 20-509(5)(i)]
2. Liquor Store
3. Ambulance Service
4. Car or Truck Wash
5. Auto Repair
6. External drive-through ATM or drive-through window [walk-up ATM's are allowed]
7. Furriers
8. Pawn Shop
9. Mobile Home Sales and Service
10. Golf Driving Range
11. Pet Store [animal sales]
12. Loan Office [short-term cash advance loans]
13. Convenience store with Gasoline Sales

The building was rezoned C-5 (General Commercial) District prior to the adoption of the 2006 Development Code. The C-5 Zoning District converted to the CS with the 2006 Code. While the development proposal submitted with the rezoning request intended to develop the building with residential and retail uses, the current owner is attempting to use historic tax credits and other financing methods in order to convert the structure to a multi-dwelling use with 46 affordable units. "Affordable", for the purpose of this project is defined per the Kansas Housing Resources Commission definition as units with rents that are affordable over a 30-year period for families with incomes at or below 60 percent of the local median income.

Per Section 20-517(4) of the Development Code, the CS district permits multi-dwelling residential uses only when they are part of a mixed use project and at least 50% of the gross floor area is being developed with nonresidential uses. This limitation on multi-dwelling residential uses in the CS District was applied with the adoption of the 2006 Development Code but did not apply when the property was rezoned to the C-5 (General Commercial) District prior to 2006. The amount of residential development possible in the current zoning was reduced through the adoption of the 2006 Development Code to 50% of the gross building area. The rezoning to the RM32 District is being requested to regain the ability to develop the entire structure residentially.

The *8th and Penn Neighborhood Redevelopment Zone Design Guidelines*, adopted in January of 2007, was the result of a planning effort that included participation from the property owners, East Lawrence Neighborhood Association, and other stakeholders. It designates the subject property within Zone 1 of the district and notes:

> ***"The centerpiece of the redevelopment zone is the group of masonry manufacturing buildings bounded by East 8th Street on the north, Pennsylvania Street on the west, Delaware Street on the east, and East 9th Street on the south that is eligible for listing as a historic district in the National Register of Historic Places. These industrial buildings range from one story to four stories in height and date from the 1880's through the 1920s. The buildings are ideal candidates for rehabilitation into mixed adaptive uses that will allow them to retain the necessary level of historic architectural integrity to continue to contribute to an***

understanding of the historic district's associations with commerce and architecture in Lawrence."

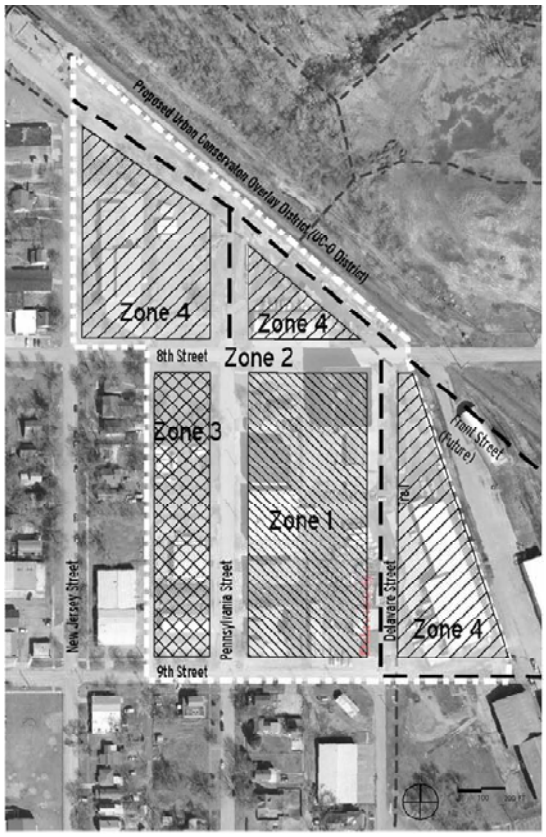


Figure 1. The Urban Conservation Overlay District with zones as established in the *8th and Penn Neighborhood Redevelopment Zone Design Guidelines*

The zoning standards at the time precluded mixed-use type development. The *8th and Penn Neighborhood Redevelopment Zone Design Guidelines* states the following related to this issue:

"The Lawrence Code recognized this problem and has provided a solution – the UC-O District. A UC-O District allows the City and a developer to tailor the development standards applicable to an area so that mixed-use development of appropriate size, orientation, and setting can be built within a neighborhood or area."

The *8th and Penn Neighborhood Redevelopment Zone Design Guidelines* received intense public participation and staff and commission analysis. Through adoption they were found to be in compliance with the comprehensive plan and address very specific site issues in the 8th and Penn area.

The *8th and Penn Neighborhood Redevelopment Zone Design Guidelines* restricts retail uses to no more than 25% of the net floor area in the UC-O District. The Poehler Mercantile Company building is to serve as the anchor and focus of the UC-O District. The Plan states that:

"*Mixed-use development cannot easily meet the requirements of traditional zoning districts. Successful mixed-use development can only thrive in areas that not only allow for the mixture of land uses, but also allow development of adequate density so that "critical mass" may be achieved*."

The Guidelines recommend a maximum density of 34 dwelling units and states that this was "*derived from the square footage of the Poehler Building divided by the number of residential units it is designed to hold."* With the new design of the Poehler Building, the number of dwelling units it is intended to hold has increased to 49 and the Poehler Building will no longer be located on an acre. In order to achieve the "critical mass" necessary for a successful mixed use district and to accommodate the change in the Poehler Building's lot area and proposed dwelling units, a text amendment has been initiated to revise the density standards in the Design Guidelines. This amendment will accommodate the proposed development but is not necessary for the rezoning to the RM32 District.

The subject property is bounded on all sides by other lots within the 8th and Penn Redevelopment area. The proposed residential use was anticipated when the *8th and Penn Neighborhood Redevelopment Zone Design Guidelines* were written, but the proposed density is higher than recommended in the plan. The higher density is due to the fact that no retail is being proposed for this building and the parking lot is being divided from the Poehler lot and is therefore no longer included in the density calculations. The rezoning and the proposed residential use would be compatible with the mix of uses in the area and would maintain the "critical mass" necessary for a mixed use development to succeed.

Staff Finding – The subject property is located within the 8th and Pennsylvania Urban Conservation Overlay District and is regulated by the *8th and Penn Neighborhood Redevelopment Zone Design Guidelines*. The guidelines anticipated residential uses for the Poehler building. Given the current 50% limitation on residential development in the CS District, the CS District is not appropriate for a residential structure. The RM32 zoning is the most appropriate district to accommodate the proposed use.

3. CHARACTER OF THE NEIGHBORHOOD

Applicant's Response:

"*An old warehouse district with primarily low-use or vacant structures."*

The *8th and Penn Neighborhood Redevelopment Zone Design Guidelines* states the following about the character of the subject area:

> ***"As stated in the East Lawrence Neighborhood Revitalization Plan, the unique character of the East Lawrence residential neighborhood is, in part, the coexistence of commercial, manufacturing and residential uses of land. In other words, this neighborhood has traditionally been a mixed-use community. Redevelopment and new development within the East Lawrence neighborhood should respect and expand this mixed-use tradition. The redevelopment concept for the 8th and Penn Neighborhood Redevelopment Zone proposes to do that through creating a horizontal and vertical mixture of land uses including residential, professional offices, inner-neighborhood commercial uses, and retail operations."***

The surrounding area contains industrial, office and residential uses and clearly reflects the mixed use nature of East Lawrence. The 8th and Penn area is intended to be a transitional area between the residential areas to the south and west and the more intense industrial uses to the north and east.

Staff Finding – The East Lawrence Neighborhood is characterized as a mixed-use area. The Poehler Building is a character defining structure in the neighborhood and has been designated for multi-dwelling uses in the *8th and Penn Neighborhood Redevelopment Zone Design Guidelines*. The proposed rezoning and use are in keeping with the character of the neighborhood.

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

The subject property is located within the East Lawrence Neighborhood. A land use plan was adopted for the East Lawrence Neighborhood in 1979 designating the property for industrial uses. A more recent plan, the *East Lawrence Neighborhood Revitalization Plan*, was adopted in November of 2000. The Revitalization Plan is an action plan for maintaining and improving the vitality of the neighborhood rather than a land use plan; however, it references the East Lawrence Plan as the guide for land use decisions.

As mentioned above, the *8th and Penn Neighborhood Redevelopment Zone Design Guidelines* was adopted in 2006 and is considered by staff to be the land use plan for 8th and Pennsylvania Overlay District. With the exception of the proposed density, the subject request complies with the planning documents for the area. A text amendment increasing the maximum density for the Poehler Building has been proposed and if approved, the requested rezoning is compliant with the land use plan for the area. If the amendment is not approved, the development proposal would be revised to comply with the design guidelines.

Staff Finding – The proposed rezoning from CS to RM32 is consistent with the recommendations of the plans for the area.

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

Applicant's Response:

> "*The area is no longer suitable for the proposed use of the existing structure which is designated as CS zoning. The area is changing and will be revitalized as a part of this rezoning process and overall development.*"

The property is suitable for the uses to which it is restricted with the CS zoning; however, the CS zoning does not support the applicant's proposal to convert the structure to a multi-dwelling structure, which is also an appropriate use for the property. While the property could be developed as a mixed-use building within the CS zoning district the amount of residential development is limited to no more than 50% of the gross floor area. The RM32 would provide the opportunity to redevelop the vacant building with a residential use, as was possible prior to the adoption of the 2006 Development Code and the conversion of the rezoning from C-5 to CS. The zoning must be changed in order to permit the residential use proposed.

Given the mixed use nature of the area, the property is suited to the restrictions of several zoning districts. The property would be suited to the restrictions of the CS or the RM32 District, depending on the amount of residential or retail uses that are being proposed. The property was rezoned to the C-5 Zoning District to accommodate the earlier development proposal of a vertical mixed use structure containing both retail and multi-dwelling residential uses. The current proposal is to develop the building with multi-dwelling residential units and to have the retail uses in other locations in the overlay district.

Staff Finding – The *8th and Penn Neighborhood Redevelopment Zone Design Guidelines* anticipated all but the ground floor of the existing building to be developed residentially. The use restrictions of the CS District requires at least 50% of the building to be developed with non-residential uses. This restriction was the result of the conversion of the zoning designation following the adoption of the 2006 Development Code. Rezoning to the RM32 District would

result in a district with permitted uses that fit the design of the building and the intent of the overlay district.

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

Applicant's Response:

"The property was previously zoned CS in 2006."

The Poehler building has been vacant since 2005. The most recent plan to redevelop the building and construct the necessary infrastructure to support its development (SP-11-85-06) was adopted on September 11, 2007. The economy has hindered that development, and the building has remained vacant. Most agree that this area is in need of rehabilitation and that the Poehler building is valuable to the historic fabric of the area. This request is an opportunity to use the building for its purpose as intended in the *8th and Penn Neighborhood Redevelopment Zone Design Guidelines*.

Staff Finding – The property contains a 5-story structure that has been vacant for approximately 6 years. The structure is need of repair and a viable zoning district is being requested to support its repair and reuse.

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

Applicant's Response:

"*The modification of the current zoning from CS to a residential designation will not detrimentally affect nearby properties at all."*

Approving RM32 zoning should have no detrimental affects to nearby properties. To the contrary, the Poehler property should be a catalyst to redeveloping what is considered a partially blighted area. Some redevelopment in the area has occurred and improvements to property have been made, but other properties remain vacant and are deteriorating with the passage of time. Redeveloping what is considered the anchor building should spur development in the areas where blight is taking hold.

Staff Finding – The RM32 zoning is in keeping with the intent of the *8th and Penn Neighborhood Redevelopment Zone Design Guidelines* and will not detrimentally affect nearby properties. The proposed rezoning supports a development that should spur redevelopment of this partially blighted area.

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 relative gain will be through a productive use of now mostly vacant property, which will benefit the local surrounding neighborhood and the entire community in general."

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

The denial of the rezoning request will maintain the current CS uses for the property. CS zoning does not support the development of this property with only residential uses, which is considered to be an appropriate use for the property. Because of this, the hardship to the applicant is that the structure could not be renovated to the desired use and the tax credits being used to complete the renovations would be lost.

There is little gain to the public by restricting the uses to those of the CS district, including the limitation on residential uses, when the multi-dwelling uses permitted in the RM32 District are also appropriate for this property. The loss of the vertical mixing of uses is made up by the mixture of uses found elsewhere in the 8th and Penn District. In addition, if the rezoning to the RM32 District were denied, the 46 affordable housing units would not be developed. Affordable housing is a recognized need in the community and denial of the rezoning request would allow the developer to develop only 50% of the structure residentially; thereby reducing or eliminating the affordable housing units or preventing the redevelopment altogether. The hardship to the applicant and to the community at large if the rezoning were denied outweighs any gain the public would enjoy by the same denial.

Staff Finding – The denial of the rezoning request would be a hardship to the applicant. There is no significant gain to the public by denying the application and restricting the uses to those permitted in the CS district.

9. PROFESSIONAL STAFF RECOMMENDATION

The 8th and Penn area has received a good deal of public process during the last decade. A very specific proposal for redeveloping the larger area was put forth and approved through the public zoning process in 2006. The project included an Urban Conservation Overlay District, conditional zoning, Historic Review, a Neighborhood Revitalization Act (NRA), a Developer Agreement, and public improvement plans to construct adjacent streets and alleys. A new owner desires to implement the formally approved plans with some revisions to the use of the Poehler Building. The current request attempts to work within this bundle of development rights afforded by the previous approvals, but much of the work needs to be revisited, including the zoning, NRA, Developer Agreement, financing of public improvements, etc. The use of the Poehler building as a multi-dwelling structure is appropriate and an important step in continuing to revitalize this part of the city.

Staff recommends approval of the rezoning request based on the findings of this report.

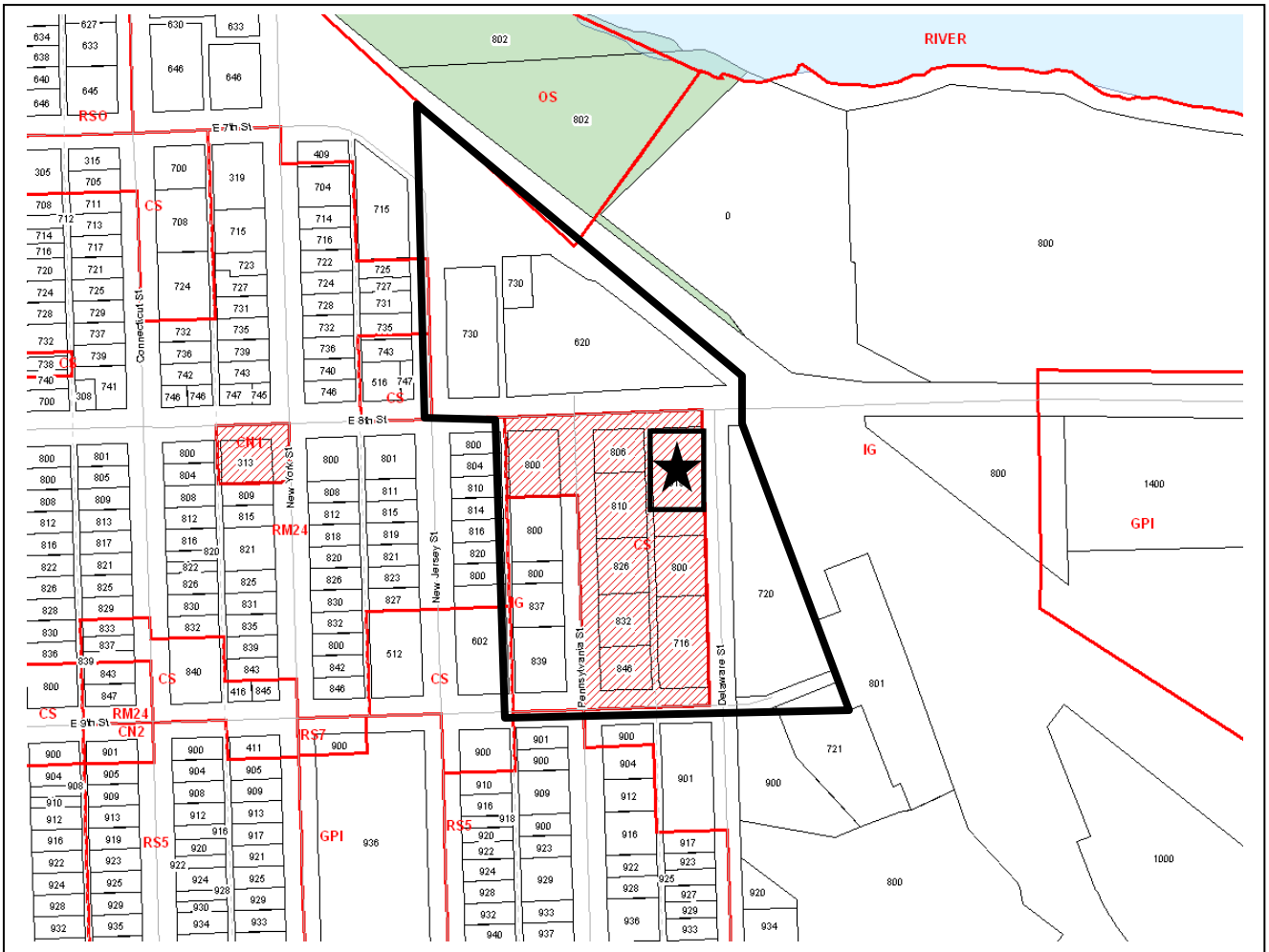


Figure 2. Location and Zoning of subject property, 619 E 8th Street.

8th and Penn Urban Conservation Overlay District boundary:

Conditional CS Zoning

Subject property

Last edit on: 00/00/00 Drawing name: W:\Proj\14000\14518\14518.008\AutoCad\Site Plan\14518-008 c01 SitePlan.dwg Layout name: SP-2 Plotted by: RLW00576 Plotted on: Aug 05, 2011 - 9:03am

PROPOSED DELAWARE STREET

CONSTRUCT ALLEY APRON, ADA RAMP, CURBING TO CITY OF LAWRENCE STANDARDS

PROP. 5' SIDEWALK

10.00' U.E.

PROP. 5' SIDEWALK

60° 2 STALLS 9.00'

TURF

PROP. 5' SIDEWALK

FUTURE SITE PLAN

15' R.

TURF

PROP. 5' SIDEWALK

FUTURE STREET TREE (TYP.)

FUTURE SITE PLAN

FUTURE SITE PLAN

FUTURE SITE PLAN

FUTURE SITE PLAN

POULTRY BUILDING 1-STORY BUILDING

FUTURE SITE PLAN

FUTURE SITE PLAN

5 STALLS

PROP. ±7.5' SIDEWALK

10 STALLS

PROP. 5' SIDEWALK

13 STALLS

FUTURE STREET TREE (TYP.)

4 STALLS

2 ADA STALLS

4 STALLS

60'

18.50'

17 STALLS

9.00'

TURF

PROP. 5' SIDEWALK

2 STALLS

STORM SEWER TO BE ATTACHED TO DELAWARE STREET DESIGN PACKAGE (TYP.)

25'-0" AISLE WIDTH

13 STALLS AT 8.'-6"x18'-0"

EXISTING TREE TO REMAIN

Slope

BIO-SWALE

13 STALLS AT 8.'-6"x18'-0"

10'-0"

25'-0" AISLE WIDTH

11 STALLS AT 8.'-6"x18'-0"

APPROVED POROUS SURFACE

INSTALL WHEEL STOP (TYP.)

INSTALL ADA SIGNAGE (TYP.)

3 ADA STALLS AT AT 8'-0"x18'-0"

25'-0" AISLE WIDTH

8 STALLS AT 8'-6"x18'-0"

5'-7"

5.00'

5.00'

5' R.

11 STALLS AT 8.'-6"x18'-0"

19'-3"

10'-0"

10.0'

INSTALL 7' HIGH WOOD SCREENING FENCE ON 6" REINFORCED CONCRETE PAD (20'-5" x 47'-6") INSTALL 8'x20'-0" TRASH ENCLOSURE (TWO DUMPSTERS, WALK-IN ENCLOSURE)

SEED BUILDING 1-STORY BUILDING

FUTURE SITE PLAN

EXISTING RAISED STEP

PROP. ±7.5' SIDEWALK

6 STALLS

INSTALL NEW DOCK, RAMP AND ±20'x20' CONCRETE APPROACH

VINEGAR BUILDING 2-STORY BUILDING MAIN F.F.E. = 832.47

GATE (TYP.)

PATIO AREA AMENITIES PER ARCHITECT/OWNER

EXISTING 1-STORY BUILDING

CONCRETE PATIO SURFACE

INSTALL BIKE RACK (6 BIKES)

RAISED PLANTER BEDS TO BE DETERMINED

TRANSFORMER LOCATION - COORDINATE WITH UTILITY PROVIDER

UGE

SAN

GATE (TYP.)

BUILDING ENTRANCE (TYP.)

EXISTING FIRE ESCAPE STAIRCASE TO BE RE-BUILT

EXISTING CONC. PAD TO STAY PENDING INSPECTION

EXISTING STAIRS TO BASEMENT LEVEL TO REMAIN

PRIVATE SANITARY SERVICE CONNECTION AND CLEANOUT

WATER SERVICE AND FIRE CONNECTIONS

BLDG. OVERHANG

INSTALL 7' HIGH SCREENING FENCE, SURFACE AND LAYOUT TO BE DETERMINED

GATE (TYP.)

EXISTING BLDG. FOUNDATION AND WALLS TO BE USED AS ARTIST DISPLAY AND WORK AREA

10' U/E

1-STORY BUILDING MAIN F.F.E. = 827.90

1-STORY GARAGE (TO REMAIN PENDING STRUCTURAL INSPECTION)

EXISTING DRIVE TO REMAIN

EXISTING TREE TO BE REMOVED

EXISTING FIRE HYDRANT TO REMAIN

EXISTING TREE TO REMAIN *

6 STALLS

10' U/E

23'-9"

Slope

EXISTING POEHLER WAREHOUSE 5-STORY BUILDING

MAIN F.F.E. = 829.54

EXISTING TO BE STRIPED AS SHOWN

SAWCUT

6 STALLS

PROP. 5' SIDEWALK

TURF

8 STALLS

PROP. 5' SIDEWALK

PROP. 5' SIDEWALK

6 PROPOSED 45° STALLS

16.80'

8.20'

13.17'

TREE IN TREE WELL

TREE IN TREE WELL

7 STALLS

CONSTRUCT ALLEY APRON, ADA RAMPS, CURBING TO CITY OF LAWRENCE STANDARDS

EXISTING FIRE HYDRANT LOCATION TO BE ADJUSTED PER PUBLIC IMPROVEMENT PLANS

EXISTING FIRE HYDRANT TO BE RELOCATED PER PUBLIC IMPROVEMENT PLANS

PLANTING BED (TYP.)

STREET TREE SPECIES PER 720 E 9TH ST ELEVATION SITE PLAN (TYP. THIS SIDE OF PROPOSED STREET)

PAVEMENT SCHEDULE

- 4" CONCRETE SIDEWALK
- 6" REINFORCED CONCRETE
- APPROVED POROUS SURFACE
- EXISTING ASPHALT PARKING TO REMAIN

NOT FOR CONSTRUCTION
PLANNING LAYOUT ONLY

1" = 20'
20 0 20 40

SITE PLANS
FOR
8TH AND PENN NEIGHBORHOOD REDEVELOPMENT DISTRICT
LAWRENCE, KANSAS

BARTLETT & WEST
628 VERMONT STREET - LAWRENCE KS 66044.2252
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SCALE: AS NOTED
DATE: 8-5-11

SHEET NUMBER SP-2 OF

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DESIGN GUIDELINES

8TH AND PENN NEIGHBORHOOD REDEVELOPMENT ZONE

24 OCTOBER, 2006



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EXECUTIVE SUMMARY

The 8th and Penn Neighborhood Redevelopment Zone is located in the historic East Lawrence manufacturing and railroad freight area and is part of the East Lawrence residential neighborhood. The proximity of the Kansas River made the historic industrial zone an ideal location for rail lines and associated freighting and manufacturing facilities. The redevelopment zone is composed of buildings, structures, and streetscapes that developed over a period of time and that had a variety of uses. Today, as in the past, there is a heterogeneous mix of warehouse and commercial/industrial facilities dating to the 1880s, large open spaces once used for rail yards and warehousing facilities, and several large, modern light industrial facilities. Although many of the older buildings and structures retain an individually distinct character and identity, their design patterns also contribute to the overall appearance of the area. Immediately adjacent to the west and south of the redevelopment zone are historic residential neighborhoods. These commercial/industrial and residential enclaves are separated by blocks that have lost their historic residential use and now are made up of vacant lots and/or a mix of commercial uses.

As in many communities, new residential and commercial growth presents unique challenges for this type of older mixed-use neighborhood. While individual buildings may have the potential to attract new businesses, if the area as a whole is to become viable, it must compete with other local and regional development zones. Experience demonstrates areas that create and/or retain a unique visual character that combines the historic and the new to enhance an existing "sense of place" are the most successful competitors.

The City of Lawrence has initiated a number of strategies to preserve, rehabilitate, and enhance the appearance of its older neighborhoods. This approach recognizes that conservation of buildings, neighborhoods, and sites of historic value is one of the best tools for recovering the worth of past investments while fueling a new economic force. To accommodate revitalization of this neighborhood and to merge old and new land uses, the redevelopment project will include changing the base zoning to C-5 and creating an Urban Conservation Overlay District (UC-O District) in accordance with the ordinances of the City of Lawrence, Kansas. There are historic resources located in the 8th and Penn Neighborhood Redevelopment Zone that are eligible for listing in the National Register of Historic Places and the Register of Historic Kansas Places. With the anticipated listing of these properties, all work (rehabilitation and new construction) in the redevelopment zone will be reviewed in accordance with the Kansas Historic Preservation Act of 1977, as amended,[1] and, possibly, Section 106 of the National Preservation Act of 1966, as amended,[2] to consider and mitigate the impact of development and adaptive reuse on the historic resources. It is also anticipated that the owners of qualifying historic buildings will participate in federal and state rehabilitation tax credit programs.

Because of these goals, the following design guidelines incorporate the "Secretary of the Interior's Standards for Rehabilitation of Historic Properties", which apply not only to rehabilitation for the adaptive reuse of historic and older buildings, but also to new construction and site development. The Secretary's Standards are currently incorporated into federal, state, and local compliance ordinances and laws, and have been upheld by state and federal courts as a reasonable standard by which to guide protection of cultural resources.

[1] The Kansas statute requires that the State Historic Preservation Office and/or its local designee review and comment on proposed projects (such as this project) undertaken by other parties, but requiring issuance of a lease, permit, license, or other entitlement for use from the State of Kansas or any political subdivision of the State of Kansas that would affect a property and/or the environs of a property listed in the National Register of Historic Places or the Register of Historic Kansas Places.
[2] This will occur if the project involves an undertaking by a federal agency, such as funding, financing, grants, issuance of permits, and so forth.

These design guidelines will be incorporated into an Urban Conservation Overlay District zoning ordinance to ensure compliance with local, state, and federal preservation laws and will thereby provide a consistent set of standards specific to the built environment and physical conditions of the redevelopment zone.

The goal in utilizing these guidelines is not to reproduce a historical period or theme approach. The intent is to identify and protect historic resources and to utilize significant common historic patterns in the existing built environment that will contribute to a sense of place, while retaining and enhancing the existing historic fabric and visual character of the development zone. Inherent in these guidelines is the provision of direction to property owners and developers to ensure that changes to properties — rehabilitation, renovation, demolition, and new construction — enhance and complement the unique character of East Lawrence. The intended purpose of using these guidelines is to help accomplish the following:

1. Foster economic viability by encouraging redevelopment and new development.

2. Regulate exterior scale, massing, design, arrangement, texture, and materials within the conservation zone in order to not only promote compatibility within the development zone, but also to create linkages with the surrounding neighborhoods.

3. Preserve and protect the historic and architectural value of buildings, structures, sites, districts, and objects listed in, or eligible for, the National Register of Historic Places, the Register of Kansas Historic Places, and the Lawrence Register of Historic Places.

4. Maintain the unique identity of East Lawrence.

5. Meet the Kansas State Law requirements as set forth in KSA 75-2724 and any amendments hereafter and Chapter 22 of the City of Lawrence Code and any amendments hereafter related to environs review.

6. Build upon historical character and foster diversity while meeting the goals of the *Horizon 2020 Comprehensive Plan* and the *East Lawrence Neighborhood Revitalization Plan.*

FIGURE 1: 8TH AND PENN NEIGHBORHOOD REDEVELOPMENT ZONE



FIGURE 2: 8TH AND PENN NEIGHBORHOOD REDEVELOPMENT ZONE (ENLARGED)



ENVIRONS OVERVIEW

The first step in creating an attractive, cohesive sense of place that reflects the historic heterogeneous land uses in the 8th and Penn Neighborhood Redevelopment Zone is to identify character-defining elements and patterns created by these elements that currently provide a sense of place and identity. An analysis of the historic land use and the existing built environment revealed four (4) zones, each with distinctive history and appearance.

ZONE 1: HISTORIC DISTRICT

The centerpiece of the redevelopment zone is the group of masonry manufacturing buildings bounded by East 8th Street on the north, Pennsylvania Street on the west, Delaware Street on the east, and East 9th Street on the south that is eligible for listing as a historic district in the National Register of Historic Places. These industrial buildings range from one story to four stories in height and date from the 1880's through the 1920s. The buildings are ideal candidates for rehabilitation into mixed adaptive uses that will allow them to retain the necessary level of historic architectural integrity to continue to contribute to an understanding of the historic district's associations with commerce and architecture in Lawrence. These buildings are eligible for participation in federal and state rehabilitation tax credit programs.

ZONE 2: STREETSCAPES AND ALLEYS

The redevelopment zone retains many of the elements that defined its historic streetscapes and alleyways. These features and spaces compose the grid of streets, alleys, and sidewalks, as well as the off-axis railroad right-of-way. The majority of the public right-of-way areas are the spaces and infrastructure between the buildings' façades on both sides of the streets and generally includes the following:

1. Pedestrian spaces between the buildings and street curbs, including landscaping, lighting fixtures, informational signage, pavement materials, and steps accessing residences and driveways to rear lots, alleyways, or off-street parking areas

2. The street which contains lanes of traffic, crosswalks, and vehicle parking adjacent to the curbs

3. Alleyways

4. Railroad right-of-way and associated alignment

Other than the railroad right-of-way features and spaces, these streetscape and alley features are a continuation of the City's traditional platted grid of street and alley systems of the neighborhoods to the south and west of the redevelopment zone. As a whole, this grid contains important historic character-defining spaces, structures, and materials. The retention of these features will contribute to a visual transition and linkage between the adjacent historic residential streetscapes and the new development in the redevelopment zone. At the same time, retention, restoration, and enhancement augment the character of the East Lawrence Industrial Historic District (Zone 1).

ZONE 3: 800 PENNSYLVANIA MIXED-USE ZONE

The streetscape and lots bordering the industrial/manufacturing zone in the block bounded by East 8th on the North, Pennsylvania Street on the east, the alley between Pennsylvania Street and New Jersey Street, and East 9th Street on the south was historically a residential street.[3] The loss of its historic residential character is due to demolition and the expansion of commercial/industrial buildings westward. This zone is adjacent to two intact residential areas — one west of New Jersey Street and one south of East 9th Street — that are part of the large East Lawrence historic residential neighborhood. Within Zone 3, there do not appear to be any historic buildings with sufficient integrity to communicate associations with the period of significance of the National Register East

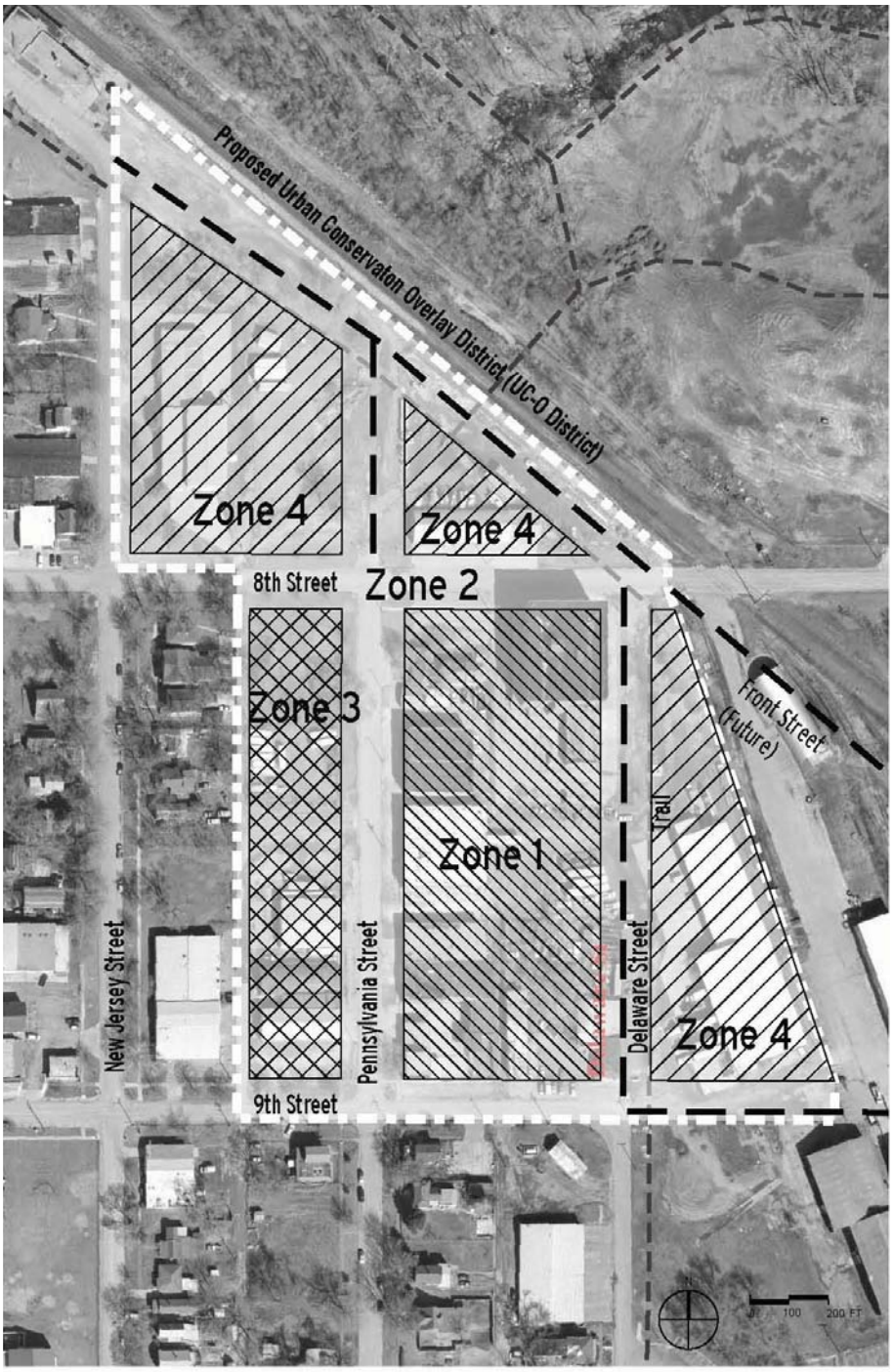
[3] The residential streetscape is intact in the Sanborn Fire Insurance Company map of 1927, a date that generally coincides with the end of the period of significance of the National Register East Lawrence Industrial Historic District.

Lawrence Industrial Historic District that comprises Zone 1 or with the residential resources on New Jersey Street. Zone 3 has the potential to become a transition zone between the existing single-family residential neighborhoods on the boundary of the redevelopment zone to the new commercial and residential uses planned in the redevelopment zone. In particular, this zone is ideal for development into higher density residential and limited commercial uses.

ZONE 4: EXISTING AND NEW CONSTRUCTION ZONE

This zone is composed of several irregularly shaped parcels that are adjacent to the railroad right-of-way and have traditionally served as areas for light manufacturing, storage, and railroad-related activities. Open space and temporary and permanent storage and manufacturing facilities defined these areas historically. Most of the buildings were large facilities of one to two stories in height aligned to both the historic street grid and the railroad's diagonal right-of-way and associated infrastructure. The infrastructure of this zone is industrial, featuring random curbing and no sidewalks. Within Zone 4, there do not appear to be any historic buildings dating to the period of significance of the buildings found in Zone 1 or to the residential enclave to the west. There are, however, buildings that are more than fifty years of age. Among them are Quonset Hut buildings dating to the World War II period and erected for industrial purposes. These areas within Zone 4 provide opportunities for new types of development that would retain open spaces and enhance the visual connection to the railroad right-of-way.

FIGURE 3: ZONE OVERVIEW



LAND USE PLAN

ZONING: LAND USE AND DEVELOPMENT STANDARDS

As stated in the *East Lawrence Neighborhood Revitalization Plan*, the unique character of the East Lawrence residential neighborhood is, in part, the coexistence of commercial, manufacturing and residential uses of land. In other words, this neighborhood has traditionally been a mixed-use community. Redevelopment and new development within the East Lawrence neighborhood should respect and expand this mixed-use tradition. The redevelopment concept for the 8th and Penn Neighborhood Redevelopment Zone proposes to do that through creating a horizontal and vertical mixture of land uses including residential, professional offices, inner-neighborhood commercial uses, and retail operations. Unfortunately at this time the Lawrence Zoning Code provides limited means and districts that provide for this type of development. Currently the only feasible way under the Lawrence Code to develop a mixed-use project in the 8th and Penn Neighborhood Redevelopment Zone is through a two-step procedure, including 1) the property in question must be rezoned to a base zoning district that controls the land uses within the district and 2) an Urban Conservation Overlay District ("UC-O District") must be created that will control the design and development standards of the district.

LAND USE ALLOCATION

As the impetus to rezone the property and create a UC-O District for the 8th and Penn Neighborhood Redevelopment Zone is premised on creating a vital mixed-used neighborhood, it is important that restrictions be crafted that insure this vision comes to light. Namely, neither the Developer, City, nor the East Lawrence Neighborhood Association, desires this property to be developed for "big box" retail uses or as an area that is principally retail in use.

As such, retail uses shall be limited to a maximum of 25% of the net floor area for the UC-O District (See Appendix B). In addition, as the Poehler Mercantile Company building is to serve as the anchor and focus of the UC-O District, in no case shall a single retail shop or tenant occupy net floor area in excess of 16,000 square feet at ground floor level. A single retail shop or tenant may occupy in excess of 16,000 if they occupy multiple floors.

As currently drafted, the City of Lawrence Code provides limited zoning districts in which mixed-use development, including residential, professional offices, inner neighborhood commercial uses, and retail operations, may occur. Of these available districts, the City of Lawrence planning staff determined C-5, limited commercial district, the most appropriate zoning district for the 8th and Pennsylvania Neighborhood Redevelopment. While C-5 is the appropriate zoning for this redevelopment, this does not currently comply with *Horizon 2020*. As a result, there is currently a text amendment submitted to correct this omission. As such, Zones 1, 2 and 3 will be rezoned to a C-5 zoning district. This underlying base zoning will control the use of land, buildings, and structures within Zones 1, 2, 3 and 4.

DESIGN AND DEVELOPMENT STANDARDS

Mixed-use development cannot easily meet the requirements of traditional zoning districts. Successful mixed-use development can only thrive in areas that not only allow for the mixture of land uses, but also allow development of adequate density so that "critical mass" may be achieved. The development standards found in traditional zoning districts are antithetical to creating this critical mass. Development standards that were drafted on the premise of low-density development that segregates and buffers differing land uses from each other through lot size regulations, large setbacks, height and density regulations, and parking minimums limit the development of mixed-use projects. The Lawrence Code recognized this problem and has provided a solution – the UC-O District. A UC-O District allows the City and a developer to tailor the development standards applicable to an area so that mixed-use development of appropriate size, orientation, and setting can be built within a neighborhood or area. The Lawrence Code provides that upon creation of a UC-O District the specific development and design standards approved by the Historic Resource Committee, the City Commission and City Planning will guide development and redevelopment within the district. The Lawrence Code further provides that when development and design

standards of the underlying base zoning district conflict with the development and design standards of the UC-O District, the standards of the UC-O District will govern.

The following development standards shall apply within this UC-O District:

LOT AREA AND YARD REGULATIONS

Standard	CS	IG	8th & Penn UC-O
Min. Site Area	-	5,000 sq.ft.	NA
Max. Site Area	-	–	NA
Min. Lot Area (sq. ft.)	5,000 [5]	5,000	1872
Min. Lot Width (ft.)	100 [5]	50	16’
Front [9]	25 [5]	[1]	NONE
Side (Exterior) [2] [9]	[3]/20 [5]	[1]	NONE
Side (Interior–adj. R) [9]	10 [5]	[1]	NONE
Side (Interior–adj. Non-R)	0	[1]	NONE
Rear [4] [9]	20/25 [5]	[1]	NONE
Max. Front Setback	NA	NA	15’
Max. Lot Coverage (%)	80 [5]	85[5]	NA
Max. Impervious Lot Cover (%)	80 [5]	75[5]	NA
Area (sq. ft.)	50[5]	–	NA
Dimensions (ft.)	5[5]	–	NA
Max. Height (ft.)	35 [5]	75	NA
Abutting Street Right –of-Way			
Across from R District	NA	50’	NA
Across from Non-R District	NA	25 / 50**	NA
Abutting Other Lot Lines			
Abutting R District	NA	50’	NA
Abutting Non-R District	NA	15’	NA

**Arterial / Collector

This table (taken from the City of Lawrence Land Development Code 20-601) illustrates the difference in allowable setbacks between a typical C-5 development, and development in the 8th and Penn UC-O District. The elimination of the lot size and setback requirement allows development to obtain an urban density, similar to the commercial nature of historic zone 1 , and promotes the creation of a defined street edge. Large setbacks and lot sizes are not conducive to

the pedestrian friendly environment appropriate to this location. In the case of setbacks, it should be noted that during the site plan review process the City Planning staff may deem setbacks necessary to mitigate impacts.

BUILDING HEIGHT

The historic Poehler Mercantile Company building will serve as a visual anchor and reference point for the UC-O District. In keeping with the history of the area, the Poehler building is to remain the tallest structure in the District.

To achieve that goal, all other buildings and structures within the UC-O District shall have a maximum of three stories and 40'-0" above grade. This height restriction would apply to all buildings in the UC-O District and structured cell towers. Cell towers with removable structures would also be allowed in the UC-O District and may exceed this height requirement.

DENSITY

Mixed-use development requires adequate residential density so that critical mass may be achieved. As such, the dwelling unit density shall not exceed thirty-four (34) units per net residential acre, as defined in the City of Lawrence Code Section 20-1007, or subsequent applicable City standards. Thirty-Four (34) units per acre were derived from the square footage of the Poehler Building divided by the number of residential units it is designed to hold. This number was compared to, and is lower than, the thirty-five (35) units per residential acre allowed in Lawrence Code for Planned Commercial Developments, Section 20-1008.

BUILDING SETBACK

The minimum setback from right-of-way, property, or lot lines allowed in the UC-O District is zero (0). The maximum front yard setback from right-of-way, property lines, or lot lines allowed in the UC-O District is 15'-0". New development that is roughly coplanar with adjacent buildings and structures is encouraged.

In Zone 4, parking lots or primary buildings shall have a zero foot set back.

PARKING

Parking in the 8th and Penn Neighborhood Redevelopment Zone will be designed to reflect the desired mixed-use pedestrian scale character of the Redevelopment Zone. One of the virtues of a mixed-use development is that parking areas can be shared by different users at different times. For example, a residential parking space could be used by an office user while the home owner is away during working hours. This results in a neighborhood that is active, more comfortable for the pedestrian, and better for the environment. The mix of uses proposed in the 8th and Penn Neighborhood Redevelopment Zone allows for a reduction in the parking requirements, typical for zoning districts and land uses more closely associated with heavy vehicular traffic. This reduction creates a more pedestrian friendly district as the residents will not have to cross large expanses of parking to reach their destination. In addition, this will be more environmentally sensitive due to the reduction of heat islands and light pollution commonly caused by large, open parking lots.

Parking density for office/retail/commercial property shall consist of one (1) on- or off-street parking stall for every five hundred (500) square feet of floor area, or one (1) space for each 1.5 employees, which ever is larger. For food related uses, the requirement shall be 1 space per 250 square feet of space. This is consistent with the 1966 City of Lawrence Code for parking, Group 17. Accessible parking stalls will be provided in accordance with the Americans with Disabilities Act Accessibility Guidelines (ADAAG). It is estimated that there will be 46,500 square feet of retail space and 24,500 square feet of office space for an estimated parking requirement of 348 spaces.

Parking density for residential property shall consist of one (1) on- or off-street parking stall for every residential unit. For units with 2 bedrooms or more, 2 spaces per unit. This is consistent with the 1966 City of Lawrence Code for parking, Group 2-F. Accessible parking stalls will be provided in accordance with the Americans with Disabilities Act Accessibility Guidelines (ADAAG).

Parking lots shall be setback from the lot line a minimum of three (3) feet to provide room for a vegetated buffer or other type of approved screening. Existing parking in historic Zone 1, and alley ways in all zones, shall be exempt from these requirements.

All off-street parking areas in Zones 3 and 4, and those containing five or more vehicles, shall be effectively screened on each side that adjoins or is across the street from any residential district with a view-reducing barrier. This barrier shall be at least three feet but not more than six feet in height.

Parking lot lighting shall be consistent with section 20-14A03 of the Lawrence Zoning Guidelines, or subsequent applicable City standards, and is discussed further on page 18, in the Lighting section of the Design Guidelines. In order to limit lighting impacts on adjacent residential properties, low bollard lighting will be utilized in parking areas adjacent to these properties in lieu of standard pole lighting.

DESIGN GUIDELINES

In addition to the development standards above, the following design guidelines are proposed to preserve the existing character-defining elements through rehabilitation and to enhance the surrounding areas with compatible new construction that capitalizes on the heterogeneous nature of the zone while also creating a cohesive entity that visually links with the adjacent neighborhoods. Thus, the purpose of these guidelines is to sensitively mediate the forces of change, create an opportunity for architectural innovation and problem solving, and enhance the existing neighborhood fabric. Given the varied nature of the project area, the chosen approach is to apply the Secretary of the Interior's Standards for Rehabilitation where applicable to each of the zones identified in the environs review.

Based on over 120 years of evolving preservation methodology involving the identification, evaluation, and protection of historic and cultural resources in Europe and America, "The Secretary of the Interior's Standards for the Treatment of Historic Properties" provides a set of common-sense principles to encourage consistent preservation practices. The Secretary's Standards for Rehabilitation may be applied to adaptive use of historic buildings, sites, structures, objects, districts, and cultural landscapes as well as to new construction and alterations affecting historic buildings as well as the environs of historic resources.

THE SECRETARY OF THE INTERIOR'S STANDARDS FOR REHABILITATION OF HISTORIC PROPERTIES

1. A (historic) property shall be used for its historic purpose or shall be placed in a new use that requires minimal changes to the defining characteristics of the building and its site and environment. (Applicable to Zone 1)

2. The historic character of a property will be retained and preserved. The removal of historic materials or alterations of features and spaces that characterize a property will be avoided. (Applicable to Zones 1 and 2)

3. Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings shall not be undertaken. (Applicable to Zones 1, 2, 3 and 4)

4. Most properties change over time: those changes that have acquired historic significance in their own right shall be retained and preserved. (Applicable to Zones 1 and 2)

5. Distinctive features, finishes, and construction techniques that are examples of craftsmanship that characterize a property shall be preserved. (Applicable to Zones 1 and 2)

6. Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, the visual qualities and, where possible, materials. Replacement of missing features shall be sustained by documentary, physical, or pictorial evidence. (Applicable to Zone 1)

7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible. (Applicable to Zone 1)

8. Significant archaeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken. (Applicable to Zones 1, 2, 3 and 4)

9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing size, scale, and architectural features to protect the historic integrity of the property and its environment. (Applicable in varying degrees to Zones 1, 2, 3 and 4)

10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired. (Applicable to Zone 1)

APPLICATION OF DESIGN GUIDELINES

Design guidelines serve as a communication tool in educating property owners and developers as to the community expectations for new construction and renovations of existing buildings. They will also serve as a guide for local, state, and national staff in reviewing various types of applications for alterations prior to the issuance of permits, as well as for utilizing incentives such as the federal and state rehabilitation tax credits. Given the architectural variety, multiple uses, and anticipated development over an extended period of time, the review of proposed alterations and new construction in the 8th and Penn Neighborhood Redevelopment Zone will be conducted on a case-by-case basis.

These guidelines are not meant to serve as a checklist for "good" design. Nor are they meant to be applied in such a stringent manner as to prevent creative design alternatives. However, it is the intent of these guidelines to provide guidance to the regulatory authorities to ensure that new construction and renovation is consistent with the character-defining elements identified in the guidelines.

REVIEW PRINCIPLES

The guidelines shall apply only to the exterior of buildings and to portions of existing and proposed buildings visible from the pedestrian level from public rights-of-way, including alleyways.

Existing buildings will be identified as "contributing" or "non-contributing" to the East Lawrence Industrial Historic District, as part of the National Register Listing. Contributing buildings should be more carefully reviewed than those buildings that have been identified as non-contributing to the National Register East Lawrence Industrial Historic District.

While economic costs are not a primary factor in the review process, cost will be considered in relation to the adherence of these guidelines.

It is not the intent of these guidelines to require existing buildings, structures, and sites to be in full compliance with these guidelines. Existing buildings that contain non-conforming elements are encouraged to make alterations that will improve the overall appearance of the building. As non-conforming buildings are altered, the proposed alterations shall be in compliance with these guidelines.

City staff will use these guidelines to review proposed projects in a consistent, fair, and equitable manner. If staff believes a proposed project does not meet the intent of the guidelines, the applicant may appeal first to the Historic Resources Commission, and, if necessary, to the City Commission. All new development, or redevelopment, within the UC-O District, shall require a site plan application and, when applicable, replat and/or rezone applications. Historic Resources Commission, Planning Commission, and City Commission review shall be required, when applicable, along with the standard site plan review. In addition to the typical documents required for submission during Site Plan Review, the submittor will also include any and all revisions to Appendix B of this document.

GENERAL GUIDELINES

NEIGHBORHOOD CONTEXT

The *East Lawrence Neighborhood Revitalization Plan* addresses a geographical area of diverse land uses and neighborhoods and includes the 8th and Penn Neighborhood Redevelopment Zone. The Plan's goal is the revitalization and rehabilitation of its historic resources, as well as strengthening East Lawrence's attractiveness and its diversity. These UC-O District guidelines enhance and further refine the general design guidelines and principles of the *East Lawrence Neighborhood Revitalization Plan.*

STORMWATER

The guiding principles for water quantity and quality goals include:

1. Preserve existing significant natural features
2. Maximize infiltration and minimize imperviousness
3. Select Best Management Practice that favor sheet flow and on-site infiltration of storm water versus piping or channeling

4. Apply "soft-engineered" solutions of plants, swales, and topographic depressions versus "hard-engineered" solutions of concrete channels, curb inlets and storm sewers
5. Utilize native plant species that are adapted to the microclimate of their proposed site placement
6. Incorporate Best Management Practice into the proposed architecture (e.g., water cisterns, pervious parking, roof water collection)

LINKAGES

Pedestrian linkages shall be accessible to people with disabilities. Pedestrian linkages should offer a variety of visual and textural stimuli, should provide locations for rest and some relief from sun, wind, rain and snow, and should be designed for safety in terms of slopes, materials, and visibility. Pedestrian linkages should incorporate some distinctive materials or landscaping in common to help create a visually coherent space and to help connect it to surrounding areas.



An effective pedestrian linkage that is accessible, safe, and interesting

PARKING

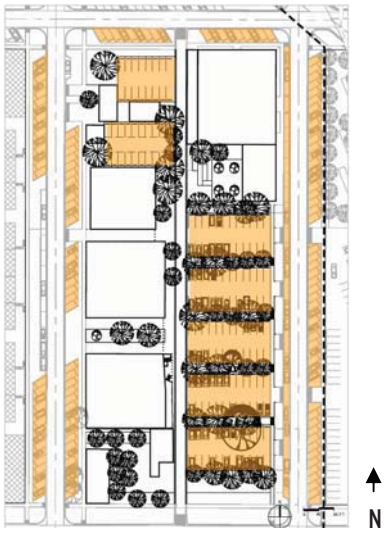
In general, surface parking lots should be located at the rear or sides of structures. Larger surface lots should be subdivided with landscaped islands that include trees. Pedestrian walkways adjacent to parking and driveways should be visually and spatially separated through the use of additional site elements, which could include bollards, lighting, landscaping, and special pavement treatments. In order to maintain the historic and industrial integrity of the area, some interior landscaping should be provided. However, surface parking areas shall not be required to meet the landscaping provisions set forth in 20-14A04.6, 20-1205, and 20-1217 of the City of Lawrence Zoning Code, or subsequent applicable City standards.

Gravel parking and pervious paving should be designed to let water infiltrate and be temporarily stored below the surface to reduce or eliminate runoff and allow the surface to be used for parking or pedestrian traffic. This environmental method of surface water run-off control reduces the amount of contaminants exiting the site by allowing the water to permeate the ground surface. This reduction in site run-off, in turn, decreases the amount of contaminants leaving the site and entering into the city stormwater system or nearby river.

Unless otherwise noted, all parking lot sizes, drive lanes, accessible stall counts, and other design features shall be consistent with the City of Lawrence Code, Section 20-1205, or subsequent applicable City standards.



Example of Parking (recommended) – vegetated islands improve lot appearance.



Example of Parking Strategy – small lots at the rear or side of structures, and landscaped planters divide larger parking areas.



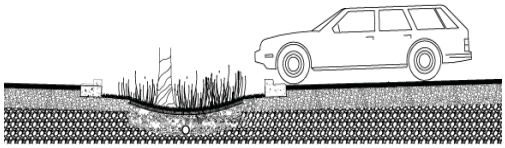
Example of street parking (recommended)



Example of compacted gravel system



Example of bio-swale



Site Section at parking with bio-swale

LIGHTING

The lighting should consist of artificial sources of illumination, particularly street lighting, pedestrian-level lighting, and lighting of signs and architectural features. The intent of the lighting plan will be to:

1. Enable people within a development zone or passing by to see well enough to find their destinations and to conduct their activities safely

2. Enliven and set the overall mood of a development zone

3. Increase the sense of security without negatively impacting surrounding residences

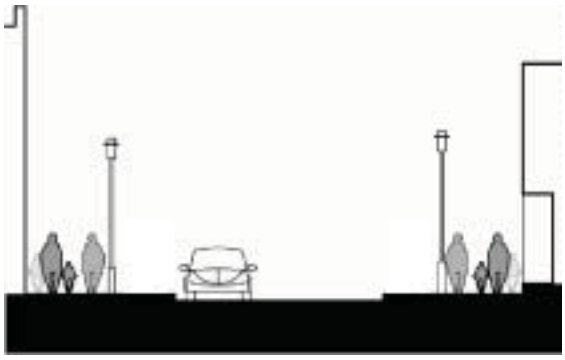
This will be addressed on three levels within the described zones:

1. Street and parking lighting (described in Zone 2)
2. Pedestrian lighting (described in Zone 3)
3. Building lighting (described in Zones 1 & 4)

Lighting should reflect the historic industrial/residential use, but provide sufficient illumination to promote health and safety and attract and accommodate pedestrian traffic. In order to limit lighting impacts on adjacent residential properties, low bollard lighting will be utilized in parking areas adjacent to these properties in lieu of standard pole lighting. Light fixtures shall be simple contemporary designs with no references to a particular historic era, and should be consistent throughout the redevelopment zone. All exterior fixtures will be fully shielded, include non-reflective, non-swivel heads mounted at a 45 degree angle, and be confined to net acreage.



Streetlights with zero up light



Site Section through street

SIDEWALK DINING AREAS

Creation of sidewalk dining areas shall be in accordance with the City of Lawrence "Guidelines for Sidewalk Dining Areas" as revised and approved in 2005. Placement of sidewalk dining areas shall be such that they do not restrict egress to and from building or public right-of-way.

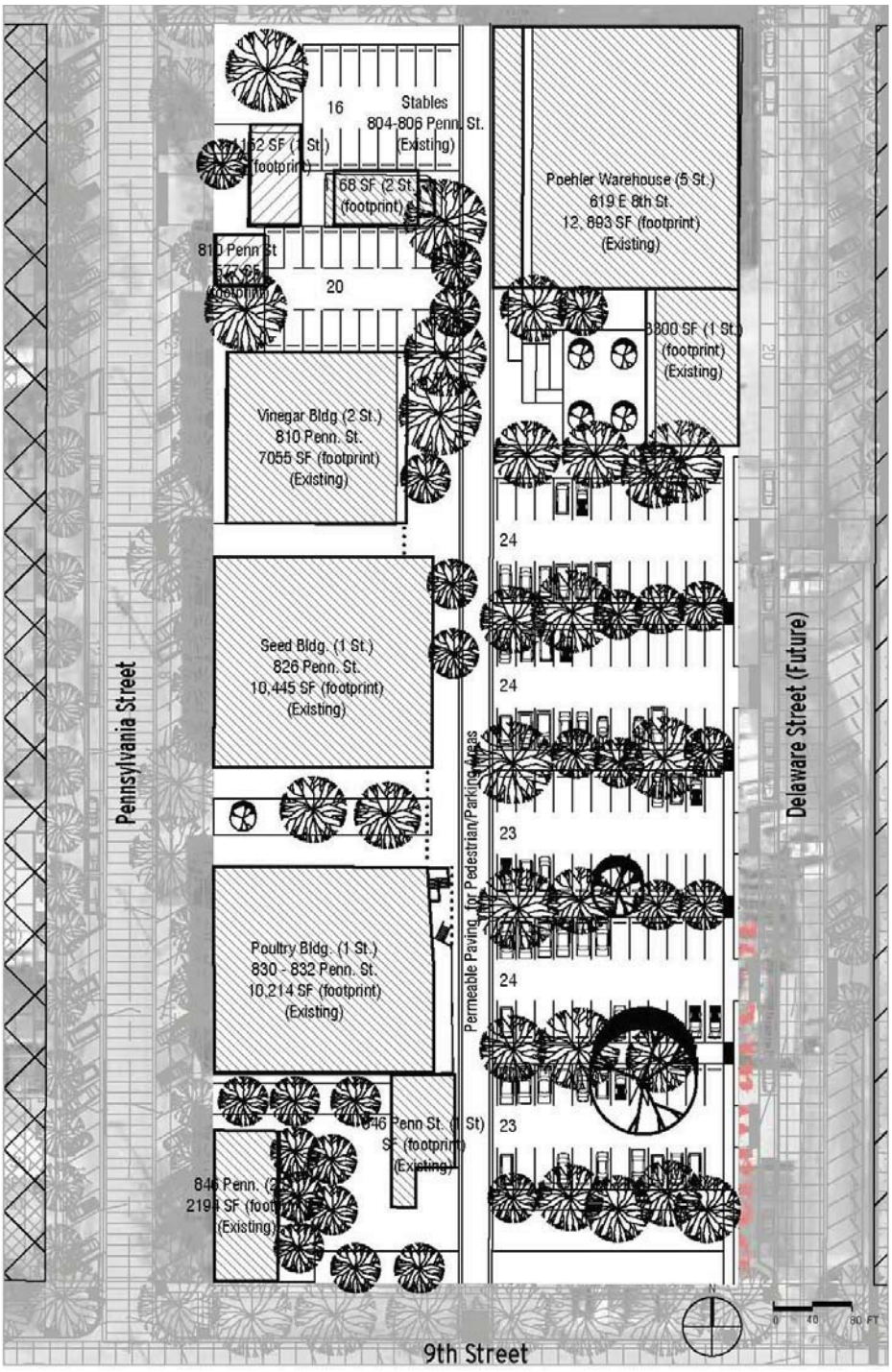
DEMOLITION

Demolition should be the result of a holistic planning and development process. Properties listed in the National Register of Historic Places, the Register of Historic Kansas Places, or the Lawrence Register of Historic Places are subject to additional review as required by KSA 75-2724 and/or Chapter 22, Code of the City of Lawrence. Moreover, demolition of properties within the environs of listed properties is also subject to review. Historic tax credit programs include the anticipated demolition as part of the compliance review process. Federal agencies must consider the impact of demolition on project undertakings as well.

Any demolition request not related to public safety shall be accompanied by additional documentation indicating the existing condition of the building and the proposed use for the site. Documentation shall include proposed elevations and an explanation of why it is not feasible to use the existing structure/building.

Demolition permits shall be reviewed by the Historic Resource Commission. If the permit is denied by the Historic Resource Commission, it may be appealed to the City Commission.

FIGURE 4: ZONE 1 HISTORIC DISTRICT – RECOMMENDED SITE IMPROVEMENTS



LAND USE PLAN

ZONE 1: HISTORIC DISTRICT

NEIGHBORHOOD CONTEXT

The boundaries of Zone 1 coincide with the boundaries of the National Register East Lawrence Industrial Historic District, correspond to the lot lines, and do not include the sidewalks, verges, and curbs that are included in Zone 2. The commercial/industrial buildings and spaces in Zone 1 determine both the functional and visual character of the 8th and Penn Neighborhood Redevelopment Area. Dating from the 1870s through the 1920s, they include examples of detached industrial buildings from almost every decade of the late nineteenth century through the onset of the Great Depression in the twentieth century. The goal in rehabilitating these buildings and structures is to preserve or recapture the original character of the buildings and their setting by adapting proposed changes to the building's character-defining features.

ARCHITECTURAL CHARACTERISTICS AND MATERIALS

ROOF SYSTEMS

A weather-tight roof is basic to the preservation of a building or structure. Because of the historic/commercial industrial character of Zone 1, the roof forms and materials associated with a building's historic use is very important. In Zone 1, the building function and form dictated the roof form and the desire for a fireproof building determined the choice of materials.

The roof forms found in Zone 1 include flat roofs, gable roofs, and shed roofs. Based on the existing building roofs and historic photographs, historic building materials and treatments included built-up composition roofs as well as sheet metal, galvanized iron, corrugated metal, and standing seam metal roofs. Historically, sheet metals (lead, copper, zinc, tin plate, and terne plate [iron dipped in an alloy of lead and tin]) and galvanized iron were common roofing materials in commercial/industrial areas and are appropriate substitute materials when the original is unknown or in new construction within Zone 1.

Although the coping on parapet walls is part of a masonry feature, it is often considered in the discussion of roofing materials. Terra-cotta and clay coping historically occurred in Zone 1. There is no evidence of the use of stone or metal coping.

If the roof is flat and is not visible from the public right-of-way, there are economic and physical advantages to substituting a built-up composition roof or other modern roofing system for what might have been a flat metal roof. If the roof is visible, substitute materials should match as closely as possible the scale, texture, and coloration of the historic roofing material, if known. If unknown, lead-coated copper, terne-coated steel, and aluminum/zinc-coated steel can successfully replace tin, terne plate, zinc, or lead roofing materials. Wood, tile, and slate roofing material are not appropriate. Terra-cotta and clay tile coping continue to be the appropriate materials for coping.







Roof Types in Zone 1

Recommended	Not Recommended
Examining and determining the composition of the existing roof and any evidence of the earlier roof. Consulting with an architect, engineer, or roofing professional to understand the scope and detailing of the roof project and ensuring proper supervision of roofers and/or maintenance personnel.	Hiring a roofing contractor without receiving a preliminary analysis of the existing conditions and scope-of-work by other professionals.
Retaining the shape, materials, and colors of the original roof that are visible from the public right-of-way. Maintaining architectural details such as cresting, parapets, and cornices.	When repairing or replacing a roof, avoid using new roof forms, materials, colors, or elements that are visible from the public right-of-way.
Replacing roof materials with similar materials that reflect the scale and texture of the traditional roof materials when they are visible from the public right-of-way.	
Designing and constructing a new roof feature using visual documentation when a historic feature is completely missing. Using a new design for a missing historic feature that is compatible with the size, scale, material, and color of the building.	Creating a false historical appearance or introducing a new roof feature that is incompatible in size, scale, material, or color.
Installing mechanical and service equipment such as air conditioning, transformers, or solar collectors on the roof so that they are inconspicuous from the public right-of-way and do not damage or obscure important building features.	Installing mechanical or service equipment so that it damages the building elements or obscures important building features.
Patching roof leaks with materials similar to those of the roof construction.	Patching roof leaks with caulks or sealants as a means of long-term repair.
Retaining the original roofline and parapet features	
Resurfacing of flat/built-up roofing materials	





Because of the simple industrial design, the parapet and cornice treatment at the roofline are often one of the most important architectural elements of industrial buildings.

See also: Technical Preservation Services, Heritage Preservation Services Division, National Park Service *Preservation Brief 4: Roofing for Historic Buildings*.

CONCRETE




Existing concrete - Zone 1

Different types of concrete are found in Zone 1. Unreinforced concrete is a composite material containing aggregates (sand, gravel, crushed shell, or rock) held together by a cement combined with water to form a pliant mass that hardens as the concrete dries out ("cures"). Reinforced concrete is concrete strengthened by the inclusion of metal bars. Both unreinforced and reinforced concrete can be cast-in-place or precast. Cast-in-place concrete is poured on site into a formwork that is removed after the concrete sets. Precast concrete is molded off site into building components.

In Zone 1, concrete appears in foundations, supporting columns, sidewalks and driveways, curbing, loading docks, elevated exterior walkways, stair systems, and window sills.




Existing concrete - Zone 1

The condition of the historic concrete elements found in Zone 1 reflects a wide range of conditions.

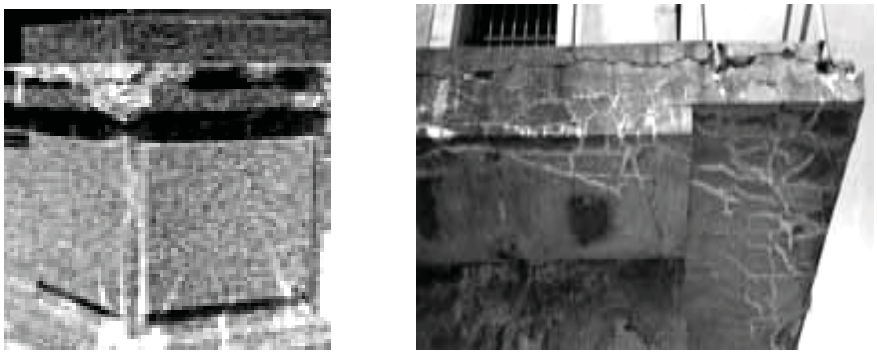
1. **Cracking** occurs over time in virtually all concrete. Cracks can be either active or inactive. Active cracks widen, deepen, or expand through the concrete. Dormant cracks remain unchanged. Some dormant cracks pose no danger to the stability of the concrete element; however, cracks of any type provide channels for moisture penetration, which usually causes further damage.

2. **Erosion** is the weathering of the concrete surface by weather and environmental pollutants.

3. **Corrosion,** caused by the rusting of the reinforcing bars in concrete, can be a serious problem. Rust, which occupies significantly more space than the original metal, causes expansive forces within the concrete, initiating cracking and spalling. Loss of concrete diminishes the load-carrying capacity of the concrete structure.

4. **Spalling**, which is the loss of surface material in patches of varying size, is caused by a number of conditions including moisture penetration.

5. **Deflection**, which is the bending or sagging of concrete beams, columns, joists, or slabs, can seriously affect both the strength and structural soundness of concrete.



Common conditions of historic concrete – spalling (left) and cracking (right)

Recommended

Undertaking repairs only after the completion of planning and analysis by a structural engineer or architect.

Filling in cracks with new material that matches the historic material. Using patching materials that are compatible with the existing concrete as well as with subsequent surface treatments such as paint or stucco.

If replacement is necessary, removing loose, deteriorated concrete and cutting damaged concrete back to remove the source of deterioration. Removing rust from exposed rebar with a wire brush or sandblasting and coating with an epoxy. Installing a compatible patch that dovetails into the existing sound concrete so that it will bond satisfactorily with and match the original concrete.

Not Recommended

Using temporary solutions that can expose a building to further and more serious deterioration.

Patching hairline cracks. Patching concrete without removing the source of deterioration.

See also: Technical Preservation Services, Heritage Preservation Services Division, National Park Service *Preservation Brief 15: Preservation of Historic Concrete: Problems and General Approaches.*

BRICK AND STONE MASONRY

The masonry features found in Zone 1 include brick, stone, and combinations thereof. Other than the painted sign on the Poehler Building and portions of the façade on 804 Pennsylvania, all exterior masonry surfaces are unpainted.

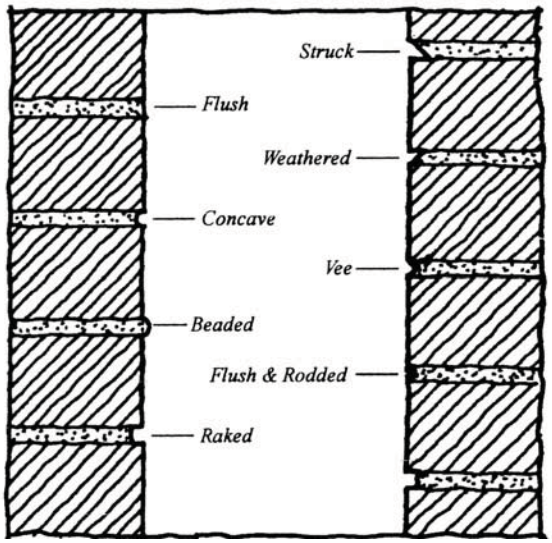




Existing brick and stone masonry – Zone 1

Recommended	Not Recommended
Retaining and preserving masonry features that are important in defining the overall character of a building such as walls, brackets, cornices, window surrounds, door surrounds, steps, columns, and details.	Removing or radically changing important masonry features. Applying paint or other coatings for purely cosmetic purposes to surfaces that were originally unpainted or uncoated.
Providing proper drainage so that water does not stand or accumulate on masonry surfaces.	Failing to treat causes of mortar joint deterioration such as leaking roofs or gutters, settling of the building, capillary action, or extreme weather exposure.
	Applying paint or other coatings to masonry that has been historically unpainted or uncoated.
Cleaning masonry only when necessary to halt deterioration or to remove graffiti or bad stains with the gentlest method possible, such as using low-pressure water (<400 psi), mild detergents, and natural bristle brushes. Conducting masonry surface cleaning tests when cleaning is necessary. Observing tests over a sufficient period of time so that both immediate and long-term effects are known, enabling selection of the gentlest method possible.	Cleaning masonry surfaces when they are not heavily soiled to create a new appearance and needlessly introducing chemicals or moisture into the original materials. Using abrasive or mechanical cleaning such as sandblasting that destroys the masonry. These methods allow water to penetrate the masonry and can result in severe damage to the brick or stone. Masonry damaged in this manner will deteriorate faster in the future. Cleaning masonry surfaces without conducting surface cleaning tests or allowing sufficient time to evaluate the immediate and long-term effects of the cleaning method.
Repairing cracks or missing bricks to prevent water infiltration and	Removing mortar from sound joints, then repointing the

Recommended	Not Recommended
further damage. Removing only deteriorated portions of brick in such a way as to avoid destroying adjacent masonry.	entire building to achieve a uniform appearance.
Applying new mortar with the same strength, color, and texture as the original mortar. Testing the original mortar to determine its original composition.	Using ready-mix mortars that have a high Portland cement content that, because it is stronger than old brick, will cause shifting and cracks.
Applying new mortar so that the joints match the original joints in width and profile.	Covering existing masonry with siding.



New mortar should be applied so that the new joints match the original in width and profile

Applying surface treatments such as "breathable" water-repellent coatings to masonry only after re-pointing and only if masonry repairs have failed to arrest water penetration problems.	Applying waterproof or water repellent treatments as a substitute for masonry pointing and repairs. Covering brick or stone with stucco or non-porous coatings. Coatings often act as sealants that block the transfer of water.
Repairing masonry by patching or piecing in.	Replacing an entire masonry feature when limited replacement is appropriate.
Replacing the original material with the same material or a compatible substitute material.	Using a substitute replacement material that does not match the original material.
	Covering masonry walls with a non-synthetic cement stucco, synthetic stucco-like coating, or siding of any material.

Recommended	Not Recommended
Leaving historic painted signage on masonry walls.	Removing paint from buildings that were historically painted
Cleaning masonry walls using the gentlest means possible.	Sandblasting, applying caustic solutions, and/or high-pressure water blasting.
Pressure cleaning historic brick or stone with water or water and a non-ionic detergent at a range of 100 to 400 psi from a distance of 3 to 12 inches after testing to find the least abrasive level.	
Hand cleaning glazed architectural terra-cotta and tile coping with a natural bristle brush using non-ionic detergent and water.	
Removing loose or deteriorated paint only to the next sound layer using the gentlest method possible prior to repainting.	
Repairing causes of leaks, water infiltration, capillary action, and/or condensation	
Using vapor permeable water-repellent coatings in selected areas only after a reasonable period of time has passed since a building has been made watertight and has dried out completely and only if moisture appears actually to be penetrating through the repointed and repaired masonry walls.	Using vapor permeable or "breathable" water-repellent coatings. Using waterproof coatings that seal the surface from liquid water and water vapor.
Cleaning masonry, when necessary to prevent biological growth, with low-pressure water (30 to 100 psi) and a natural- or synthetic-bristled scrub brush.	
Removing graffiti as soon as possible by using non-abrasive chemical cleaners after careful testing.	Using anti-graffiti or barrier coatings.

REPLACEMENT OF MISSING MASONRY FEATURES



False brick "quoining" introduces design elements not found in the historic industrial district

Recommended

Designing and installing a new masonry feature such as steps or a door surround using accurate documentation of the appearance of the original feature. When there is no documentation of the original element, new designs should be compatible with the building in size, scale, material, and color.

Not Recommended

Creating a false historical appearance by using historical treatments based on other buildings or conjecture. Introducing a new feature that is incompatible with the building in size, scale, material, and color.





Above: c. 1950 photograph of masonry openings and concrete docks, Barteldes Seed Company. Below: Current condition of the same entrance.

See also: Technical Preservation Services, Heritage Preservation Services Division, National Park Service *Preservation Brief 1: Assessing Cleaning and Water-Repellent Treatments for Historic Masonry Buildings; Preservation Brief 2: Repointing Mortar Joints in Historic Masonry Buildings; Preservation Brief 6: Dangers of Abrasive Cleaning to Historic Buildings; Preservation Brief 7: The Preservation of Historic Glazed Architectural Terra-Cotta; Preservation Brief 38: Removing Graffiti from Historic Masonry;* and *Preservation Brief 42: The Maintenance, Repair and Replacement of Historic Cast Stone.*

SIDING

No buildings in Zone 1 have siding

Recommended	Not Recommended
	Covering the building's original wall materials with siding.

WOOD MATERIALS

Wood is used for structural members and flooring in some of the older buildings in Zone 1. It is also used in window and door framing, sashes, and in some soffit areas. It was seldom used for roofing shingles.

There are no wood roofs or siding in Zone 1. Wood appears in window frames and sashes; in pedestrian, garage, and loading dock doors; and as structural supports and flooring. All replacement elements should be in-kind. No synthetic materials should be used in new construction to replicate traditional wood features.

Recommended	Not Recommended
When damaged beyond repair, replacing all wood elements in-kind.	Replacing wood elements with synthetic materials.
Removing vegetation that grows too close to wood surfaces.	
Keeping wood joinery adequately sealed, primed, and painted to avoid water penetration.	
Priming all exposed wood surfaces before painting.	
Providing proper drainage and ventilation to minimize rot.	
Maintaining a slope on horizontal wood surfaces, such as entrance floors or sills, to ensure that water does not collect.	
Recaulking joints where moisture might penetrate. Removing old caulk and dirt prior to recaulking.	

See also: Technical Preservation Services, Heritage Preservation Services Division, National Park Service's *Preservation Brief 9: The Repair of Historic Wooden Windows* and *Preservation Brief #10: Exterior Paint Problems on Historic Woodwork.*

ARCHITECTURAL METAL FEATURES

In addition to the use of sheet metal as a roofing material as discussed in the Roofing section of these guidelines, galvanized iron, iron, and steel are also found in Zone 1. Historic and non-historic uses include fire escapes, lintels and loading dock door frames and dock edging, all of which were historically iron. Window frames and muntins utilized steel and galvanized iron. Downspouts were generally corrugated metal. Replacement should be in-kind in both contributing and non-contributing buildings and structures. New construction should use traditional materials.



Existing metal features – Zone 1

Recommended	Not Recommended
Retaining and preserving architectural metal features that are important in defining the architectural character of a building.	Removing or radically changing important metal features. Removing a major part of the metal feature instead of repairing or replacing only the deteriorated metal. Removing metal features and then reconstructing the façade with new material in order to create an "improved" appearance.
Providing proper drainage so that water does not accumulate on surfaces.	Failing to treat the causes of corrosion, such as moisture from leaking roofs or gutters.

Cleaning architectural metals to remove corrosion prior to repainting or applying other appropriate protective coatings. Identifying the type of metal prior to cleaning. Cleaning metals using the gentlest method possible as determined by research and/or testing. Applying an appropriate protective coating when necessary.

Using cleaning methods that alter or damage the color, texture, and/or finish of the metal. Removing the patina that a metal acquired over a period of time (the patina may be a protective coating on some metals).

Placing incompatible metals together without providing a reliable separation material to prevent galvanic corrosion. For example, copper corrodes cast iron, steel, tin, and aluminum. Exposing metals originally intended to be protected from the environment. Applying paint or other coatings to metals such as copper, bronze, aluminum, or stainless steel that were originally exposed.

Repairing metal features by patching, splicing, or otherwise reinforcing the metal. When damaged beyond repair, replacing the damaged portions with materials that match the original in size, scale, material, and color.

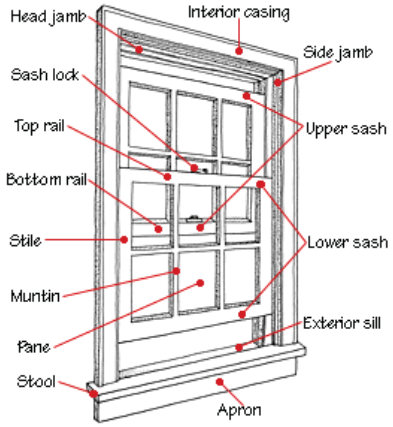
Replacing an entire feature when repair or replacement of only the damaged element is possible. Removing a metal feature that has irreparable damage and not replacing it. Replacing a metal feature with a new metal feature that does not have the same visual appearance as the original or introducing a new metal feature that is incompatible in size, scale, material, and color.

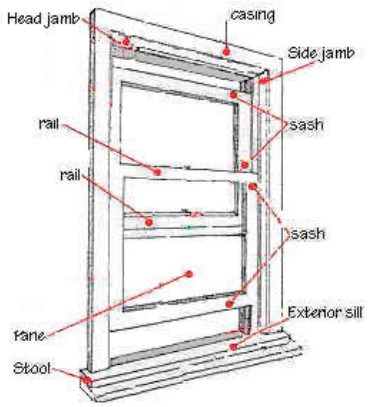
Reproducing in-kind a missing feature or when there is no documentation of the original feature, replacing the missing feature with a new design that is compatible with the size, scale, material, and color of the building.

See also: Technical Preservation Services, Heritage Preservation Services Division, National Park Service's *Preservation Brief 13: The Repair and Thermal Upgrading of Historic Steel Windows* and *Preservation Brief 27: The Maintenance and Repair of Architectural Cast Iron.*

WINDOWS

Serving as both an interior and exterior feature, windows are always a key element in the building's character. They reflect changes in technology and period of time. The historic functional and decorative features include frames, sashes, muntins, glazing, sills, heads, hood molds, moldings, and shutters. The dimensions and proportions of window parts greatly influence the overall appearance of the window. Lead abatement or thermal performance may be accomplished without the loss of historic windows and is not justification for replacement.





Typical window components found in late nineteenth and early twentieth century double-hung sash units

Both wood and metal windows occur in the buildings and structures in Zone 1 and have double-hung sash, casement, fixed pane, and awning units. When the design and materials of the original windows cannot be ascertained, wood, wood-clad metal and metal windows are compatible window materials for replacement windows and windows used in new construction. Synthetic materials, including vinyl windows, are not acceptable as replacement windows or as windows in new infill construction because of their inability to meet the traditional sash proportions due to their construction materials.

Recommended	**Not Recommended**
	Using vinyl window units.
Conducting an in-depth survey of the conditions of existing windows early in the rehabilitation planning process so that repair and upgrading methods and possible replacement options can be fully explored.	Replacing windows that can be repaired. Replacing windows solely because of peeling paint, broken glass, stuck sashes, and high air infiltration. Removing or radically changing windows that are important in defining the character of a building.
Retaining and repairing the original windows and their character-defining elements whenever possible. Repair may include incremental replacement of individual elements such as sills or sashes by patching, splicing, consolidating, or reinforcing with in-kind or compatible substitute materials.	Changing the number, location, size, and glazing pattern of windows by blocking-in windows or installing replacement sashes that do not fit the original window opening.
Using low profile boxed skylights installed between rafters when not visible from the public-right-of-way.	Using bubble or Plexiglas skylights that protrude from the roof plane.
Retaining and repairing the original windows and their character-defining elements whenever possible. Repair may include incremental replacement of individual elements such as sills or sashes by patching, splicing, consolidating, or reinforcing with in-kind or compatible substitute materials.	

Recommended



Repair and retain character of original window when possible

Accomplishing thermal upgrade by using exterior or interior storm windows that have minimal visual intrusiveness.

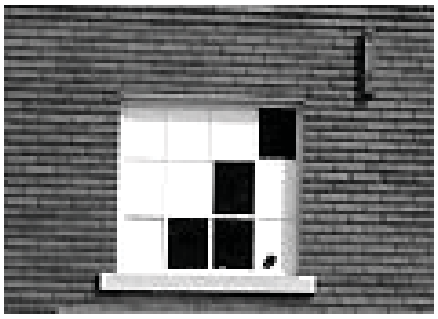
When damage can be avoided, modifying existing historic windows to allow reglazing with insulated glass.

Making windows weather tight by caulking and replacing or installing weather stripping.

When original window openings are altered, restoring them to their original configuration and detail.

When damaged beyond repair, replacing the original windows with windows that match the originals in profile, size, color, configuration, materials, and glazing.

Not Recommended



Typical historic industrial window treatments found in Zone 1

Using storm windows that are smaller than the window opening. Using storm windows that allow moisture to accumulate and damage the window frame.

Changing the appearance of a window through the use of inappropriate designs, materials, finishes, or colors that notably change the sashes, depth of reveal, muntin configuration and reflectively, and color of the glazing (such as the use of mirrored or tinted glass) or the appearance of the frame. Using shutters.

Stripping windows of historic material such as wood, cast iron, and bronze.

Using a replacement window that does not match the original

Recommended

Not Recommended



Incompatible new window lower right resulting in loss of the building's historic character.

Obscuring original window elements with signs, metal, or other materials. Using through-window air conditioning units on primarily façades.

Using replacement glazing that is consistent in color and reflectivity with the glazing originally used at the building.

Using tinted glass that does not appear as transparent from public-right-of-way.

Rising metal screens or bars covering window openings

Using true divided lights.

Using replacement windows that capture the visual effect of how the original window operated.

Basing the replacement of non-historic or missing windows on photographic documentation, extant units in the building, or ensuring that they are consistent with the historic character of the building.

Creating a false historical appearance because the replacement window is based on insufficient historical, pictorial, and/or physical documentation. Introducing a new design that is incompatible with the historic character of the building.

Providing a setback in the design of dropped ceilings when they are required for a new use to allow for the full height of the window openings.

Inserting new floors or furred-down ceilings that cut across the glazed areas of windows so that the exterior form and appearance of the windows are changed.

Limiting the installation of additional windows to secondary, non-character-defining elevations to occur only when required by the new use to allow natural light and air or when other important adaptations are necessary for the building's new use.

Installing new windows, including frames, sashes, and muntin configurations that are incompatible with the buildings historic appearance or that obscure, damage, or destroy character-defining features.

When required by a new use, creating new window openings and using new window units that are simple and visually subservient to the original openings and units, and that are visually distinguishable from the original window openings and units.

Creating new window openings and using new window units that duplicate the fenestration pattern and detailing of a character-defining elevation.

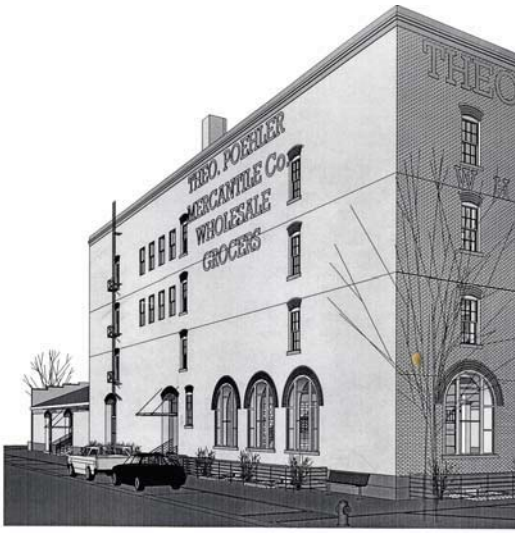
Recommended

When adding new window openings and unit, using a simpler, slightly different glazing configuration.

Not Recommended

Creating new window openings and using new window units that replicate the historic windows.

Installing vinyl window systems



Preserves historic signage and does not alter the more formal front bays, reserving alterations to the utilitarian portion of the façade above loading docks. Note smaller and simpler window design compared to the originals.

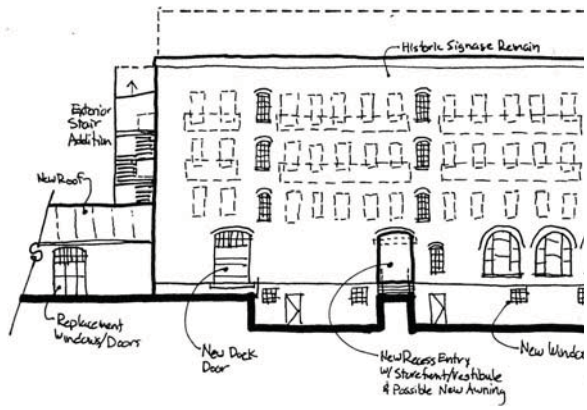


Diagram above has too many new openings and calls for balconies spanning the width of the new openings.

See also: Technical Preservation Services, Heritage Preservation Services Division, National Park Service *Preservation Brief 3: Conserving Energy in Historic Buildings; Preservation Brief 9: The Repair of Historic Wooden Windows; Preservation Brief 10: Exterior Paint Problems on Historic Woodwork; Preservation Brief 13: The Repair and Thermal Upgrading of Historic Steel Windows;* and the following National Park Service Interpreting the Secretary of the Interior's Standards for Rehabilitation (ITS) Bulletins: *ITS Number 14: Adding New Openings: New Openings in Secondary Elevations or Introducing New Windows in Blank Walls* and *ITS Number 21: Adding New Openings: Adding New Openings on Secondary Elevations.*

ENTRANCE DOORS

With a few exceptions, entrance doors in Zone 1 were functional non-retail commercial designs. Adaptive reuse of buildings for residential or retail use will require choosing replacement doors that are complimentary to the industrial character of the buildings.

Entrance doors were historically wood or metal. Appropriate substitute materials should be wood or metal when the original material is unknown or for new construction, with the use of vinyl or synthetic materials not appropriate in Zone 1.

Recommended

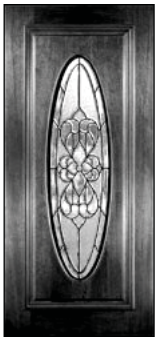


Retaining and repairing original doors. Maintaining original door hardware in good working order.

Preserving and retaining the original proportions of the door and the door opening.

Replicating the original door if it is damaged beyond repair and there is physical, pictorial, or photographic documentation as to its original appearance. If there is no documentation of the door's original appearance, replace it with a new unit that is compatible with the style and character of the historic building.

Not Recommended



Using residential doors in functional industrial entrances.

Using generic historical stylistic reproductions that create the appearance of another period of time.

See also: National Park Service Interpreting the Secretary of the Interior's Standards for Rehabilitation (ITS) Bulletin: *ITS Number 4: Exterior Doors: Inappropriate Replacement Doors.*

GARAGE AND LOADING DOCK DOORS

In industrial buildings that utilized loading docks and garages, the openings were commonly fitted with wood or metal segmental doors that rode on overhead tracks or roll-up mental doors. Sometimes these buildings used double-hinged, sliding, and other types of doors.



Examples of garage/loading dock doors – Zone 1



Example of garage/loading dock doors – Zone 1

Recommended

Replicating an original door if it is damaged beyond repair or is missing and there is physical, pictorial, or photographic documentation as to its original appearance; or, if required for the new use, installing a new glazing system that resembles the segmented panels of the historic doors. \

Retaining and repairing the building's original door(s) and /or door opening(s).



Original door opening is retained. The new infill incorporates an entrance and half "closed" garage door as well as transparent glazing is an appropriate treatment where there is no documentation of the original door.

Retaining corner guards and bumper guards. Modifications such as replacing some of the upper wood panels with glass in order to provide natural light.

If there is no documentation of the door's original appearance, replacing the door with a new unit that is compatible with the style and character of the historic building.

Not Recommended

Installing a replacement door that reflects historic residential garage door designs.

Altering the size of the original openings with infill. Removing character-defining elements. Altering a historic pattern of adjacent pedestrian-vehicular entrances with a new storefront design.



The infill storefront in the building above creates the false impression of an original retail store rather than the historical industrial use of the building

Recommended

Installing new glazing patterns that replicate the typical historic arrangement of intersecting stiles and rails found on the industrial garage and loading dock doors. This approach also clearly differentiates fenestration patterns for windows and doors.

Not Recommended

See also: National Park Service Interpreting the Secretary of the Interior's Standards for Rehabilitation (ITS) Bulletins: *ITS Number 2: Garage Door Openings: New Infill for Historic Garage Openings* and *ITS Number 16: Loading Door Openings: New Infill for Historic Loading Door Openings.*

ALTERATIONS TO REAR AND SECONDARY ELEVATIONS

In industrial and warehouse areas, secondary elevations often played an important role in the functional design of the building or structure. Features such as loading docks, vehicular entrances, and pedestrian/worker entrances related to the function of the building and are important character-defining elements. Secondary façades are somewhat less formal than primary façades. Often, materials and designs are plainer, window placement may be irregular, ornament is seldom used, and the façade's division into base, middle, and top may be less clear. New uses that introduce the public to these elevations should preserve the utilitarian nature of these elevations and their adjoining exterior spaces.

The most significant loss of historic features is the filling of original openings with brick or concrete block and the alteration/addition of loading dock entrances. There is a significant loss of the original loading docks, which were originally made of stone piers and post-and-beam construction. Concrete loading docks commonly appeared in the first decades of the twentieth century. Depending on the date of construction, either is appropriate for replacement or new construction.




Industrial character of rear and secondary elevations

Recommended

Determining if secondary elevations retain defining architectural and functional characteristics that visually communicate the building's historic building type.

Making minimal changes to the secondary elevation features that define the building's original architectural and/or functional property type.



Original façade

Maintaining consistent patterns and using consistent materials between the ground floor and the upper floors, and incorporating a simple definition at the roofline.

Restoring existing openings that have been previously filled in or blocked.

Maintaining a clear separation between the loading areas and the pedestrian access areas for the sake of appearance and safety.

Utilizing masonry materials with a simple texture, minimal ornamentation, and informal door and window placement.

Designing and locating security gates, grills, and alarm boxes out of sight or in such a way that during non-business hours the building and surrounding area maintain their appearance as a safe and attractive pedestrian environment.

Locating and screening air conditioner equipment so that signage, sound, and exhaust air are not intrusive to newly defined public spaces.

Minimizing the intrusion of trash receptacles, utility lines, meter boxes, downspouts, and other functional hardware.

Not Recommended

Making changes to the visual characteristics of a secondary elevation that communicate a new use that is different from the original use.



Changes to visual character

See also National Park Service Interpreting the Secretary of the Interior's Standards for Rehabilitation (ITS) Bulletin: ITS Number 33: Alterations to Rear Elevations.

NEW ADDITIONS

It may be necessary to add extra space to a historic building that is being rehabilitated to satisfy new use requirements. The best adaptive use design is always one that requires the least amount of change to the historic building. However, new spaces to house certain practical functions that were not part of the historic use, such as mechanical equipment, an elevator shaft, or a stair tower, or even new spaces to provide more rentable or occupiable space to make the project economically viable may be acceptable reasons for new additions. The Secretary of the Interior's Standards for Rehabilitation permit new additions to historic buildings if the additions meet certain criteria. Common to these criteria are the general concepts of similarity and subordination. Because of the size and placement of the buildings in Zone 1, their spatial relationship is important to communicating their historic associations. New additions to primary and secondary elevations should be avoided whenever possible. If necessary they should be clearly ancillary and subservient to the size, scale, massing of the preexisting building. Historic photographs as well as Sanborn Fire Insurance Company maps available in local research collections document the location, size, and, sometimes, materials of pre-existing structures and serve as an excellent guide in determining the location of new construction.

Recommended	Not Recommended
Designing and constructing new additions that preserve the historic character of the building by visibly retaining significant historic materials and features.	Designing and constructing new additions that result in the diminution or loss of the historic character of the resource, including its design, materials, workmanship, location, or setting.
Determining if the building can meet new use requirements by altering non-character-defining interior spaces rather than by constructing a new addition to the building.	Whenever possible, avoid designs and plans that cannot accommodate new uses without exterior additions.
Utilizing a design that is visually distinguishable from the historic building, but that is clearly subservient to the historic building.	Designing and constructing additions that create a false sense of history by closely replicating the exact form, material, style, and detailing of the historic building in such a way that the new addition appears to be part of the historic building.
Locating an attached exterior addition at the rear or on an inconspicuous side of a historic building.	Designing and constructing additions that are highly visible from the public right-of-way.
Limiting the size and scale of an addition in relationship to the historic building.	Designing and constructing a new addition so that its size and scale in relation to the historic building are out of proportion, thus diminishing the historic character of the historic building.

Recommended



This small glass connector between two historic buildings is appropriately set back. A similar approach may also be made between a historic building and an addition

Constructing a new addition so that there is the least possible loss of historic materials and so that character-defining features are not obscured, damaged, or destroyed. Utilizing elevator or stair towers that have a high degree of transparency and that expose the building's original materials and features.

Using small, recessed, transparent connector "hyphens" that expose original materials and features and distinguish the historic building from the new addition.

Restore existing openings that have previously been filled in or blocked

Placing new additions such as balconies, greenhouses, and other special use additions on secondary elevations, and limiting their size and scale in relationship to the historic building.

Not Recommended



Stair tower could have been incorporated in the building by enclosing existing stair well. Location of the new stairwell on a highly visible façade is inappropriate as is use of materials and scale and massing

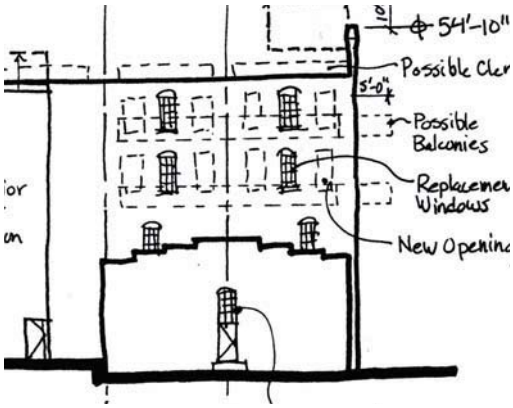
Attaching a new addition so that the character-defining features of the historic building are obscured, damaged, or destroyed.

Designing and constructing new additions such as balconies or penthouse additions that obscure, damage, or destroy character-defining features of the historic building.

Recommended

Designing an additional penthouse story, rooftop garden, or greenhouse, when required, that is clearly subservient to the historic building, set back at least one full bay from the building's tall wall planes, and is as inconspicuous as possible when viewed from the street from within a several-block radius.

Not Recommended



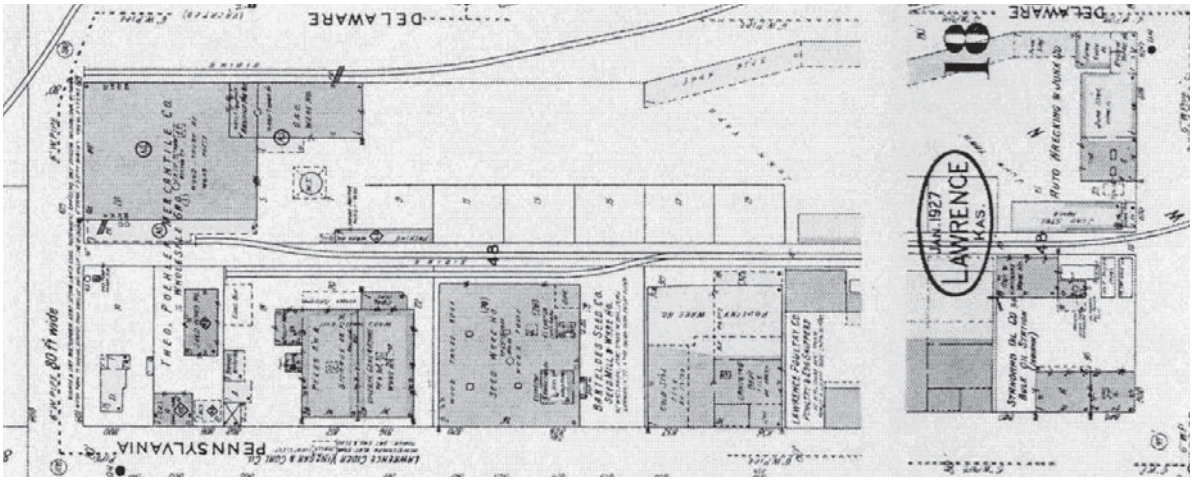
Sketch shows balconies that span the width of the elevation. A recommended alternative would be to limit the number of balconies and to have these span only one or two openings. The balcony should be painted to match the masonry wall.

Designing and constructing roof-top additions that dramatically change the historic appearance of the building. Constructing additional stories to the building so that the historic appearance of the building is radically changed.

See also Technical Preservation Services, Heritage Preservation Services Division, National Park Service Preservation Brief 14 New Exterior Additions to Historic Buildings: Preservation Concerns; National Park Service Interpreting the Secretary of the Interior's Standards for Rehabilitation (ITS) Bulletins: ITS Number 3: New Additions to Mid-size Historic Buildings 1; National Park Service Interpreting the Secretary of the Interior's Standards for Rehabilitation (ITS) Bulletins: ITS Number 10: Stair Tower Additions Exterior Stair/Elevator Tower Additions; National Park Service Interpreting the Secretary of the Interior's Standards for Rehabilitation (ITS) Bulletins: ITS Number 18: New Additions to Mid-size Historic buildings 2; National Park Service Interpreting the Secretary of the Interior's Standards for Rehabilitation (ITS) Bulletins: ITS Number 33; Alterations to Rear Elevations.

NEW INFILL CONSTRUCTION

The arrangement of elements and spaces that define a historic district contribute to a unique sense of place. These elements combine several factors such as building materials, color, size, shape, placement of buildings and spatial relationships. To preserve these qualities, new construction should be compatible with the existing character-defining architectural and landscape elements of Zone 1. At the same time, new construction can and should be differentiated from older buildings by virtue of its own contemporary stylistic elements. New construction includes new buildings erected in previously undeveloped spaces and "infill" replacement buildings.



Old and new construction

Recommended

Limiting new construction in historically open spaces to the southeast quadrant of the zone or placing it in accordance with historic building patterns documented in Sanborn Fire Insurance Company maps.

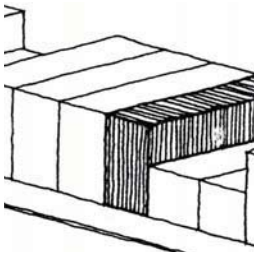
Retaining the footprint, size, scale, and height and massing of the original building when constructing replacement buildings

Not Recommended

Recommended

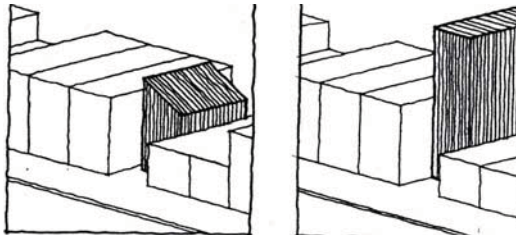
Not Recommended

Locating front walls on the same plane as the façades of adjacent buildings and matching the rhythm of spacing between buildings and the rhythm of entrances and other projections or recesses to sidewalks.



Appropriate integration

Utilizing new designs with inappropriate alignment, setback, spacing, massing, proportion, and scale.



Inappropriate alignment and setback

Erecting buildings of one or two stories. The height and scale of new buildings should match the height of adjacent historic buildings on the streetscape.

Matching the type, size, proportion, and pattern of openings on the primary façade and loading dock façades to that of the adjacent buildings. Storefront façades in new construction should reference the industrial loading dock entrances and doors in size and glazing.



Appropriate infill façade

Using materials, texture, and color that relate to and harmonize with those on nearby historic buildings and structures.

Introducing materials and colors that do not relate to the traditional materials found in the National Register East Lawrence Industrial Historic District.

Continuing of the use of similar roof shapes, types, and materials.

Using roof shapes, pitches, and materials not found in the National Register East Lawrence Industrial District.

SITE AND SETTING – EXTERIOR FEATURES AND OPEN SPACE

The Setting of Zone 1 is a heterogonous mix of buildings, structures, and spaces that evolved over an extended period of time. The relationship of these components and the random vegetation patterns and features contribute to a unique sense of place. The primary buildings and structures are oriented to the major streets, with the functional orientation of their loading docks to an alley that bisects the zone. As important as the buildings and structures is the large open space in the southeast quarter of the block that is covered with a mixture of dirt, gravel, and vegetation. This area has traditionally been open space with the exception of the presence of assorted shed structures along 9th Street and the alley when the space served as a junkyard.

Common materials found in the setting are concrete, asphalt, dirt, brick, and stone. Common landscape features include wire, chain link, and board fencing; railroad rails, curbing, grasses, and a Cottonwood tree. All communicate the continuing industrial character of the zone.





Existing exterior features and open space

Setting

Recommended	Not Recommended
Identifying, retaining, and preserving building and landscape features that are important in defining the historic character of the site and setting.	Creating a false sense of history by introducing landscape features that are based on conjecture or that impact an understanding of the industrial nature of the site or setting.
Retaining the historic relationship between buildings and landscape features such as alleys, open space, work areas, pathways, driveways, and so forth.	Removing or radically changing the features of the site and setting that are important in defining the historic character of the site or the National Register East Lawrence Industrial Historic District.
Creating subtle visual distinctions through the use of different hard surface materials between the historic spaces/materials and new space uses such as parking areas.	Destroying the relationship between the buildings and structures and the landscape features by widening existing streets or constructing inappropriately located new streets or parking facilities.
Designing new parking areas that are as unobtrusive as possible to minimize the effect of the historic spatial arrangement and character of the setting. Constructing shared	Using vacant lots that once held buildings or structures for unauthorized or spontaneous automobile parking.

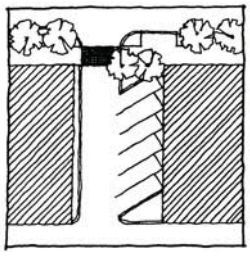
Recommended	Not Recommended
parking in traditionally open spaces.	
Removing non-significant buildings, structures, additions, or landscape features that detract from the historic setting.	Removing or relocating significant historic primary and secondary buildings and structures or character-defining landscape features, destroying their historic relationship.
Retaining historic secondary ancillary buildings and structures such as garages and outbuildings. Retaining and preserving all character-defining features of outbuildings, including foundations, steps, roof forms, windows, doors, architectural trim, and materials. If replacement of an element is necessary, replace only the deteriorated item with one that matches the original in size, scale, proportion, material, texture, and detail.	Constructing prefabricated buildings or storage structures.
Using new construction that is compatible with the historic character of the setting in terms of size, scale, design, material, color, and texture.	Introducing new building or landscape features that are out of scale or are otherwise inappropriate to the historic character of the setting.
Revealing landscape features such as alleys and pathways that have been covered by paving or other materials over time.	
Using screening devices for trash receptacles and storage units that visually blend into the rear façades.	
Painting, or screening, mechanical units and service equipment to blend with the overall exterior color of the building, in accordance with City standards. Placing such equipment near secondary elevations out of view from the public right-of-way.	
Screening dumpster units on all four sides with material that blends in with the main commercial building wall adjacent to the location of the dumpster. The height of the screening device should match that of the dumpster and the access door. Clustering dumpsters adjacent to alleys.	
Utilizing satellite dishes one diameter in size or smaller and placing them in locations not visible from the public right-of-way.	Installing antennae and/or satellite dishes in places visible from the public right-of-way.
Installing removable cellular tower poles, which may be attached to the roofs of buildings, but must be set back one bay from the perimeter wall?	Installing cellular towers.
Additional landscape screening may be required by City staff to lessen impact of parking, lighting, or noise on neighboring residential properties.	

Landscape

Historically, Zone 1 did not have planned landscaping. Thus, the introduction of landscaping should be minimal and part of an overall design to denote the boundaries of the zone and to direct pedestrian traffic. Natural plants of the region, in particular of the East Lawrence area, should be utilized.

Recommended

Landscaping the perimeters of parking areas with trees and low plantings to provide pedestrian linkages, to reinforce the traditional grid system of the original street and alleys, and to screen the view of vehicles and surface paving.



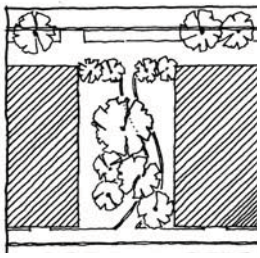
Planting trees and shrubs at the peripheral edges of a vacant lot to reinforce the traditional edge between the absent building wall and the sidewalk. The edges should coincide with the setback and configuration of adjacent buildings.

Maintaining traditional alleyways, lot delineations, and open spaces.

Introducing discreet, coordinated interpretive signage throughout the zone to educate visitors about the history of the buildings in Zone 1 and that of the surrounding areas.

Not Recommended

Introducing formal or exotic landscape designs that are inappropriate to the industrial setting.



Installing plantings near the buildings, destroying the open, partially hard-surfaced industrial site.

Using chain link or wood fences and/or other devices that discourage an understanding of the historic setting and its functional features.

PARKING

Vehicular parking historically occurred at the sides of buildings and on the street. Traditional open spaces provide opportunities for surface parking lots by maintaining the historic spatial relationships between buildings. Gravel or asphalt paving generally covered parking areas. In one or two instances, drives and parking areas with high traffic had concrete drive-through and/or parking spaces. These traditional materials continue to be appropriate as do other hard surface and gravel treatments. Drainage is a problem in this area and a combination of pervious and non-pervious treatments that designate historic space uses as well as assist in the control of water runoff is desirable.

Recommended

Locating surface parking lots in traditional open spaces.

Subdividing larger surface lots with landscaped islands that include trees.

Visually and spatially separating pedestrian walkways adjacent to parking and driveways through the use of additional site elements, including bollards, lighting, landscaping, and special pavement treatments.

Not Recommended

LIGHTING

The purpose of exterior lighting is to highlight the building entrance and its signage, as well as parking and public use areas, when natural light is insufficient or not present in a historic district. The level of lighting must reflect the building's historic use and must provide sufficient illumination to promote health and safety and to attract the pedestrian traffic required by the building's new use. Lighting types recommended in other zones apply to Zone 1 and should be consistent throughout the redevelopment area.

Unless noted otherwise, lighting in Zone 1 will be consistent with City of Lawrence Code Section 20-14A01 through Section 20-14A03, or subsequent applicable City standards. Parking lighting shall have a maximum initial illumination value no greater than 0.20 horizontal footcandles at the zone boundary. No more than 5 percent of fixture lumens are emitted at an angle of 90 degrees or higher from nadir (straight down) with the exception of minor building lighting. These lighting requirements are adapted from IESNA RP-33-99.

Recommended

Using light fixtures that are as inconspicuous as possible and that are compatible with the industrial character of Zone 1.

Using dark sky fixtures.

Using incandescent lights to illuminate small projecting and flat signboards.

Not Recommended

Using conduits that are visible from the public right-of-way.

Using fluorescent light fixtures and high intensity discharge lighting.

Recommended

Not Recommended

Using internally lit signs.

Designing the light source for signs as a part of the sign or hiding it from view.

Using neon lighting that accentuates any shape or form of any of the building's elements.

AWNINGS

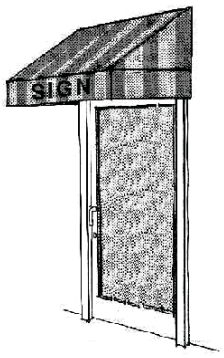
While the commercial/industrial buildings in Zone 1 did not have a retail function or storefronts, most were businesses that had a customer service area and offices on the first story near the entrance. The need to protect these areas from the heat and glare of sunlight (particularly on the west elevations along Pennsylvania Street) may have included canvas awnings above individual window openings on the first story. New uses may require similar protection from the elements in the entrance areas.

Recommended

Not Recommended

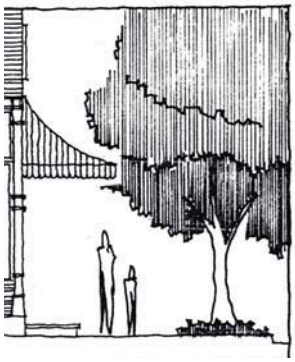
Using fixed awnings of metal or synthetic materials that are compatible with the industrial character of the zone.

Using awnings not compatible with the character of the zone.





Recommended



Using installations that do not damage the building or visually block or impair its distinctive architectural features.

Selecting colors, pattern, form, and materials that relate to and complement the surrounding buildings.

Not Recommended



Because of industrial character of buildings, typical storefront treatments that span the width of the façade are not appropriate. Each opening should have its own awning.

Using of materials, colors, and designs that detract from the character of the building.

See also Technical Preservation Services, Heritage Preservation Services Division, National Park Service *Preservation Brief 44 The Use of Awnings on Historic Buildings: Repairs, Replacement and New Design;* National Park Service Interpreting the Secretary of the Interior's Standards for Rehabilitation (ITS) Bulletins: ITS *Number 27: Awnings: Adding Awnings to Historic Storefronts and Entrances.*

ACCESS

Originally, historic buildings were not designed to accommodate the needs of people with disabilities. Federal law requires that historic buildings occupied by employees or residents and visited for business or private purposes meet accessibility requirements for individuals with disabilities under the Americans with Disabilities Act (ADA) of 1990.

Recommended

Providing building access through a primary pubic entrance. If access through a primary entrance cannot occur without causing permanent damage to the character-defining features of the historic entrance, at least one entrance used by the public should be made accessible. Appropriate directional signage should be installed to direct disabled individuals from the primary historic entrance to the accessible entrance.

Installing mechanical wheelchair lifts or submergible lifts in unobtrusive locations with cover from the elements.

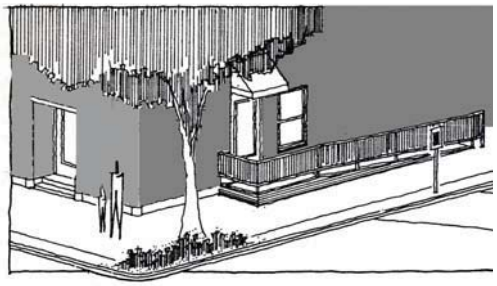
Not Recommended

Using rear or service entrances as the only means of entering the building for individuals with disabilities.

Recommended

Not Recommended

Installing ramps along side elevations that are designed and located to minimize the loss of any historic features at the connection point to the building. Installing ramps behind historic features such as walls, railings, or landscaping to minimize the visual effect from the public right-of-way.



Ramps should be installed on side elevations or behind historic features to minimize visual effect.

See also Technical Preservation Services, Heritage Preservation Services Division, National Park Service Preservation Brief 32 Making Historic Properties Accessible

SIGNAGE

The primary purpose of signage is to identify the business name and location. Sign location is an important element in the adaptation of new uses for industrial/warehouse facilities. Generally, each building should have a primary sign noting the name and location, and secondary signage with information about hours of operation and building use. Because of the need to retain the industrial character of the setting of Zone 1 and the fact that the commercial buildings do not have a sign frieze typical of retail storefronts, the following guidelines limit the types of signage options.



Appropriate signage

Recommended

Using signs that respect the size, scale, and design of the historic building and are pedestrian scaled; signs that do not obscure significant features of the historic building and neighboring buildings; and sign materials compatible with and characteristic of the building's period and style, including the following primary sign forms: (1) a single plaque on a flat surface on the first story wall plane near the entrance; (2) a projecting pendant sign mounted on a flat wall plane above the primary entrance; or (3) signage printed on awnings

Using simple legible primary signs containing only the name of the business and no secondary or incidental information.



Selecting colors, materials, and a lettering style that relates to and complements the historic building and the surrounding buildings. In general, each sign should contain a maximum of three colors, two materials, and one lettering style.

Not Recommended

Using large, flashy signs designed to attract automobiles from a distance.



Using small, poorly proportioned signs with an inferior quality of design, materials, and execution.

Mounting signs on a roof.

Using signs on windows and/or doors that overpower the other building signs.

Using several signs and messages that compete with one another.

Recommended

Using signs attached to building that do not damage the historic fabric and that ensure the safety of pedestrians. Installing fittings that penetrate mortar joints rather than brick with properly calculated and distributed sign loads.

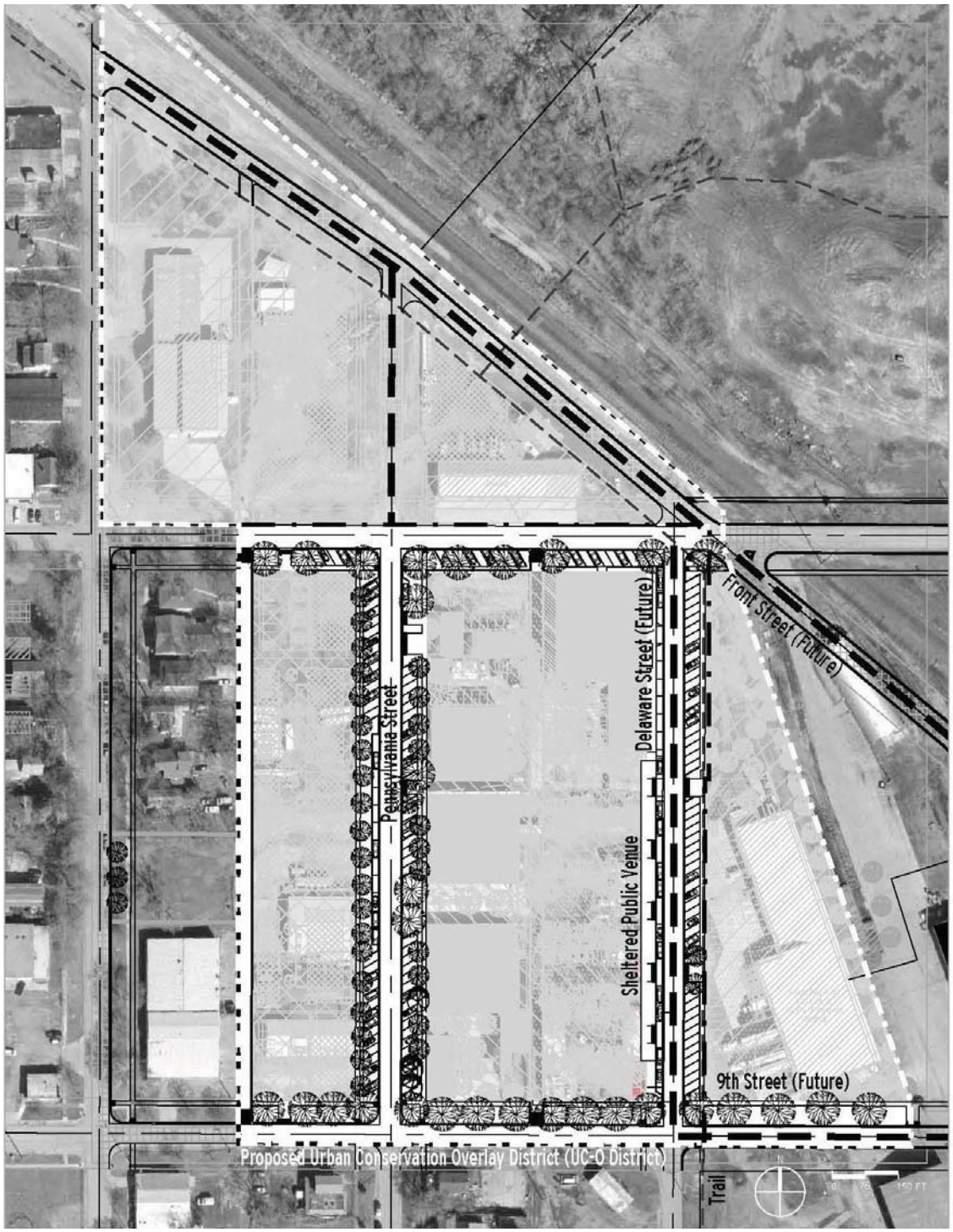
Using signs painted on windows and doors for secondary information that do not obscure visibility from inside or outside the building.



Not Recommended

See also: Technical Preservation Services, Heritage Preservation Services Division, National Park Service Preservation Brief 25 The Preservation of Historic Signs

FIGURE 5: ZONE 2 STREETSCAPES AND ALLEYS



LAND USE PLAN

ZONE 2: STREETSCAPES AND ALLEYS

NEIGHBORHOOD CONTEXT

The historic patterns of streets and alleys form the basis for the visual patterns that traditionally defined the redevelopment zone. This existing grid layout of streets and alleyways also serve as links that extend into adjoining neighborhoods and beyond. These features and spaces compose the grid of streets, alleys, and sidewalks, as well as the off-axis railroad right-of-way. Today, this public right-of-way zone plays an important role in defining the relationship between the manufacturing zone and the adjacent residential streets. Physical inspection of the zone and an analysis of historic photographs and maps indicate that these zones have significant loss of material and features. Reestablishment and retention of these established patterns is important in maintaining the visual character and identity of the historic manufacturing zone of East Lawrence.

ACCESS

Recommended	Not Recommended
Retaining all alley dimensions and driveway access to alleys.	
Retaining/reestablishing the width and number of vehicular traffic lanes to match existing conditions or the established grid in East Lawrence.	
Providing curb cuts for ADA accessibility at street crossings.	

STREETSCAPE

Recommended	Not Recommended
Removing built-up street overlay and exposing original brick.	
Reestablishing the grass verge between the sidewalks and curbs at the corners of East 8th and Pennsylvania Streets, East 8th and Delaware Streets, East 9th and Pennsylvania Streets, and East 9th and Delaware Streets.	
While retaining the grassy verge zones at the corners, pave the traditional verge zone for parking with a material different from that of the street, thus delineating the original street width and street/curb/verge configuration.	
Retaining the historic parking zone on the north side of the Poehler Building on East 8th Street.	
Retain the historic parking zone on the west side of the 804/806 building on Pennsylvania.	
Constructing concrete and/or brick sidewalks to match the materials of those found in the adjoining neighborhoods along Pennsylvania and East 9th Street.	

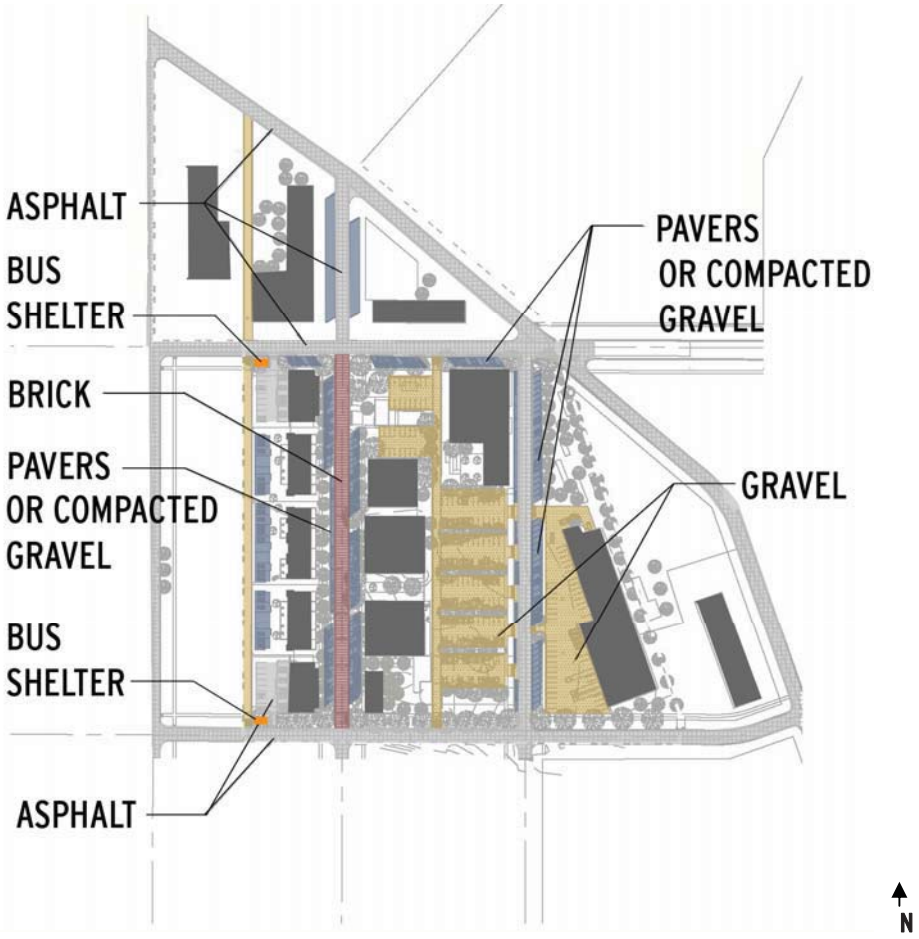
Recommended

In Zone 1, Existing sidewalks shall remain. Repairs to existing sidewalks on Pennsylvania and Delaware Streets that conform to the dimensions of those shown on Pennsylvania and Delaware Streets, respectively, from the 1927 Sanborn Fire Insurance Company maps. New sidewalks in Zone 1 shall conform to City Standards. In Zones 3 & 4 sidewalks shall be constructed to a minimum width of 5'-0"

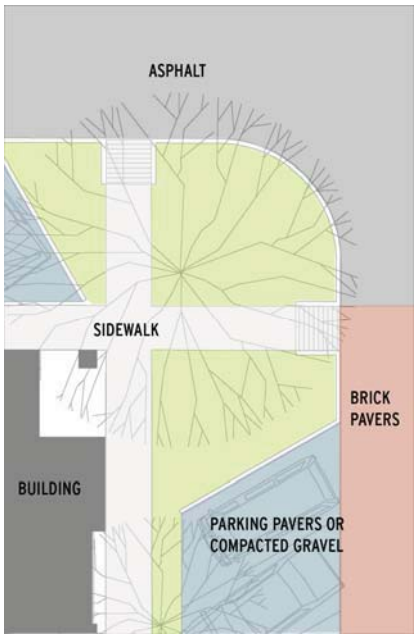
Establishing a sheltered bus venue on the west side of Delaware Street.

Establishing sheltered bus venues that are compatible with the listed properties and their environs.

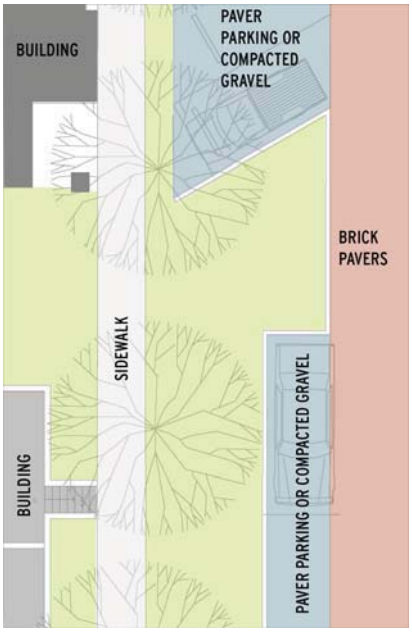
Not Recommended



Paving Design



Pedestrian/Parking Surfaces – Corner Condition
Show here at the west corner of 8th and Pennsylvania



Pedestrian/Parking Surfaces – Mid Block Condition
Shown here mid-block between 8th and 9th on the west side of Pennsylvania

LANDSCAPE

The existing landscaping in Zone 2 primarily consists of unmaintained shrubs and weeds. Since most of Zone 2 borders the historical Zone 1, care should be given to not diverge from the industrial feel of the area. Historic conditions supersede the Design Guidelines for landscaping requirements in Zone 1.

Recommended

In addition to restoring portions of the traditional grass verges, planting street trees in the verge zones to define the separation between the sidewalk and the street. Creating a clear walking zone of at least ten feet between the trees and buildings, and maintaining a mature branching height of at least twelve feet above the street.

Planting trees large enough to add substantial greenery and shade, with a three-inch caliper at a minimum.

Using plantings that reinforce the city grid and cohesiveness of the area.

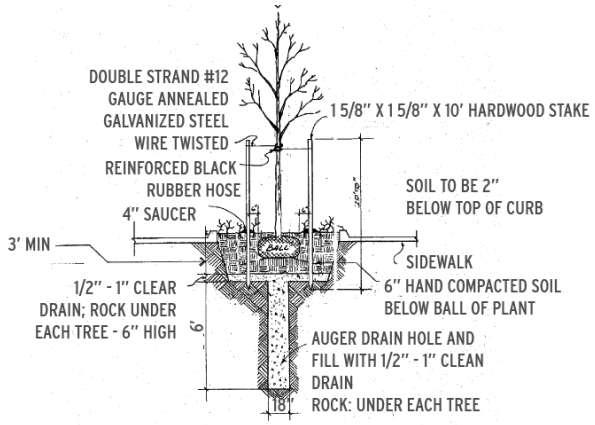
Not Recommended

Planting trees that produce large amounts of fruit or flowers. Planting small trees that will be less than thirty-six feet tall at maturity. Planting trees that are not native to the zone or that have marginal success in the zone. Planting trees with branches that break easily.

Installing artificial trees, shrubs, turf, or plants.

Using native trees approved by City of Lawrence Parks and Recreation Department. (See Appendix)

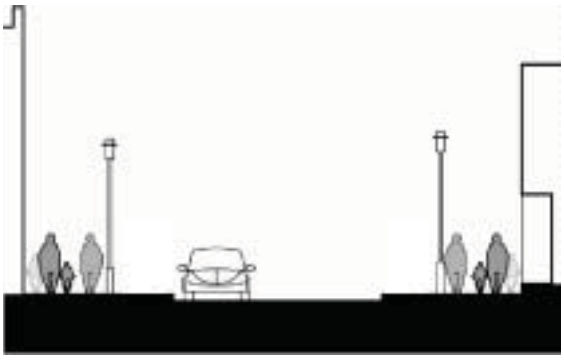
Planting a quantity of trees that complies with the minimum number required set forth in the City Standards.



Tree Well detail for 6" curb

LIGHTING

Unless noted otherwise, lighting for Zone 2 will be consistent with the City of Lawrence Code, sections 20-14A01 through Section 20-14A03. Street and pedestrian walkway lighting shall have a maximum initial illumination value of no greater than 0.20 horizontal footcandles at the zone boundary. No more than 5 percent of designed fixture lumens to be emitted at an angle of 90 degrees or higher from nadir (straight down) at the zone boundary. For zone boundaries that abut the public right of way, light trespass requirements may be met relative to the curb line in lieu of the zone boundary.



Recommended

Installing simple, contemporary, or generic pedestrian-scale street lights.

Not Recommended

Installing street lights with a historic appearance that replicate those used in retail and residential zones.

Pedestrian scale lighting

'Dark Sky' style lighting fixtures.

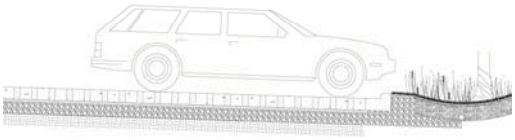
PARKING

Existing parking facilities are currently comprised of some unpaved on-street parking, primarily as roadside locations.

Recommended

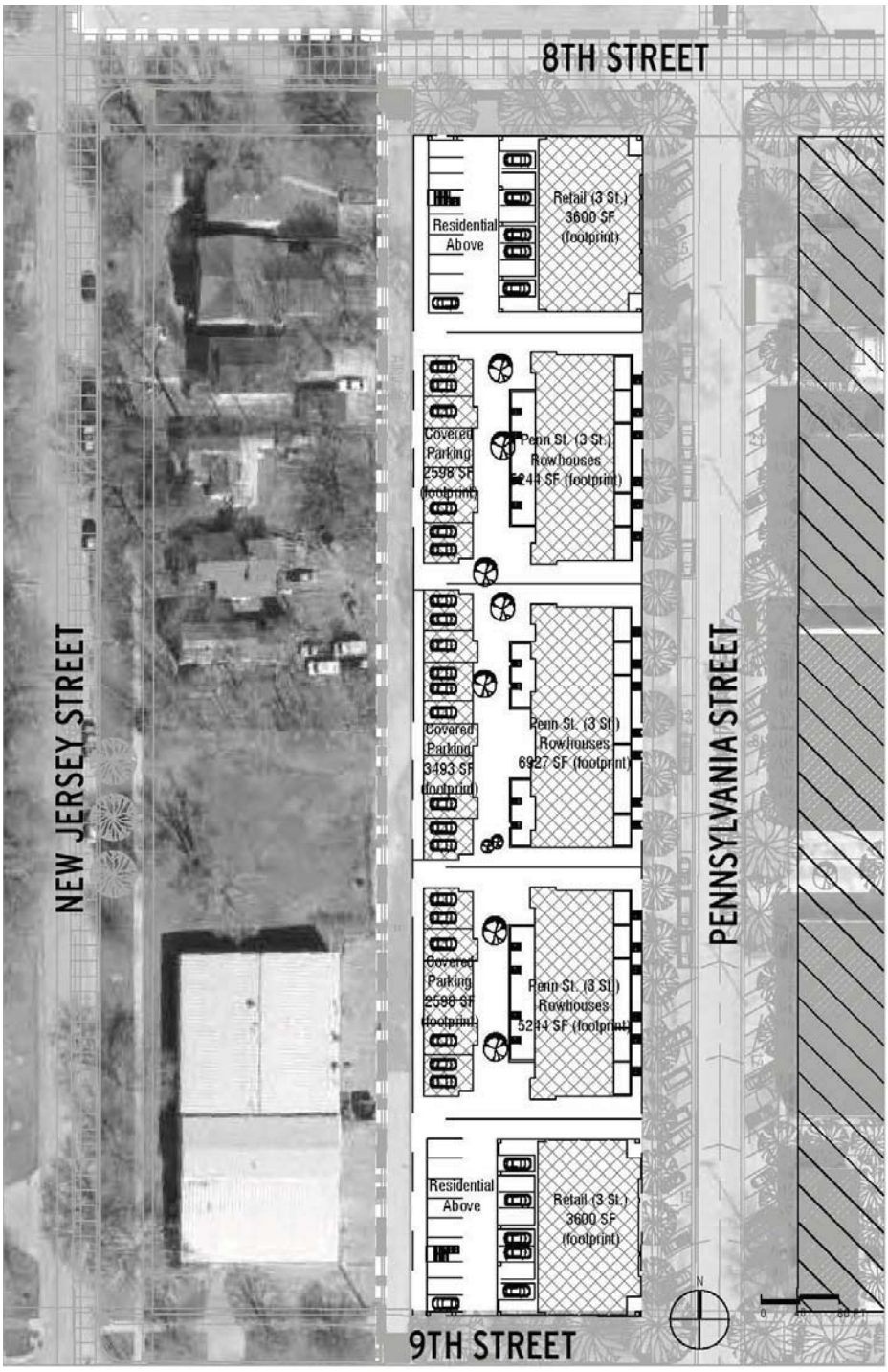
Visually and spatially separating on-street parking from pedestrian walkways or plazas through the use of additional site elements, including landscaping and special pavement treatments.

Not Recommended



Site section at On-street Parking

FIGURE 6: ZONE 3 800 PENNSYLVANIA MIXED-USE ZONE



LAND USE PLAN

ZONE 3: 800 PENNSYLVANIA MIXED-USE ZONE

NEIGHBORHOOD CONTEXT

This zone is adjacent to the historic residential neighborhoods of East Lawrence and was once part of the residential enclave, but none of the original setting or residences remain. This zone should function as a buffer or transition zone between the residential neighborhoods to the west and south and the mixed-use of the historic industrial complex and new development. This zone should be reserved for new construction. Contemporary methods of design and construction have to be coordinated with the existing surroundings dating from the late nineteenth century. A continuous sense of space should be conveyed using traditional and new materials in new ways. *New construction should relate to the setback, size, form, patterns, texture, materials, and color of the features that characterize the environs of all listed properties. Where there are inconsistent or varied patterns the new construction should fall within the range of typical patterns in the environs of the listed properties. Future environs review within the conservation zone should be in the context of the character defining features of the listed properties.

SUSTAINABILITY

As a zone dedicated to new construction, this zone has the most potential for integration of sustainable building practices. Including aspects of green architecture into the building design early on is recommended, and will have the best chance for success.

Recommended

Having mixed residential/retail commercial use.

Not Recommended

Having commercial use only.





Examples of Mixed-use

**This language is taken directly from the "Standards and Guidelines for Evaluating the Effect of Projects on Environs".*

RESIDENTIAL BUILDINGS

ARCHITECTURAL CHARACTERISTICS AND MATERIALS

Recommended

Maintaining the massing character of the two- to three-story buildings in the area. Massing and building styles that compliment the height, width, and depth of the residential lots in the adjacent neighborhood and/or the original lot width.

Arranging architectural elements in a regular and repetitive pattern. Patterns can be found within individual buildings, such as the arrangement of windows, or in groupings of buildings along a street.

Arranging of open space in a regular and repetitive pattern.

Maintaining proportions and relationships between doors and windows that are compatible in placement and scale with the architectural character of the single family residences in the adjacent residential neighborhood.

Maintaining individual or shared entrance porches on residential buildings designated to provide semi-public space for neighborhood interaction.



Example of Housing Density and Fenestration

Maintaining consistency in the use of materials and textures.

Using traditional building materials found in East Lawrence.

Using traditional colors found in the buildings of East Lawrence.

Not Recommended

Dividing single-family residences into multi-family dwelling units.

Using synthetic building materials and/or poor quality building materials.

Recommended

Using architectural details that add visual interest to a building and that define the character of a building.

Using roof shapes and architectural characteristics that reference the traditional industrial/commercial built environment of East Lawrence, but incorporate a clear differentiation of old and new.

Having rear façades of residential buildings that include porches and decks and that create a transition from a residential to a commercial/industrial mixed-use appearance.

Not Recommended

Replicating historic architectural details associated with a particular style in such as way as to create a false sense of history by reproducing a historic house design.

BUILT TO LINES AND SETBACKS

Recommended

Locating the front walls of residential buildings on the same plane and matching the rhythm of spacing (or lack thereof) between buildings and the rhythm of entrances and other projections or recesses to sidewalks.

Having individual or shared entrance porches on residential buildings with individual sizes and locations that merges with and compliments the architectural diversity of East Lawrence.

Not Recommended

Constructing new buildings with inappropriate alignment setback and spacing, massing, proportion, or pattern that is out of character with the residential and small commercial buildings found in East Lawrence.

LANDSCAPE

Recommended

Having front yards with lawn, shrubbery, and tree plantings, typically found in East Lawrence.

Not Recommended

Introducing landscape features such as front yard fencing, statuary, walls, benches, yard lights, and so forth that were not traditionally found on the streetscapes of East Lawrence.

PARKING

Proposed parking for the residential portions of Zone 3 will be consistent in design and scale for the zone to serve as the transition zone between the historical properties in Zone 1 and the single family residential areas on New Jersey. Parking will be limited to single story structures that will be served by the alleyway.

Recommended

Using the rear portion of a lot accessed by an alley for parking spaces/structures.

Providing some green space at the rear of buildings.

Separating parking zones/structures from residential buildings with landscaped pathways.

Having parking structures that are subservient in size, scale, massing, and materials that create the impression of ancillary residential outbuildings.

Designing parking structures to be compatible with neighboring buildings, including materials.

Breaking up the overall massing of the parking structure with architectural details.

Low bollard lighting will be used to limit lighting impacts to adjacent residential areas.

Not Recommended

LIGHTING

Unless noted otherwise, lighting for Zone 3 will be consistent with the City of Lawrence Code, sections 20-14A01 through Section 20-14A03, or subsequent applicable City standards. Residential lighting will have a maximum initial illumination value of no greater than 0.10 horizontal footcandles at the zone boundary. No more than 5 percent of the total designed fixture lumens are at an angle of 90 degrees or higher from nadir (straight down). In order to limit lighting impacts on adjacent residential properties, low bollard lighting will be utilized in parking areas adjacent to these properties in lieu of standard pole lighting.

Recommended

Having exterior residential lighting at building entrances.

Not Recommended

COMMERCIAL/RETAIL CORNER BUILDINGS

ARCHITECTURAL CHARACTERISTICS AND MATERIALS

Recommended

Having corner business buildings that reference the original lot configuration through the use of vertical bays. If the building is bigger than two traditional lots, differentiating the bays to create the visual impression of an assembly of small commercial buildings.

Not Recommended

Having corner commercial buildings larger than the three original lot sizes.

Recommended

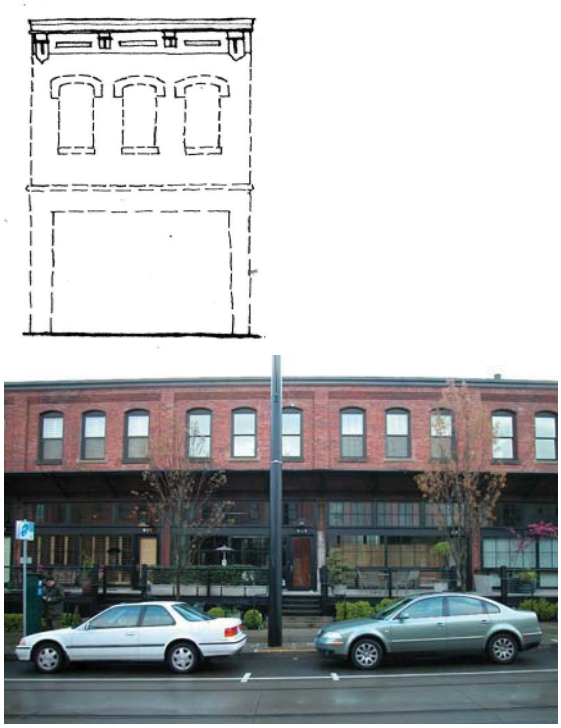


Typical Corner Building

Using a corner entrance in combination with traditional entrances to create variety in fenestration.

Using traditional brick walls, but differentiating in design, color, texture, and pattern between commercial buildings to create a heterogeneous treatment.

Having a clear system of base, middle, and top; visual referencing of traditional storefront components (i.e., bulkhead, display window, sign frieze, second-story fenestration, and cornice/parapet).



Base, Middle, and Top

Not Recommended

Designing commercial buildings that as a whole present the impression of suburban development patterns and design treatments rather than the heterogeneous appearance of evolution over a period of time on a lot-by-lot basis.

BUILT TO LINES AND SETBACKS

Recommended

Avoid

Constructing new buildings with inappropriate alignment setback and spacing, massing, proportion, or pattern that is out of character with the residential and small commercial buildings found in East Lawrence.

Locating the front walls of residential buildings on the same plane and matching the rhythm of spacing (or lack thereof) between buildings and the rhythm of entrances and other projections or recesses to sidewalks.

Having individual or shared entrance porches on residential buildings with individual sizes and locations that merge with and compliment the architectural diversity of East Lawrence.

SIGNAGE

Recommended

Not Recommended

Using new signs that respect the size, scale, and design of the building (1) on a flat sign located in the frieze above the display window; (2) on a single plaque on the flat surface on the first-story wall plane near the entrance; (3) a projecting pendant sign mounted on the flat wall plane above the primary entrance; or (4) awning signs.

Using small, poorly proportioned signs with an inferior quality of design, materials, and execution.

Mounting signs on a roof.



Roof Mounted Sign

Using signs designed on a pedestrian scale.

Using one simple legible primary sign containing only the name of the business and no secondary or incidental information.

Using secondary signage painted on glass in windows and

Using large, flashy signs designed to attract automobiles from a distance.

Using several signs and messages that compete with one another.

Recommended

doors for secondary information that does not obscure visibility from inside or outside the building.

Selecting colors, materials, and a lettering style that relates to and complements the building and contains a maximum of three colors, two materials, and one lettering style.

Not Recommended

ACCESS

Recommended

Providing access to the parking lots only from the main streets.

Not Recommended

Access to commercial buildings from alley ways or vehicular routes that abut single family residences.

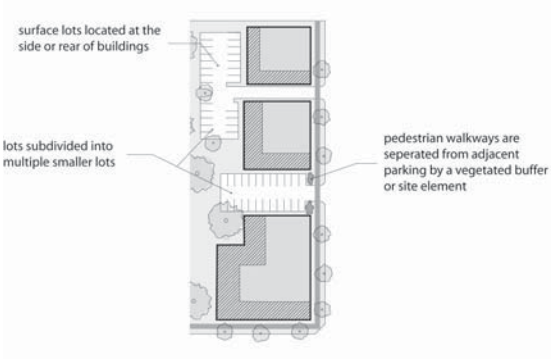
PARKING

Proposed parking for the residential portions of Zone 3 will be consistent with the requirements of the City of Lawrence Code, sections 20-1205, or subsequent applicable City standards. Parking for commercial, retail and mixed-use uses shall be served from a public street in lieu of an alleyway.

Recommended

Locating surface parking lots at the sides or rear of buildings or structures.

Having multiple small parking lots rather than single large parking lots.



Multiple Small Parking Lots

Subdividing larger surface lots with landscaped islands that have trees.

Visually and spatially separating pedestrian walkways adjacent to parking and driveways through the use of additional site elements, including bollards, lighting, landscaping, and special

Not Recommended

pavement treatments.

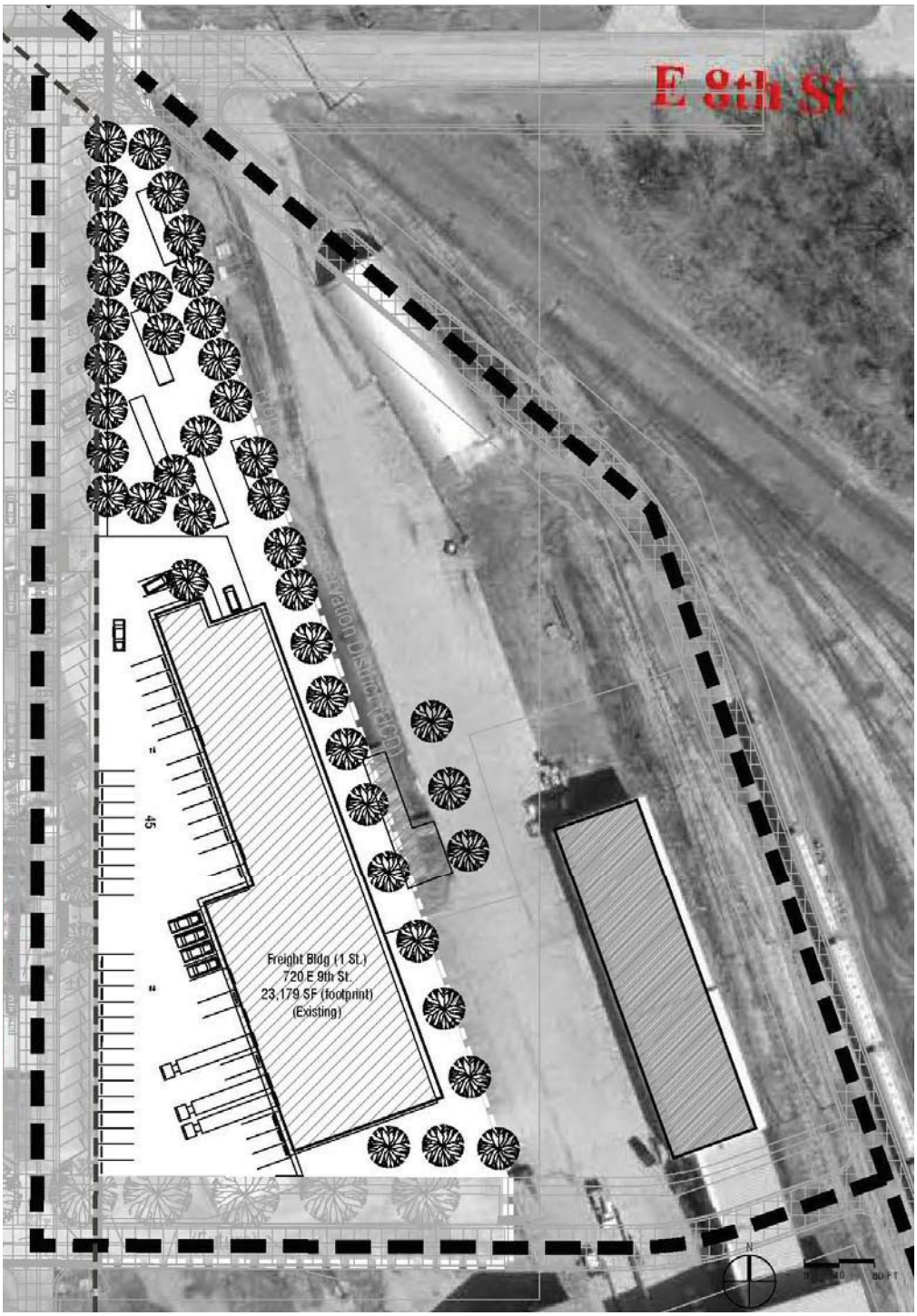
Low bollard lighting will be used to limit lighting impacts to adjacent residential areas.

LIGHTING

Unless noted otherwise, lighting in Zone 3 will be consistent with City of Lawrence Code Section 20-14A01 through Section 20-14A03, or subsequent applicable City standards. Parking lighting shall have a maximum initial illumination value no greater than 0.10 horizontal footcandles at the zone boundary. Nor more than 5 percent of fixture lumens are emitted at an angle of 90 degrees or higher from nadir (straight down) with the exception of minor building lighting. These lighting requirements are adapted from IESNA RP-33-99. In order to limit lighting impacts on adjacent residential properties, low bollard lighting will be utilized in parking areas adjacent to these properties in lieu of standard pole lighting.

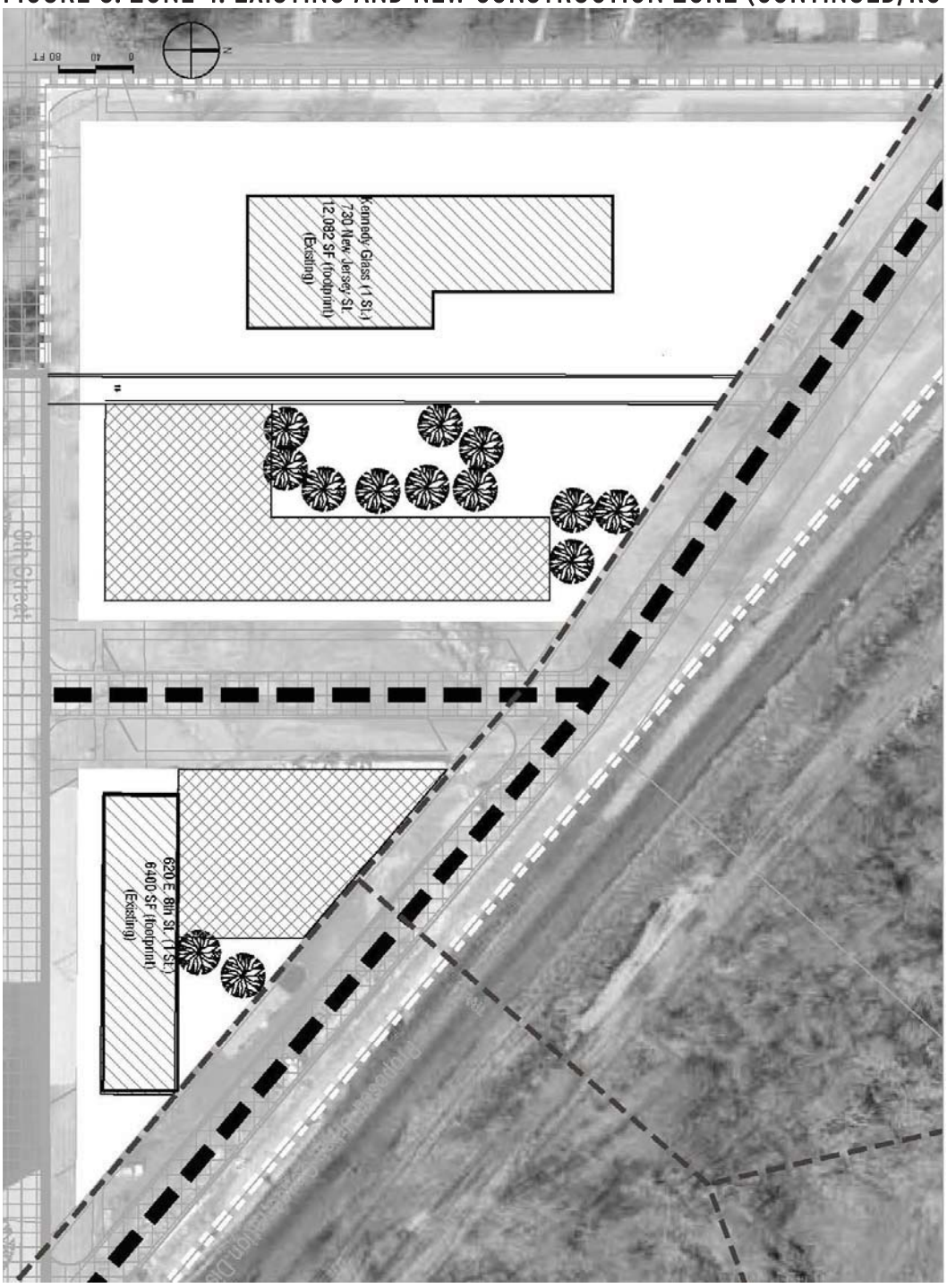
Recommended	Not Recommended
Using light fixtures that are as inconspicuous as possible with the exception of lighting compatible with the district.	Using conduits that are visible from the public right-of-way.
Using incandescent lights to illuminate small projecting and flat signboards and ambient light to illuminate the overall façade.	Using fluorescent light fixtures and high intensity discharge lighting.
Designing the light source for signs as a part of the sign or hiding it from view.	Using neon lighting that accentuates any shape or form of any of the building's elements.

FIGURE 7: ZONE 4 EXISTING AND NEW CONSTRUCTION ZONE



LAND USE PLAN

FIGURE 8: ZONE 4: EXISTING AND NEW CONSTRUCTION ZONE (CONTINUED/ROTATED)



LAND USE PLAN

ZONE 4: EXISTING AND NEW CONSTRUCTION ZONE

NEIGHBORHOOD CONTEXT

This zone is characterized by trapezoidal lots with alignments to both the traditional street grid system and the railroad right-of-way. The parcels were historically characterized by a lack of density, buildings of all sizes, and large amounts of open space, particularly in zones adjacent to railroad right-of-way. They contain several World War II-era Quonset Huts. This zone provides opportunities for new types of development that would retain open spaces and enhance the visual connection to the railroad right-of-way.

Due to its location, Zone 4 is a transitional buffer zone between the Historic and Residential Zones in the UC-O District and the more industrial uses of the railroad, concrete plant, and other potential future developments east of the UC-O District. As a result, the design, scale, massing, and lot openness of the zone should reflect this transitional nature.

SUSTAINABILITY

As a new construction zone, this zone has the most potential for integration of sustainable building practices. Including aspects of green architecture into the building design early on is recommended, and will have the best chance for success.

INFRASTRUCTURE

New construction in this zone will necessitate the need for new street and infrastructure additions, as well. Any additions of this character shall be consistent with those design guidelines established Zone 2, Streetscapes and Alleyways.

ARCHITECTURAL CHARACTERISTICS AND MATERIALS

Recommended	Not Recommended
Retaining the Quonset Huts in adaptive re-use when economically feasible.	Constructing buildings of the size, scale, and density of the residential zones in East Lawrence.
Incorporating new construction that uses mid- to large-scale buildings. Constructing buildings that reference the street grid or the railroad alignment.	
Continuing new mixed-use residential commercial development patterns established in Zone 3 in the zone north of East 8th Street between New Jersey and Pennsylvania Streets, creating a buffer zone or locating large industrial size buildings within surrounding open space.	
Building scale should be consistent with the zoned usage.	"Big Box" architecture.
Building materials and fenestration should be consistent with building use but complementary to the surrounding zones.	

LANDSCAPE

Recommended	Not Recommended
Retaining traditional open spaces.	

ACCESS

Recommended	Not Recommended
Locating dual access drives for service and delivery vehicles so that they do not disrupt pedestrian or vehicular circulation and do not visually detract from the front of the buildings by shifting them to parking areas or providing alley access.	Access routes for delivery vehicles that create routes directly through the residential areas.
Designing and locating access drives so that they prevent headlights from shining into adjacent residential zones.	

PARKING

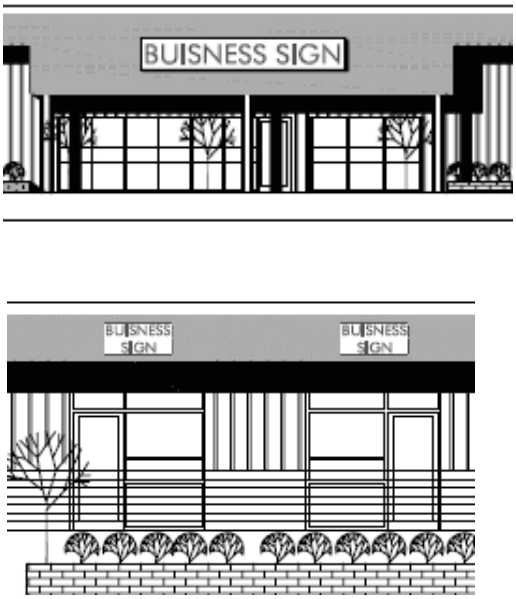
Recommended	Not Recommended
Locating surface parking lots on all sides of the primary buildings and structures.	
Retention of existing on-street parking in front of existing Zone 4 buildings.	
Parking design should be consistent with other zones in the UC-O District.	Large surface lots.
Low bollard lighting will be used to limit lighting impacts to adjacent residential areas.	

SIGNAGE

Recommended	Not Recommended
Having all signs conform with the Sign Code provisions of Article 7 of the Code of the City of Lawrence	
Depending upon the building's use, signs may be oriented toward both pedestrian and vehicular traffic.	
Having storefront façades that do not extend past the	

storefront cornice line. Locating storefront signs in the zone between the display windows and the roofline or the second story. Signs for multiple storefronts within the same building should align with each other.

Using signs that reflect the overall symmetry of the building



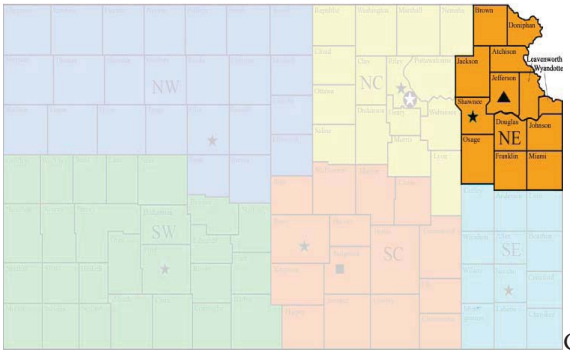
Examples of storefront signage

LIGHTING

Unless noted otherwise, lighting in Zone 4 will be consistent with City of Lawrence Code Section 20-14A01 through Section 20-14A03, or subsequent applicable City standards. Parking lighting shall have a maximum initial illumination value no greater than 0.20 horizontal footcandles at the zone boundary. Nor more than 5 percent of fixture lumens are emitted at an angle of 90 degrees or higher from nadir (straight down) with the exception of minor building lighting. These lighting requirements are adapted from IESNA RP-33-99. In order to limit lighting impacts on adjacent residential properties, low bollard lighting will be utilized in parking areas adjacent to these properties in lieu of standard pole lighting.

APPENDIX A

Preferred Trees for Northeast Kansas



Growing trees successfully depends on the selection of the right trees for the intended site. It is important to match the growing conditions and space available on the site with the cultural requirements and projected size of each tree to be planted. The following four charts on the following pages show the tolerances of individual trees to various environmental conditions as well as the major landscape attributes of each tree. Not all recommended trees for planting in Northeast Kansas are included. The preferred trees listed were recommended by industry professionals such as city foresters, local tree boards, county and horticulture extension agents, commercial arborists and retail/production nursery interests.

KEY TO USING THIS INFORMATION:

TREE SPECIES AND CULTIVARS: The names of the trees are listed in the center of four different charts. Three of the charts list deciduous trees according to average mature height [a plus (+) indicates they may grow slightly larger.] The fourth chart lists evergreen trees. If improved cultivars of the trees are available and recommended, they are listed. Cultivars often possess improved plant characteristics like better fall color; a unique form; more attractive flowers, fruit or bark; greater heat tolerance; or increased pest resistance. Many trees are available in single and multi-stemmed form. Multi-stemmed forms are more likely to be damaged from snow, ice, or wind.

ENVIRONMENTAL TOLERANCES: The left side of each chart indicates whether the tree is tolerant to various environmental conditions including full sun, light shade, alkaline soil, drought or wet soil. Each chart also shows how resistant each tree is to insect and disease pests. A "**G**" (for good) under the appropriate column indicates the tree is strongly tolerant of the characteristic indicated. An "**F**" (for fair) signifies that the tree shows some tolerance. A blank space in a column indicates the tree is not tolerant and should not be subjected to that environmental condition. Specific information on the "alkaline soil" and "pests" categories follows:

ALKALINE SOIL: (**G**) = tree may tolerate soils with a pH up to 8.0 or more; (**F**) = tree generally will tolerate

an alkaline soil up to a pH of 7.5; (blank) = tree may not tolerate alkaline soils; do not plant in alkaline soils to avoid the problem of iron or manganese chlorosis.

PESTS: (**G**) = tree is usually free of insect and disease problems; (**F**) = tree encounters insect or disease pests on an infrequent basis and often is not permanently damaged; (blank) = tree may suffer from pests which may permanently damage or kill the tree and/or the tree may exhibit minor insect and disease problems on a frequent basis which may affect the aesthetics of the tree or insects may commonly be a nuisance.

LANDSCAPE ATTRIBUTES: The right side of each chart includes average mature height and spread of each tree. The size is sometimes highly variable due to the size and shape of different cultivars planted and variability among growing sites. The landscape attributes of flowers, fruit, autumn color and ornamental bark are also listed.

DESIRABLE FLOWERS: (**G**) = the flowers are showy, adding unique ornamental interest to the landscape; (**F**) = the flowers are not particularly showy, but may possess other desirable characteristics such as fragrance; (blank) = the flowers are generally considered insignificant.

SHOWY OR USEFUL FRUIT: (**G**) = fruits are generally aesthetically pleasing; (**F**) = fruits or nuts are not considered unusually showy, but may provide other interest or benefits such as attracting wildlife; (blank) = no showy or useful fruit.

AUTUMN FOLIAGE COLOR: (**G**) = the autumn leaf color is typically quite good (may vary with individual trees, cultivars and environmental conditions, however); (**F**) = the fall color may provide interest in some years; (blank) = autumn foliage color is generally not considered an asset of this particular tree.

ORNAMENTAL BARK: (**G**) = the bark or twigs are considered to be exceptionally ornamental; (**F**) = the bark or twigs (on at least some cultivars) lend interest to the landscape (good color, texture, etc.); (blank) = the bark or twigs are not generally considered to be ornamental.

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ENVIRONMENT (tolerant of)							LANDSCAPE ATTRIBUTES					
FULL SUN	LIGHT SHADE	ALKALINE SOIL (HIGH pH)	DROUGHT	WET SOIL	PESTS (RESISTANT TO)	**SMALL DECIDUOUS TREES** (usually under 20 feet at maturity) Trees with mature height 20 feet or less can be used within 15 feet on either side of utility lines.	MATURE HEIGHT	MATURE SPREAD	DESIRABLE FLOWERS	SHOWY OR USEFUL FRUIT	AUTUMN FOLIAGE COLOR	ORNAMENTAL BARK
	G				F	**Japanese Maple** (Acer palmatum) Protect from summer wind and heat exposure.	15-25	15-25			G	

G	F	F	G	F	F	**Amur Maple** (Acer tataricum var. ginnala) **Cultivars:** 'Compactum', 'Flame' and other improved selections	15-20	15-20			G	
G	G					**Serviceberry (**Amelanchier x grandiflora) **Cultivar:** 'Autumn Brilliance'. Choose superior cultivars and native species.	15-25	15-20	G	G	F	
G	F	G	F		F	**Eastern Redbud** (Cercis canadensis) **Cultivars**: 'Alba', 'Forest Pansy'	20-25+	20-25+	G		F	F
G	F	G	F		F	**Oklahoma Redbud** (Cercis canadensis subspecies texensis 'Oklahoma')	15-20+	15-20+	G		F	F
G	G				F	**Chinese Fringetree** (Chionanthus retusus)	15-25	10-25	G	G		G
G	G				F	**White Fringetree** (Chionanthus virginicus)	10-20	10-20	G			
G		F	F		F	**Common Smoketree** (Cotinus spp.) Purple and green leaf cultivars available	10-15	10-15	G			
G	F	G	G		F	**Winterberry Euonymus** (Euonymus bungeanus)	15-20+	10		G	F	
	G				G	**Star Magnolia** (Magnolia stellata) Protect from summer wind and heat exposure.	15-20	10-15	G			
	G			F	G	**Sweetbay Magnolia** (Magnolia virginiana) Protect from summer wind and heat exposure.	10-30	10-20	F			

G		F	F			**Flowering Crabapple** (Malus spp.) Many cultivars available. Choose disease resistant cultivars only. Superior cultivars include: 'Prairiefire', 'Adirondack', 'Adams', 'Sargeant', Also refer to KSU Research and Extension Crabapple Publication MF-875.	varies	varies	G	G		F
G	F				F	**Chokecherry** (Prunus virginiana) **Cultivar:** 'Canada Red Select'	15-25	10-15	G	G	F	
G		G	F		F	**Japanese Tree Lilac** (Syringa reticulata) **Cultivar:** 'Ivory Silk'	20-25	15-25	G			G

ENVIRONMENT (tolerant of)							LANDSCAPE ATTRIBUTES					
FULL SUN	LIGHT SHADE	ALKALINE SOIL (HIGH pH)	DROUGHT	WET SOIL	PESTS (RESISTANT TO)	**MEDIUM DECIDUOUS TREES** (usually 20 to 40 feet at maturity)	MATURE HEIGHT	MATURE SPREAD	DESIRABLE FLOWERS	SHOWY OR USEFUL FRUIT	AUTUMN FOLIAGE COLOR	ORNAMENTAL BARK
G	F	F	F	F	F	**Trident Maple** (Acer buergeiranum) Some trees could suffer winter injury.	20-35	20-30			G	F
G	G	F	G		G	**Hedge Maple** (Acer campestre) **Cultivar**: Queen Elizabeth™('Evelyn')	25-35	25-35			F	
F	F	F			G	**Paperbark Maple** (Acer griseum)	20-30	15-30			F	G
G	F	F	F		G	**Shantung (Purpleblow) Maple** (Acer truncatum) **Cultivars**-hybrid with A. platanoides: 'Keithsform' (Norwegian Sunset™),	25-30	25-30			F	

						'Warrensred' (Pacific Sunset™).						
F	G				F	**American Hornbeam** (Carpinus caroliniana)	20-30	20-30				

G		F			G	**American Yellowwood** (Cladrastis kentukea)	30-50	40-55	F		F	
G		G	G			**Goldenraintree** (Koelreuteria paniculata)	30-40	30-40	G	G	F	
G		G	G	F	G	**Osage Orange** (Maclura pomifera) **Cultivars**: 'Wichita', 'Whiteshield. Fruitless and thornless cultivars recommended for most community plantings.	30-40+	20-40			G	F
F	G					**Saucer Magnolia** (Magnolia x soulangiana) Protect from summer wind and heat exposure.	20-30	15-25	G			
G		F	F			**Flowering Crabapple** (Malus species) Many cultivars available. Choose disease resistant cultivars only. Superior cultivars include: 'Centurion'; 'Ralph Shay'; Siberian Crab (M. baccata 'Jackii'); 'Spring Snow'; 'Van Eseltine'; White Angel™ ('Inglis'); 'Red Splendor'. Also refer to KSU Research and Extension Crabapple Publication MF-875.	varies	varies	G	G		F
G	G	F	F		G	**Hophornbeam (Ironwood)** (Ostrya virginiana)	25-40	20-30		F	F	F
G		F	G		F	**Callery Pear** (Pyrus calleryana) Several improved cultivars available. Superior cultivars include: 'Chanticleer' (also labeled 'Cleveland Select'), 'Capital', 'Aristocrat', 'Redspire'. 'Bradford' is not a recommended cultivar.	30-40+	10-45	G	F	G	
G		G	G		G	**Chinkapin Oak** (Quercus muehlenbergii)	35-40+	40-45		F	F	
G		G	G		G	**Western Soapberry** (Sapindus drummondii)	25-40+	25-30	G	G	G	F

ENVIRONMENT (tolerant of)							LANDSCAPE ATTRIBUTES					
FULL SUN	LIGHT SHADE	ALKALINE SOIL (HIGH pH)	DROUGHT	WET SOIL	PESTS (RESISTANT TO)	LARGE and VERY LARGE DECIDUOUS TREES (usually 40 feet and larger at maturity)	MATURE HEIGHT	MATURE SPREAD	DESIRABLE FLOWERS	SHOWY OR USEFUL FRUIT	AUTUMN FOLIAGE COLOR	ORNAMENTAL BARK
G	F	F				**Freeman Maple** (Acer x freemanii) **Cultivar:** 'Armstrong'; 'Jeffersred' (Autumn Blaze ®); Autumn Fantasy ™. Poisonous to horses.	50-60	40-50			G	F
G	F	G	G			**Norway Maple** (Acer platanoides) Several cultivars available. Superior cultivars include: 'Emerald	40-50	40-50				

						Queen', 'Superform' (Green leaf cultivars) and 'Fairview', 'Crimson King', 'Royal Red' (Red leaf cultivars).						
G	F			G		**Red Maple** (Acer rubrum) **Cultivars**: Red Sunset ® ('Franksred'); October Glory ®; 'Autumn Flame'; Burgundy Belle ® 'Magnificent Magenta' and columnar forms; Poisonous to horses.	40-60	35-50	F		G	F
G	G	F				**Sugar Maple** (Acer saccharum) **Cultivars:** 'Commemoration'; 'Legacy'; Caddo; 'Fall Fiesta'; 'Bonfire'; all are more heat tolerant/leaf tatter resistant cultivars.	40-60+	30-50			G	
G				G	F	**River Birch** (Betula nigra) **Cultivar**: 'Heritage'	40-60	40-50	F		F	G
G	F		F		F	**European Hornbeam** (Carpinus betulus) Upright cultivars available.	40-60	30-40+				
G		F	G		F	**Persimmon** (Diospyros virginiana)	35-50+	20-35	F	G	F	G
G		G	G		G	**Ginkgo** (Ginkgo biloba) **Cultivars:** 'Autumn Gold'; 'Princeton Sentry'; 'Magyar'. Male cultivars recommended for most community plantings.	50-60+	25-40			G	F
G		G	G	F		**Thornless Honeylocust** (Gleditsia triacanthos var. inermis) **Cultivars**: 'Shademaster', 'Skyline', 'Imperial'.	40-60+	30-50			F	
G		G	G	F	G	**Kentucky Coffeetree** (Gymnocladus dioicus) Seedless cultivars available.	50-60+	30-45		F	F	F
G				G		**Sweetgum** (Liquidambar	50-75	35-50		F	G	F

						styraciflua)						
G	F			G		**Black Tupelo (Black Gum)** (Nyssa sylvatica)	30-50	20-30			G	G
G	F	G	F	G		**London Planetree** (Platanus x acerifolia)	60-80	50-60		F		G

						Cultivar: 'Bloodgood'.						
G		F	G		G	**Sawtooth Oak** (Quercus acutissima)	35-40+	30-45		F	F	
G						**White Oak** (Quercus alba)	60-80	40-60		F	G	
G			F	G	F	**Swamp White Oak** (Quercus bicolor)	50-60	40-60		F	G	F
G			G	F	F	**Shingle Oak** (Quercus imbricaria)	50-60	40-60		F	F	
G		G	G	F		**Bur Oak** (Quercus macrocarpa)	60-80	50-70		F		
G			F	F	G	**Willow Oak** (Quercus phellos)	40-60	30-40			F	
G						**Chestnut Oak** (Quercus prinus)	60-70	60-70				
G		G	F		F	**English Oak** (Quercus robur)	40-60+	45-65		F		
G					F	**Red Oak** (Quercus rubra)	60-75	40-60		F	G	
G		F	F	F	F	**Shumard Red Oak** (Quercus shumardii)	60-80	40-60		F	G	
G			G	G	G	**Baldcypress** (Taxodium distichum)	50-70+	20-50		F	G	F
G	F	F			F	**American Linden** (Tilia americana) **Cultivars**: 'Redmond'	50-60+	35-40	F		F	
G	F	G			F	**Littleleaf Linden** (Tilia cordata) **Cultivars**: 'Greenspire'.	50-60	25-40	F		F	
G	F	G	G	F	F	**Lacebark Elm** (Ulmus parvifolia) **Cultivars: '**Emeri I' (Athena®); **'**Emer II' (Allee®); Bosque™; 'Emerald Prairie'; 'Frontier'.	40-60	35-50		F	F	G

ENVIRONMENT (tolerant of)

LANDSCAPE ATTRIBUTES

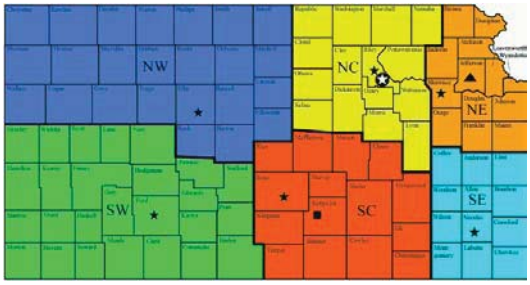
FULL SUN LIGHT SHADE ALKALINE SOIL (HIGH pH) DROUGHTWET SOILPESTS (RESISTANT TO) **EVERGREEN TREES**

MATURE HEIGHTMATURE SPREAD DESIRABLE FLOWERS SHOWY OR USEFUL FRUIT AUTUMN FOLIAGE COLOR ORNAMENTAL BARK

G G G G G	G G F	G G G	**Upright Chinese Juniper** (Juniperus chinensis) Many cultivars available. See your KSU-County Extension office or local nursery for the best recommendations. **Eastern Red Cedar** (Juniperus virginiana) Many cultivars available**.** Superior cultivars include: 'Canaertii' (Canaert Red Cedar), 'Taylor', 'Burkii'; **Black Hills Spruce** (Picea glauca 'Densata') **Norway Spruce** (Picea abies) **Limber Pine** (Pinus flexilis) **Cultivar**: 'Vanderwolf's Pryamid'	varies 30-40+ 30-40+ 40-60 30-40	varies 10- 30 15-20 25-30 15- 30	G G F F F	F F

This publication is coordinated and updated by the Kansas Forest Service. For further information and assistance, or to provide feedback and recommendations to the preferred tree listing please contact:

Kim Bomberger, NE / NC District Community Forester Preferred tree lists are available for other areas of the state.
Kansas Forest Service Visit us on the web for more information. 2610 Claflin Road Manhattan, KS 66502 785-532-3315
kbomberg@oznet.ksu.edu



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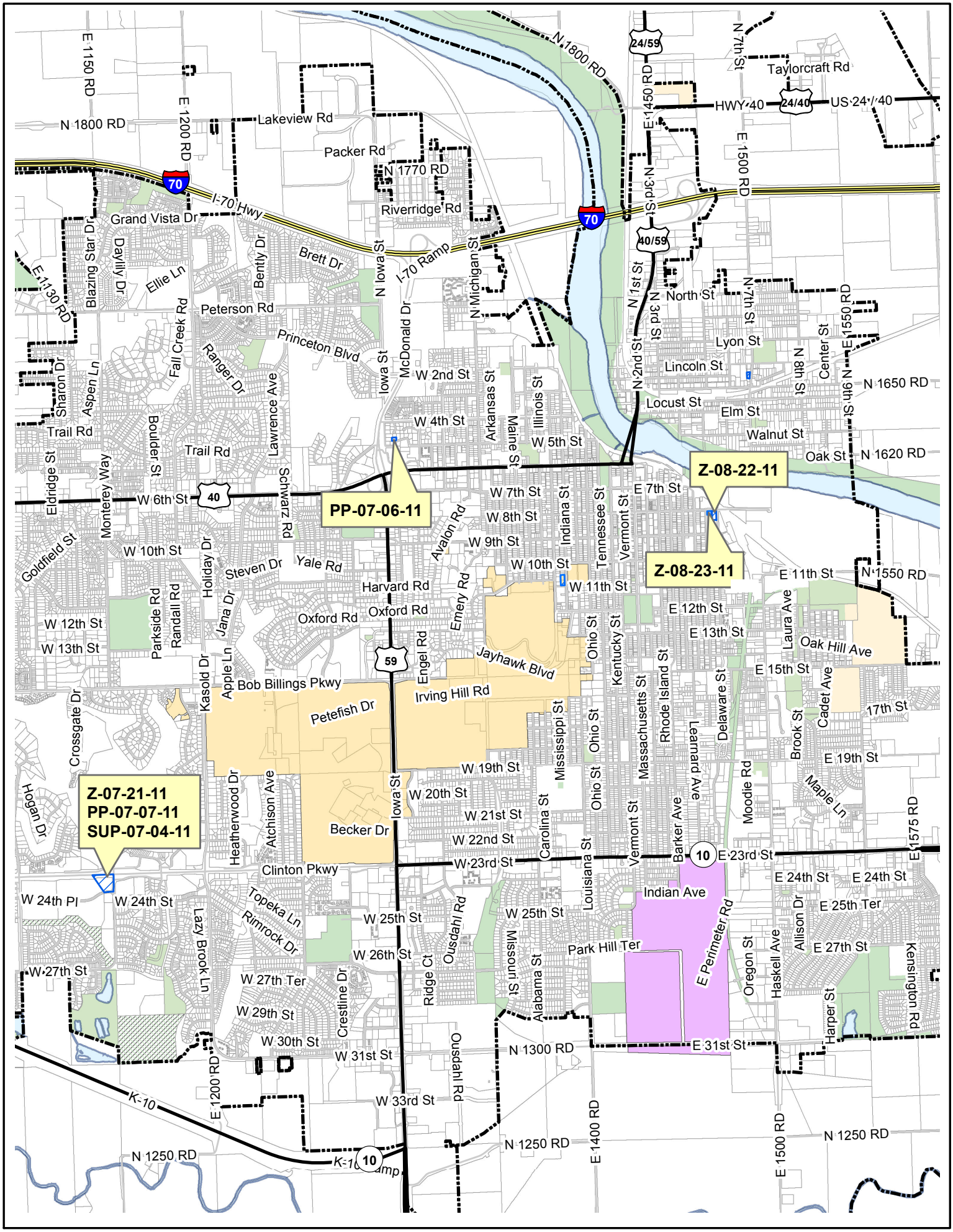
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APPENDIX B

8TH AND PENN NEIGHBORHOOD REDEVELOPMENT DENSITY						
	Bldg	Stories	Residential (sq ft)	Units	Retail (sq ft)	Office (sq ft)
Existing Buildings	720 E. 9th					
	806 Penn	1			1115	
	804 Penn	2			1369	
	Poehler (Main)	1				15508
	2nd floor + basement	2				12893
	Residential		25700	24		
	810 Penn	2			6627	
	826 Penn	1			10444	
	830-832 Penn	1				10220
	846 Penn West	2			2651	
	846 Penn East	1			1556	
	Totals		25700	24	23762	38621
Projected	8th & Penn	3			3600	
	9th & Penn	3			3600	
	Penn Row Phase II	3	11230	10		
	Penn Row Phase III	3	11230	10		
	Penn Row Phase IV	3	11230	10		
	Totals		33690	30	7200	0
	OVERALL TOTALS		59390	54	30962	38621
	Total Development Area (Residential area + Retail area + Office area)					128973
	Percentage Retail (not to exceed 25%; see page 11 of this document)					24.0%

Note: Built, unoccupied space shall be calculated as non-retail space for the purpose of determining a percentage of retail development for the 8th and Penn UC-O District.

Note: A revised Appendix B shall be submitted with each plan review as stated in the Review Principles section (pg. 16) of this document.


Z-08-22-11
Z-08-23-11
PP-07-06-11
Z-07-21-11
PP-07-07-11
SUP-07-04-11
N 1800 RD
Lakeview Rd
Packer Rd
N 1770 RD
Riverridge Rd
I-70 Hwy
I-70 Ramp
Grand Vista Dr
Brett Dr
Bently Dr
Ellie Ln
Peterson Rd
Princeton Blvd
Fall Creek Rd
Ranger Dr
Lawrence Ave
Schwarz Rd
Boulder St
Trail Rd
Sharon Dr
Aspen Ln
Eldridge St
Monterey Way
Goldfield St
W 6th St
W 7th St
W 8th St
W 9th St
W 10th St
W 11th St
W 12th St
W 13th St
Steven Dr
Yale Rd
Holiday Dr
Parkside Rd
Randall Rd
Jana Dr
Harvard Rd
Oxford Rd
Avalon Rd
Emery Rd
Engel Rd
Jayhawk Blvd
Irving Hill Rd
Bob Billings Pkwy
Petefish Dr
Apple Ln
Kasold Dr
Crossgate Dr
Hogan Dr
Heatherwood Dr
Atchison Ave
Becker Dr
Clinton Pkwy
W 19th St
W 20th St
W 21st St
W 22nd St
W 23rd St
W 24th Pl
W 24th St
W 25th St
W 26th St
W 27th St
W 27th Ter
W 29th St
W 30th St
W 31st St
W 33rd St
Topeka Ln
Rimrock Dr
Lazy Brook Ln
Crestline Dr
Ridge Ct
Ousdahl Rd
Oskahl Rd
N 1300 RD
N 1250 RD
E 1200 RD
E 1400 RD
E 1500 RD
E 1575 RD
K-10
K-10 Ramp
N Iowa St
McDonald Dr
N Michigan St
Arkansas St
Maine St
Illinois St
Indiana St
Tennessee St
Vermont St
Ohio St
Kentucky St
Mississippi St
Carolina St
Louisiana St
Massachusetts St
Rhode Island St
Delaware St
Leonard Ave
Barker Ave
Moodie Rd
Brook St
Cadet Ave
Laura Ave
Oak Hill Ave
Maple Ln
Indian Ave
E Perimeter Rd
Park Hill Ter
Allison Dr
Haskell Ave
Oregon St
Harper St
Kensington Rd
E 23rd St
E 24th St
E 25th Ter
E 27th St
E 31st St
E 1130 RD
E 1150 RD
E 1200 RD
E 1450 RD
E 1500 RD
E 1550 RD
N 1620 RD
N 1650 RD
N 1st St
N 2nd St
N 3rd St
N 7th St
N 8th St
N 9th St
North St
Lyon St
Lincoln St
Locust St
Elm St
Walnut St
Oak St
Center St
E 7th St
E 10th St
E 11th St
E 12th St
E 13th St
E 15th St
17th St
E 19th St
Taylorcraft Rd
HWY 40
US 24/40
24/59
40/59
70
59
40
10

PLANNING COMMISSION REPORT
Regular Agenda - Public Hearing Item

PC Staff Report
9/26/11

ITEM NO. 5B: CS TO RM12D; .27 ACRES; 804-806 PENNSYLVANIA ST (MKM)

Z-8-23-11: Consider a request to rezone approximately .27 acres from CS (Strip Commercial) to RM12D (Multi-Dwelling Residential) within the 8th & Pennsylvania Urban Conservation Overlay District, located at 804-806 Pennsylvania Street. Submitted by Bartlett & West, Inc., for Ohio Mortgage Investors, LLC, property owner of record.

STAFF RECOMMENDATION: Staff recommends approval of the request to rezone approximately .27acres located at 806 Pennsylvania Street from CS to RM12D, 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 condition:

Ordinance shall be published after the deed for the sale of the property to Ohio Mortgage Investors, LLC has been recorded with the Register of Deeds.

Reason for Request: *"Rezoning of the existing property to make it compatible with the residential living intent of the structure.*

KEY POINTS

- The property contains a contributing structure to the East Lawrence Industrial Historic District, National Register of Historic Places; therefore, the Historic Resources Commission (HRC) must review the rezoning request under the State Preservation Law (K.S.A. 75-2724, as amended).
- The subject property is regulated in part by the *8th and Penn Neighborhood Redevelopment Zone Design Guidelines* and was part of the *8th and Penn District Neighborhood Revitalization Plan*, which was adopted by the City Commission in 2007 with Ordinance 8093. The plan expired after 5 years and is no longer in effect.
- The subject property and the area around the subject property has been master planned through the design guideline process.
- Ohio Mortgage Investors LLC purchased the property at a Sherriff's sale and have provided documentation of the purchase. The deed for the property has not yet been recorded with the Register of Deeds.

ATTACHMENTS

Attachment A Site Plan for 806 Pennsylvania Street, documenting the existing residential structure and the proposed parking to be shared with other properties in the District. (SP-8-46-11)

Attachment B *8th and Penn Neighborhood Redevelopment Zone Design Guidelines*

ASSOCIATED CASES/OTHER ACTION REQUIRED

Other action:

- Historic Resources approval. The HRC confirmed the approval of the rezoning at their September 15, 2011 meeting.

- City Commission approval of the rezoning request and publication of Ordinance.
- Recordation of the deed establishing Ohio Mortgage Investors, LLC as the property owner with the Register of Deeds prior to the publication of the ordinance.

Associated Cases:

- Administrative approval and recording of Minor Subdivision (MS-8-5-11). The subject property is included in this Minor Subdivision and the lot lines are being reconfigured to reduce the area to .27 acres.
- Administrative approval of site plan (SP-8-46-11) to document the existing duplex building and to provide a new shared parking lot.
- Historic Resources Commission approval of minor subdivision (MS-8-5-11) and site plan (SP-8-46-11). Any conditions of approval placed on these items by the Historic Resources Commission must be met before the recording of the minor subdivision with the Register of Deeds or the release of the site plan to Development Services for building permits.

PUBLIC COMMENT RECEIVED PRIOR TO PRINTING

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

Project Summary:

This request is for rezoning of one 11,761 sq ft lot located at 806 Pennsylvania Street from the CS (Commercial Strip) District to the RM12D (Multi-Dwelling Residential) District. (See Figure 2, page 8) The RM12D District is a 'medium-density' district, which permits duplex development at a maximum density of 12 dwelling units per acre. The subject property lot lines are being revised with a minor subdivision to reduce the area to .27 acres or 11,761 sq ft. The duplex development on this lot will result in a density of 7.4 dwelling units per acre which is compliant with the density standards for the RM12D District.

A parking area is proposed on the subject property and on-street parking will be located adjacent to the property. This parking will meet the requirements of the duplex use and will be used to meet the parking requirements of other uses in the Overlay District. The use of on-street parking to meet the parking requirement is not typical but is permitted with the *8th and Penn Neighborhood Redevelopment Zone Design Guidelines.* The site plan which has been submitted for this lot illustrates the proposed development and is included with this report as Attachment A.

1. CONFORMANCE WITH THE COMPREHENSIVE PLAN

Applicant's Response:

> *"The proposed request is within conformance of allowable uses set by the 8th and Penn Neighborhood Design Guidelines and also Horizon 2020."*

This request is governed by general policies of *Horizon 2020* and the zoning standards of the *8th and Penn Neighborhood Redevelopment Zone Design Guidelines*, which are standards used to implement the 8th and Pennsylvania Urban Conservation Overlay District. *Horizon 2020* is the focus of this section of the report. The *8th and Penn Neighborhood Redevelopment Zone Design Guidelines* are discussed later.

The Lawrence Future Land Use Map (Map 3-2) of *Horizon 2020* designates the subject property for office/research, industrial and warehouse uses, though residential uses are designated for nearby properties. Several residential strategies of Chapter Five – Residential

Land Use support the requested RM32 zoning, including policies related to appropriate infill, using a mixture of housing types, and protecting and enhancing a neighborhood's character.

Staff Finding – The proposed RM12D zoning is generally compatible with recommendations for infill residential development in *Horizon 2020*.

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

Current Zoning and Land Use:	CS-UC (Commercial Strip) with (8th and Pennsylvania Urban Conservation) Overlay District; duplex residence.
Surrounding Zoning and Land Use:	To the north: IG (General Industrial and 8th and Pennsylvania Urban Conservation Overlay) District; utility facility.
	To the west: CS (Commercial Strip and 8th and Pennsylvania Urban Conservation Overlay) District; undeveloped property.
	To the south: CS (Commercial Strip and 8th and Pennsylvania Urban Conservation Overlay) District; vacant building with an active development proposal for an art studio with retail sales under review.

The subject property and the adjacent property to the south, east and west are not only located within an Urban Conservation Overlay zone, but the base zoning C-5 [converted to CS] was conditioned via the adopting ordinance (Ord 8054). Per the conditions of the zoning, the following uses are prohibited in the CS district:

1. Bars [unless 55% of gross receipts are derived from food sales as outlined in 20-509(5)(i)]
2. Liquor Store
3. Ambulance Service
4. Car or Truck Wash
5. Auto Repair
6. External drive-through ATM or drive-through window [walk-up ATM's are allowed]
7. Furriers
8. Pawn Shop
9. Mobile Home Sales and Service
10. Golf Driving Range
11. Pet Store [animal sales]
12. Loan Office [short-term cash advance loans]
13. Convenience store with Gasoline Sales

The building was rezoned C-5 (General Commercial) prior to the adoption of the 2006 Development Code. The C-5 Zoning District converted to the CS with the 2006 Code. Duplex residential uses were permitted uses in the C-5 District but are not permitted within the CS District. Currently the duplexes are non-conforming uses and are regulated under Section 20-

1502 of the Development Code. The rezoning is being requested to bring the duplex use into conformity with the Code.

The *8th and Penn Neighborhood Redevelopment Zone Design Guidelines*, adopted in January of 2007, was the result of a planning effort that included participation from the property owners, East Lawrence Neighborhood Association, and other stakeholders. It designates the subject property within Zone 1 of the district and notes:



Figure 1. Overlay District Boundaries and Zones. Subject property marked with a star.

"The centerpiece of the redevelopment zone is the group of masonry manufacturing buildings bounded by East 8th Street on the north, Pennsylvania Street on the west, Delaware Street on the east, and East 9th Street on the south that is eligible for listing as a historic district in the National Register of Historic Places. These industrial buildings range from one story to four stories in height and date from the 1880's through the 1920s. The buildings are ideal candidates for rehabilitation into mixed adaptive uses that will allow them to retain the necessary level of historic architectural integrity to continue to contribute to an understanding of the historic district's associations with commerce and architecture in Lawrence."

The zoning standards at the time precluded mixed-use type development. The *8th and Penn Neighborhood Redevelopment Zone Design Guidelines* states the following related to this issue:

"The Lawrence Code recognized this problem and has provided a solution – the UC-O District. A UC-O District allows the City and a developer to tailor the development standards applicable to an area so that mixed-use development of appropriate size, orientation, and setting can be built within a neighborhood or area."

Staff Finding – The subject property is located within the 8th and Pennsylvania Urban Conservation Overlay District and is regulated by the *8th and Penn Neighborhood Redevelopment Zone Design Guidelines*. The property contains a masonry building that was used for industrial and retail uses in the past, but has been in use as a duplex residence since 1984. The C-5 District permitted the duplex use, but the CS District does not. The RM12D zoning is the appropriate district to accommodate the existing use.

3. CHARACTER OF THE NEIGHBORHOOD

Applicant's Response:

"*An old warehouse district with primarily low-used or vacant structures."*

The surrounding area contains industrial, office and residential uses and clearly reflects the mixed use nature of East Lawrence. The 8th and Penn area is intended to be a transitional area between the residential areas to the south and west and the more intense industrial uses to the north and east.

Staff Finding – The area contains a mix of uses. The proposed rezoning removes the non-conforming status of the existing use and is in keeping with the character of the neighborhood.

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

The subject property is located within the East Lawrence Neighborhood. A land use plan was adopted for the East Lawrence Neighborhood in 1979 designating the property for industrial uses. A more recent plan, the *East Lawrence Neighborhood Revitalization Plan*, was adopted in November of 2000. The Revitalization Plan is an action plan for maintaining and improving the vitality of the neighborhood rather than a land use plan.

As mentioned earlier, the *8th and Penn Neighborhood Redevelopment Zone Design Guidelines* were adopted in 2006 and is considered by staff to be the land use plan for the area. The guidelines recommend a mix of uses in this area, with a limitation on retail to prevent it from being the predominate use.

Staff Finding – The proposed rezoning from CS to RM12D is consistent with the recommendations of the plan for the area.

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

Applicant's Response:

"*The area is no longer suitable for the proposed use of the existing structure which is designated as CS zoning. The area is changing and will be revitalized as a part of this rezoning process and overall development."*

The property is currently developed with a duplex. The duplex residential use was permitted with the previous C-5 zoning, but is not permitted within the CS District. The property was rezoned from industrial zoning districts to the C-5 District in order to permit a mix of uses; however, with the adoption of the 2006 Development Code the zoning designation converted to the CS District which does not permit the range of uses that were permitted in the C-5 District. Specifically, the CS District does not permit the existing duplex residential use that was permitted with the C-5 zoning.

The overlay district placed a limit on the amount of retail space that could be developed within this district at 25% of the floor area. With the prohibition of duplex uses in the CS District and the limitation on retail area possible in the district, the types of uses which are possible on this

property are limited. The property would be suited for an office use, but the building would need to be remodeled and brought into compliance with building codes for that use.

Staff Finding –The property is developed with a duplex residence. This structure could be converted and brought into compliance with building codes for commercial or office uses. With these changes, the property would be suited for the commercial uses permitted within the CS District; however, the property -as developed- is most suited to the RM12D zoning being requested.

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

Applicant's Response:

"The property was previously zoned CS in 2006."

The subject property contains a duplex residence which is currently inhabited. The National Register Nomination for this property notes that the structure at 806 Pennsylvania was built about the same time as the Poehler Building and it is assumed that it served as a storage for explosives. It was later used for seed storage. The nomination also notes that a residential structure was located to the north of the existing building at one time. The 1984 Polk Directory provides 2 residential phone numbers for this property.

Staff Finding – The subject property is not vacant, but is being used as a duplex residence. The property has historically been used as storage, office and residential uses.

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

Applicant's Response:

"*The modification of the current zoning from CS to a residential designation will not detrimentally affect nearby properties at all."*

The *8th and Penn Neighborhood Redevelopment Zone Design Guidelines* expressed concern with the possibility of having too much retail in the zone.

> **"As the impetus to rezone the property and create a UC-O District for the 8th and Penn Neighborhood Re-Development Zone is premised on creating a vital mixed-used neighborhood, it is important that restrictions be crafted that insure this vision comes to light. Namely, neither the Developer, City, nor the East Lawrence Neighborhood Association, desires this property to be developed for "big box" retail uses or as an area that is principally retail in use. "**

The Guidelines limited the amount of retail that could be developed within the zone and established a maximum size for any single retail shop or tenant in order to prevent the area from becoming retail in nature. As the RM12D District does not permit retail uses, the rezoning would remove the possibility of developing 806 Pennsylvania commercially and would maintain the existing residential use.

Staff Finding – The proposed rezoning would not negatively impact nearby properties. The rezoning would maintain the existing residential use at 806 Pennsylvania St and remove the

possibility of developing the property commercially. This would assist in maintaining the limits that have been set on retail uses in the guidelines.

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 relative gain will be through a productive use of now mostly vacant property, which will benefit the local surrounding neighborhood and the entire community in general."*

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

The denial of the rezoning request will not alter the use of the property, but would maintain the duplex residence's status as a nonconforming use; therefore, it would have no impact to the public health, safety and welfare.

Staff Finding – The denial of the rezoning request would be a hardship to the applicant as the existing use would remain a nonconforming use. There is no gain to the public by denying the application as no change in use is being proposed.

9. PROFESSIONAL STAFF RECOMMENDATION

The 8th and Penn area has received a good deal of process during the last decade. A very specific proposal for redeveloping the larger area was put forth and approved through the public zoning process in 2006. The project included an Urban Conservation Overlay District, conditional zoning, Historic Review, a Neighborhood Revitalization Act (NRA), a Developer Agreement, and public improvement plans to construct adjacent streets and alleys. A new owner desires to implement the formally approved plans with some revisions to the use of the Poehler building. The current request attempts to work within this bundle of development rights afforded by the previous approvals, but much of the work needs to be revisited, including the zoning, NRA, Developer Agreement, financing of public improvements, etc. Staff appreciates that a developer is looking to redevelop the area and is finding creative ways to finance the improvements. The use of the Poehler building as a Multi-Dwelling Structure is appropriate and an important step in continuing to revitalize this part of the city.

Staff recommends approval of the rezoning request based on the findings of this report, subject to the condition that the Ordinance be published after the deed for the sale of the property to Ohio Mortgage Investors, LLC has been recorded with the Register of Deeds.

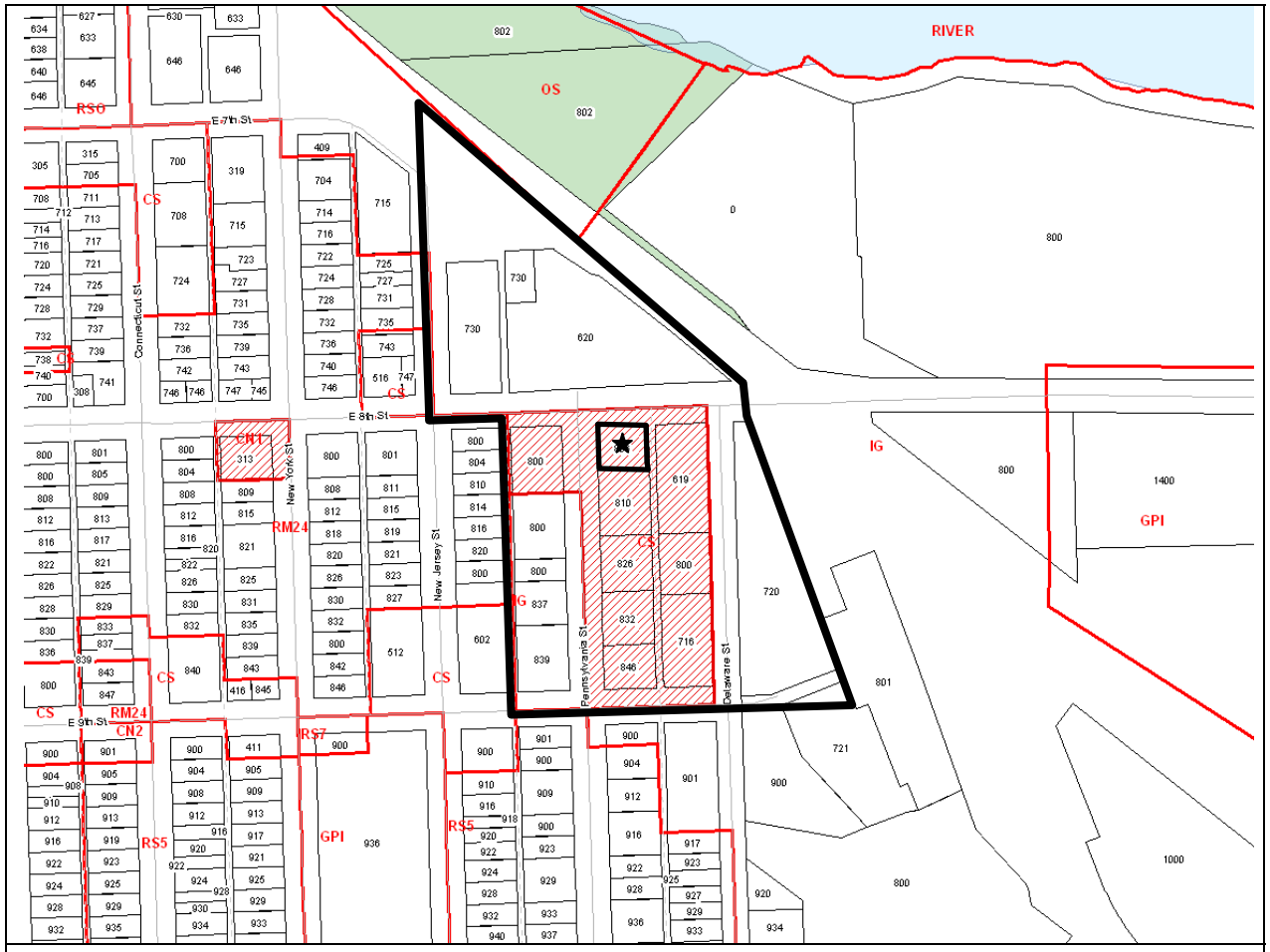


Figure 1. Location and Zoning of subject property, 806 Pennsylvania St.

Urban Conservation Overlay District boundary

Conditioned CS Zoning District

Subject Property

Last edit on: 00/00/00 Drawing name: W:\Proj\14000\14518\14518.008\AutoCad\Site Plan\14518-008 c01 SitePlan.dwg Layout name: SP-2 Plotted by: RLW00576 Plotted on: Aug 05, 2011 - 9:03am

PROPOSED DELAWARE STREET

CONSTRUCT ALLEY APRON, ADA RAMP, CURBING TO CITY OF LAWRENCE STANDARDS

PROP. 5' SIDEWALK

10.00' U.E.

PROP. 5' SIDEWALK

60° 2 STALLS 9.00'

TURF

PROP. 5' SIDEWALK

FUTURE SITE PLAN

15' R.

TURF

PROP. 5' SIDEWALK

FUTURE STREET TREE (TYP.)

FUTURE SITE PLAN

FUTURE SITE PLAN

FUTURE SITE PLAN

FUTURE SITE PLAN

POULTRY BUILDING 1-STORY BUILDING

FUTURE SITE PLAN

FUTURE SITE PLAN

5 STALLS

PROP. ±7.5' SIDEWALK

10 STALLS

PROP. 5' SIDEWALK

13 STALLS

FUTURE STREET TREE (TYP.)

4 STALLS

2 ADA STALLS

4 STALLS

60'

18.50'

17 STALLS

9.00'

TURF

PROP. 5' SIDEWALK

2 STALLS

STORM SEWER TO BE ATTACHED TO DELAWARE STREET DESIGN PACKAGE (TYP.)

25'-0" AISLE WIDTH

13 STALLS AT 8.'-6"x18'-0"

EXISTING TREE TO REMAIN

Slope

BIO-SWALE

13 STALLS AT 8.'-6"x18'-0"

10'-0"

25'-0" AISLE WIDTH

11 STALLS AT 8.'-6"x18'-0"

APPROVED POROUS SURFACE

INSTALL WHEEL STOP (TYP.)

INSTALL ADA SIGNAGE (TYP.)

3 ADA STALLS AT AT 8'-0"x18'-0"

25'-0" AISLE WIDTH

8 STALLS AT 8'-6"x18'-0"

5'-7"

5.00'

5.00'

5' R.

11 STALLS AT 8.'-6"x18'-0"

19'-3"

10'-0"

10.0'

INSTALL 7' HIGH WOOD SCREENING FENCE ON 6" REINFORCED CONCRETE PAD (20'-5" x 47'-6") INSTALL 8'x20'-0" TRASH ENCLOSURE (TWO DUMPSTERS, WALK-IN ENCLOSURE)

SEED BUILDING 1-STORY BUILDING

FUTURE SITE PLAN

EXISTING RAISED STEP

PROP. ±7.5' SIDEWALK

6 STALLS

INSTALL NEW DOCK, RAMP AND ±20'x20' CONCRETE APPROACH

VINEGAR BUILDING 2-STORY BUILDING MAIN F.F.E. = 832.47

GATE (TYP.)

PATIO AREA AMENITIES PER ARCHITECT/OWNER

EXISTING 1-STORY BUILDING

CONCRETE PATIO SURFACE

INSTALL BIKE RACK (6 BIKES)

RAISED PLANTER BEDS TO BE DETERMINED

TRANSFORMER LOCATION - COORDINATE WITH UTILITY PROVIDER

UGE

SAN

GATE (TYP.)

BUILDING ENTRANCE (TYP.)

EXISTING FIRE ESCAPE STAIRCASE TO BE RE-BUILT

EXISTING CONC. PAD TO STAY PENDING INSPECTION

EXISTING STAIRS TO BASEMENT LEVEL TO REMAIN

PRIVATE SANITARY SERVICE CONNECTION AND CLEANOUT

WATER SERVICE AND FIRE CONNECTIONS

BLDG. OVERHANG

INSTALL 7' HIGH SCREENING FENCE, SURFACE AND LAYOUT TO BE DETERMINED

GATE (TYP.)

EXISTING BLDG. FOUNDATION AND WALLS TO BE USED AS ARTIST DISPLAY AND WORK AREA

10' U/E

1-STORY BUILDING MAIN F.F.E. = 827.90

1-STORY GARAGE (TO REMAIN PENDING STRUCTURAL INSPECTION)

EXISTING DRIVE TO REMAIN

EXISTING TREE TO BE REMOVED

EXISTING FIRE HYDRANT TO REMAIN

EXISTING TREE TO REMAIN *

6 STALLS

10' U/E

23'-9"

Slope

EXISTING POEHLER WAREHOUSE 5-STORY BUILDING

MAIN F.F.E. = 829.54

EXISTING TO BE STRIPED AS SHOWN

SAWCUT

6 STALLS

PROP. 5' SIDEWALK

TURF

8 STALLS

PROP. 5' SIDEWALK

PROP. 5' SIDEWALK

6 PROPOSED 45° STALLS

16.80'

8.20'

13.17'

TREE IN TREE WELL

TREE IN TREE WELL

7 STALLS

CONSTRUCT ALLEY APRON, ADA RAMPS, CURBING TO CITY OF LAWRENCE STANDARDS

EXISTING FIRE HYDRANT LOCATION TO BE ADJUSTED PER PUBLIC IMPROVEMENT PLANS

EXISTING FIRE HYDRANT TO BE RELOCATED PER PUBLIC IMPROVEMENT PLANS

PLANTING BED (TYP.)

STREET TREE SPECIES PER 720 E 9TH ST ELEVATION SITE PLAN (TYP. THIS SIDE OF PROPOSED STREET)

PAVEMENT SCHEDULE

- 4" CONCRETE SIDEWALK
- 6" REINFORCED CONCRETE
- APPROVED POROUS SURFACE
- EXISTING ASPHALT PARKING TO REMAIN

NOT FOR CONSTRUCTION
PLANNING LAYOUT ONLY

1" = 20'
20 0 20 40

SITE PLANS
FOR
8TH AND PENN NEIGHBORHOOD REDEVELOPMENT DISTRICT
LAWRENCE, KANSAS

BARTLETT & WEST
628 VERMONT STREET - LAWRENCE KS 66044.2252
PHONE 785.749.9452 - FAX 785.749.5961
WWW.BARTWEST.COM

REV	DATE	DESCRIPTION	BY

DESIGNED BY: DRA
DRAWN BY: RLW
APPROVED BY: DRA
DESIGN PROJ: 14518.008
CONST PROJ:
SCALE: AS NOTED
DATE: 8-5-11

SHEET NUMBER SP-2 OF

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DESIGN GUIDELINES

8TH AND PENN NEIGHBORHOOD REDEVELOPMENT ZONE

24 OCTOBER, 2006



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EXECUTIVE SUMMARY

The 8th and Penn Neighborhood Redevelopment Zone is located in the historic East Lawrence manufacturing and railroad freight area and is part of the East Lawrence residential neighborhood. The proximity of the Kansas River made the historic industrial zone an ideal location for rail lines and associated freighting and manufacturing facilities. The redevelopment zone is composed of buildings, structures, and streetscapes that developed over a period of time and that had a variety of uses. Today, as in the past, there is a heterogeneous mix of warehouse and commercial/industrial facilities dating to the 1880s, large open spaces once used for rail yards and warehousing facilities, and several large, modern light industrial facilities. Although many of the older buildings and structures retain an individually distinct character and identity, their design patterns also contribute to the overall appearance of the area. Immediately adjacent to the west and south of the redevelopment zone are historic residential neighborhoods. These commercial/industrial and residential enclaves are separated by blocks that have lost their historic residential use and now are made up of vacant lots and/or a mix of commercial uses.

As in many communities, new residential and commercial growth presents unique challenges for this type of older mixed-use neighborhood. While individual buildings may have the potential to attract new businesses, if the area as a whole is to become viable, it must compete with other local and regional development zones. Experience demonstrates areas that create and/or retain a unique visual character that combines the historic and the new to enhance an existing "sense of place" are the most successful competitors.

The City of Lawrence has initiated a number of strategies to preserve, rehabilitate, and enhance the appearance of its older neighborhoods. This approach recognizes that conservation of buildings, neighborhoods, and sites of historic value is one of the best tools for recovering the worth of past investments while fueling a new economic force. To accommodate revitalization of this neighborhood and to merge old and new land uses, the redevelopment project will include changing the base zoning to C-5 and creating an Urban Conservation Overlay District (UC-O District) in accordance with the ordinances of the City of Lawrence, Kansas. There are historic resources located in the 8th and Penn Neighborhood Redevelopment Zone that are eligible for listing in the National Register of Historic Places and the Register of Historic Kansas Places. With the anticipated listing of these properties, all work (rehabilitation and new construction) in the redevelopment zone will be reviewed in accordance with the Kansas Historic Preservation Act of 1977, as amended,[1] and, possibly, Section 106 of the National Preservation Act of 1966, as amended,[2] to consider and mitigate the impact of development and adaptive reuse on the historic resources. It is also anticipated that the owners of qualifying historic buildings will participate in federal and state rehabilitation tax credit programs.

Because of these goals, the following design guidelines incorporate the "Secretary of the Interior's Standards for Rehabilitation of Historic Properties", which apply not only to rehabilitation for the adaptive reuse of historic and older buildings, but also to new construction and site development. The Secretary's Standards are currently incorporated into federal, state, and local compliance ordinances and laws, and have been upheld by state and federal courts as a reasonable standard by which to guide protection of cultural resources.

[1] The Kansas statute requires that the State Historic Preservation Office and/or its local designee review and comment on proposed projects (such as this project) undertaken by other parties, but requiring issuance of a lease, permit, license, or other entitlement for use from the State of Kansas or any political subdivision of the State of Kansas that would affect a property and/or the environs of a property listed in the National Register of Historic Places or the Register of Historic Kansas Places.
[2] This will occur if the project involves an undertaking by a federal agency, such as funding, financing, grants, issuance of permits, and so forth.

These design guidelines will be incorporated into an Urban Conservation Overlay District zoning ordinance to ensure compliance with local, state, and federal preservation laws and will thereby provide a consistent set of standards specific to the built environment and physical conditions of the redevelopment zone.

The goal in utilizing these guidelines is not to reproduce a historical period or theme approach. The intent is to identify and protect historic resources and to utilize significant common historic patterns in the existing built environment that will contribute to a sense of place, while retaining and enhancing the existing historic fabric and visual character of the development zone. Inherent in these guidelines is the provision of direction to property owners and developers to ensure that changes to properties — rehabilitation, renovation, demolition, and new construction — enhance and complement the unique character of East Lawrence. The intended purpose of using these guidelines is to help accomplish the following:

1. Foster economic viability by encouraging redevelopment and new development.

2. Regulate exterior scale, massing, design, arrangement, texture, and materials within the conservation zone in order to not only promote compatibility within the development zone, but also to create linkages with the surrounding neighborhoods.

3. Preserve and protect the historic and architectural value of buildings, structures, sites, districts, and objects listed in, or eligible for, the National Register of Historic Places, the Register of Kansas Historic Places, and the Lawrence Register of Historic Places.

4. Maintain the unique identity of East Lawrence.

5. Meet the Kansas State Law requirements as set forth in KSA 75-2724 and any amendments hereafter and Chapter 22 of the City of Lawrence Code and any amendments hereafter related to environs review.

6. Build upon historical character and foster diversity while meeting the goals of the *Horizon 2020 Comprehensive Plan* and the *East Lawrence Neighborhood Revitalization Plan.*

FIGURE 1: 8TH AND PENN NEIGHBORHOOD REDEVELOPMENT ZONE



FIGURE 2: 8TH AND PENN NEIGHBORHOOD REDEVELOPMENT ZONE (ENLARGED)



ENVIRONS OVERVIEW

The first step in creating an attractive, cohesive sense of place that reflects the historic heterogeneous land uses in the 8th and Penn Neighborhood Redevelopment Zone is to identify character-defining elements and patterns created by these elements that currently provide a sense of place and identity. An analysis of the historic land use and the existing built environment revealed four (4) zones, each with distinctive history and appearance.

ZONE 1: HISTORIC DISTRICT

The centerpiece of the redevelopment zone is the group of masonry manufacturing buildings bounded by East 8th Street on the north, Pennsylvania Street on the west, Delaware Street on the east, and East 9th Street on the south that is eligible for listing as a historic district in the National Register of Historic Places. These industrial buildings range from one story to four stories in height and date from the 1880's through the 1920s. The buildings are ideal candidates for rehabilitation into mixed adaptive uses that will allow them to retain the necessary level of historic architectural integrity to continue to contribute to an understanding of the historic district's associations with commerce and architecture in Lawrence. These buildings are eligible for participation in federal and state rehabilitation tax credit programs.

ZONE 2: STREETSCAPES AND ALLEYS

The redevelopment zone retains many of the elements that defined its historic streetscapes and alleyways. These features and spaces compose the grid of streets, alleys, and sidewalks, as well as the off-axis railroad right-of-way. The majority of the public right-of-way areas are the spaces and infrastructure between the buildings' façades on both sides of the streets and generally includes the following:

1. Pedestrian spaces between the buildings and street curbs, including landscaping, lighting fixtures, informational signage, pavement materials, and steps accessing residences and driveways to rear lots, alleyways, or off-street parking areas

2. The street which contains lanes of traffic, crosswalks, and vehicle parking adjacent to the curbs

3. Alleyways

4. Railroad right-of-way and associated alignment

Other than the railroad right-of-way features and spaces, these streetscape and alley features are a continuation of the City's traditional platted grid of street and alley systems of the neighborhoods to the south and west of the redevelopment zone. As a whole, this grid contains important historic character-defining spaces, structures, and materials. The retention of these features will contribute to a visual transition and linkage between the adjacent historic residential streetscapes and the new development in the redevelopment zone. At the same time, retention, restoration, and enhancement augment the character of the East Lawrence Industrial Historic District (Zone 1).

ZONE 3: 800 PENNSYLVANIA MIXED-USE ZONE

The streetscape and lots bordering the industrial/manufacturing zone in the block bounded by East 8th on the North, Pennsylvania Street on the east, the alley between Pennsylvania Street and New Jersey Street, and East 9th Street on the south was historically a residential street.[3] The loss of its historic residential character is due to demolition and the expansion of commercial/industrial buildings westward. This zone is adjacent to two intact residential areas — one west of New Jersey Street and one south of East 9th Street — that are part of the large East Lawrence historic residential neighborhood. Within Zone 3, there do not appear to be any historic buildings with sufficient integrity to communicate associations with the period of significance of the National Register East

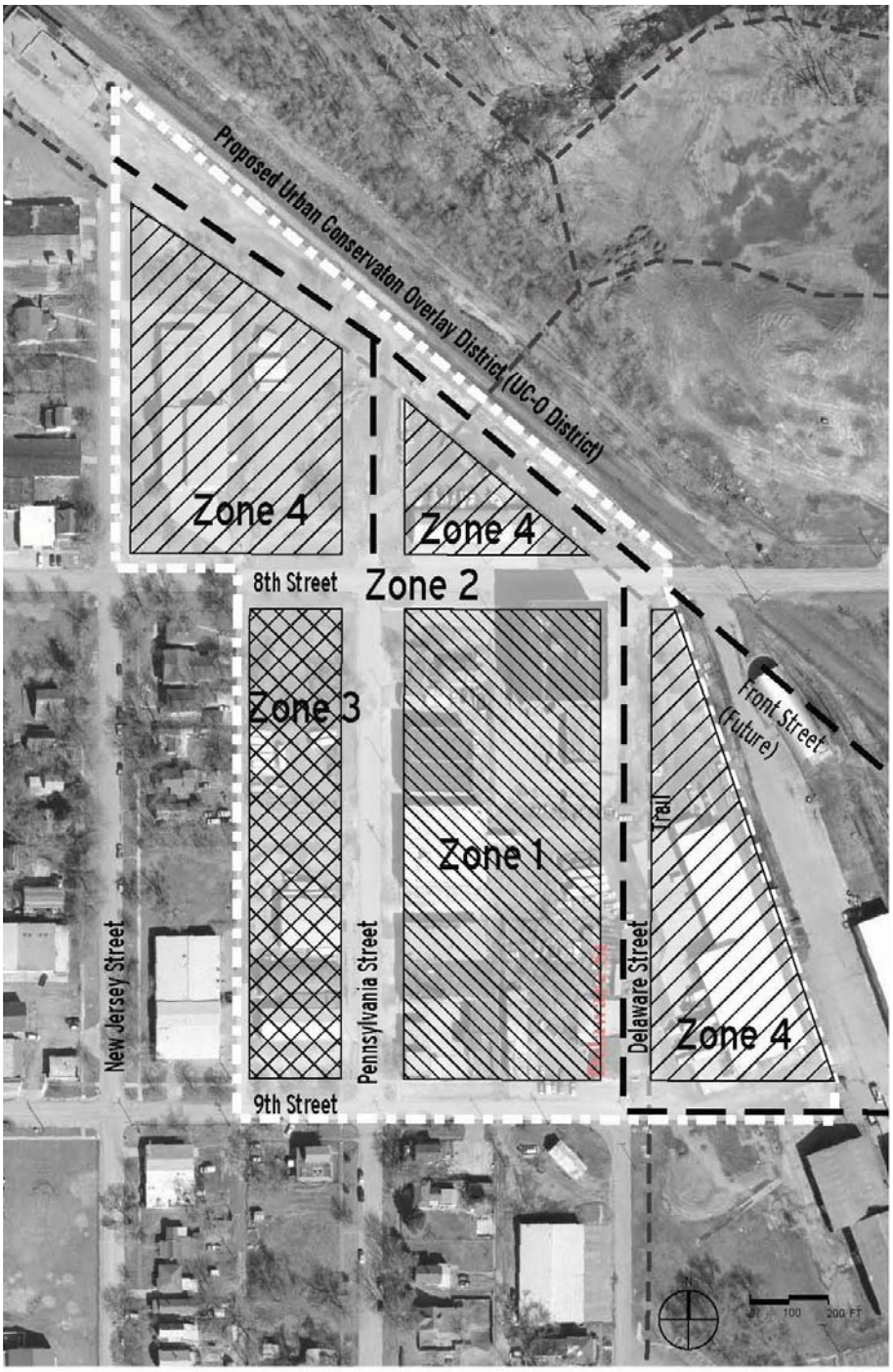
[3] The residential streetscape is intact in the Sanborn Fire Insurance Company map of 1927, a date that generally coincides with the end of the period of significance of the National Register East Lawrence Industrial Historic District.

Lawrence Industrial Historic District that comprises Zone 1 or with the residential resources on New Jersey Street. Zone 3 has the potential to become a transition zone between the existing single-family residential neighborhoods on the boundary of the redevelopment zone to the new commercial and residential uses planned in the redevelopment zone. In particular, this zone is ideal for development into higher density residential and limited commercial uses.

ZONE 4: EXISTING AND NEW CONSTRUCTION ZONE

This zone is composed of several irregularly shaped parcels that are adjacent to the railroad right-of-way and have traditionally served as areas for light manufacturing, storage, and railroad-related activities. Open space and temporary and permanent storage and manufacturing facilities defined these areas historically. Most of the buildings were large facilities of one to two stories in height aligned to both the historic street grid and the railroad's diagonal right-of-way and associated infrastructure. The infrastructure of this zone is industrial, featuring random curbing and no sidewalks. Within Zone 4, there do not appear to be any historic buildings dating to the period of significance of the buildings found in Zone 1 or to the residential enclave to the west. There are, however, buildings that are more than fifty years of age. Among them are Quonset Hut buildings dating to the World War II period and erected for industrial purposes. These areas within Zone 4 provide opportunities for new types of development that would retain open spaces and enhance the visual connection to the railroad right-of-way.

FIGURE 3: ZONE OVERVIEW



LAND USE PLAN

ZONING: LAND USE AND DEVELOPMENT STANDARDS

As stated in the *East Lawrence Neighborhood Revitalization Plan*, the unique character of the East Lawrence residential neighborhood is, in part, the coexistence of commercial, manufacturing and residential uses of land. In other words, this neighborhood has traditionally been a mixed-use community. Redevelopment and new development within the East Lawrence neighborhood should respect and expand this mixed-use tradition. The redevelopment concept for the 8th and Penn Neighborhood Redevelopment Zone proposes to do that through creating a horizontal and vertical mixture of land uses including residential, professional offices, inner-neighborhood commercial uses, and retail operations. Unfortunately at this time the Lawrence Zoning Code provides limited means and districts that provide for this type of development. Currently the only feasible way under the Lawrence Code to develop a mixed-use project in the 8th and Penn Neighborhood Redevelopment Zone is through a two-step procedure, including 1) the property in question must be rezoned to a base zoning district that controls the land uses within the district and 2) an Urban Conservation Overlay District ("UC-O District") must be created that will control the design and development standards of the district.

LAND USE ALLOCATION

As the impetus to rezone the property and create a UC-O District for the 8th and Penn Neighborhood Redevelopment Zone is premised on creating a vital mixed-used neighborhood, it is important that restrictions be crafted that insure this vision comes to light. Namely, neither the Developer, City, nor the East Lawrence Neighborhood Association, desires this property to be developed for "big box" retail uses or as an area that is principally retail in use.

As such, retail uses shall be limited to a maximum of 25% of the net floor area for the UC-O District (See Appendix B). In addition, as the Poehler Mercantile Company building is to serve as the anchor and focus of the UC-O District, in no case shall a single retail shop or tenant occupy net floor area in excess of 16,000 square feet at ground floor level. A single retail shop or tenant may occupy in excess of 16,000 if they occupy multiple floors.

As currently drafted, the City of Lawrence Code provides limited zoning districts in which mixed-use development, including residential, professional offices, inner neighborhood commercial uses, and retail operations, may occur. Of these available districts, the City of Lawrence planning staff determined C-5, limited commercial district, the most appropriate zoning district for the 8th and Pennsylvania Neighborhood Redevelopment. While C-5 is the appropriate zoning for this redevelopment, this does not currently comply with *Horizon 2020*. As a result, there is currently a text amendment submitted to correct this omission. As such, Zones 1, 2 and 3 will be rezoned to a C-5 zoning district. This underlying base zoning will control the use of land, buildings, and structures within Zones 1, 2, 3 and 4.

DESIGN AND DEVELOPMENT STANDARDS

Mixed-use development cannot easily meet the requirements of traditional zoning districts. Successful mixed-use development can only thrive in areas that not only allow for the mixture of land uses, but also allow development of adequate density so that "critical mass" may be achieved. The development standards found in traditional zoning districts are antithetical to creating this critical mass. Development standards that were drafted on the premise of low-density development that segregates and buffers differing land uses from each other through lot size regulations, large setbacks, height and density regulations, and parking minimums limit the development of mixed-use projects. The Lawrence Code recognized this problem and has provided a solution – the UC-O District. A UC-O District allows the City and a developer to tailor the development standards applicable to an area so that mixed-use development of appropriate size, orientation, and setting can be built within a neighborhood or area. The Lawrence Code provides that upon creation of a UC-O District the specific development and design standards approved by the Historic Resource Committee, the City Commission and City Planning will guide development and redevelopment within the district. The Lawrence Code further provides that when development and design

standards of the underlying base zoning district conflict with the development and design standards of the UC-O District, the standards of the UC-O District will govern.

The following development standards shall apply within this UC-O District:

LOT AREA AND YARD REGULATIONS

Standard	CS	IG	8th & Penn UC-O
Min. Site Area	-	5,000 sq.ft.	NA
Max. Site Area	-	–	NA
Min. Lot Area (sq. ft.)	5,000 [5]	5,000	1872
Min. Lot Width (ft.)	100 [5]	50	16’
Front [9]	25 [5]	[1]	NONE
Side (Exterior) [2] [9]	[3]/20 [5]	[1]	NONE
Side (Interior–adj. R) [9]	10 [5]	[1]	NONE
Side (Interior–adj. Non-R)	0	[1]	NONE
Rear [4] [9]	20/25 [5]	[1]	NONE
Max. Front Setback	NA	NA	15’
Max. Lot Coverage (%)	80 [5]	85[5]	NA
Max. Impervious Lot Cover (%)	80 [5]	75[5]	NA
Area (sq. ft.)	50[5]	–	NA
Dimensions (ft.)	5[5]	–	NA
Max. Height (ft.)	35 [5]	75	NA
Abutting Street Right –of-Way			
Across from R District	NA	50’	NA
Across from Non-R District	NA	25 / 50**	NA
Abutting Other Lot Lines			
Abutting R District	NA	50’	NA
Abutting Non-R District	NA	15’	NA

**Arterial / Collector

This table (taken from the City of Lawrence Land Development Code 20-601) illustrates the difference in allowable setbacks between a typical C-5 development, and development in the 8th and Penn UC-O District. The elimination of the lot size and setback requirement allows development to obtain an urban density, similar to the commercial nature of historic zone 1 , and promotes the creation of a defined street edge. Large setbacks and lot sizes are not conducive to

the pedestrian friendly environment appropriate to this location. In the case of setbacks, it should be noted that during the site plan review process the City Planning staff may deem setbacks necessary to mitigate impacts.

BUILDING HEIGHT

The historic Poehler Mercantile Company building will serve as a visual anchor and reference point for the UC-O District. In keeping with the history of the area, the Poehler building is to remain the tallest structure in the District.

To achieve that goal, all other buildings and structures within the UC-O District shall have a maximum of three stories and 40'-0" above grade. This height restriction would apply to all buildings in the UC-O District and structured cell towers. Cell towers with removable structures would also be allowed in the UC-O District and may exceed this height requirement.

DENSITY

Mixed-use development requires adequate residential density so that critical mass may be achieved. As such, the dwelling unit density shall not exceed thirty-four (34) units per net residential acre, as defined in the City of Lawrence Code Section 20-1007, or subsequent applicable City standards. Thirty-Four (34) units per acre were derived from the square footage of the Poehler Building divided by the number of residential units it is designed to hold. This number was compared to, and is lower than, the thirty-five (35) units per residential acre allowed in Lawrence Code for Planned Commercial Developments, Section 20-1008.

BUILDING SETBACK

The minimum setback from right-of-way, property, or lot lines allowed in the UC-O District is zero (0). The maximum front yard setback from right-of-way, property lines, or lot lines allowed in the UC-O District is 15'-0". New development that is roughly coplanar with adjacent buildings and structures is encouraged.

In Zone 4, parking lots or primary buildings shall have a zero foot set back.

PARKING

Parking in the 8th and Penn Neighborhood Redevelopment Zone will be designed to reflect the desired mixed-use pedestrian scale character of the Redevelopment Zone. One of the virtues of a mixed-use development is that parking areas can be shared by different users at different times. For example, a residential parking space could be used by an office user while the home owner is away during working hours. This results in a neighborhood that is active, more comfortable for the pedestrian, and better for the environment. The mix of uses proposed in the 8th and Penn Neighborhood Redevelopment Zone allows for a reduction in the parking requirements, typical for zoning districts and land uses more closely associated with heavy vehicular traffic. This reduction creates a more pedestrian friendly district as the residents will not have to cross large expanses of parking to reach their destination. In addition, this will be more environmentally sensitive due to the reduction of heat islands and light pollution commonly caused by large, open parking lots.

Parking density for office/retail/commercial property shall consist of one (1) on- or off-street parking stall for every five hundred (500) square feet of floor area, or one (1) space for each 1.5 employees, which ever is larger. For food related uses, the requirement shall be 1 space per 250 square feet of space. This is consistent with the 1966 City of Lawrence Code for parking, Group 17. Accessible parking stalls will be provided in accordance with the Americans with Disabilities Act Accessibility Guidelines (ADAAG). It is estimated that there will be 46,500 square feet of retail space and 24,500 square feet of office space for an estimated parking requirement of 348 spaces.

Parking density for residential property shall consist of one (1) on- or off-street parking stall for every residential unit. For units with 2 bedrooms or more, 2 spaces per unit. This is consistent with the 1966 City of Lawrence Code for parking, Group 2-F. Accessible parking stalls will be provided in accordance with the Americans with Disabilities Act Accessibility Guidelines (ADAAG).

Parking lots shall be setback from the lot line a minimum of three (3) feet to provide room for a vegetated buffer or other type of approved screening. Existing parking in historic Zone 1, and alley ways in all zones, shall be exempt from these requirements.

All off-street parking areas in Zones 3 and 4, and those containing five or more vehicles, shall be effectively screened on each side that adjoins or is across the street from any residential district with a view-reducing barrier. This barrier shall be at least three feet but not more than six feet in height.

Parking lot lighting shall be consistent with section 20-14A03 of the Lawrence Zoning Guidelines, or subsequent applicable City standards, and is discussed further on page 18, in the Lighting section of the Design Guidelines. In order to limit lighting impacts on adjacent residential properties, low bollard lighting will be utilized in parking areas adjacent to these properties in lieu of standard pole lighting.

DESIGN GUIDELINES

In addition to the development standards above, the following design guidelines are proposed to preserve the existing character-defining elements through rehabilitation and to enhance the surrounding areas with compatible new construction that capitalizes on the heterogeneous nature of the zone while also creating a cohesive entity that visually links with the adjacent neighborhoods. Thus, the purpose of these guidelines is to sensitively mediate the forces of change, create an opportunity for architectural innovation and problem solving, and enhance the existing neighborhood fabric. Given the varied nature of the project area, the chosen approach is to apply the Secretary of the Interior's Standards for Rehabilitation where applicable to each of the zones identified in the environs review.

Based on over 120 years of evolving preservation methodology involving the identification, evaluation, and protection of historic and cultural resources in Europe and America, "The Secretary of the Interior's Standards for the Treatment of Historic Properties" provides a set of common-sense principles to encourage consistent preservation practices. The Secretary's Standards for Rehabilitation may be applied to adaptive use of historic buildings, sites, structures, objects, districts, and cultural landscapes as well as to new construction and alterations affecting historic buildings as well as the environs of historic resources.

THE SECRETARY OF THE INTERIOR'S STANDARDS FOR REHABILITATION OF HISTORIC PROPERTIES

1. A (historic) property shall be used for its historic purpose or shall be placed in a new use that requires minimal changes to the defining characteristics of the building and its site and environment. (Applicable to Zone 1)

2. The historic character of a property will be retained and preserved. The removal of historic materials or alterations of features and spaces that characterize a property will be avoided. (Applicable to Zones 1 and 2)

3. Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings shall not be undertaken. (Applicable to Zones 1, 2, 3 and 4)

4. Most properties change over time: those changes that have acquired historic significance in their own right shall be retained and preserved. (Applicable to Zones 1 and 2)

5. Distinctive features, finishes, and construction techniques that are examples of craftsmanship that characterize a property shall be preserved. (Applicable to Zones 1 and 2)

6. Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, the visual qualities and, where possible, materials. Replacement of missing features shall be sustained by documentary, physical, or pictorial evidence. (Applicable to Zone 1)

7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible. (Applicable to Zone 1)

8. Significant archaeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken. (Applicable to Zones 1, 2, 3 and 4)

9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing size, scale, and architectural features to protect the historic integrity of the property and its environment. (Applicable in varying degrees to Zones 1, 2, 3 and 4)

10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired. (Applicable to Zone 1)

APPLICATION OF DESIGN GUIDELINES

Design guidelines serve as a communication tool in educating property owners and developers as to the community expectations for new construction and renovations of existing buildings. They will also serve as a guide for local, state, and national staff in reviewing various types of applications for alterations prior to the issuance of permits, as well as for utilizing incentives such as the federal and state rehabilitation tax credits. Given the architectural variety, multiple uses, and anticipated development over an extended period of time, the review of proposed alterations and new construction in the 8th and Penn Neighborhood Redevelopment Zone will be conducted on a case-by-case basis.

These guidelines are not meant to serve as a checklist for "good" design. Nor are they meant to be applied in such a stringent manner as to prevent creative design alternatives. However, it is the intent of these guidelines to provide guidance to the regulatory authorities to ensure that new construction and renovation is consistent with the character-defining elements identified in the guidelines.

REVIEW PRINCIPLES

The guidelines shall apply only to the exterior of buildings and to portions of existing and proposed buildings visible from the pedestrian level from public rights-of-way, including alleyways.

Existing buildings will be identified as "contributing" or "non-contributing" to the East Lawrence Industrial Historic District, as part of the National Register Listing. Contributing buildings should be more carefully reviewed than those buildings that have been identified as non-contributing to the National Register East Lawrence Industrial Historic District.

While economic costs are not a primary factor in the review process, cost will be considered in relation to the adherence of these guidelines.

It is not the intent of these guidelines to require existing buildings, structures, and sites to be in full compliance with these guidelines. Existing buildings that contain non-conforming elements are encouraged to make alterations that will improve the overall appearance of the building. As non-conforming buildings are altered, the proposed alterations shall be in compliance with these guidelines.

City staff will use these guidelines to review proposed projects in a consistent, fair, and equitable manner. If staff believes a proposed project does not meet the intent of the guidelines, the applicant may appeal first to the Historic Resources Commission, and, if necessary, to the City Commission. All new development, or redevelopment, within the UC-O District, shall require a site plan application and, when applicable, replat and/or rezone applications. Historic Resources Commission, Planning Commission, and City Commission review shall be required, when applicable, along with the standard site plan review. In addition to the typical documents required for submission during Site Plan Review, the submittor will also include any and all revisions to Appendix B of this document.

GENERAL GUIDELINES

NEIGHBORHOOD CONTEXT

The *East Lawrence Neighborhood Revitalization Plan* addresses a geographical area of diverse land uses and neighborhoods and includes the 8th and Penn Neighborhood Redevelopment Zone. The Plan's goal is the revitalization and rehabilitation of its historic resources, as well as strengthening East Lawrence's attractiveness and its diversity. These UC-O District guidelines enhance and further refine the general design guidelines and principles of the *East Lawrence Neighborhood Revitalization Plan.*

STORMWATER

The guiding principles for water quantity and quality goals include:

1. Preserve existing significant natural features
2. Maximize infiltration and minimize imperviousness
3. Select Best Management Practice that favor sheet flow and on-site infiltration of storm water versus piping or channeling

4. Apply "soft-engineered" solutions of plants, swales, and topographic depressions versus "hard-engineered" solutions of concrete channels, curb inlets and storm sewers
5. Utilize native plant species that are adapted to the microclimate of their proposed site placement
6. Incorporate Best Management Practice into the proposed architecture (e.g., water cisterns, pervious parking, roof water collection)

LINKAGES

Pedestrian linkages shall be accessible to people with disabilities. Pedestrian linkages should offer a variety of visual and textural stimuli, should provide locations for rest and some relief from sun, wind, rain and snow, and should be designed for safety in terms of slopes, materials, and visibility. Pedestrian linkages should incorporate some distinctive materials or landscaping in common to help create a visually coherent space and to help connect it to surrounding areas.



An effective pedestrian linkage that is accessible, safe, and interesting

PARKING

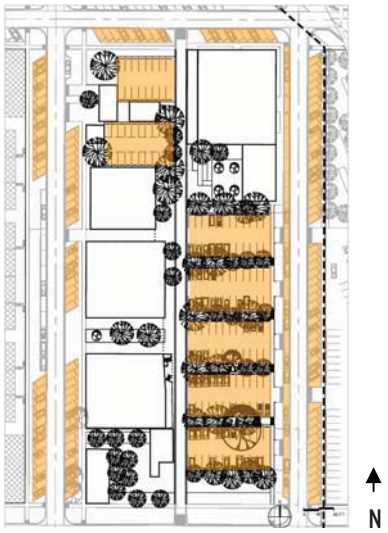
In general, surface parking lots should be located at the rear or sides of structures. Larger surface lots should be subdivided with landscaped islands that include trees. Pedestrian walkways adjacent to parking and driveways should be visually and spatially separated through the use of additional site elements, which could include bollards, lighting, landscaping, and special pavement treatments. In order to maintain the historic and industrial integrity of the area, some interior landscaping should be provided. However, surface parking areas shall not be required to meet the landscaping provisions set forth in 20-14A04.6, 20-1205, and 20-1217 of the City of Lawrence Zoning Code, or subsequent applicable City standards.

Gravel parking and pervious paving should be designed to let water infiltrate and be temporarily stored below the surface to reduce or eliminate runoff and allow the surface to be used for parking or pedestrian traffic. This environmental method of surface water run-off control reduces the amount of contaminants exiting the site by allowing the water to permeate the ground surface. This reduction in site run-off, in turn, decreases the amount of contaminants leaving the site and entering into the city stormwater system or nearby river.

Unless otherwise noted, all parking lot sizes, drive lanes, accessible stall counts, and other design features shall be consistent with the City of Lawrence Code, Section 20-1205, or subsequent applicable City standards.



Example of Parking (recommended) – vegetated islands improve lot appearance.



Example of Parking Strategy – small lots at the rear or side of structures, and landscaped planters divide larger parking areas.



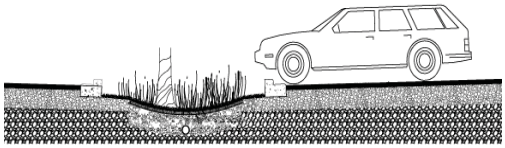
Example of street parking (recommended)



Example of compacted gravel system



Example of bio-swale



Site Section at parking with bio-swale

LIGHTING

The lighting should consist of artificial sources of illumination, particularly street lighting, pedestrian-level lighting, and lighting of signs and architectural features. The intent of the lighting plan will be to:

1. Enable people within a development zone or passing by to see well enough to find their destinations and to conduct their activities safely

2. Enliven and set the overall mood of a development zone

3. Increase the sense of security without negatively impacting surrounding residences

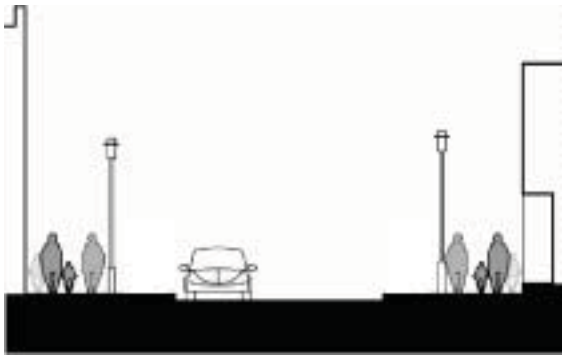
This will be addressed on three levels within the described zones:

1. Street and parking lighting (described in Zone 2)
2. Pedestrian lighting (described in Zone 3)
3. Building lighting (described in Zones 1 & 4)

Lighting should reflect the historic industrial/residential use, but provide sufficient illumination to promote health and safety and attract and accommodate pedestrian traffic. In order to limit lighting impacts on adjacent residential properties, low bollard lighting will be utilized in parking areas adjacent to these properties in lieu of standard pole lighting. Light fixtures shall be simple contemporary designs with no references to a particular historic era, and should be consistent throughout the redevelopment zone. All exterior fixtures will be fully shielded, include non-reflective, non-swivel heads mounted at a 45 degree angle, and be confined to net acreage.



Streetlights with zero up light



Site Section through street

SIDEWALK DINING AREAS

Creation of sidewalk dining areas shall be in accordance with the City of Lawrence "Guidelines for Sidewalk Dining Areas" as revised and approved in 2005. Placement of sidewalk dining areas shall be such that they do not restrict egress to and from building or public right-of-way.

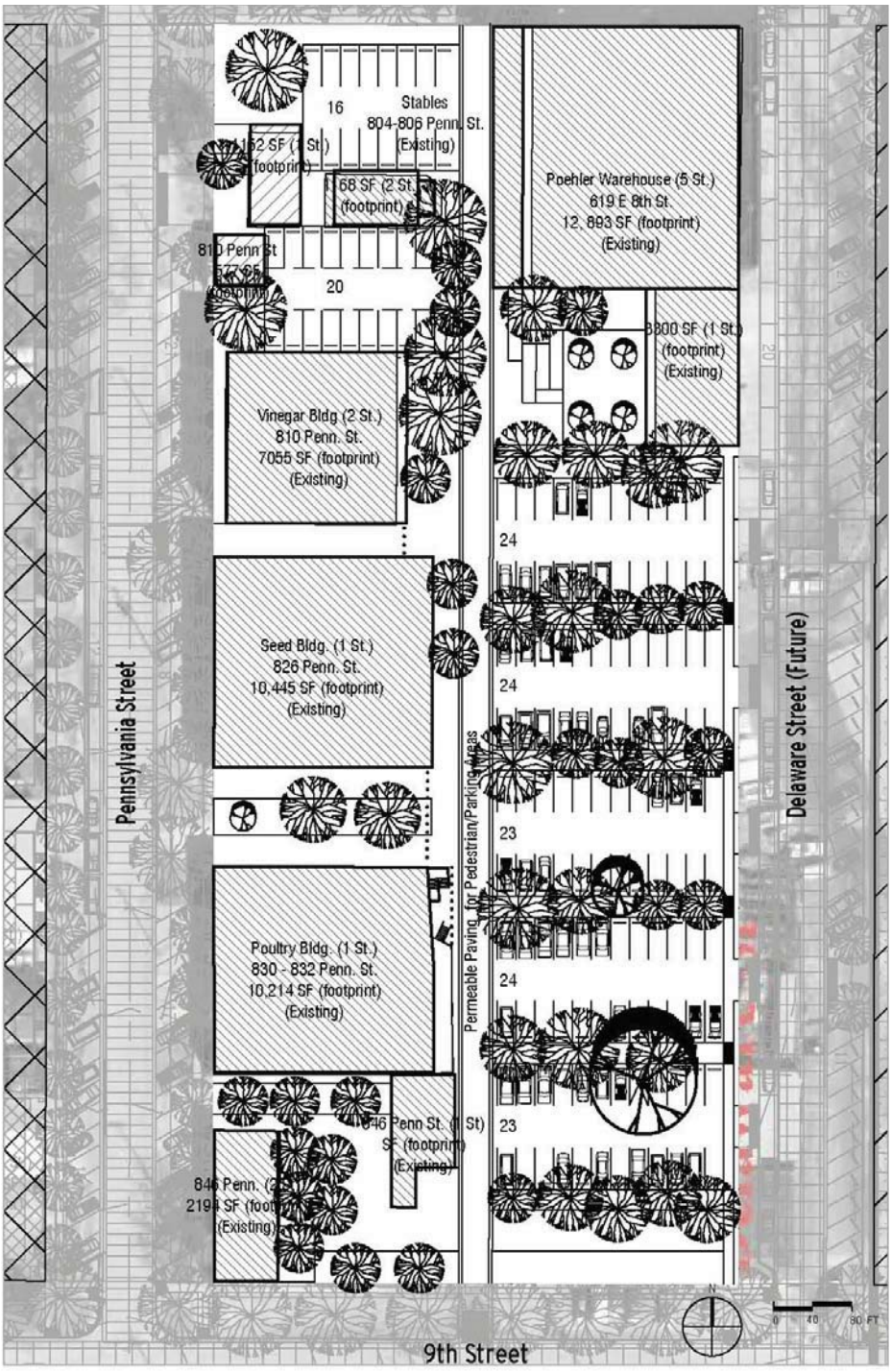
DEMOLITION

Demolition should be the result of a holistic planning and development process. Properties listed in the National Register of Historic Places, the Register of Historic Kansas Places, or the Lawrence Register of Historic Places are subject to additional review as required by KSA 75-2724 and/or Chapter 22, Code of the City of Lawrence. Moreover, demolition of properties within the environs of listed properties is also subject to review. Historic tax credit programs include the anticipated demolition as part of the compliance review process. Federal agencies must consider the impact of demolition on project undertakings as well.

Any demolition request not related to public safety shall be accompanied by additional documentation indicating the existing condition of the building and the proposed use for the site. Documentation shall include proposed elevations and an explanation of why it is not feasible to use the existing structure/building.

Demolition permits shall be reviewed by the Historic Resource Commission. If the permit is denied by the Historic Resource Commission, it may be appealed to the City Commission.

FIGURE 4: ZONE 1 HISTORIC DISTRICT – RECOMMENDED SITE IMPROVEMENTS



LAND USE PLAN

ZONE 1: HISTORIC DISTRICT

NEIGHBORHOOD CONTEXT

The boundaries of Zone 1 coincide with the boundaries of the National Register East Lawrence Industrial Historic District, correspond to the lot lines, and do not include the sidewalks, verges, and curbs that are included in Zone 2. The commercial/industrial buildings and spaces in Zone 1 determine both the functional and visual character of the 8th and Penn Neighborhood Redevelopment Area. Dating from the 1870s through the 1920s, they include examples of detached industrial buildings from almost every decade of the late nineteenth century through the onset of the Great Depression in the twentieth century. The goal in rehabilitating these buildings and structures is to preserve or recapture the original character of the buildings and their setting by adapting proposed changes to the building's character-defining features.

ARCHITECTURAL CHARACTERISTICS AND MATERIALS

ROOF SYSTEMS

A weather-tight roof is basic to the preservation of a building or structure. Because of the historic/commercial industrial character of Zone 1, the roof forms and materials associated with a building's historic use is very important. In Zone 1, the building function and form dictated the roof form and the desire for a fireproof building determined the choice of materials.

The roof forms found in Zone 1 include flat roofs, gable roofs, and shed roofs. Based on the existing building roofs and historic photographs, historic building materials and treatments included built-up composition roofs as well as sheet metal, galvanized iron, corrugated metal, and standing seam metal roofs. Historically, sheet metals (lead, copper, zinc, tin plate, and terne plate [iron dipped in an alloy of lead and tin]) and galvanized iron were common roofing materials in commercial/industrial areas and are appropriate substitute materials when the original is unknown or in new construction within Zone 1.

Although the coping on parapet walls is part of a masonry feature, it is often considered in the discussion of roofing materials. Terra-cotta and clay coping historically occurred in Zone 1. There is no evidence of the use of stone or metal coping.

If the roof is flat and is not visible from the public right-of-way, there are economic and physical advantages to substituting a built-up composition roof or other modern roofing system for what might have been a flat metal roof. If the roof is visible, substitute materials should match as closely as possible the scale, texture, and coloration of the historic roofing material, if known. If unknown, lead-coated copper, terne-coated steel, and aluminum/zinc-coated steel can successfully replace tin, terne plate, zinc, or lead roofing materials. Wood, tile, and slate roofing material are not appropriate. Terra-cotta and clay tile coping continue to be the appropriate materials for coping.







Roof Types in Zone 1

Recommended	Not Recommended
Examining and determining the composition of the existing roof and any evidence of the earlier roof. Consulting with an architect, engineer, or roofing professional to understand the scope and detailing of the roof project and ensuring proper supervision of roofers and/or maintenance personnel.	Hiring a roofing contractor without receiving a preliminary analysis of the existing conditions and scope-of-work by other professionals.
Retaining the shape, materials, and colors of the original roof that are visible from the public right-of-way. Maintaining architectural details such as cresting, parapets, and cornices.	When repairing or replacing a roof, avoid using new roof forms, materials, colors, or elements that are visible from the public right-of-way.
Replacing roof materials with similar materials that reflect the scale and texture of the traditional roof materials when they are visible from the public right-of-way.	
Designing and constructing a new roof feature using visual documentation when a historic feature is completely missing. Using a new design for a missing historic feature that is compatible with the size, scale, material, and color of the building.	Creating a false historical appearance or introducing a new roof feature that is incompatible in size, scale, material, or color.
Installing mechanical and service equipment such as air conditioning, transformers, or solar collectors on the roof so that they are inconspicuous from the public right-of-way and do not damage or obscure important building features.	Installing mechanical or service equipment so that it damages the building elements or obscures important building features.
Patching roof leaks with materials similar to those of the roof construction.	Patching roof leaks with caulks or sealants as a means of long-term repair.
Retaining the original roofline and parapet features	
Resurfacing of flat/built-up roofing materials	





Because of the simple industrial design, the parapet and cornice treatment at the roofline are often one of the most important architectural elements of industrial buildings.

See also: Technical Preservation Services, Heritage Preservation Services Division, National Park Service *Preservation Brief 4: Roofing for Historic Buildings*.

CONCRETE




Existing concrete - Zone 1

Different types of concrete are found in Zone 1. Unreinforced concrete is a composite material containing aggregates (sand, gravel, crushed shell, or rock) held together by a cement combined with water to form a pliant mass that hardens as the concrete dries out ("cures"). Reinforced concrete is concrete strengthened by the inclusion of metal bars. Both unreinforced and reinforced concrete can be cast-in-place or precast. Cast-in-place concrete is poured on site into a formwork that is removed after the concrete sets. Precast concrete is molded off site into building components.

In Zone 1, concrete appears in foundations, supporting columns, sidewalks and driveways, curbing, loading docks, elevated exterior walkways, stair systems, and window sills.




Existing concrete - Zone 1

The condition of the historic concrete elements found in Zone 1 reflects a wide range of conditions.

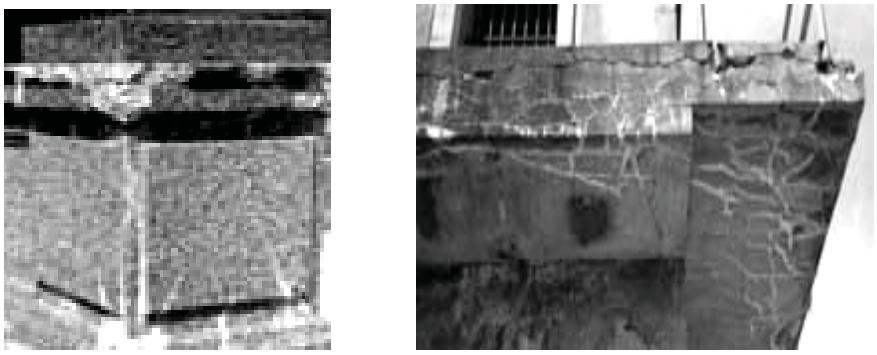
1. **Cracking** occurs over time in virtually all concrete. Cracks can be either active or inactive. Active cracks widen, deepen, or expand through the concrete. Dormant cracks remain unchanged. Some dormant cracks pose no danger to the stability of the concrete element; however, cracks of any type provide channels for moisture penetration, which usually causes further damage.

2. **Erosion** is the weathering of the concrete surface by weather and environmental pollutants.

3. **Corrosion,** caused by the rusting of the reinforcing bars in concrete, can be a serious problem. Rust, which occupies significantly more space than the original metal, causes expansive forces within the concrete, initiating cracking and spalling. Loss of concrete diminishes the load-carrying capacity of the concrete structure.

4. **Spalling**, which is the loss of surface material in patches of varying size, is caused by a number of conditions including moisture penetration.

5. **Deflection**, which is the bending or sagging of concrete beams, columns, joists, or slabs, can seriously affect both the strength and structural soundness of concrete.



Common conditions of historic concrete – spalling (left) and cracking (right)

Recommended

Undertaking repairs only after the completion of planning and analysis by a structural engineer or architect.

Filling in cracks with new material that matches the historic material. Using patching materials that are compatible with the existing concrete as well as with subsequent surface treatments such as paint or stucco.

If replacement is necessary, removing loose, deteriorated concrete and cutting damaged concrete back to remove the source of deterioration. Removing rust from exposed rebar with a wire brush or sandblasting and coating with an epoxy. Installing a compatible patch that dovetails into the existing sound concrete so that it will bond satisfactorily with and match the original concrete.

Not Recommended

Using temporary solutions that can expose a building to further and more serious deterioration.

Patching hairline cracks. Patching concrete without removing the source of deterioration.

See also: Technical Preservation Services, Heritage Preservation Services Division, National Park Service *Preservation Brief 15: Preservation of Historic Concrete: Problems and General Approaches.*

BRICK AND STONE MASONRY

The masonry features found in Zone 1 include brick, stone, and combinations thereof. Other than the painted sign on the Poehler Building and portions of the façade on 804 Pennsylvania, all exterior masonry surfaces are unpainted.

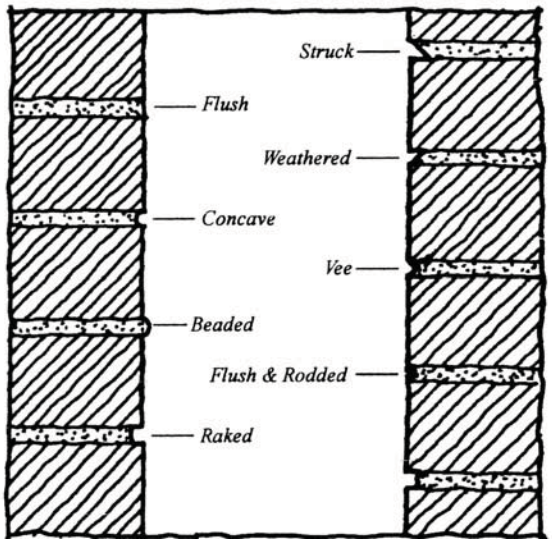




Existing brick and stone masonry – Zone 1

Recommended	Not Recommended
Retaining and preserving masonry features that are important in defining the overall character of a building such as walls, brackets, cornices, window surrounds, door surrounds, steps, columns, and details.	Removing or radically changing important masonry features. Applying paint or other coatings for purely cosmetic purposes to surfaces that were originally unpainted or uncoated.
Providing proper drainage so that water does not stand or accumulate on masonry surfaces.	Failing to treat causes of mortar joint deterioration such as leaking roofs or gutters, settling of the building, capillary action, or extreme weather exposure.
	Applying paint or other coatings to masonry that has been historically unpainted or uncoated.
Cleaning masonry only when necessary to halt deterioration or to remove graffiti or bad stains with the gentlest method possible, such as using low-pressure water (<400 psi), mild detergents, and natural bristle brushes. Conducting masonry surface cleaning tests when cleaning is necessary. Observing tests over a sufficient period of time so that both immediate and long-term effects are known, enabling selection of the gentlest method possible.	Cleaning masonry surfaces when they are not heavily soiled to create a new appearance and needlessly introducing chemicals or moisture into the original materials. Using abrasive or mechanical cleaning such as sandblasting that destroys the masonry. These methods allow water to penetrate the masonry and can result in severe damage to the brick or stone. Masonry damaged in this manner will deteriorate faster in the future. Cleaning masonry surfaces without conducting surface cleaning tests or allowing sufficient time to evaluate the immediate and long-term effects of the cleaning method.
Repairing cracks or missing bricks to prevent water infiltration and	Removing mortar from sound joints, then repointing the

Recommended	Not Recommended
further damage. Removing only deteriorated portions of brick in such a way as to avoid destroying adjacent masonry.	entire building to achieve a uniform appearance.
Applying new mortar with the same strength, color, and texture as the original mortar. Testing the original mortar to determine its original composition.	Using ready-mix mortars that have a high Portland cement content that, because it is stronger than old brick, will cause shifting and cracks.
Applying new mortar so that the joints match the original joints in width and profile.	Covering existing masonry with siding.



New mortar should be applied so that the new joints match the original in width and profile

Applying surface treatments such as "breathable" water-repellent coatings to masonry only after re-pointing and only if masonry repairs have failed to arrest water penetration problems.	Applying waterproof or water repellent treatments as a substitute for masonry pointing and repairs. Covering brick or stone with stucco or non-porous coatings. Coatings often act as sealants that block the transfer of water.
Repairing masonry by patching or piecing in.	Replacing an entire masonry feature when limited replacement is appropriate.
Replacing the original material with the same material or a compatible substitute material.	Using a substitute replacement material that does not match the original material.
	Covering masonry walls with a non-synthetic cement stucco, synthetic stucco-like coating, or siding of any material.

Recommended	Not Recommended
Leaving historic painted signage on masonry walls.	Removing paint from buildings that were historically painted
Cleaning masonry walls using the gentlest means possible.	Sandblasting, applying caustic solutions, and/or high-pressure water blasting.
Pressure cleaning historic brick or stone with water or water and a non-ionic detergent at a range of 100 to 400 psi from a distance of 3 to 12 inches after testing to find the least abrasive level.	
Hand cleaning glazed architectural terra-cotta and tile coping with a natural bristle brush using non-ionic detergent and water.	
Removing loose or deteriorated paint only to the next sound layer using the gentlest method possible prior to repainting.	
Repairing causes of leaks, water infiltration, capillary action, and/or condensation	
Using vapor permeable water-repellent coatings in selected areas only after a reasonable period of time has passed since a building has been made watertight and has dried out completely and only if moisture appears actually to be penetrating through the repointed and repaired masonry walls.	Using vapor permeable or "breathable" water-repellent coatings. Using waterproof coatings that seal the surface from liquid water and water vapor.
Cleaning masonry, when necessary to prevent biological growth, with low-pressure water (30 to 100 psi) and a natural- or synthetic-bristled scrub brush.	
Removing graffiti as soon as possible by using non-abrasive chemical cleaners after careful testing.	Using anti-graffiti or barrier coatings.

REPLACEMENT OF MISSING MASONRY FEATURES



False brick "quoining" introduces design elements not found in the historic industrial district

Recommended

Designing and installing a new masonry feature such as steps or a door surround using accurate documentation of the appearance of the original feature. When there is no documentation of the original element, new designs should be compatible with the building in size, scale, material, and color.

Not Recommended

Creating a false historical appearance by using historical treatments based on other buildings or conjecture. Introducing a new feature that is incompatible with the building in size, scale, material, and color.





Above: c. 1950 photograph of masonry openings and concrete docks, Barteldes Seed Company. Below: Current condition of the same entrance.

See also: Technical Preservation Services, Heritage Preservation Services Division, National Park Service *Preservation Brief 1: Assessing Cleaning and Water-Repellent Treatments for Historic Masonry Buildings; Preservation Brief 2: Repointing Mortar Joints in Historic Masonry Buildings; Preservation Brief 6: Dangers of Abrasive Cleaning to Historic Buildings; Preservation Brief 7: The Preservation of Historic Glazed Architectural Terra-Cotta; Preservation Brief 38: Removing Graffiti from Historic Masonry;* and *Preservation Brief 42: The Maintenance, Repair and Replacement of Historic Cast Stone.*

SIDING

No buildings in Zone 1 have siding

Recommended	Not Recommended
	Covering the building's original wall materials with siding.

WOOD MATERIALS

Wood is used for structural members and flooring in some of the older buildings in Zone 1. It is also used in window and door framing, sashes, and in some soffit areas. It was seldom used for roofing shingles.

There are no wood roofs or siding in Zone 1. Wood appears in window frames and sashes; in pedestrian, garage, and loading dock doors; and as structural supports and flooring. All replacement elements should be in-kind. No synthetic materials should be used in new construction to replicate traditional wood features.

Recommended	Not Recommended
When damaged beyond repair, replacing all wood elements in-kind.	Replacing wood elements with synthetic materials.
Removing vegetation that grows too close to wood surfaces.	
Keeping wood joinery adequately sealed, primed, and painted to avoid water penetration.	
Priming all exposed wood surfaces before painting.	
Providing proper drainage and ventilation to minimize rot.	
Maintaining a slope on horizontal wood surfaces, such as entrance floors or sills, to ensure that water does not collect.	
Recaulking joints where moisture might penetrate. Removing old caulk and dirt prior to recaulking.	

See also: Technical Preservation Services, Heritage Preservation Services Division, National Park Service's *Preservation Brief 9: The Repair of Historic Wooden Windows* and *Preservation Brief #10: Exterior Paint Problems on Historic Woodwork.*

ARCHITECTURAL METAL FEATURES

In addition to the use of sheet metal as a roofing material as discussed in the Roofing section of these guidelines, galvanized iron, iron, and steel are also found in Zone 1. Historic and non-historic uses include fire escapes, lintels and loading dock door frames and dock edging, all of which were historically iron. Window frames and muntins utilized steel and galvanized iron. Downspouts were generally corrugated metal. Replacement should be in-kind in both contributing and non-contributing buildings and structures. New construction should use traditional materials.



Existing metal features – Zone 1

Recommended	Not Recommended
Retaining and preserving architectural metal features that are important in defining the architectural character of a building.	Removing or radically changing important metal features. Removing a major part of the metal feature instead of repairing or replacing only the deteriorated metal. Removing metal features and then reconstructing the façade with new material in order to create an "improved" appearance.
Providing proper drainage so that water does not accumulate on surfaces.	Failing to treat the causes of corrosion, such as moisture from leaking roofs or gutters.

Cleaning architectural metals to remove corrosion prior to repainting or applying other appropriate protective coatings. Identifying the type of metal prior to cleaning. Cleaning metals using the gentlest method possible as determined by research and/or testing. Applying an appropriate protective coating when necessary.

Using cleaning methods that alter or damage the color, texture, and/or finish of the metal. Removing the patina that a metal acquired over a period of time (the patina may be a protective coating on some metals).

Placing incompatible metals together without providing a reliable separation material to prevent galvanic corrosion. For example, copper corrodes cast iron, steel, tin, and aluminum. Exposing metals originally intended to be protected from the environment. Applying paint or other coatings to metals such as copper, bronze, aluminum, or stainless steel that were originally exposed.

Repairing metal features by patching, splicing, or otherwise reinforcing the metal. When damaged beyond repair, replacing the damaged portions with materials that match the original in size, scale, material, and color.

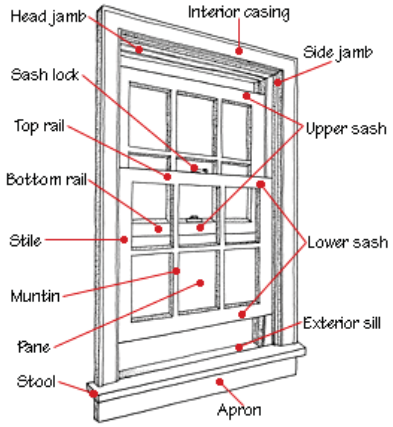
Replacing an entire feature when repair or replacement of only the damaged element is possible. Removing a metal feature that has irreparable damage and not replacing it. Replacing a metal feature with a new metal feature that does not have the same visual appearance as the original or introducing a new metal feature that is incompatible in size, scale, material, and color.

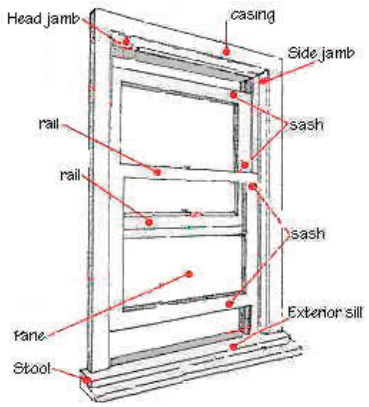
Reproducing in-kind a missing feature or when there is no documentation of the original feature, replacing the missing feature with a new design that is compatible with the size, scale, material, and color of the building.

See also: Technical Preservation Services, Heritage Preservation Services Division, National Park Service's *Preservation Brief 13: The Repair and Thermal Upgrading of Historic Steel Windows* and *Preservation Brief 27: The Maintenance and Repair of Architectural Cast Iron.*

WINDOWS

Serving as both an interior and exterior feature, windows are always a key element in the building's character. They reflect changes in technology and period of time. The historic functional and decorative features include frames, sashes, muntins, glazing, sills, heads, hood molds, moldings, and shutters. The dimensions and proportions of window parts greatly influence the overall appearance of the window. Lead abatement or thermal performance may be accomplished without the loss of historic windows and is not justification for replacement.





Typical window components found in late nineteenth and early twentieth century double-hung sash units

Both wood and metal windows occur in the buildings and structures in Zone 1 and have double-hung sash, casement, fixed pane, and awning units. When the design and materials of the original windows cannot be ascertained, wood, wood-clad metal and metal windows are compatible window materials for replacement windows and windows used in new construction. Synthetic materials, including vinyl windows, are not acceptable as replacement windows or as windows in new infill construction because of their inability to meet the traditional sash proportions due to their construction materials.

Recommended	**Not Recommended**
	Using vinyl window units.
Conducting an in-depth survey of the conditions of existing windows early in the rehabilitation planning process so that repair and upgrading methods and possible replacement options can be fully explored.	Replacing windows that can be repaired. Replacing windows solely because of peeling paint, broken glass, stuck sashes, and high air infiltration. Removing or radically changing windows that are important in defining the character of a building.
Retaining and repairing the original windows and their character-defining elements whenever possible. Repair may include incremental replacement of individual elements such as sills or sashes by patching, splicing, consolidating, or reinforcing with in-kind or compatible substitute materials.	Changing the number, location, size, and glazing pattern of windows by blocking-in windows or installing replacement sashes that do not fit the original window opening.
Using low profile boxed skylights installed between rafters when not visible from the public-right-of-way.	Using bubble or Plexiglas skylights that protrude from the roof plane.
Retaining and repairing the original windows and their character-defining elements whenever possible. Repair may include incremental replacement of individual elements such as sills or sashes by patching, splicing, consolidating, or reinforcing with in-kind or compatible substitute materials.	

Recommended



Repair and retain character of original window when possible

Accomplishing thermal upgrade by using exterior or interior storm windows that have minimal visual intrusiveness.

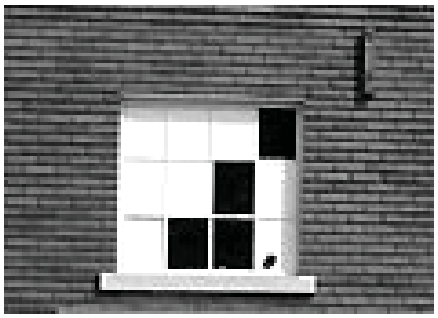
When damage can be avoided, modifying existing historic windows to allow reglazing with insulated glass.

Making windows weather tight by caulking and replacing or installing weather stripping.

When original window openings are altered, restoring them to their original configuration and detail.

When damaged beyond repair, replacing the original windows with windows that match the originals in profile, size, color, configuration, materials, and glazing.

Not Recommended



Typical historic industrial window treatments found in Zone 1

Using storm windows that are smaller than the window opening. Using storm windows that allow moisture to accumulate and damage the window frame.

Changing the appearance of a window through the use of inappropriate designs, materials, finishes, or colors that notably change the sashes, depth of reveal, muntin configuration and reflectively, and color of the glazing (such as the use of mirrored or tinted glass) or the appearance of the frame. Using shutters.

Stripping windows of historic material such as wood, cast iron, and bronze.

Using a replacement window that does not match the original

Recommended

Not Recommended



Incompatible new window lower right resulting in loss of the building's historic character.

Obscuring original window elements with signs, metal, or other materials. Using through-window air conditioning units on primarily façades.

Using replacement glazing that is consistent in color and reflectivity with the glazing originally used at the building.

Using tinted glass that does not appear as transparent from public-right-of-way.

Rising metal screens or bars covering window openings

Using true divided lights.

Using replacement windows that capture the visual effect of how the original window operated.

Basing the replacement of non-historic or missing windows on photographic documentation, extant units in the building, or ensuring that they are consistent with the historic character of the building.

Creating a false historical appearance because the replacement window is based on insufficient historical, pictorial, and/or physical documentation. Introducing a new design that is incompatible with the historic character of the building.

Providing a setback in the design of dropped ceilings when they are required for a new use to allow for the full height of the window openings.

Inserting new floors or furred-down ceilings that cut across the glazed areas of windows so that the exterior form and appearance of the windows are changed.

Limiting the installation of additional windows to secondary, non-character-defining elevations to occur only when required by the new use to allow natural light and air or when other important adaptations are necessary for the building's new use.

Installing new windows, including frames, sashes, and muntin configurations that are incompatible with the buildings historic appearance or that obscure, damage, or destroy character-defining features.

When required by a new use, creating new window openings and using new window units that are simple and visually subservient to the original openings and units, and that are visually distinguishable from the original window openings and units.

Creating new window openings and using new window units that duplicate the fenestration pattern and detailing of a character-defining elevation.

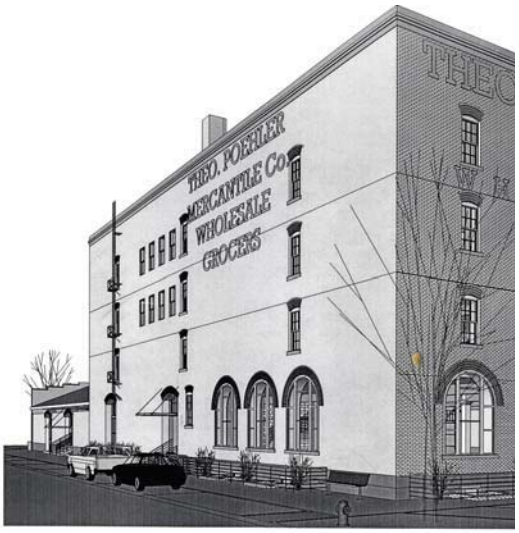
Recommended

When adding new window openings and unit, using a simpler, slightly different glazing configuration.

Not Recommended

Creating new window openings and using new window units that replicate the historic windows.

Installing vinyl window systems



Preserves historic signage and does not alter the more formal front bays, reserving alterations to the utilitarian portion of the façade above loading docks. Note smaller and simpler window design compared to the originals.

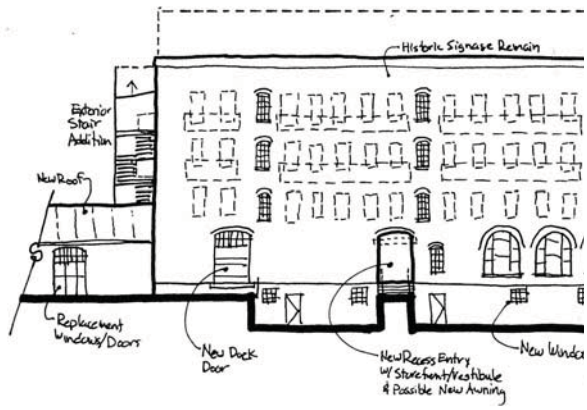


Diagram above has too many new openings and calls for balconies spanning the width of the new openings.

See also: Technical Preservation Services, Heritage Preservation Services Division, National Park Service *Preservation Brief 3: Conserving Energy in Historic Buildings; Preservation Brief 9: The Repair of Historic Wooden Windows; Preservation Brief 10: Exterior Paint Problems on Historic Woodwork; Preservation Brief 13: The Repair and Thermal Upgrading of Historic Steel Windows;* and the following National Park Service Interpreting the Secretary of the Interior's Standards for Rehabilitation (ITS) Bulletins: *ITS Number 14: Adding New Openings: New Openings in Secondary Elevations or Introducing New Windows in Blank Walls* and *ITS Number 21: Adding New Openings: Adding New Openings on Secondary Elevations.*

ENTRANCE DOORS

With a few exceptions, entrance doors in Zone 1 were functional non-retail commercial designs. Adaptive reuse of buildings for residential or retail use will require choosing replacement doors that are complimentary to the industrial character of the buildings.

Entrance doors were historically wood or metal. Appropriate substitute materials should be wood or metal when the original material is unknown or for new construction, with the use of vinyl or synthetic materials not appropriate in Zone 1.

Recommended

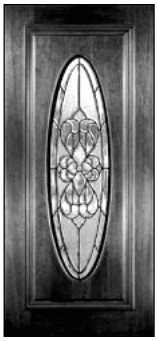


Retaining and repairing original doors. Maintaining original door hardware in good working order.

Preserving and retaining the original proportions of the door and the door opening.

Replicating the original door if it is damaged beyond repair and there is physical, pictorial, or photographic documentation as to its original appearance. If there is no documentation of the door's original appearance, replace it with a new unit that is compatible with the style and character of the historic building.

Not Recommended



Using residential doors in functional industrial entrances.

Using generic historical stylistic reproductions that create the appearance of another period of time.

See also: National Park Service Interpreting the Secretary of the Interior's Standards for Rehabilitation (ITS) Bulletin: *ITS Number 4: Exterior Doors: Inappropriate Replacement Doors.*

GARAGE AND LOADING DOCK DOORS

In industrial buildings that utilized loading docks and garages, the openings were commonly fitted with wood or metal segmental doors that rode on overhead tracks or roll-up mental doors. Sometimes these buildings used double-hinged, sliding, and other types of doors.



Examples of garage/loading dock doors – Zone 1



Example of garage/loading dock doors – Zone 1

Recommended

Replicating an original door if it is damaged beyond repair or is missing and there is physical, pictorial, or photographic documentation as to its original appearance; or, if required for the new use, installing a new glazing system that resembles the segmented panels of the historic doors. \

Retaining and repairing the building's original door(s) and /or door opening(s).



Original door opening is retained. The new infill incorporates an entrance and half "closed" garage door as well as transparent glazing is an appropriate treatment where there is no documentation of the original door.

Retaining corner guards and bumper guards. Modifications such as replacing some of the upper wood panels with glass in order to provide natural light.

If there is no documentation of the door's original appearance, replacing the door with a new unit that is compatible with the style and character of the historic building.

Not Recommended

Installing a replacement door that reflects historic residential garage door designs.

Altering the size of the original openings with infill. Removing character-defining elements. Altering a historic pattern of adjacent pedestrian-vehicular entrances with a new storefront design.



The infill storefront in the building above creates the false impression of an original retail store rather than the historical industrial use of the building

Recommended

Installing new glazing patterns that replicate the typical historic arrangement of intersecting stiles and rails found on the industrial garage and loading dock doors. This approach also clearly differentiates fenestration patterns for windows and doors.

Not Recommended

See also: National Park Service Interpreting the Secretary of the Interior's Standards for Rehabilitation (ITS) Bulletins: *ITS Number 2: Garage Door Openings: New Infill for Historic Garage Openings* and *ITS Number 16: Loading Door Openings: New Infill for Historic Loading Door Openings.*

ALTERATIONS TO REAR AND SECONDARY ELEVATIONS

In industrial and warehouse areas, secondary elevations often played an important role in the functional design of the building or structure. Features such as loading docks, vehicular entrances, and pedestrian/worker entrances related to the function of the building and are important character-defining elements. Secondary façades are somewhat less formal than primary façades. Often, materials and designs are plainer, window placement may be irregular, ornament is seldom used, and the façade's division into base, middle, and top may be less clear. New uses that introduce the public to these elevations should preserve the utilitarian nature of these elevations and their adjoining exterior spaces.

The most significant loss of historic features is the filling of original openings with brick or concrete block and the alteration/addition of loading dock entrances. There is a significant loss of the original loading docks, which were originally made of stone piers and post-and-beam construction. Concrete loading docks commonly appeared in the first decades of the twentieth century. Depending on the date of construction, either is appropriate for replacement or new construction.




Industrial character of rear and secondary elevations

Recommended

Determining if secondary elevations retain defining architectural and functional characteristics that visually communicate the building's historic building type.

Making minimal changes to the secondary elevation features that define the building's original architectural and/or functional property type.



Original façade

Maintaining consistent patterns and using consistent materials between the ground floor and the upper floors, and incorporating a simple definition at the roofline.

Restoring existing openings that have been previously filled in or blocked.

Maintaining a clear separation between the loading areas and the pedestrian access areas for the sake of appearance and safety.

Utilizing masonry materials with a simple texture, minimal ornamentation, and informal door and window placement.

Designing and locating security gates, grills, and alarm boxes out of sight or in such a way that during non-business hours the building and surrounding area maintain their appearance as a safe and attractive pedestrian environment.

Locating and screening air conditioner equipment so that signage, sound, and exhaust air are not intrusive to newly defined public spaces.

Minimizing the intrusion of trash receptacles, utility lines, meter boxes, downspouts, and other functional hardware.

Not Recommended

Making changes to the visual characteristics of a secondary elevation that communicate a new use that is different from the original use.



Changes to visual character

See also National Park Service Interpreting the Secretary of the Interior's Standards for Rehabilitation (ITS) Bulletin: ITS Number 33: Alterations to Rear Elevations.

NEW ADDITIONS

It may be necessary to add extra space to a historic building that is being rehabilitated to satisfy new use requirements. The best adaptive use design is always one that requires the least amount of change to the historic building. However, new spaces to house certain practical functions that were not part of the historic use, such as mechanical equipment, an elevator shaft, or a stair tower, or even new spaces to provide more rentable or occupiable space to make the project economically viable may be acceptable reasons for new additions. The Secretary of the Interior's Standards for Rehabilitation permit new additions to historic buildings if the additions meet certain criteria. Common to these criteria are the general concepts of similarity and subordination. Because of the size and placement of the buildings in Zone 1, their spatial relationship is important to communicating their historic associations. New additions to primary and secondary elevations should be avoided whenever possible. If necessary they should be clearly ancillary and subservient to the size, scale, massing of the preexisting building. Historic photographs as well as Sanborn Fire Insurance Company maps available in local research collections document the location, size, and, sometimes, materials of pre-existing structures and serve as an excellent guide in determining the location of new construction.

Recommended	Not Recommended
Designing and constructing new additions that preserve the historic character of the building by visibly retaining significant historic materials and features.	Designing and constructing new additions that result in the diminution or loss of the historic character of the resource, including its design, materials, workmanship, location, or setting.
Determining if the building can meet new use requirements by altering non-character-defining interior spaces rather than by constructing a new addition to the building.	Whenever possible, avoid designs and plans that cannot accommodate new uses without exterior additions.
Utilizing a design that is visually distinguishable from the historic building, but that is clearly subservient to the historic building.	Designing and constructing additions that create a false sense of history by closely replicating the exact form, material, style, and detailing of the historic building in such a way that the new addition appears to be part of the historic building.
Locating an attached exterior addition at the rear or on an inconspicuous side of a historic building.	Designing and constructing additions that are highly visible from the public right-of-way.
Limiting the size and scale of an addition in relationship to the historic building.	Designing and constructing a new addition so that its size and scale in relation to the historic building are out of proportion, thus diminishing the historic character of the historic building.

Recommended



This small glass connector between two historic buildings is appropriately set back. A similar approach may also be made between a historic building and an addition

Constructing a new addition so that there is the least possible loss of historic materials and so that character-defining features are not obscured, damaged, or destroyed. Utilizing elevator or stair towers that have a high degree of transparency and that expose the building's original materials and features.

Using small, recessed, transparent connector "hyphens" that expose original materials and features and distinguish the historic building from the new addition.

Restore existing openings that have previously been filled in or blocked

Placing new additions such as balconies, greenhouses, and other special use additions on secondary elevations, and limiting their size and scale in relationship to the historic building.

Not Recommended



Stair tower could have been incorporated in the building by enclosing existing stair well. Location of the new stairwell on a highly visible façade is inappropriate as is use of materials and scale and massing

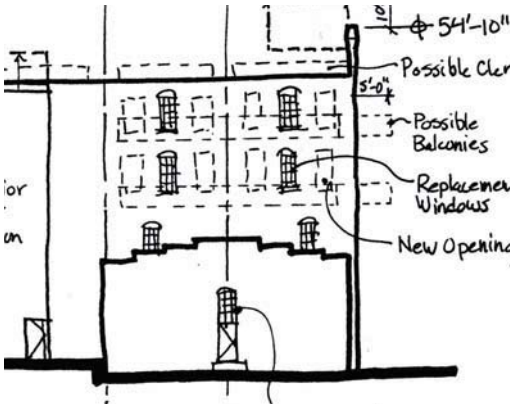
Attaching a new addition so that the character-defining features of the historic building are obscured, damaged, or destroyed.

Designing and constructing new additions such as balconies or penthouse additions that obscure, damage, or destroy character-defining features of the historic building.

Recommended

Designing an additional penthouse story, rooftop garden, or greenhouse, when required, that is clearly subservient to the historic building, set back at least one full bay from the building's tall wall planes, and is as inconspicuous as possible when viewed from the street from within a several-block radius.

Not Recommended



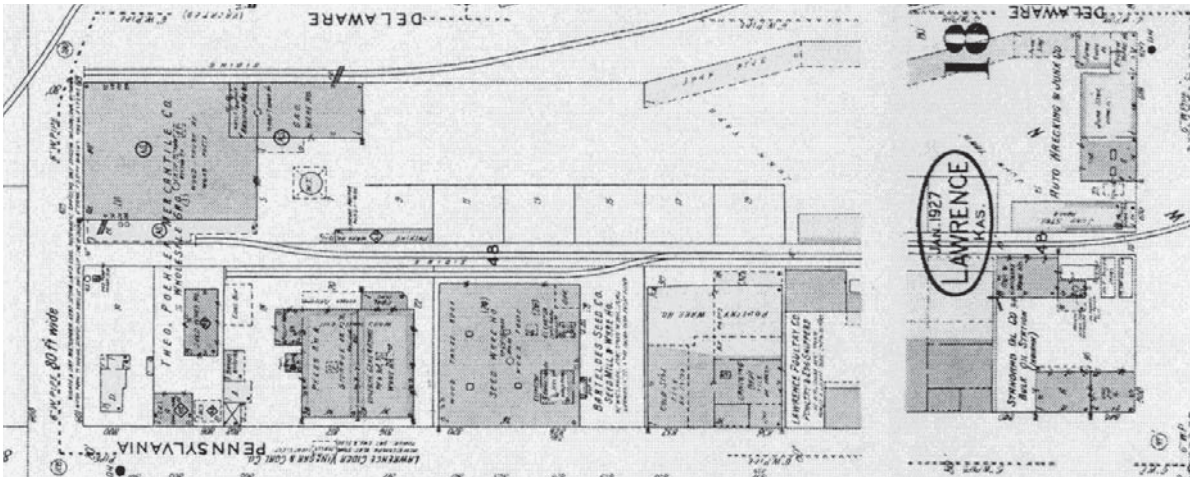
Sketch shows balconies that span the width of the elevation. A recommended alternative would be to limit the number of balconies and to have these span only one or two openings. The balcony should be painted to match the masonry wall.

Designing and constructing roof-top additions that dramatically change the historic appearance of the building. Constructing additional stories to the building so that the historic appearance of the building is radically changed.

See also Technical Preservation Services, Heritage Preservation Services Division, National Park Service Preservation Brief 14 New Exterior Additions to Historic Buildings: Preservation Concerns; National Park Service Interpreting the Secretary of the Interior's Standards for Rehabilitation (ITS) Bulletins: ITS Number 3: New Additions to Mid-size Historic Buildings 1; National Park Service Interpreting the Secretary of the Interior's Standards for Rehabilitation (ITS) Bulletins: ITS Number 10: Stair Tower Additions Exterior Stair/Elevator Tower Additions; National Park Service Interpreting the Secretary of the Interior's Standards for Rehabilitation (ITS) Bulletins: ITS Number 18: New Additions to Mid-size Historic buildings 2; National Park Service Interpreting the Secretary of the Interior's Standards for Rehabilitation (ITS) Bulletins: ITS Number 33; Alterations to Rear Elevations.

NEW INFILL CONSTRUCTION

The arrangement of elements and spaces that define a historic district contribute to a unique sense of place. These elements combine several factors such as building materials, color, size, shape, placement of buildings and spatial relationships. To preserve these qualities, new construction should be compatible with the existing character-defining architectural and landscape elements of Zone 1. At the same time, new construction can and should be differentiated from older buildings by virtue of its own contemporary stylistic elements. New construction includes new buildings erected in previously undeveloped spaces and "infill" replacement buildings.



Old and new construction

Recommended

Limiting new construction in historically open spaces to the southeast quadrant of the zone or placing it in accordance with historic building patterns documented in Sanborn Fire Insurance Company maps.

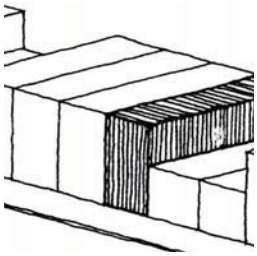
Retaining the footprint, size, scale, and height and massing of the original building when constructing replacement buildings

Not Recommended

Recommended

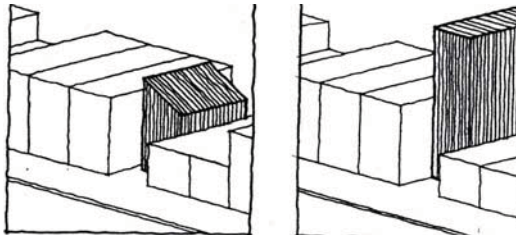
Not Recommended

Locating front walls on the same plane as the façades of adjacent buildings and matching the rhythm of spacing between buildings and the rhythm of entrances and other projections or recesses to sidewalks.



Appropriate integration

Utilizing new designs with inappropriate alignment, setback, spacing, massing, proportion, and scale.



Inappropriate alignment and setback

Erecting buildings of one or two stories. The height and scale of new buildings should match the height of adjacent historic buildings on the streetscape.

Matching the type, size, proportion, and pattern of openings on the primary façade and loading dock façades to that of the adjacent buildings. Storefront façades in new construction should reference the industrial loading dock entrances and doors in size and glazing.



Appropriate infill façade

Using materials, texture, and color that relate to and harmonize with those on nearby historic buildings and structures.

Introducing materials and colors that do not relate to the traditional materials found in the National Register East Lawrence Industrial Historic District.

Continuing of the use of similar roof shapes, types, and materials.

Using roof shapes, pitches, and materials not found in the National Register East Lawrence Industrial District.

SITE AND SETTING – EXTERIOR FEATURES AND OPEN SPACE

The Setting of Zone 1 is a heterogonous mix of buildings, structures, and spaces that evolved over an extended period of time. The relationship of these components and the random vegetation patterns and features contribute to a unique sense of place. The primary buildings and structures are oriented to the major streets, with the functional orientation of their loading docks to an alley that bisects the zone. As important as the buildings and structures is the large open space in the southeast quarter of the block that is covered with a mixture of dirt, gravel, and vegetation. This area has traditionally been open space with the exception of the presence of assorted shed structures along 9th Street and the alley when the space served as a junkyard.

Common materials found in the setting are concrete, asphalt, dirt, brick, and stone. Common landscape features include wire, chain link, and board fencing; railroad rails, curbing, grasses, and a Cottonwood tree. All communicate the continuing industrial character of the zone.





Existing exterior features and open space

Setting

Recommended	Not Recommended
Identifying, retaining, and preserving building and landscape features that are important in defining the historic character of the site and setting.	Creating a false sense of history by introducing landscape features that are based on conjecture or that impact an understanding of the industrial nature of the site or setting.
Retaining the historic relationship between buildings and landscape features such as alleys, open space, work areas, pathways, driveways, and so forth.	Removing or radically changing the features of the site and setting that are important in defining the historic character of the site or the National Register East Lawrence Industrial Historic District.
Creating subtle visual distinctions through the use of different hard surface materials between the historic spaces/materials and new space uses such as parking areas.	Destroying the relationship between the buildings and structures and the landscape features by widening existing streets or constructing inappropriately located new streets or parking facilities.
Designing new parking areas that are as unobtrusive as possible to minimize the effect of the historic spatial arrangement and character of the setting. Constructing shared	Using vacant lots that once held buildings or structures for unauthorized or spontaneous automobile parking.

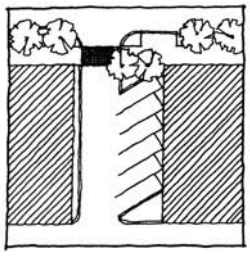
Recommended	Not Recommended
parking in traditionally open spaces.	
Removing non-significant buildings, structures, additions, or landscape features that detract from the historic setting.	Removing or relocating significant historic primary and secondary buildings and structures or character-defining landscape features, destroying their historic relationship.
Retaining historic secondary ancillary buildings and structures such as garages and outbuildings. Retaining and preserving all character-defining features of outbuildings, including foundations, steps, roof forms, windows, doors, architectural trim, and materials. If replacement of an element is necessary, replace only the deteriorated item with one that matches the original in size, scale, proportion, material, texture, and detail.	Constructing prefabricated buildings or storage structures.
Using new construction that is compatible with the historic character of the setting in terms of size, scale, design, material, color, and texture.	Introducing new building or landscape features that are out of scale or are otherwise inappropriate to the historic character of the setting.
Revealing landscape features such as alleys and pathways that have been covered by paving or other materials over time.	
Using screening devices for trash receptacles and storage units that visually blend into the rear façades.	
Painting, or screening, mechanical units and service equipment to blend with the overall exterior color of the building, in accordance with City standards. Placing such equipment near secondary elevations out of view from the public right-of-way.	
Screening dumpster units on all four sides with material that blends in with the main commercial building wall adjacent to the location of the dumpster. The height of the screening device should match that of the dumpster and the access door. Clustering dumpsters adjacent to alleys.	
Utilizing satellite dishes one diameter in size or smaller and placing them in locations not visible from the public right-of-way.	Installing antennae and/or satellite dishes in places visible from the public right-of-way.
Installing removable cellular tower poles, which may be attached to the roofs of buildings, but must be set back one bay from the perimeter wall?	Installing cellular towers.
Additional landscape screening may be required by City staff to lessen impact of parking, lighting, or noise on neighboring residential properties.	

Landscape

Historically, Zone 1 did not have planned landscaping. Thus, the introduction of landscaping should be minimal and part of an overall design to denote the boundaries of the zone and to direct pedestrian traffic. Natural plants of the region, in particular of the East Lawrence area, should be utilized.

Recommended

Landscaping the perimeters of parking areas with trees and low plantings to provide pedestrian linkages, to reinforce the traditional grid system of the original street and alleys, and to screen the view of vehicles and surface paving.



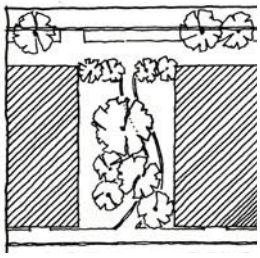
Planting trees and shrubs at the peripheral edges of a vacant lot to reinforce the traditional edge between the absent building wall and the sidewalk. The edges should coincide with the setback and configuration of adjacent buildings.

Maintaining traditional alleyways, lot delineations, and open spaces.

Introducing discreet, coordinated interpretive signage throughout the zone to educate visitors about the history of the buildings in Zone 1 and that of the surrounding areas.

Not Recommended

Introducing formal or exotic landscape designs that are inappropriate to the industrial setting.



Installing plantings near the buildings, destroying the open, partially hard-surfaced industrial site.

Using chain link or wood fences and/or other devices that discourage an understanding of the historic setting and its functional features.

PARKING

Vehicular parking historically occurred at the sides of buildings and on the street. Traditional open spaces provide opportunities for surface parking lots by maintaining the historic spatial relationships between buildings. Gravel or asphalt paving generally covered parking areas. In one or two instances, drives and parking areas with high traffic had concrete drive-through and/or parking spaces. These traditional materials continue to be appropriate as do other hard surface and gravel treatments. Drainage is a problem in this area and a combination of pervious and non-pervious treatments that designate historic space uses as well as assist in the control of water runoff is desirable.

Recommended

Locating surface parking lots in traditional open spaces.

Subdividing larger surface lots with landscaped islands that include trees.

Visually and spatially separating pedestrian walkways adjacent to parking and driveways through the use of additional site elements, including bollards, lighting, landscaping, and special pavement treatments.

Not Recommended

LIGHTING

The purpose of exterior lighting is to highlight the building entrance and its signage, as well as parking and public use areas, when natural light is insufficient or not present in a historic district. The level of lighting must reflect the building's historic use and must provide sufficient illumination to promote health and safety and to attract the pedestrian traffic required by the building's new use. Lighting types recommended in other zones apply to Zone 1 and should be consistent throughout the redevelopment area.

Unless noted otherwise, lighting in Zone 1 will be consistent with City of Lawrence Code Section 20-14A01 through Section 20-14A03, or subsequent applicable City standards. Parking lighting shall have a maximum initial illumination value no greater than 0.20 horizontal footcandles at the zone boundary. No more than 5 percent of fixture lumens are emitted at an angle of 90 degrees or higher from nadir (straight down) with the exception of minor building lighting. These lighting requirements are adapted from IESNA RP-33-99.

Recommended

Using light fixtures that are as inconspicuous as possible and that are compatible with the industrial character of Zone 1.

Using dark sky fixtures.

Using incandescent lights to illuminate small projecting and flat signboards.

Not Recommended

Using conduits that are visible from the public right-of-way.

Using fluorescent light fixtures and high intensity discharge lighting.

Recommended

Not Recommended

Using internally lit signs.

Designing the light source for signs as a part of the sign or hiding it from view.

Using neon lighting that accentuates any shape or form of any of the building's elements.

AWNINGS

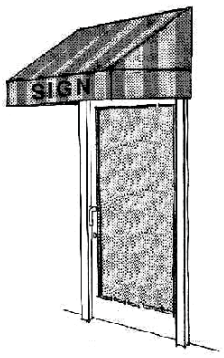
While the commercial/industrial buildings in Zone 1 did not have a retail function or storefronts, most were businesses that had a customer service area and offices on the first story near the entrance. The need to protect these areas from the heat and glare of sunlight (particularly on the west elevations along Pennsylvania Street) may have included canvas awnings above individual window openings on the first story. New uses may require similar protection from the elements in the entrance areas.

Recommended

Not Recommended

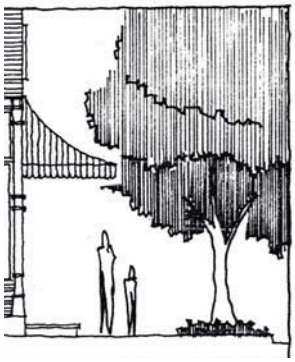
Using fixed awnings of metal or synthetic materials that are compatible with the industrial character of the zone.

Using awnings not compatible with the character of the zone.





Recommended



Using installations that do not damage the building or visually block or impair its distinctive architectural features.

Selecting colors, pattern, form, and materials that relate to and complement the surrounding buildings.

Not Recommended



Because of industrial character of buildings, typical storefront treatments that span the width of the façade are not appropriate. Each opening should have its own awning.

Using of materials, colors, and designs that detract from the character of the building.

See also Technical Preservation Services, Heritage Preservation Services Division, National Park Service *Preservation Brief 44 The Use of Awnings on Historic Buildings: Repairs, Replacement and New Design;* National Park Service Interpreting the Secretary of the Interior's Standards for Rehabilitation (ITS) Bulletins: ITS *Number 27: Awnings: Adding Awnings to Historic Storefronts and Entrances.*

ACCESS

Originally, historic buildings were not designed to accommodate the needs of people with disabilities. Federal law requires that historic buildings occupied by employees or residents and visited for business or private purposes meet accessibility requirements for individuals with disabilities under the Americans with Disabilities Act (ADA) of 1990.

Recommended

Providing building access through a primary pubic entrance. If access through a primary entrance cannot occur without causing permanent damage to the character-defining features of the historic entrance, at least one entrance used by the public should be made accessible. Appropriate directional signage should be installed to direct disabled individuals from the primary historic entrance to the accessible entrance.

Installing mechanical wheelchair lifts or submergible lifts in unobtrusive locations with cover from the elements.

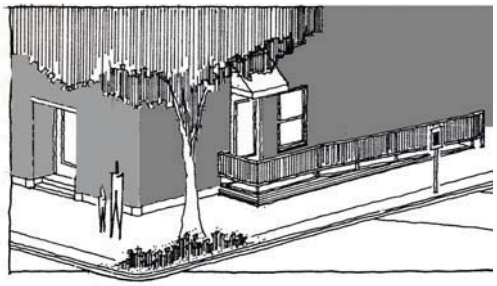
Not Recommended

Using rear or service entrances as the only means of entering the building for individuals with disabilities.

Recommended

Not Recommended

Installing ramps along side elevations that are designed and located to minimize the loss of any historic features at the connection point to the building. Installing ramps behind historic features such as walls, railings, or landscaping to minimize the visual effect from the public right-of-way.



Ramps should be installed on side elevations or behind historic features to minimize visual effect.

See also Technical Preservation Services, Heritage Preservation Services Division, National Park Service Preservation Brief 32 Making Historic Properties Accessible

SIGNAGE

The primary purpose of signage is to identify the business name and location. Sign location is an important element in the adaptation of new uses for industrial/warehouse facilities. Generally, each building should have a primary sign noting the name and location, and secondary signage with information about hours of operation and building use. Because of the need to retain the industrial character of the setting of Zone 1 and the fact that the commercial buildings do not have a sign frieze typical of retail storefronts, the following guidelines limit the types of signage options.



Appropriate signage

Recommended

Using signs that respect the size, scale, and design of the historic building and are pedestrian scaled; signs that do not obscure significant features of the historic building and neighboring buildings; and sign materials compatible with and characteristic of the building's period and style, including the following primary sign forms: (1) a single plaque on a flat surface on the first story wall plane near the entrance; (2) a projecting pendant sign mounted on a flat wall plane above the primary entrance; or (3) signage printed on awnings

Using simple legible primary signs containing only the name of the business and no secondary or incidental information.



Selecting colors, materials, and a lettering style that relates to and complements the historic building and the surrounding buildings. In general, each sign should contain a maximum of three colors, two materials, and one lettering style.

Not Recommended

Using large, flashy signs designed to attract automobiles from a distance.



Using small, poorly proportioned signs with an inferior quality of design, materials, and execution.

Mounting signs on a roof.

Using signs on windows and/or doors that overpower the other building signs.

Using several signs and messages that compete with one another.

Recommended

Using signs attached to building that do not damage the historic fabric and that ensure the safety of pedestrians. Installing fittings that penetrate mortar joints rather than brick with properly calculated and distributed sign loads.

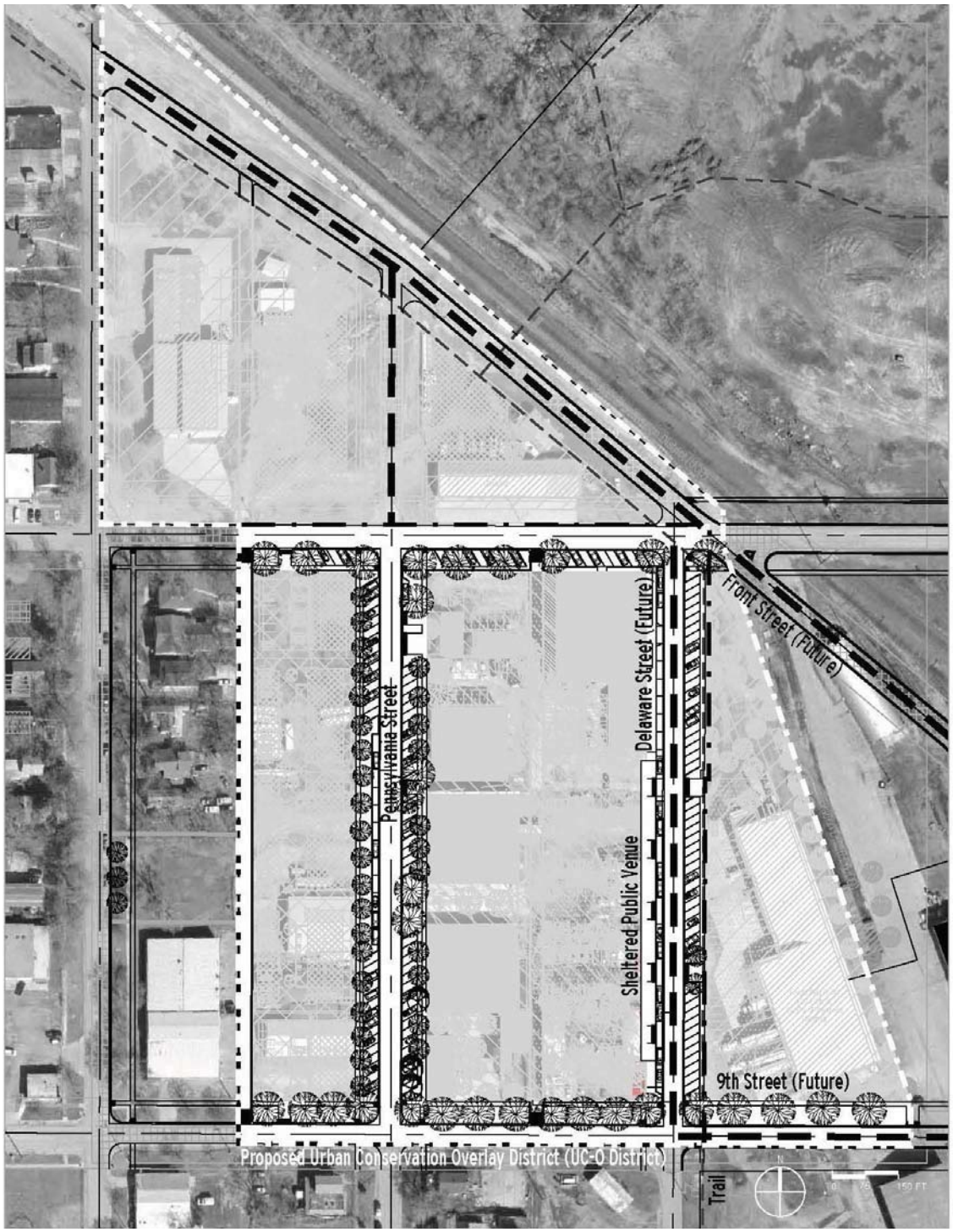
Using signs painted on windows and doors for secondary information that do not obscure visibility from inside or outside the building.



Not Recommended

See also: Technical Preservation Services, Heritage Preservation Services Division, National Park Service Preservation Brief 25 The Preservation of Historic Signs

FIGURE 5: ZONE 2 STREETSCAPES AND ALLEYS



LAND USE PLAN

ZONE 2: STREETSCAPES AND ALLEYS

NEIGHBORHOOD CONTEXT

The historic patterns of streets and alleys form the basis for the visual patterns that traditionally defined the redevelopment zone. This existing grid layout of streets and alleyways also serve as links that extend into adjoining neighborhoods and beyond. These features and spaces compose the grid of streets, alleys, and sidewalks, as well as the off-axis railroad right-of-way. Today, this public right-of-way zone plays an important role in defining the relationship between the manufacturing zone and the adjacent residential streets. Physical inspection of the zone and an analysis of historic photographs and maps indicate that these zones have significant loss of material and features. Reestablishment and retention of these established patterns is important in maintaining the visual character and identity of the historic manufacturing zone of East Lawrence.

ACCESS

Recommended	Not Recommended
Retaining all alley dimensions and driveway access to alleys.	
Retaining/reestablishing the width and number of vehicular traffic lanes to match existing conditions or the established grid in East Lawrence.	
Providing curb cuts for ADA accessibility at street crossings.	

STREETSCAPE

Recommended	Not Recommended
Removing built-up street overlay and exposing original brick.	
Reestablishing the grass verge between the sidewalks and curbs at the corners of East 8th and Pennsylvania Streets, East 8th and Delaware Streets, East 9th and Pennsylvania Streets, and East 9th and Delaware Streets.	
While retaining the grassy verge zones at the corners, pave the traditional verge zone for parking with a material different from that of the street, thus delineating the original street width and street/curb/verge configuration.	
Retaining the historic parking zone on the north side of the Poehler Building on East 8th Street.	
Retain the historic parking zone on the west side of the 804/806 building on Pennsylvania.	
Constructing concrete and/or brick sidewalks to match the materials of those found in the adjoining neighborhoods along Pennsylvania and East 9th Street.	

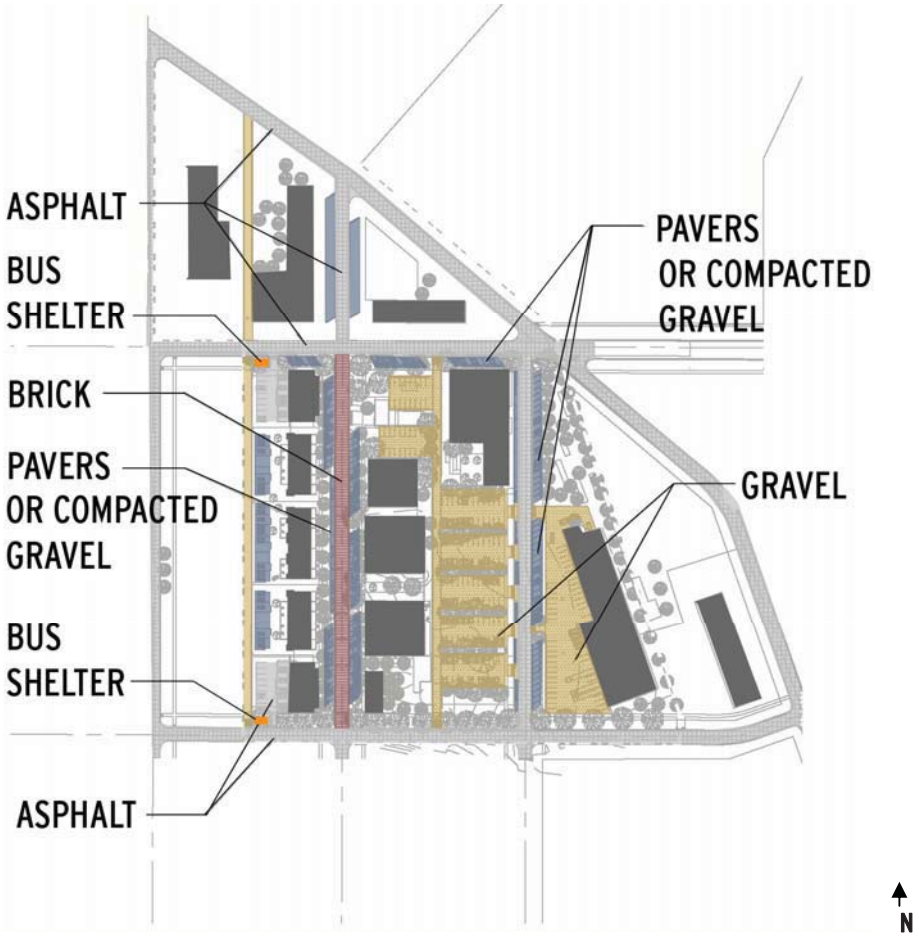
Recommended

In Zone 1, Existing sidewalks shall remain. Repairs to existing sidewalks on Pennsylvania and Delaware Streets that conform to the dimensions of those shown on Pennsylvania and Delaware Streets, respectively, from the 1927 Sanborn Fire Insurance Company maps. New sidewalks in Zone 1 shall conform to City Standards. In Zones 3 & 4 sidewalks shall be constructed to a minimum width of 5'-0"

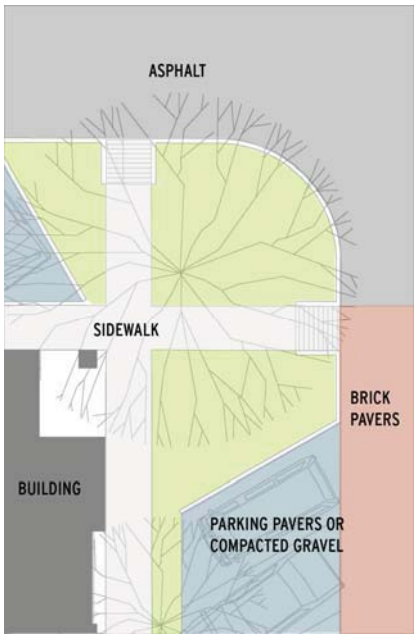
Establishing a sheltered bus venue on the west side of Delaware Street.

Establishing sheltered bus venues that are compatible with the listed properties and their environs.

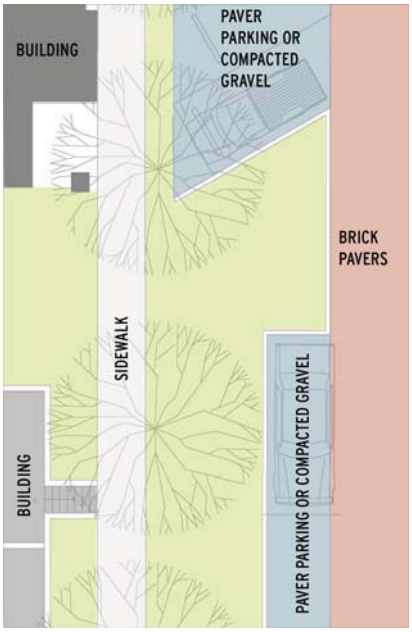
Not Recommended



Paving Design



Pedestrian/Parking Surfaces – Corner Condition
Show here at the west corner of 8th and Pennsylvania



Pedestrian/Parking Surfaces – Mid Block Condition
Shown here mid-block between 8th and 9th on the west side of Pennsylvania

LANDSCAPE

The existing landscaping in Zone 2 primarily consists of unmaintained shrubs and weeds. Since most of Zone 2 borders the historical Zone 1, care should be given to not diverge from the industrial feel of the area. Historic conditions supersede the Design Guidelines for landscaping requirements in Zone 1.

Recommended

In addition to restoring portions of the traditional grass verges, planting street trees in the verge zones to define the separation between the sidewalk and the street. Creating a clear walking zone of at least ten feet between the trees and buildings, and maintaining a mature branching height of at least twelve feet above the street.

Planting trees large enough to add substantial greenery and shade, with a three-inch caliper at a minimum.

Using plantings that reinforce the city grid and cohesiveness of the area.

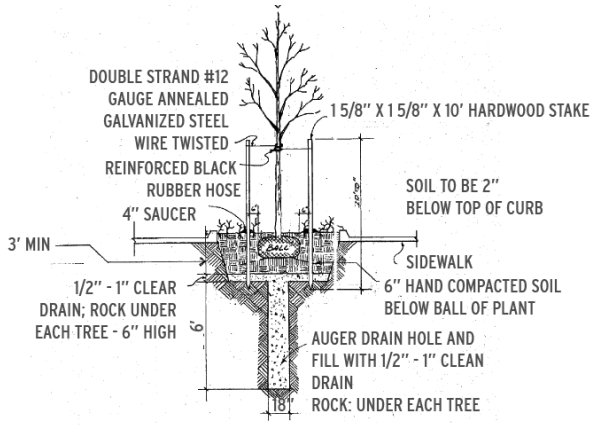
Not Recommended

Planting trees that produce large amounts of fruit or flowers. Planting small trees that will be less than thirty-six feet tall at maturity. Planting trees that are not native to the zone or that have marginal success in the zone. Planting trees with branches that break easily.

Installing artificial trees, shrubs, turf, or plants.

Using native trees approved by City of Lawrence Parks and Recreation Department. (See Appendix)

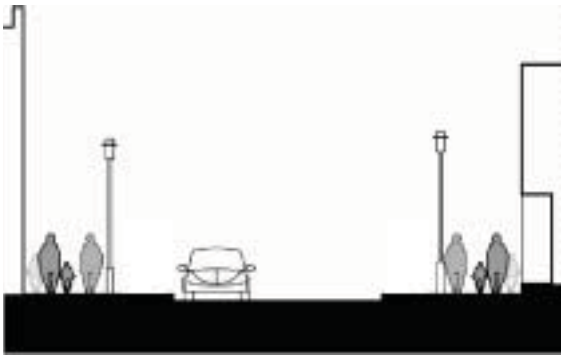
Planting a quantity of trees that complies with the minimum number required set forth in the City Standards.



Tree Well detail for 6" curb

LIGHTING

Unless noted otherwise, lighting for Zone 2 will be consistent with the City of Lawrence Code, sections 20-14A01 through Section 20-14A03. Street and pedestrian walkway lighting shall have a maximum initial illumination value of no greater than 0.20 horizontal footcandles at the zone boundary. No more than 5 percent of designed fixture lumens to be emitted at an angle of 90 degrees or higher from nadir (straight down) at the zone boundary. For zone boundaries that abut the public right of way, light trespass requirements may be met relative to the curb line in lieu of the zone boundary.



Recommended

Installing simple, contemporary, or generic pedestrian-scale street lights.

Not Recommended

Installing street lights with a historic appearance that replicate those used in retail and residential zones.

Pedestrian scale lighting

'Dark Sky' style lighting fixtures.

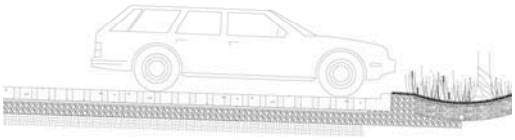
PARKING

Existing parking facilities are currently comprised of some unpaved on-street parking, primarily as roadside locations.

Recommended

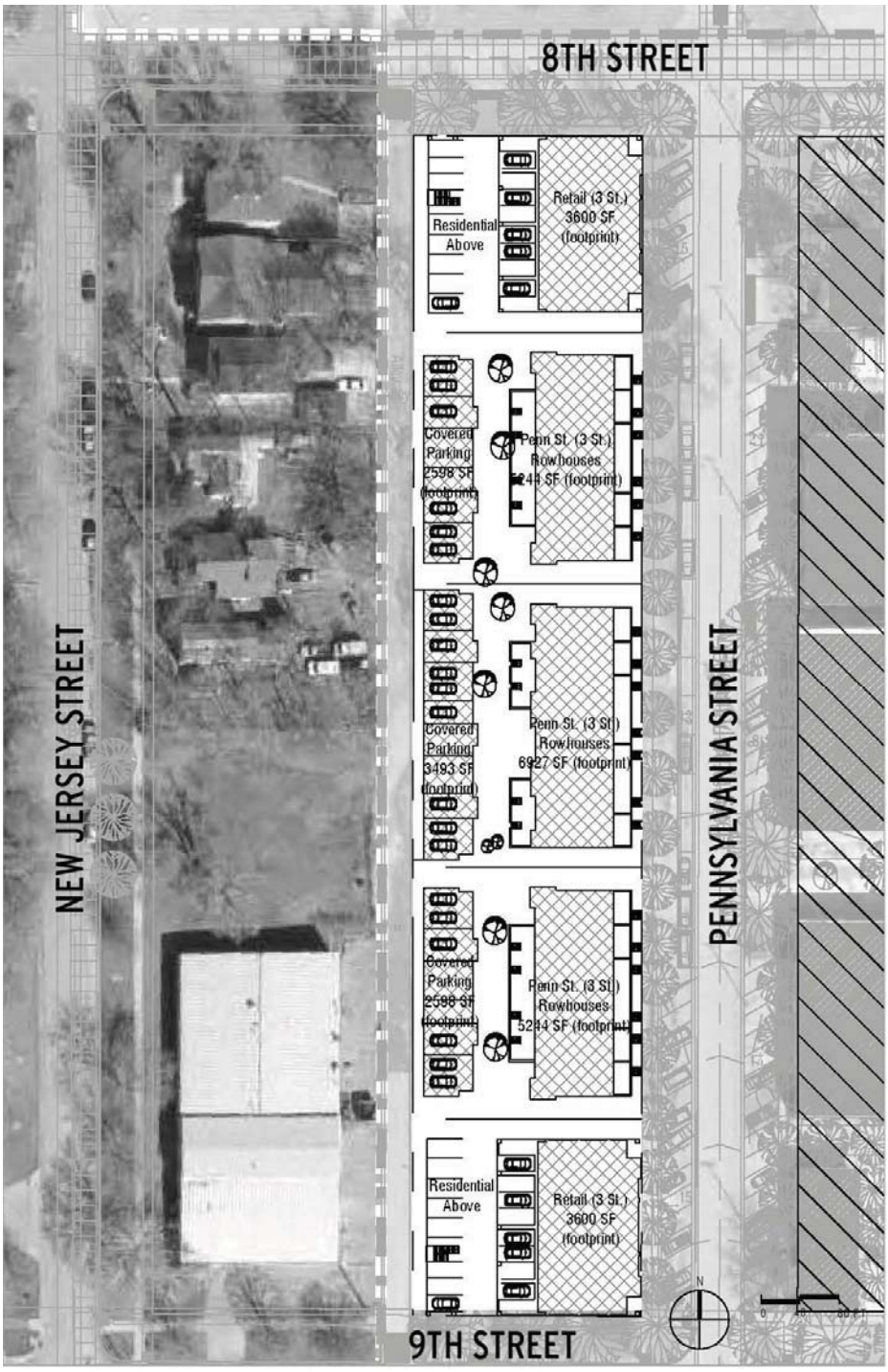
Visually and spatially separating on-street parking from pedestrian walkways or plazas through the use of additional site elements, including landscaping and special pavement treatments.

Not Recommended



Site section at On-street Parking

FIGURE 6: ZONE 3 800 PENNSYLVANIA MIXED-USE ZONE



LAND USE PLAN

ZONE 3: 800 PENNSYLVANIA MIXED-USE ZONE

NEIGHBORHOOD CONTEXT

This zone is adjacent to the historic residential neighborhoods of East Lawrence and was once part of the residential enclave, but none of the original setting or residences remain. This zone should function as a buffer or transition zone between the residential neighborhoods to the west and south and the mixed-use of the historic industrial complex and new development. This zone should be reserved for new construction. Contemporary methods of design and construction have to be coordinated with the existing surroundings dating from the late nineteenth century. A continuous sense of space should be conveyed using traditional and new materials in new ways. *New construction should relate to the setback, size, form, patterns, texture, materials, and color of the features that characterize the environs of all listed properties. Where there are inconsistent or varied patterns the new construction should fall within the range of typical patterns in the environs of the listed properties. Future environs review within the conservation zone should be in the context of the character defining features of the listed properties.

SUSTAINABILITY

As a zone dedicated to new construction, this zone has the most potential for integration of sustainable building practices. Including aspects of green architecture into the building design early on is recommended, and will have the best chance for success.

Recommended

Having mixed residential/retail commercial use.

Not Recommended

Having commercial use only.





Examples of Mixed-use

**This language is taken directly from the "Standards and Guidelines for Evaluating the Effect of Projects on Environs".*

RESIDENTIAL BUILDINGS

ARCHITECTURAL CHARACTERISTICS AND MATERIALS

Recommended

Maintaining the massing character of the two- to three-story buildings in the area. Massing and building styles that compliment the height, width, and depth of the residential lots in the adjacent neighborhood and/or the original lot width.

Arranging architectural elements in a regular and repetitive pattern. Patterns can be found within individual buildings, such as the arrangement of windows, or in groupings of buildings along a street.

Arranging of open space in a regular and repetitive pattern.

Maintaining proportions and relationships between doors and windows that are compatible in placement and scale with the architectural character of the single family residences in the adjacent residential neighborhood.

Maintaining individual or shared entrance porches on residential buildings designated to provide semi-public space for neighborhood interaction.



Example of Housing Density and Fenestration

Maintaining consistency in the use of materials and textures.

Using traditional building materials found in East Lawrence.

Using traditional colors found in the buildings of East Lawrence.

Not Recommended

Dividing single-family residences into multi-family dwelling units.

Using synthetic building materials and/or poor quality building materials.

Recommended

Using architectural details that add visual interest to a building and that define the character of a building.

Using roof shapes and architectural characteristics that reference the traditional industrial/commercial built environment of East Lawrence, but incorporate a clear differentiation of old and new.

Having rear façades of residential buildings that include porches and decks and that create a transition from a residential to a commercial/industrial mixed-use appearance.

Not Recommended

Replicating historic architectural details associated with a particular style in such as way as to create a false sense of history by reproducing a historic house design.

BUILT TO LINES AND SETBACKS

Recommended

Locating the front walls of residential buildings on the same plane and matching the rhythm of spacing (or lack thereof) between buildings and the rhythm of entrances and other projections or recesses to sidewalks.

Having individual or shared entrance porches on residential buildings with individual sizes and locations that merges with and compliments the architectural diversity of East Lawrence.

Not Recommended

Constructing new buildings with inappropriate alignment setback and spacing, massing, proportion, or pattern that is out of character with the residential and small commercial buildings found in East Lawrence.

LANDSCAPE

Recommended

Having front yards with lawn, shrubbery, and tree plantings, typically found in East Lawrence.

Not Recommended

Introducing landscape features such as front yard fencing, statuary, walls, benches, yard lights, and so forth that were not traditionally found on the streetscapes of East Lawrence.

PARKING

Proposed parking for the residential portions of Zone 3 will be consistent in design and scale for the zone to serve as the transition zone between the historical properties in Zone 1 and the single family residential areas on New Jersey. Parking will be limited to single story structures that will be served by the alleyway.

Recommended

Using the rear portion of a lot accessed by an alley for parking spaces/structures.

Providing some green space at the rear of buildings.

Separating parking zones/structures from residential buildings with landscaped pathways.

Having parking structures that are subservient in size, scale, massing, and materials that create the impression of ancillary residential outbuildings.

Designing parking structures to be compatible with neighboring buildings, including materials.

Breaking up the overall massing of the parking structure with architectural details.

Low bollard lighting will be used to limit lighting impacts to adjacent residential areas.

Not Recommended

LIGHTING

Unless noted otherwise, lighting for Zone 3 will be consistent with the City of Lawrence Code, sections 20-14A01 through Section 20-14A03, or subsequent applicable City standards. Residential lighting will have a maximum initial illumination value of no greater than 0.10 horizontal footcandles at the zone boundary. No more than 5 percent of the total designed fixture lumens are at an angle of 90 degrees or higher from nadir (straight down). In order to limit lighting impacts on adjacent residential properties, low bollard lighting will be utilized in parking areas adjacent to these properties in lieu of standard pole lighting.

Recommended

Having exterior residential lighting at building entrances.

Not Recommended

COMMERCIAL/RETAIL CORNER BUILDINGS

ARCHITECTURAL CHARACTERISTICS AND MATERIALS

Recommended

Having corner business buildings that reference the original lot configuration through the use of vertical bays. If the building is bigger than two traditional lots, differentiating the bays to create the visual impression of an assembly of small commercial buildings.

Not Recommended

Having corner commercial buildings larger than the three original lot sizes.

Recommended

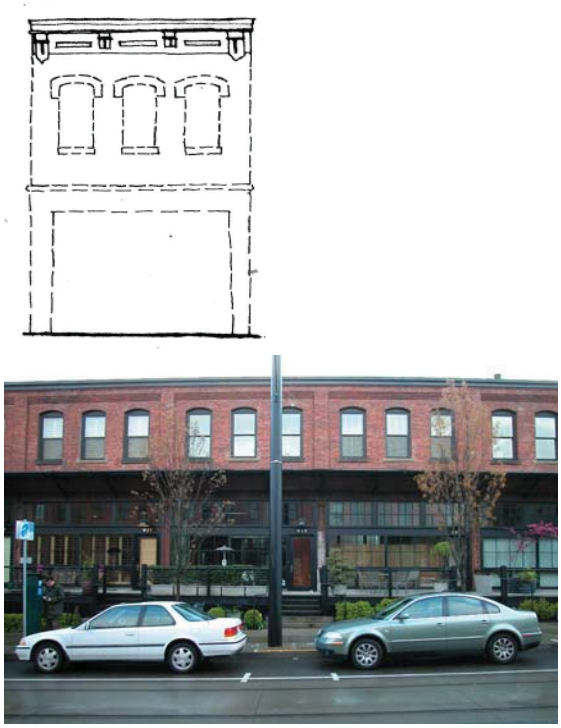


Typical Corner Building

Using a corner entrance in combination with traditional entrances to create variety in fenestration.

Using traditional brick walls, but differentiating in design, color, texture, and pattern between commercial buildings to create a heterogeneous treatment.

Having a clear system of base, middle, and top; visual referencing of traditional storefront components (i.e., bulkhead, display window, sign frieze, second-story fenestration, and cornice/parapet).



Base, Middle, and Top

Not Recommended

Designing commercial buildings that as a whole present the impression of suburban development patterns and design treatments rather than the heterogeneous appearance of evolution over a period of time on a lot-by-lot basis.

BUILT TO LINES AND SETBACKS

Recommended

Avoid

Constructing new buildings with inappropriate alignment setback and spacing, massing, proportion, or pattern that is out of character with the residential and small commercial buildings found in East Lawrence.

Locating the front walls of residential buildings on the same plane and matching the rhythm of spacing (or lack thereof) between buildings and the rhythm of entrances and other projections or recesses to sidewalks.

Having individual or shared entrance porches on residential buildings with individual sizes and locations that merge with and compliment the architectural diversity of East Lawrence.

SIGNAGE

Recommended

Not Recommended

Using new signs that respect the size, scale, and design of the building (1) on a flat sign located in the frieze above the display window; (2) on a single plaque on the flat surface on the first-story wall plane near the entrance; (3) a projecting pendant sign mounted on the flat wall plane above the primary entrance; or (4) awning signs.

Using small, poorly proportioned signs with an inferior quality of design, materials, and execution.

Mounting signs on a roof.



Roof Mounted Sign

Using signs designed on a pedestrian scale.

Using one simple legible primary sign containing only the name of the business and no secondary or incidental information.

Using secondary signage painted on glass in windows and

Using large, flashy signs designed to attract automobiles from a distance.

Using several signs and messages that compete with one another.

Recommended

doors for secondary information that does not obscure visibility from inside or outside the building.

Selecting colors, materials, and a lettering style that relates to and complements the building and contains a maximum of three colors, two materials, and one lettering style.

Not Recommended

ACCESS

Recommended

Providing access to the parking lots only from the main streets.

Not Recommended

Access to commercial buildings from alley ways or vehicular routes that abut single family residences.

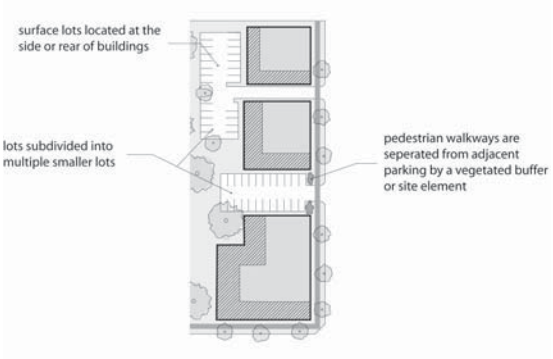
PARKING

Proposed parking for the residential portions of Zone 3 will be consistent with the requirements of the City of Lawrence Code, sections 20-1205, or subsequent applicable City standards. Parking for commercial, retail and mixed-use uses shall be served from a public street in lieu of an alleyway.

Recommended

Locating surface parking lots at the sides or rear of buildings or structures.

Having multiple small parking lots rather than single large parking lots.



Multiple Small Parking Lots

Subdividing larger surface lots with landscaped islands that have trees.

Visually and spatially separating pedestrian walkways adjacent to parking and driveways through the use of additional site elements, including bollards, lighting, landscaping, and special

Not Recommended

pavement treatments.

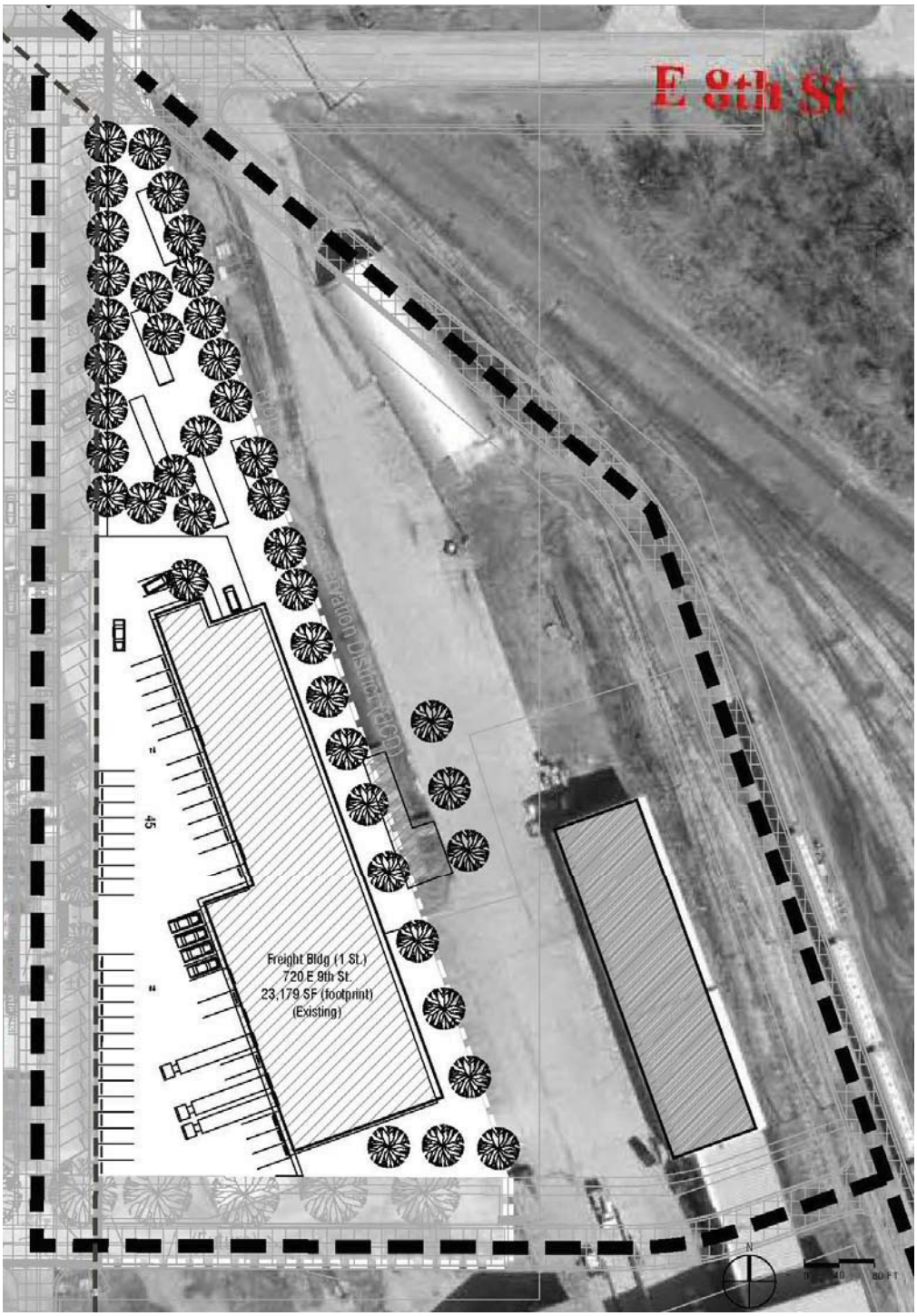
Low bollard lighting will be used to limit lighting impacts to adjacent residential areas.

LIGHTING

Unless noted otherwise, lighting in Zone 3 will be consistent with City of Lawrence Code Section 20-14A01 through Section 20-14A03, or subsequent applicable City standards. Parking lighting shall have a maximum initial illumination value no greater than 0.10 horizontal footcandles at the zone boundary. Nor more than 5 percent of fixture lumens are emitted at an angle of 90 degrees or higher from nadir (straight down) with the exception of minor building lighting. These lighting requirements are adapted from IESNA RP-33-99. In order to limit lighting impacts on adjacent residential properties, low bollard lighting will be utilized in parking areas adjacent to these properties in lieu of standard pole lighting.

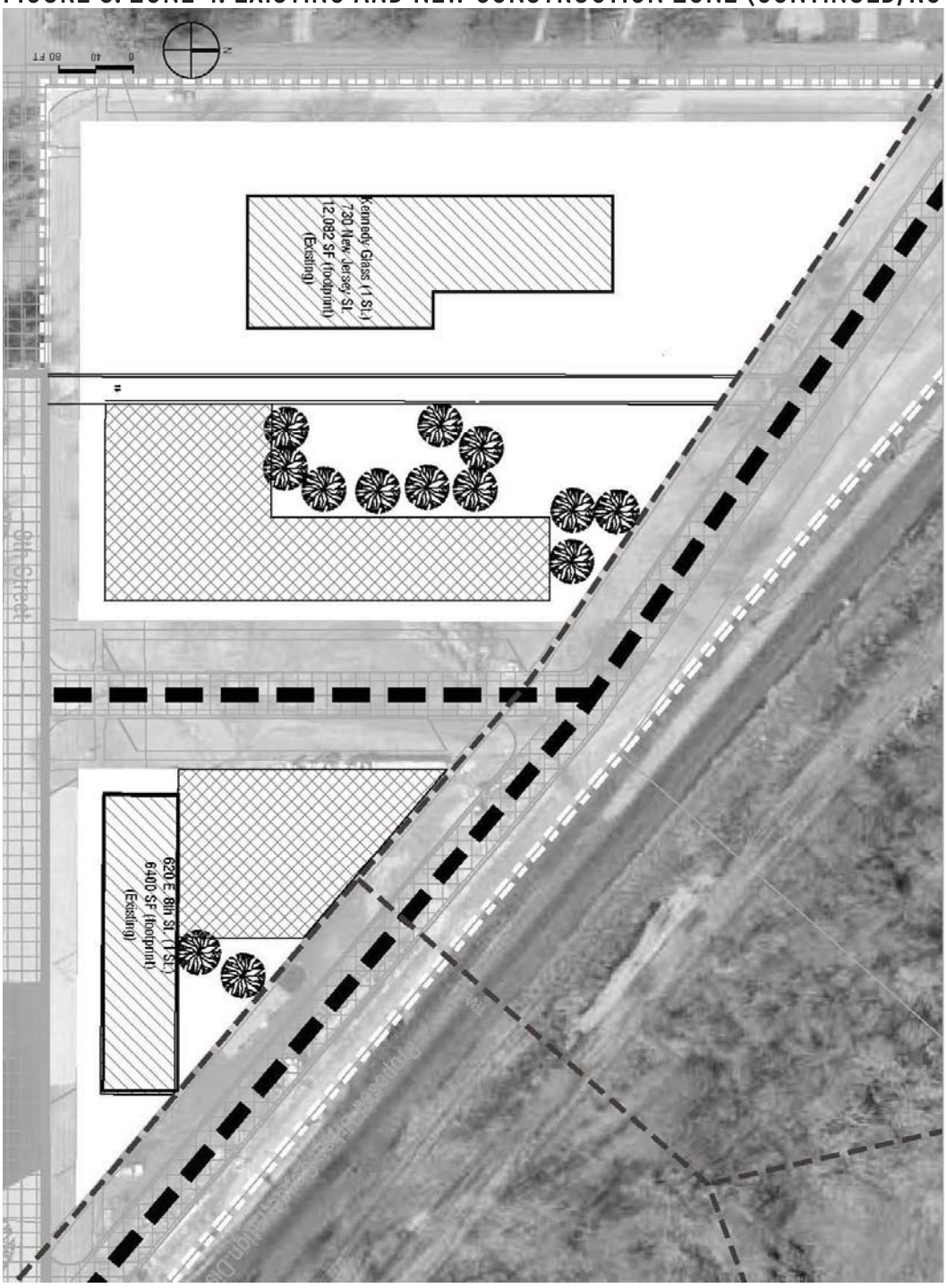
Recommended	Not Recommended
Using light fixtures that are as inconspicuous as possible with the exception of lighting compatible with the district.	Using conduits that are visible from the public right-of-way.
Using incandescent lights to illuminate small projecting and flat signboards and ambient light to illuminate the overall façade.	Using fluorescent light fixtures and high intensity discharge lighting.
Designing the light source for signs as a part of the sign or hiding it from view.	Using neon lighting that accentuates any shape or form of any of the building's elements.

FIGURE 7: ZONE 4 EXISTING AND NEW CONSTRUCTION ZONE



LAND USE PLAN

FIGURE 8: ZONE 4: EXISTING AND NEW CONSTRUCTION ZONE (CONTINUED/ROTATED)



LAND USE PLAN

ZONE 4: EXISTING AND NEW CONSTRUCTION ZONE

NEIGHBORHOOD CONTEXT

This zone is characterized by trapezoidal lots with alignments to both the traditional street grid system and the railroad right-of-way. The parcels were historically characterized by a lack of density, buildings of all sizes, and large amounts of open space, particularly in zones adjacent to railroad right-of-way. They contain several World War II-era Quonset Huts. This zone provides opportunities for new types of development that would retain open spaces and enhance the visual connection to the railroad right-of-way.

Due to its location, Zone 4 is a transitional buffer zone between the Historic and Residential Zones in the UC-O District and the more industrial uses of the railroad, concrete plant, and other potential future developments east of the UC-O District. As a result, the design, scale, massing, and lot openness of the zone should reflect this transitional nature.

SUSTAINABILITY

As a new construction zone, this zone has the most potential for integration of sustainable building practices. Including aspects of green architecture into the building design early on is recommended, and will have the best chance for success.

INFRASTRUCTURE

New construction in this zone will necessitate the need for new street and infrastructure additions, as well. Any additions of this character shall be consistent with those design guidelines established Zone 2, Streetscapes and Alleyways.

ARCHITECTURAL CHARACTERISTICS AND MATERIALS

Recommended	Not Recommended
Retaining the Quonset Huts in adaptive re-use when economically feasible.	Constructing buildings of the size, scale, and density of the residential zones in East Lawrence.
Incorporating new construction that uses mid- to large-scale buildings. Constructing buildings that reference the street grid or the railroad alignment.	
Continuing new mixed-use residential commercial development patterns established in Zone 3 in the zone north of East 8th Street between New Jersey and Pennsylvania Streets, creating a buffer zone or locating large industrial size buildings within surrounding open space.	
Building scale should be consistent with the zoned usage.	"Big Box" architecture.
Building materials and fenestration should be consistent with building use but complementary to the surrounding zones.	

LANDSCAPE

Recommended	Not Recommended
Retaining traditional open spaces.	

ACCESS

Recommended	Not Recommended
Locating dual access drives for service and delivery vehicles so that they do not disrupt pedestrian or vehicular circulation and do not visually detract from the front of the buildings by shifting them to parking areas or providing alley access.	Access routes for delivery vehicles that create routes directly through the residential areas.
Designing and locating access drives so that they prevent headlights from shining into adjacent residential zones.	

PARKING

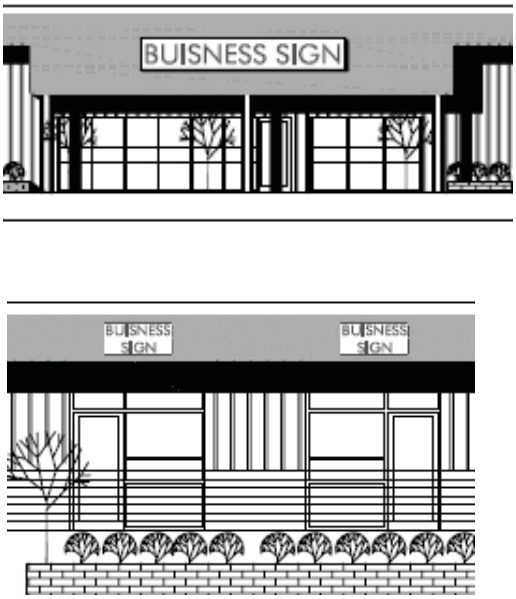
Recommended	Not Recommended
Locating surface parking lots on all sides of the primary buildings and structures.	
Retention of existing on-street parking in front of existing Zone 4 buildings.	
Parking design should be consistent with other zones in the UC-O District.	Large surface lots.
Low bollard lighting will be used to limit lighting impacts to adjacent residential areas.	

SIGNAGE

Recommended	Not Recommended
Having all signs conform with the Sign Code provisions of Article 7 of the Code of the City of Lawrence	
Depending upon the building's use, signs may be oriented toward both pedestrian and vehicular traffic.	
Having storefront façades that do not extend past the	

storefront cornice line. Locating storefront signs in the zone between the display windows and the roofline or the second story. Signs for multiple storefronts within the same building should align with each other.

Using signs that reflect the overall symmetry of the building



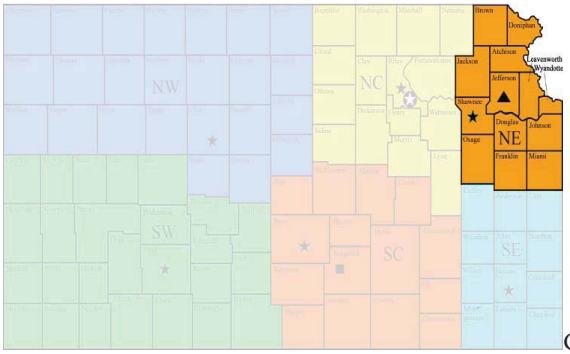
Examples of storefront signage

LIGHTING

Unless noted otherwise, lighting in Zone 4 will be consistent with City of Lawrence Code Section 20-14A01 through Section 20-14A03, or subsequent applicable City standards. Parking lighting shall have a maximum initial illumination value no greater than 0.20 horizontal footcandles at the zone boundary. Nor more than 5 percent of fixture lumens are emitted at an angle of 90 degrees or higher from nadir (straight down) with the exception of minor building lighting. These lighting requirements are adapted from IESNA RP-33-99. In order to limit lighting impacts on adjacent residential properties, low bollard lighting will be utilized in parking areas adjacent to these properties in lieu of standard pole lighting.

APPENDIX A

Preferred Trees for Northeast Kansas



Growing trees successfully depends on the selection of the right trees for the intended site. It is important to match the growing conditions and space available on the site with the cultural requirements and projected size of each tree to be planted. The following four charts on the following pages show the tolerances of individual trees to various environmental conditions as well as the major landscape attributes of each tree. Not all recommended trees for planting in Northeast Kansas are included. The preferred trees listed were recommended by industry professionals such as city foresters, local tree boards, county and horticulture extension agents, commercial arborists and retail/production nursery interests.

KEY TO USING THIS INFORMATION:

TREE SPECIES AND CULTIVARS: The names of the trees are listed in the center of four different charts. Three of the charts list deciduous trees according to average mature height [a plus (+) indicates they may grow slightly larger.] The fourth chart lists evergreen trees. If improved cultivars of the trees are available and recommended, they are listed. Cultivars often possess improved plant characteristics like better fall color; a unique form; more attractive flowers, fruit or bark; greater heat tolerance; or increased pest resistance. Many trees are available in single and multi-stemmed form. Multi-stemmed forms are more likely to be damaged from snow, ice, or wind.

ENVIRONMENTAL TOLERANCES: The left side of each chart indicates whether the tree is tolerant to various environmental conditions including full sun, light shade, alkaline soil, drought or wet soil. Each chart also shows how resistant each tree is to insect and disease pests. A "**G**" (for good) under the appropriate column indicates the tree is strongly tolerant of the characteristic indicated. An "**F**" (for fair) signifies that the tree shows some tolerance. A blank space in a column indicates the tree is not tolerant and should not be subjected to that environmental condition. Specific information on the "alkaline soil" and "pests" categories follows:

ALKALINE SOIL: (**G**) = tree may tolerate soils with a pH up to 8.0 or more; (**F**) = tree generally will tolerate

an alkaline soil up to a pH of 7.5; (blank) = tree may not tolerate alkaline soils; do not plant in alkaline soils to avoid the problem of iron or manganese chlorosis.

PESTS: (**G**) = tree is usually free of insect and disease problems; (**F**) = tree encounters insect or disease pests on an infrequent basis and often is not permanently damaged; (blank) = tree may suffer from pests which may permanently damage or kill the tree and/or the tree may exhibit minor insect and disease problems on a frequent basis which may affect the aesthetics of the tree or insects may commonly be a nuisance.

LANDSCAPE ATTRIBUTES: The right side of each chart includes average mature height and spread of each tree. The size is sometimes highly variable due to the size and shape of different cultivars planted and variability among growing sites. The landscape attributes of flowers, fruit, autumn color and ornamental bark are also listed.

DESIRABLE FLOWERS: (**G**) = the flowers are showy, adding unique ornamental interest to the landscape; (**F**) = the flowers are not particularly showy, but may possess other desirable characteristics such as fragrance; (blank) = the flowers are generally considered insignificant.

SHOWY OR USEFUL FRUIT: (**G**) = fruits are generally aesthetically pleasing; (**F**) = fruits or nuts are not considered unusually showy, but may provide other interest or benefits such as attracting wildlife; (blank) = no showy or useful fruit.

AUTUMN FOLIAGE COLOR: (**G**) = the autumn leaf color is typically quite good (may vary with individual trees, cultivars and environmental conditions, however); (**F**) = the fall color may provide interest in some years; (blank) = autumn foliage color is generally not considered an asset of this particular tree.

ORNAMENTAL BARK: (**G**) = the bark or twigs are considered to be exceptionally ornamental; (**F**) = the bark or twigs (on at least some cultivars) lend interest to the landscape (good color, texture, etc.); (blank) = the bark or twigs are not generally considered to be ornamental.

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ENVIRONMENT (tolerant of)							LANDSCAPE ATTRIBUTES					
FULL SUN	LIGHT SHADE	ALKALINE SOIL (HIGH pH)	DROUGHT	WET SOIL	PESTS (RESISTANT TO)	**SMALL DECIDUOUS TREES** (usually under 20 feet at maturity) Trees with mature height 20 feet or less can be used within 15 feet on either side of utility lines.	MATURE HEIGHT	MATURE SPREAD	DESIRABLE FLOWERS	SHOWY OR USEFUL FRUIT	AUTUMN FOLIAGE COLOR	ORNAMENTAL BARK
	G				F	**Japanese Maple** (Acer palmatum) Protect from summer wind and heat exposure.	15-25	15-25			G	

G	F	F	G	F	F	**Amur Maple** (Acer tataricum var. ginnala) **Cultivars:** 'Compactum', 'Flame' and other improved selections	15-20	15-20			G	
G	G					**Serviceberry (**Amelanchier x grandiflora) **Cultivar:** 'Autumn Brilliance'. Choose superior cultivars and native species.	15-25	15-20	G	G	F	
G	F	G	F		F	**Eastern Redbud** (Cercis canadensis) **Cultivars**: 'Alba', 'Forest Pansy'	20-25+	20-25+	G		F	F
G	F	G	F		F	**Oklahoma Redbud** (Cercis canadensis subspecies texensis 'Oklahoma')	15-20+	15-20+	G		F	F
G	G				F	**Chinese Fringetree** (Chionanthus retusus)	15-25	10-25	G	G		G
G	G				F	**White Fringetree** (Chionanthus virginicus)	10-20	10-20	G			
G		F	F		F	**Common Smoketree** (Cotinus spp.) Purple and green leaf cultivars available	10-15	10-15	G			
G	F	G	G		F	**Winterberry Euonymus** (Euonymus bungeanus)	15-20+	10		G	F	
	G				G	**Star Magnolia** (Magnolia stellata) Protect from summer wind and heat exposure.	15-20	10-15	G			
	G			F	G	**Sweetbay Magnolia** (Magnolia virginiana) Protect from summer wind and heat exposure.	10-30	10-20	F			

G		F	F			**Flowering Crabapple** (Malus spp.) Many cultivars available. Choose disease resistant cultivars only. Superior cultivars include: 'Prairiefire', 'Adirondack', 'Adams', 'Sargeant', Also refer to KSU Research and Extension Crabapple Publication MF-875.	varies	varies	G	G		F
G	F				F	**Chokecherry** (Prunus virginiana) **Cultivar:** 'Canada Red Select'	15-25	10-15	G	G	F	
G		G	F		F	**Japanese Tree Lilac** (Syringa reticulata) **Cultivar:** 'Ivory Silk'	20-25	15-25	G			G

ENVIRONMENT (tolerant of)							LANDSCAPE ATTRIBUTES					
FULL SUN	LIGHT SHADE	ALKALINE SOIL (HIGH pH)	DROUGHT	WET SOIL	PESTS (RESISTANT TO)	**MEDIUM DECIDUOUS TREES** (usually 20 to 40 feet at maturity)	MATURE HEIGHT	MATURE SPREAD	DESIRABLE FLOWERS	SHOWY OR USEFUL FRUIT	AUTUMN FOLIAGE COLOR	ORNAMENTAL BARK
G	F	F	F	F	F	**Trident Maple** (Acer buergeiranum) Some trees could suffer winter injury.	20-35	20-30			G	F
G	G	F	G		G	**Hedge Maple** (Acer campestre) **Cultivar**: Queen Elizabeth™('Evelyn')	25-35	25-35			F	
F	F	F			G	**Paperbark Maple** (Acer griseum)	20-30	15-30			F	G
G	F	F	F		G	**Shantung (Purpleblow) Maple** (Acer truncatum) **Cultivars**-hybrid with A. platanoides: 'Keithsform' (Norwegian Sunset™),	25-30	25-30			F	

						'Warrensred' (Pacific Sunset™).						
F	G				F	**American Hornbeam** (Carpinus caroliniana)	20-30	20-30				

G		F			G	**American Yellowwood** (Cladrastis kentukea)	30-50	40-55	F		F	
G		G	G			**Goldenraintree** (Koelreuteria paniculata)	30-40	30-40	G	G	F	
G		G	G	F	G	**Osage Orange** (Maclura pomifera) **Cultivars**: 'Wichita', 'Whiteshield. Fruitless and thornless cultivars recommended for most community plantings.	30-40+	20-40			G	F
F	G					**Saucer Magnolia** (Magnolia x soulangiana) Protect from summer wind and heat exposure.	20-30	15-25	G			
G		F	F			**Flowering Crabapple** (Malus species) Many cultivars available. Choose disease resistant cultivars only. Superior cultivars include: 'Centurion'; 'Ralph Shay'; Siberian Crab (M. baccata 'Jackii'); 'Spring Snow'; 'Van Eseltine'; White Angel™ ('Inglis'); 'Red Splendor'. Also refer to KSU Research and Extension Crabapple Publication MF-875.	varies	varies	G	G		F
G	G	F	F		G	**Hophornbeam (Ironwood)** (Ostrya virginiana)	25-40	20-30		F	F	F
G		F	G		F	**Callery Pear** (Pyrus calleryana) Several improved cultivars available. Superior cultivars include: 'Chanticleer' (also labeled 'Cleveland Select'), 'Capital', 'Aristocrat', 'Redspire'. 'Bradford' is not a recommended cultivar.	30-40+	10-45	G	F	G	
G		G	G		G	**Chinkapin Oak** (Quercus muehlenbergii)	35-40+	40-45		F	F	
G		G	G		G	**Western Soapberry** (Sapindus drummondii)	25-40+	25-30	G	G	G	F

ENVIRONMENT (tolerant of)							LANDSCAPE ATTRIBUTES					
FULL SUN	LIGHT SHADE	ALKALINE SOIL (HIGH pH)	DROUGHT	WET SOIL	PESTS (RESISTANT TO)	LARGE and VERY LARGE DECIDUOUS TREES (usually 40 feet and larger at maturity)	MATURE HEIGHT	MATURE SPREAD	DESIRABLE FLOWERS	SHOWY OR USEFUL FRUIT	AUTUMN FOLIAGE COLOR	ORNAMENTAL BARK
G	F	F				**Freeman Maple** (Acer x freemanii) **Cultivar:** 'Armstrong'; 'Jeffersred' (Autumn Blaze ®); Autumn Fantasy ™. Poisonous to horses.	50-60	40-50			G	F
G	F	G	G			**Norway Maple** (Acer platanoides) Several cultivars available. Superior cultivars include: 'Emerald	40-50	40-50				

						Queen', 'Superform' (Green leaf cultivars) and 'Fairview', 'Crimson King', 'Royal Red' (Red leaf cultivars).						
G	F			G		**Red Maple** (Acer rubrum) **Cultivars**: Red Sunset ® ('Franksred'); October Glory ®; 'Autumn Flame'; Burgundy Belle ® 'Magnificent Magenta' and columnar forms; Poisonous to horses.	40-60	35-50	F		G	F
G	G	F				**Sugar Maple** (Acer saccharum) **Cultivars:** 'Commemoration'; 'Legacy'; Caddo; 'Fall Fiesta'; 'Bonfire'; all are more heat tolerant/leaf tatter resistant cultivars.	40-60+	30-50			G	
G				G	F	**River Birch** (Betula nigra) **Cultivar**: 'Heritage'	40-60	40-50	F		F	G
G	F		F		F	**European Hornbeam** (Carpinus betulus) Upright cultivars available.	40-60	30-40+				
G		F	G		F	**Persimmon** (Diospyros virginiana)	35-50+	20-35	F	G	F	G
G		G	G		G	**Ginkgo** (Ginkgo biloba) **Cultivars:** 'Autumn Gold'; 'Princeton Sentry'; 'Magyar'. Male cultivars recommended for most community plantings.	50-60+	25-40			G	F
G		G	G	F		**Thornless Honeylocust** (Gleditsia triacanthos var. inermis) **Cultivars**: 'Shademaster', 'Skyline', 'Imperial'.	40-60+	30-50			F	
G		G	G	F	G	**Kentucky Coffeetree** (Gymnocladus dioicus) Seedless cultivars available.	50-60+	30-45		F	F	F
G				G		**Sweetgum** (Liquidambar	50-75	35-50		F	G	F

						styraciflua)						
G	F			G		**Black Tupelo (Black Gum)** (Nyssa sylvatica)	30-50	20-30			G	G
G	F	G	F	G		**London Planetree** (Platanus x acerifolia)	60-80	50-60		F		G

						Cultivar: 'Bloodgood'.						
G		F	G		G	**Sawtooth Oak** (Quercus acutissima)	35-40+	30-45		F	F	
G						**White Oak** (Quercus alba)	60-80	40-60		F	G	
G			F	G	F	**Swamp White Oak** (Quercus bicolor)	50-60	40-60		F	G	F
G			G	F	F	**Shingle Oak** (Quercus imbricaria)	50-60	40-60		F	F	
G		G	G	F		**Bur Oak** (Quercus macrocarpa)	60-80	50-70		F		
G			F	F	G	**Willow Oak** (Quercus phellos)	40-60	30-40			F	
G						**Chestnut Oak** (Quercus prinus)	60-70	60-70				
G		G	F		F	**English Oak** (Quercus robur)	40-60+	45-65		F		
G					F	**Red Oak** (Quercus rubra)	60-75	40-60		F	G	
G		F	F	F	F	**Shumard Red Oak** (Quercus shumardii)	60-80	40-60		F	G	
G			G	G	G	**Baldcypress** (Taxodium distichum)	50-70+	20-50		F	G	F
G	F	F			F	**American Linden** (Tilia americana) **Cultivars**: 'Redmond'	50-60+	35-40	F		F	
G	F	G			F	**Littleleaf Linden** (Tilia cordata) **Cultivars**: 'Greenspire'.	50-60	25-40	F		F	
G	F	G	G	F	F	**Lacebark Elm** (Ulmus parvifolia) **Cultivars: '**Emeri I' (Athena®); **'**Emer II' (Allee®); Bosque™; 'Emerald Prairie'; 'Frontier'.	40-60	35-50		F	F	G

ENVIRONMENT (tolerant of)

LANDSCAPE ATTRIBUTES

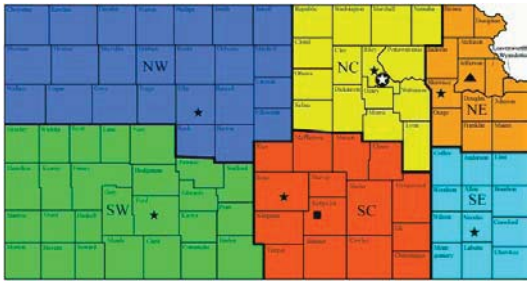
FULL SUN LIGHT SHADE ALKALINE SOIL (HIGH pH) DROUGHTWET SOILPESTS (RESISTANT TO) **EVERGREEN TREES**

MATURE HEIGHTMATURE SPREAD DESIRABLE FLOWERS SHOWY OR USEFUL FRUIT AUTUMN FOLIAGE COLOR ORNAMENTAL BARK

G G G G G	G G F	G G G	**Upright Chinese Juniper** (Juniperus chinensis) Many cultivars available. See your KSU-County Extension office or local nursery for the best recommendations. **Eastern Red Cedar** (Juniperus virginiana) Many cultivars available**.** Superior cultivars include: 'Canaertii' (Canaert Red Cedar), 'Taylor', 'Burkii'; **Black Hills Spruce** (Picea glauca 'Densata') **Norway Spruce** (Picea abies) **Limber Pine** (Pinus flexilis) **Cultivar**: 'Vanderwolf's Pryamid'	varies 30-40+ 30-40+ 40-60 30-40	varies 10- 30 15-20 25-30 15- 30	G G F F F	F F

This publication is coordinated and updated by the Kansas Forest Service. For further information and assistance, or to provide feedback and recommendations to the preferred tree listing please contact:

Kim Bomberger, NE / NC District Community Forester Preferred tree lists are available for other areas of the state.
Kansas Forest Service Visit us on the web for more information. 2610 Claflin Road Manhattan, KS 66502 785-532-3315
kbomberg@oznet.ksu.edu



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KANSAS STATE UNIVERSITY

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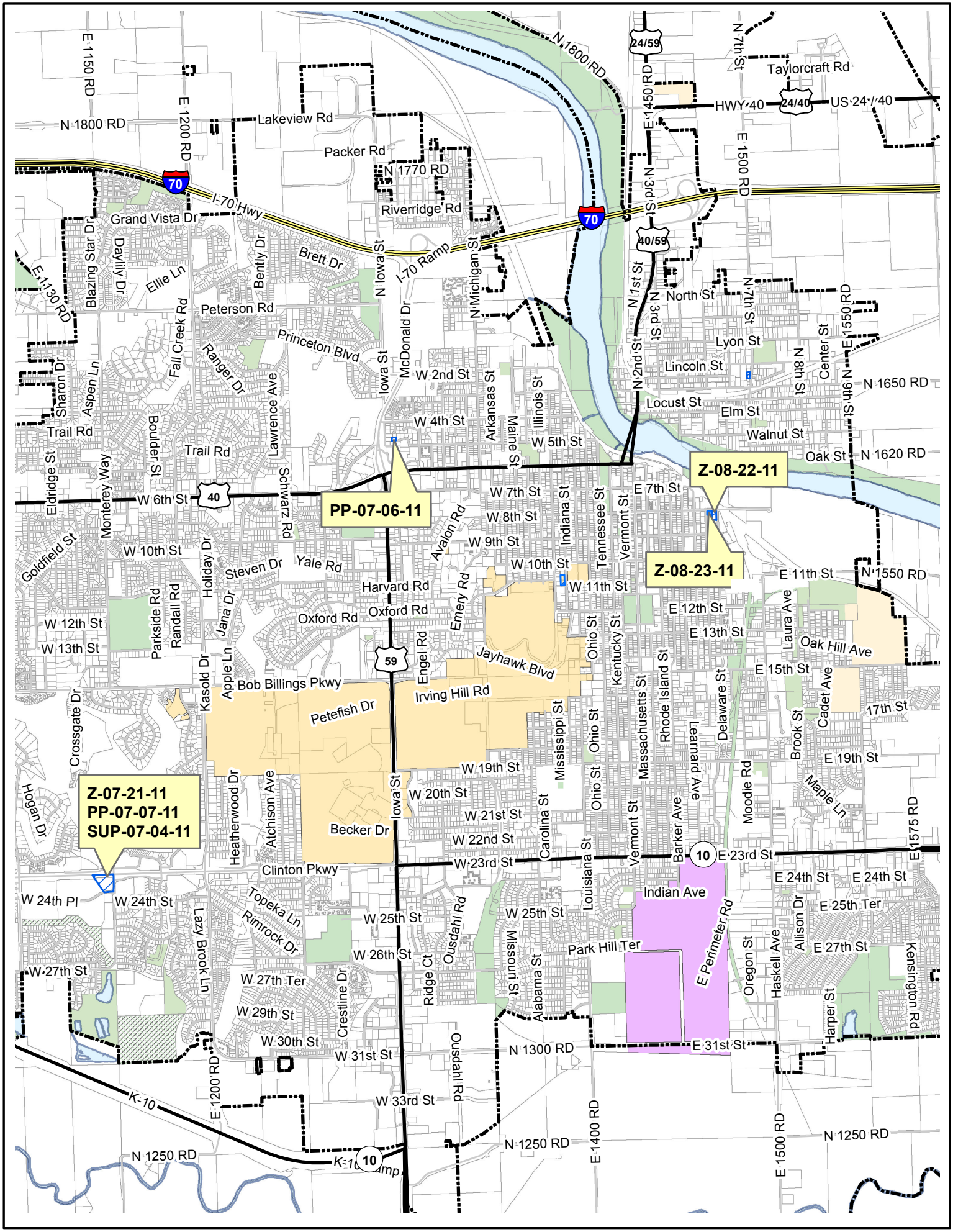
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APPENDIX B

8TH AND PENN NEIGHBORHOOD REDEVELOPMENT DENSITY						
	Bldg	Stories	Residential (sq ft)	Units	Retail (sq ft)	Office (sq ft)
Existing Buildings	720 E. 9th					
	806 Penn	1			1115	
	804 Penn	2			1369	
	Poehler (Main)	1				15508
	2nd floor + basement	2				12893
	Residential		25700	24		
	810 Penn	2			6627	
	826 Penn	1			10444	
	830-832 Penn	1				10220
	846 Penn West	2			2651	
	846 Penn East	1			1556	
	Totals		25700	24	23762	38621
Projected	8th & Penn	3			3600	
	9th & Penn	3			3600	
	Penn Row Phase II	3	11230	10		
	Penn Row Phase III	3	11230	10		
	Penn Row Phase IV	3	11230	10		
	Totals		33690	30	7200	0
	OVERALL TOTALS		59390	54	30962	38621
	Total Development Area (Residential area + Retail area + Office area)					128973
	Percentage Retail (not to exceed 25%; see page 11 of this document)					24.0%

Note: Built, unoccupied space shall be calculated as non-retail space for the purpose of determining a percentage of retail development for the 8th and Penn UC-O District.

Note: A revised Appendix B shall be submitted with each plan review as stated in the Review Principles section (pg. 16) of this document.


Z-08-22-11
Z-08-23-11
PP-07-06-11
Z-07-21-11
PP-07-07-11
SUP-07-04-11
N 1800 RD
Lakeview Rd
Packer Rd
N 1770 RD
Riverridge Rd
I-70 Hwy
I-70 Ramp
Grand Vista Dr
Brett Dr
Bently Dr
Ellie Ln
Peterson Rd
Princeton Blvd
Fall Creek Rd
Ranger Dr
Lawrence Ave
Schwarz Rd
Boulder St
Trail Rd
Sharon Dr
Aspen Ln
Eldridge St
Monterey Way
Goldfield St
W 6th St
W 7th St
W 8th St
W 9th St
W 10th St
W 11th St
W 12th St
W 13th St
Steven Dr
Yale Rd
Holiday Dr
Parkside Rd
Randall Rd
Jana Dr
Harvard Rd
Oxford Rd
Avalon Rd
Emery Rd
Engel Rd
Jayhawk Blvd
Irving Hill Rd
Bob Billings Pkwy
Petefish Dr
Apple Ln
Kasold Dr
Crossgate Dr
Hogan Dr
Heatherwood Dr
Atchison Ave
Becker Dr
Clinton Pkwy
W 19th St
W 20th St
W 21st St
W 22nd St
W 23rd St
W 24th Pl
W 24th St
W 25th St
W 26th St
W 27th St
W 27th Ter
W 29th St
W 30th St
W 31st St
W 33rd St
Topeka Ln
Rimrock Dr
Lazy Brook Ln
Crestline Dr
Ridge Ct
Ousdahl Rd
Oskahl Rd
N 1300 RD
N 1250 RD
E 1200 RD
E 1400 RD
E 1500 RD
E 1575 RD
K-10
K-10 Ramp
N Iowa St
McDonald Dr
N Michigan St
Arkansas St
Maine St
Illinois St
Indiana St
Tennessee St
Vermont St
Ohio St
Kentucky St
Mississippi St
Carolina St
Louisiana St
Massachusetts St
Rhode Island St
Delaware St
Leonard Ave
Barker Ave
Moodie Rd
Brook St
Cadet Ave
Laura Ave
Oak Hill Ave
Maple Ln
Indian Ave
E Perimeter Rd
Park Hill Ter
Allison Dr
Haskell Ave
Oregon St
Harper St
Kensington Rd
E 23rd St
E 24th St
E 25th Ter
E 27th St
E 31st St
E 1130 RD
E 1150 RD
E 1200 RD
E 1450 RD
E 1500 RD
E 1550 RD
N 1620 RD
N 1650 RD
N 1st St
N 2nd St
N 3rd St
N 7th St
N 8th St
N 9th St
North St
Lyon St
Lincoln St
Locust St
Elm St
Walnut St
Oak St
Center St
E 7th St
E 10th St
E 11th St
E 12th St
E 13th St
E 15th St
17th St
E 19th St
Taylorcraft Rd
HWY 40
US 24/40
24/59
40/59
70
59
40
10

PLANNING COMMISSION REPORT
Regular Agenda -- Public Hearing Item

PC Staff Report
9/26/11

ITEM NO. 6 TEXT AMENDMENT TO CITY OF LAWRENCE DEVELOPMENT CODE; CHP 20 (MJL)

TA-8-12-11: Consider amendments to various sections of the City of Lawrence Land Development Code, Chapter 20, regarding revisions to the district criteria and development standards for development adjacent to R (Residential) Districts, clarify other density and dimensional standards, Section 20-1701 to clarify or add terms used in the density and dimensional standards table, and Sections 20-211 and 20-212 to make consistent with proposed changes in Article 6. *Initiated by City Commission on 7/12/11.*

RECOMMENDATION: Staff recommends that the Planning Commission forward a recommendation for approval of the proposed amendments TA-8-12-11 to the Land Development Code, Sections 20-211, 20-212, 20-601, 20-602, and 20-1701 to the City Commission.

Reason for Request: To address inconsistencies in the sections and district criteria and revise standards for development adjacent to RS (Single-Dwelling Residential) Districts.

RELEVANT GOLDEN FACTOR:
- The amendment is in conformance with the comprehensive plan.

PUBLIC COMMENT RECEIVED PRIOR TO PRINTING
- None

OVERVIEW OF PROPOSED AMENDMENT
The amendments are generally related to the density and dimensional standards table in Article 6. The main change is modifying the standard for development next to an RS zoned property from Section 20-602(g)(2), into the table in Section 20-601(a). Additional clean-up and consistency changes were made which lead to making changes to Sections 20-211, 20-212 and 20-1701. A more detailed description of the proposed changes can be found in the staff review section of this staff report. A general list of revised standards addressed is listed below.
- Removal of standards out of the CC and CR Districts descriptions in Article 2
- Revisions to setbacks (side and rear) adjacent to RS zoned districts
- Clarification of Max Building Lot Coverage and Max. Impervious Surface Coverage

CONFORMANCE WITH THE COMPREHENSIVE PLAN
Horizon 2020 speaks to infill development that is compatible to the surrounding development and appropriate transition between uses. This amendment seeks to make the standards cleaner and more prescriptive as they related to RS zoned compatibility.

CRITERIA FOR REVIEW AND DECISION-MAKING
Section 20-1302(f) provides review and decision-making criteria on proposed text amendments. It states that review bodies shall consider at least the following factors:

1) Whether the proposed text amendment corrects an error or inconsistency in the Development Code or meets the challenge of a changing condition; and

Staff believes that the proposed changes are correcting inconsistencies in the code and clarifying standards.

2) Whether the proposed text amendment is consistent with the Comprehensive Plan and the stated purpose of this Development Code (Sec. 20-104).

Horizon 2020 supports protection of residential development and appropriate transitions between uses. These changes will help protect and enhance the general welfare of the citizens of Lawrence while clarifying the expectations for the development community.

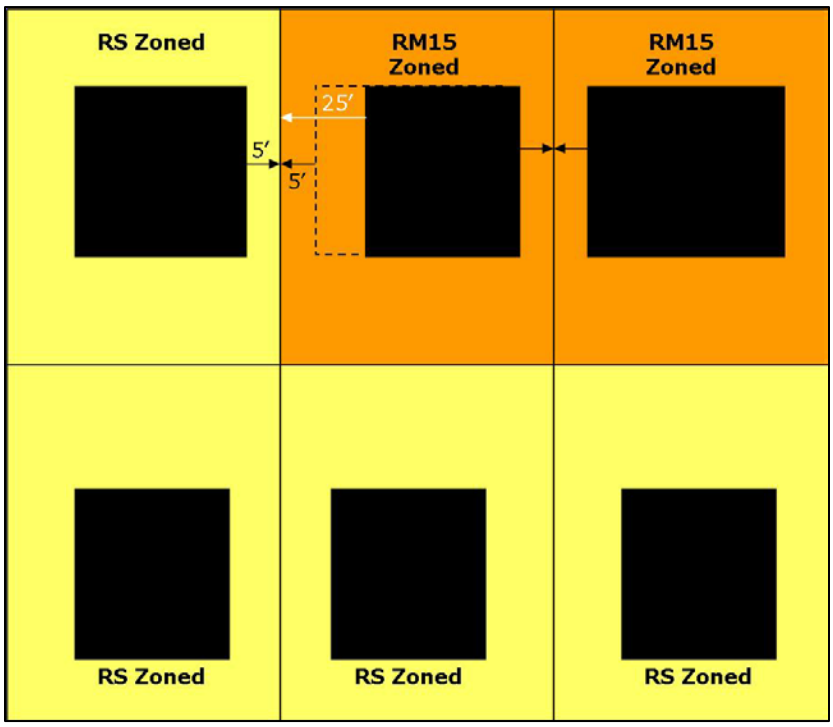
Staff Review

At the July 12th City Commission meeting, the Commission denied proposed changes to Article 6 that were included with an amendment to Section 602(g)(2) and initiated a new text amendment to look at the proposed changes in a broader context with potential changes to the Density and Dimensional Tables. Below is a summary of the proposed changes and attached is the draft language in the code sections.

- **Sections 211-212 CC, Community Commercial District & CR, Regional Commercial District**
  Staff is proposing to remove a standard regulating the maximum building coverage of CC (Community Commercial) and CR (Regional Commercial) lots. This is a standard and should not be in the district description and is better addressed in the Density and Dimensional Table.

- **Section 601(a) Residential Districts**
  - Staff is proposing to add a standard for interior side setbacks for property adjacent to RS zoned property. This would be a new row in the table. This change moves and modifies a standard from the text in Section 20-603(h)(2), into the Density and Dimensional Table. The standard would require more distance between single-dwelling residential structures that have a maximum building height of 35' and structures built on RM zoned property that can generally be built to 45'. This helps to address potential issues of taller multi-dwelling structures being built 10' away from single story structures. This can especially be an issue in infill situations. The staff proposal a lesser amount of setback than what would be required today if a building on an RM zoned property is to be built directly adjacent to a property zoned RS. The proposal moves the standard into the Density and Dimensional Table where it is easier to find and reduces the amount while still offering protections to the RS zoned property.

The example shows setbacks today (dashed building outline) if an RM developed lot matched the building height of the RS structure, the side yard setbacks of the other lots are 5'. If the RM property is developed higher than the adjacent RS structure, then the setback=height. In staff's opinion, the standard established in Section 20-602 (which was new to the Code in 2006) is extremely burdensome to the RM property. Staff proposes deleting the previous standard and adding the standard in white (25') to the Density and Dimensional Table. The total distances between structures would be 30' as opposed to 10' if height is matched or possibly 45' if the height matches the setbacks.



- Clarification of terms to make them consistent between tables is proposed for the Max. Building Coverage and Max. Impervious Surface Coverage. Additionally, the terms are able to be linked back to definitions in Article 17.

- Footnote 5 was revised to clarify what sections specifically the code refers to for additional setbacks. Specific sections are proposed to be referenced and the addition of language that if bufferyards are required, the more restrictive setback shall apply. The text is proposed to read "*Additional Setback standards may be applicable to properties developed adjacent to RS zoned properties. These standards include but are not limited to Section 20-1004, 20-1101, and 20-1307. Where Bufferyards are required, the more restrictive standard shall apply.*" For example if a minimum 5' side yard is required and a minimum 15' bufferyard is also required, the building must meet the bufferyard standards because it is more restrictive.

- Footnote 6 is redundant as the RM12D District is listed in the table with the RM12 District and can therefore be deleted.

20-601(a) Residential Districts

Standard	RS40	RS20	RS10	RS7	RS5	RS3	RSO	RM12/ RM12D ~~[6]~~	RM15	RMO	RM24	RM32	RMG
Min. Lot Area (sq. ft.)	40,000	20,000	10,000	7,000	5,000	3,000	5,000	6,000	6,000	5,000	6,000	6,000	10,000
Min. Lot Area per Dwelling Unit (sq.ft.)	40,000	20,000	10,000	7,000	5,000	3,000	--	--	--	--	--	--	–
Max. Dwelling Units per acre	--	--	--	--	--	--	15	12	15	22	24	32	1
Min. Lot Width (ft.)	150	100	70	60	40	25	50	60	60	50	50	50	50
Min. Lot Frontage	40	40	40	40	40	25	40	60	60	40	50	50	50
Min. Setbacks (ft.):													
Front [5]	25	25	25	25	20	15 [1]	25	25	25	25	25	25	25
Side (Exterior) [2][5]	25/25	25/20	25/15	25/10	20/10	15/10	25/10	25/10	25/10	25/10	25/10	25/10	25/10
Side (Interior) [5]	20	20	10	5	5	5	5	5	5	5	5	5	5
Side (Interior-adj RS) [5]	--	--	--	--	--	--	--	--	25	25	25	25	25
Rear [3][5]	30/35	30/35	30/25	30/25	20/25	20/25	20/25	20/25	25/25	20/25	20/25	20/25	20/25
Max. Bldg. Coverage (% of site)	15 [4]	30 [4]	40 [4]	45 [4]	50 [4]	50 [4]	50 [4]	50 [4]	50 [4]	50 [4]	50 [4]	60 [4]	60 [4]
Max. Impervious Surface Coverage (% of site)	25 [4]	50 [4]	70 [4]	70 [4]	75 [4]	75 [4]	75 [4]	75[4]	75 [4]	75[4]	75[4]	80[4]	80[4]
Min. Outdoor Area (per Dwelling):													
Area (sq. ft.)	None	None	None	None	240	150	None	50	50	50	50	50	None
Dimensions (ft.)	N/A	N/A	N/A	N/A	12	10	N/A	5	5	5	5	5	NA
Max. Height (ft.)	35	35	35	35	35	35	35	35	45	45	45	45	35[4]

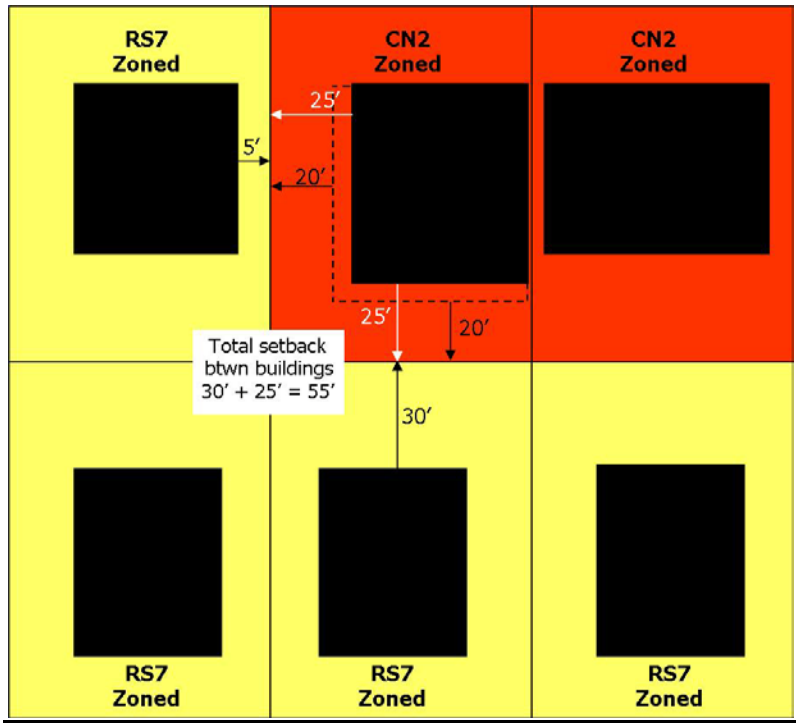
[1] Minimum garage entrance Setback = 20 feet
[2] First number represents minimum Exterior Side Setback when subject Lot is adjacent to an abutting interior Side Lot Line. Second number represents minimum Exterior Side Setback when subject Lot is adjacent to an abutting Rear Lot Line.
[3] First number represents minimum Rear Setback for Single Frontage Lot. Second number represents minimum Rear Setback for double Frontage (or through) Lot.
[4] Applies only to Lots platted after the Effective Date or any improvements on a property after the Effective Date which increase the Building coverage or impervious coverage.
[5] Additional Setback ~~restrictions~~ standards may be applicable ~~apply~~ to properties developed adjacent to RS zoned properties. These standards include but are not limited to Section 20-1004, 20-1101, and 20-1307. ~~where expressly required elsewhere in the Development Code.~~ Where Bufferyards are required, the more restrictive standard shall apply.
~~[6] Density and Dimensional Standards for the RM12D District are the same as those for the RM12 District.~~

- **Section 601(b) Non-Residential Districts**
  - The text amendment proposes to increase the interior side setback when adjacent to an R District for the CO (Commercial Office) and CN2 (Neighborhood Commercial Center) Districts. Both standards are proposed to be increased from 20' to 25'. This is consistent with the similar interior side setback for CC District which is 25'. The changes were based on the maximum permitted height for the districts which are 50' for the CO and the CC Districts and 40' for the CN2 District and attempting to establish similar setbacks for similar potential heights.

  - Staff is proposing the addition of a row to the Density and Dimensional Table with standards for rear setbacks adjacent to RS Districts. This helps address the standard that is proposed to be removed from Section 20-603(h)(2). This provides additional building setback of the non-residential structure from the RS zoned property since the non-residential properties can be developed to a greater height. The staff proposal a

lesser amount of setback than what would be required today if a building on an RM zoned property is to be built directly adjacent to a property zoned RS. The proposal moves the standard into the Density and Dimensional Table where it is easier to find and reduces the amount while still offering protections to the RS zoned property.

The example below shows setbacks today (dashed building outline) if a non-residential property is developed at the same building height as the adjacent RS structure, the side yard setbacks are 5'. If the non-residential property is developed higher than the adjacent RS structure, then the setback=height. In staff's opinion, the standard established in Section 20-602 (which was new to the Code in 2006) is extremely burdensome to the RM property. Staff proposes deleting the previous standard and adding the standard in white (25') to the Density and Dimensional Table. Total rear distance between structures is 55' as opposed to 50' or in this example, 30'+45' (height)=75'.



- The term Max. Lot Coverage was changed to Max. Building Coverage. This is a consistency issue between the residential and non-residential tables. Also this proposed change will clarify some issues in that the max lot coverage standards conflicted with the max impervious lot coverage standards with no definition of either term. Once these terms were clarified, it appeared that some of the standards were inadvertently switched at some point in time. If left as is, some standards would read that the percent of building coverage standards could be more than the percent of impervious surface coverage. The impervious surface coverage needs to be the same or larger than the building coverage standards to consider parking and other possible impervious amenities.

- The maximum building height for the IL (Limited Industrial) District is proposed to be increased from 45' to 60'. Though the IL District would be considered a medium-high intensity industrial district, it consistently has the lowest maximum building height. The

proposed change would be consistent with the maximum building height of the IBP (Industrial/Business Park) District.

- Footnote 1 is proposed to be updated to add a local street right-of-way designation for setbacks. Many industrially zoned property are located on a local streets and by practice, staff has been using the regulations as proposed.

- Footnote 8 is proposed to be deleted, in staff's opinion, a 25% building coverage limitation would encourage large sites in order to build larger buildings and does not promote compact development. The standard would be regulated in the proposed table.

- Footnote 9 is proposed to be changed consistent with the proposed Footnote 5 in the residential table to add specific reference to sections regarding setbacks adjacent to RS zoned property.

- Footnote 10 is proposed to be deleted and indicated in the Density and Dimensional Table with the IBP District as the note states.

- Footnotes 11 and 12 are being renumbered to reflect the deleted footnotes.

- Footnote 13 is proposed to be deleted as changes to the table are proposed to address this issue and the referenced section is proposed to be deleted.

- Footnotes 14 and 15 are being renumbered to reflect the deleted footnotes.

- All footnotes that are renumbered are updated in the table.

20-601(b)

Standard	CN1	CO	CN2	CD	CC	CR	CS	IBP/GPI/H ~~[10]~~	IL	IG	OS
Min. Site Area	5,000 sq. ft	5,000 sq.ft.	2 Ac.	2,500	5 Ac.	40 Ac	-	5 Ac.	20,000 sq.ft.	5,000 sq.ft.	–
Max. Site Area	1 Ac.	–	15 Ac.	–	–	–	-	–	–	–	–
Min. Lot Area (sq. ft.)	5,000	5,000	20,000	2,500	20,000	20,000	5,000	20,000	20,000	5,000	–
Min. Lot Width (ft.) ~~[12]~~ [10]	50	50	100	25	100	150	50/100	200	100	50	–
Min. Setbacks (ft.)											
Front [9]	[6]	20	20	0	25	25	25	[1]	[1]	[1]	[3]
Side (Exterior) [2]~~[9]~~ [8]	[3]/20	[3]/20	[3]/20	[3]/0	[3]/20	[3]20	[3]15	[1]	[1]	[1]	35
Side (Interior–adj. R) ~~[9]~~ [8]	10	~~20~~ 25	~~20~~ 25	20	25	45	12	[1]	[1]	[1]	20
Side (Interior–adj. Non-R)	0	5	0	0	0	0	0	[1]	[1]	[1]	15
Rear (adj. RS) [4] [8]	25/[3]	25/[3]	25/[3]	10/[3]	25/[3]	30/[3]	25/[3]	[1]	[1]	[1]	10/[3]
Rear (adj. Non-RS) [4]~~[9]~~ [8]	20/25	15/25	20/25	0	12/25	30	12/25	[1]	[1]	[1]	0
Max. Front Setback	[6]	NA	NA	5[7]	20	0	NA	NA	NA	NA	NA
~~Max. Lot Coverage (%)~~ Max. Bldg. Coverage (% of site)	65 [5]~~[11]~~ [9]	65 [5]~~[11]~~ [9]	75 [5]~~[11]~~ ~~[9]~~	100	~~85~~ 80 [5]~~[11]~~ [9]	~~80~~ 75 [5]~~[11]~~ [9]	80 [5]~~[11]~~ [9]	65 [5]~~[11]~~ ~~[9]~~	~~85~~ 75 [5]~~[11]~~ ~~[9]~~	~~85~~ 75 [5]~~[11]~~ [9]	NA
Max. Impervious ~~Lot~~ Surface Coverage (%)	75 [5]~~[11]~~ [9]	75 [5]~~[11]~~ [9]	80 [5]~~[11]~~ ~~[9]~~	100	~~80~~ 85[5] ~~[8]~~[11] [9]	~~75~~ 80[5] ~~[8]~~[11] [9]	80 [5]~~[11]~~ [9]	75 [5]~~[11]~~ ~~[9]~~	~~75~~ 85 [5]~~[11]~~ ~~[9]~~	~~75~~ 85 [5]~~[11]~~ [9]	NA
Min. Outdoor Area (per unit)											
Area (sq. ft.)	50	–	50	–	–	–	50 [5]~~[11]~~ [9]	–	–	–	–

Dimensions (ft.)	5	–	5	–	–	–	5 [5]~~[11]~~ [9]	–	–	–	–
Max. Height (ft.) ~~[13]~~	25	50	45	90 [7]	50	75	45	60	~~45~~ 60	75	35

[1] Minimum Setbacks are as follows:

District	Abutting Street Right-of-Way			Abutting Other Lot Lines	
	Across From R District	Across From Non- R District		Abutting R District or Lawrence SmartCode District	Abutting Non-R District
		Arterial	Collector or Local		
IBP/GPI/H ~~[10]~~	40	40	~~40~~ 25	40	15
IL	50~~[14]~~ [11]	50	25	20~~[15]~~ [12]	15
IG	50 ~~[14]~~ [11]	50	25	50 ~~[15]~~ [12]	15

[2] First number represents minimum Exterior Setback to an abutting Side Lot Line. Second number represents minimum Exterior Setback to an abutting Rear Lot Line
[3] Same as Front Yard of abutting Lot
[4] First number represents minimum Rear Setback for Single Frontage Lot. Second number represents minimum Rear Setback for double Frontage (or through) Lot
[5] Applies only to Lots platted after the Effective Date.
[6] Setback of Building constructed after the Effective Date shall be within 1 foot of the average Setback of existing Buildings on the same Block on the same side of the Street.
[7] Subject to location and Height limitations in Downtown Design Guidelines and Downtown Design Standards.
~~[8] Maximum Building coverage in CC and CR districts is 25%.~~
~~[9]~~ [8] Additional Setback ~~restrictions~~ standards may be applicable ~~apply~~ to properties developed adjacent to RS zoned properties. These standards include but are not limited to Section 20-1004, 20-1101, and 20-1307. ~~where expressly required elsewhere in the Development Code.~~ Where Bufferyards are required, the more restrictive standard shall apply.
~~[10] Density and Dimensional Standards for the GPI and H Districts shall be the same as those established in the IBP District.~~
~~[11]~~ [9] Applies to any Significant Development Project.
~~[12]~~ [10] First number represents the minimum existing Lot Width. The second number represents the required Lot Width for a Lot platted after the Effective Date.
~~[13] Maximum Height may be subject to the standards of Section 20-602(h)(2) when located adjacent to RS properties.~~
~~[14]~~ [11] Setback shall be 25 feet for all IG and IL properties zoned M-2 under the previous zoning code.
~~[15]~~ [12] Setback shall be 20 feet for all IG and IL properties zoned M-2 under the previous zoning code.

- **Section 601(c) Mixed Use District**
  - The Max. Impervious Coverage standard was updated to be consistent with the residential and non-residential tables to read Max Impervious Surface Coverage.
  - Footnote 8 is proposed to be updated to reflect a proposed deletion and renumbering of the section of the code referenced.

20-601(c)

Standard	Mixed Use District Development Zones		
	Primary	Secondary	Tertiary
Min. Site Area (sq. ft)	20,000		
Max. Site Area (acres)	20		
Min. Lot Area (sq. ft.)	3,000		
Min. Lot Width (ft.) [12]	25		
Max. Dwelling Units (per acre)	32	15	12
Setback Range: Minimum to Maximum (in feet)			
Front	0-10 [1]	0-20 [1]	0-25 [1]
Side (Exterior)	0-10 [1]	0-20 [1]	0-25 [1]
Side (Interior)	0-5	0-5	0/5 [2]
Rear (when abutting Alley)	0-10 [3]	0-20	10-30 [4]
Rear (no Alley) [5]	20/0-10 [1]	20/0-20 [1]	20/10-30 [1]
Max. Building Coverage (% of Lot)	100 [6]	85 [6]	75 [6]
Max. Impervious Surface Coverage (% of Lot)	100 [6]	95 [6]	85 [6]
Max. Height (ft.)	48 [7]	36 [7]	24 [7]
Minimum Outdoor Area (per Dwelling Unit)			
Area (sq. ft.)	50 [8]	50 [8]	50 [8]
Dimensions (ft.)	4 [8]	4 [8]	4 [8]
Min. Dimensions of Ground Level Nonresidential Spaces in Mixed Use Buildings			
Floor to Floor Height (ft.) [9]	12	12	12
Area (sq. ft.) [9]	800 [10]	600 [10]	500 [10]

[1] Corresponding Public Frontages shall be designed for each Development Zone.
[2] First number represents the required Setback for all attached Structures, second number represents the required Setback for detached Structures.
[3] May be up to 25 feet to accommodate service/delivery uses.
[4] Setback may be reduced to zero feet for garages or garages with internal Accessory Dwelling Units.
[5] First number represents the minimum Rear Setback for a Single Frontage Lot. Second number range represents minimum/maximum Rear Setback for double Frontage (through) Lots. The Rear Yard for double-Frontage lots shall be considered a Public Frontage and shall be designed as such in accordance with Section 20-1108(j).
[6] Applies only to Lots platted after the Effective Date.
[7] Maximum Height may only be increased by redemption of Development Bonuses as per the standards of Section 20-1108(h) or by Special Use Permit.
[8] Minimum Outdoor Area is not required for each Dwelling Unit onsite if a public park is located within ¼ of a mile of the site. If not available, the Outdoor Area shall be provided as per the standards of Section 20-602(~~g~~h).
[9] Minimum dimensions for the floor to floor Height and Gross Floor Area for ground level nonresidential uses are necessary in order to ensure that the dimensions of the space meet the needs of nonresidential tenants.
[10] Or 20% of the Lot Area when located on Lots whose width is less than 50 feet, whichever is greater.

- **Section 602**
  - **602(f)**
    This subsection is proposed to be deleted from this section and moved to Article 17 Terminology, Section 1701. This is a definition and should not be with the standards.

  - **602(g)(2)**
    Deleted and addressed in the Density and Dimensional Tables in Section 601(a) and 601(b).

  - Re-lettered portions due to proposed deletions

- **Section 1701 General Terms**
  - Move the term Building Coverage from Section 602(f) to Section 1701 General Terms. Staff is not proposing changing the definition text at this time.

Staff Recommendation

Staff recommends that the Planning Commission forward a recommendation for approval of the proposed amendments TA-8-12-11 to the Land Development Code, Sections 20-211, 20-212, 20-601, 20-602, and 20-1701 to the City Commission.

20-211 CC, COMMUNITY COMMERCIAL DISTRICT

(a) Purpose

(1) The CC, Community Commercial Centers District, is primarily intended to implement the Comprehensive Plan's Community Commercial Centers policy for commercial development at a community scale to serve multiple neighborhoods. Within the Community Commercial Center classification there are two categories of commercial centers; the CC200 Center and the CC400 Center. Permitted uses are the same in both categories; Density and dimensional standards are greater in the CC400 Center than in the CC200 Center.

(2) The Primary Purpose of the CC200 Center is to provide for the redevelopment of existing Community Commercial Centers and to provide an alternative for the existing highway strip commercial areas.

(3) The Primary Purpose of the CC400 Centers is to provide opportunities for development of new Community Commercial Centers for fringe areas as neighborhoods grow and develop.

(b) Principal Uses

Principal Uses are allowed in CC Districts in accordance with the Use Table of Article 4.

(c) Accessory Uses and Accessory Structures

Accessory Uses and Structures are permitted by right in connection with any lawfully established Principal Use, except as otherwise expressly provided in this Development Code. Additionally, Accessory Uses are subject to the same regulations as the Principal Use. Accessory Uses and Structures, including Home Occupations are subject to the regulations of Section 20-532 et seq.

(d) Density and Dimensional Standards

Unless otherwise expressly stated, all development in CC Districts shall comply with the City's Comprehensive Land Use Plan and Density and Dimensional Standards of Article 6, as modified by the design standards set forth in Section 20-526. The following additional Density and Dimensional Standards shall apply in the CC District:

(1) Site Requirements

Not all corners of a CC200 Commercial Node shall be devoted to commercial uses. For a Center that has Buildings between 40,000 and 100,000 gross square feet in size, the maximum gross square feet of the Center shall not exceed 50% of the allowable commercial square feet for a CC200 Commercial Node.

A minimum of 95% of the commercial gross square feet of a new CC400 Center shall be located on two (2) or fewer corners of the Commercial Node intersection. If there are remaining allowable square feet at a Node (intersection) after two or fewer corners are developed, one of the remaining corners may have 50% or less of the remaining 400,000 gross square feet of allowable commercial space. Any corner of an intersection where the gross square feet of commercial space is 20,000 or more shall have a minimum site area of 20 acres and a width to depth ratio between 1:1 and 3:2.

(2) Lot Requirements

Lot Area of any development within the CC Centers District shall maintain a width-to-depth ratio between 1:1 and 3:2. ~~A maximum Building coverage of 25% shall apply to all development within the CC Centers District.~~

(3) Floor Area Requirements

CC200 Centers: CC200 Centers shall contain no more than 200,000 gross square feet of the entire Node's commercial space as provided in Chapter 6 of Horizon 2020. Floor Area of any Structure for a Principal Use within a CC200 Center shall not exceed 100,000 gross square feet. Within a Large Retail Establishment, no more than 15% of the Floor Area may be devoted to ancillary uses separate in management or operation from the principal retail use. Ancillary uses shall take their public Access internally from the larger Retail Establishment. General retail stores (including general merchandise and apparel) shall not exceed 65,000 gross square feet.

CC400 Centers: CC400 Centers shall contain no more than 400,000 gross square feet of the entire Node's commercial space as provided in Chapter 6 of Horizon 2020. Floor Area of any Structure for a Principal Use within a CC400 Center shall not exceed 175,000 gross square feet. Within a Large Retail Establishment, no more than 15% of the Floor Area may be devoted to ancillary uses separate in management or operation from the principal retail use. Ancillary uses shall take their public Access internally from the larger Retail Establishment.

(e) Street Access

Development in the CC Centers District shall take Access from a Collector Street, Arterial Street, or designated highway. CC200 Centers shall be located at Collector/Arterial Street intersections or Arterial/Arterial Street intersections. CC400 Centers shall be located at the intersection of two Arterial Streets that have at least a four-lane cross section or at the intersection of a four-lane Arterial Street with a State or Federally designated highway. Whenever possible, CC Centers development shall share direct or indirect Access through common curb cuts or private Access roads. When the CC Center site abuts a controlled intersection, Access shall be directed to a side street with adequate distance between the intersection and the site Access point(s).

(f) Other Regulations

There are a number of other Development standards that may apply to development in Base Districts, including but not limited to the following:

(1)	General Development Standards	See Article 11.
(2)	Landscaping	See Article 10.
(3)	Off-Street Parking and Loading	See Article 9.
(4)	Outdoor Lighting	See Section 20-1103.
(5)	Overlay Districts	**See Article 3.**

20-212 CR, REGIONAL COMMERCIAL DISTRICT

(a) Purpose

The CR, Regional Commercial District, is primarily intended to implement the Comprehensive Land Use Plan's Regional Commercial Center policy of providing the same services as a Community Commercial Center but for a regional market area, offering a greater variety and number of general merchandise, apparel, furniture stores and other tenants. Regional Commercial Centers shall contain no more than 1.5 million gross square feet of commercial space.

(b) Principal Uses

Principal Uses are allowed in CR Districts in accordance with the Use Table of Article 4.

(c) Accessory Uses and Accessory Structures

Accessory Uses and Structures are permitted by right in connection with any lawfully established Principal Use, except as otherwise expressly provided in this Development Code. Also, unless otherwise stated, Accessory Uses are subject to the same regulations as the Principal Use. Accessory Uses and Structures, are subject to the regulations of Section 20-532 et seq.

(d) Density and Dimensional Standards

Unless expressly stated, all development in CR Districts shall comply with the City's Comprehensive Land Use Plan and the Density and Dimensional Standards Article 6. The following additional Density and Dimensional Standards apply in the CR District:

(1) Site Requirements

Site area of any development within the CR District shall be no less than 40 acres and shall have a minimum primary street Frontage of 1,400 linear feet.

(2) Lot Requirements

Lot Area of any development within the CR District shall maintain a width-to-depth ratio between 1:1 and 3:2~~ with a maximum Building coverage not to exceed 25%~~.

(3) Floor Area Requirements

Floor Area of any Structure for a Principal Use within the CR District shall not exceed 175,000 gross square feet. Within a Large Retail Establishment, no more than 15% of the Floor Area may be devoted to ancillary uses separate in management or operation from the principal retail use. Ancillary uses shall take their public Access internally from the larger Retail Establishment.

(e) Street Access

Development in the CR Districts shall be located at the intersection of two State or Federally designated highways or the intersection of a four-lane Arterial Street and a State or Federally designated highway. Whenever possible, such Commercial Development shall share direct or indirect Access through common curb cuts or private Access roads. When the Commercial Development abuts a controlled intersection, Access shall be directed to a side street with adequate distance between the intersection and the site Access point(s).

(f) Other Regulations

There are a number of other Development standards that may apply to development in Base Districts, including but not limited to the following:

(1)	General Development Standards	See Article 11.
(2)	Landscaping	See Article 10.

(3)	Off-Street Parking and Loading	See Article 9.
(4)	Outdoor Lighting	See Section 20-1103.
(5)	Overlay Districts	**See Article 3.**

ARTICLE 6. DENSITY AND DIMENSIONAL STANDARDS

20-601 Density and Dimensional Standards Tables
20-602 Measurement of and Exceptions to Density and Dimensional Standards

20-601 DENSITY AND DIMENSIONAL STANDARDS

(a) Residential Districts

Unless otherwise expressly stated, all development in R Districts shall comply with the Density and Dimensional Standards of the following table:

Standard	RS40	RS20	RS10	RS7	RS5	RS3	RSO	RM12/ RM12D ~~[6]~~	RM15	RMO	RM24	RM32	RMG
Min. Lot Area (sq. ft.)	40,000	20,000	10,000	7,000	5,000	3,000	5,000	6,000	6,000	5,000	6,000	6,000	10,000
Min. Lot Area per Dwelling Unit (sq.ft.)	40,000	20,000	10,000	7,000	5,000	3,000	--	--	--	--	--	--	–
Max. Dwelling Units per acre	--	--	--	--	--	--	15	12	15	22	24	32	1
Min. Lot Width (ft.)	150	100	70	60	40	25	50	60	60	50	50	50	50
Min. Lot Frontage	40	40	40	40	40	25	40	60	60	40	50	50	50
Min. Setbacks (ft.):													
Front [5]	25	25	25	25	20	15 [1]	25	25	25	25	25	25	25
Side (Exterior) [2][5]	25/25	25/20	25/15	25/10	20/10	15/10	25/10	25/10	25/10	25/10	25/10	25/10	25/10
Side (Interior) [5]	20	20	10	5	5	5	5	5	5	5	5	5	5
Side (Interior-adj RS) [5]	--	--	--	--	--	--	--	--	25	25	25	25	25
Rear [3][5]	30/35	30/35	30/25	30/25	20/25	20/25	20/25	20/25	25/25	20/25	20/25	20/25	20/25
Max. Bldg. Coverage (% of site)	15 [4]	30 [4]	40 [4]	45 [4]	50 [4]	50 [4]	50 [4]	50 [4]	50 [4]	50 [4]	50 [4]	60 [4]	60 [4]
Max. Impervious Surface Coverage (% of site)	25 [4]	50 [4]	70 [4]	70 [4]	75 [4]	75 [4]	75 [4]	75[4]	75 [4]	75[4]	75[4]	80[4]	80[4]
Min. Outdoor Area (per Dwelling):													
Area (sq. ft.)	None	None	None	None	240	150	None	50	50	50	50	50	None
Dimensions (ft.)	N/A	N/A	N/A	N/A	12	10	N/A	5	5	5	5	5	NA
Max. Height (ft.)	35	35	35	35	35	35	35	35	45	45	45	45	35[4]

[1] Minimum garage entrance Setback = 20 feet
[2] First number represents minimum Exterior Side Setback when subject Lot is adjacent to an abutting interior Side Lot Line. Second number represents minimum Exterior Side Setback when subject Lot is adjacent to an abutting Rear Lot Line.
[3] First number represents minimum Rear Setback for Single Frontage Lot. Second number represents minimum Rear Setback for double Frontage (or through) Lot.
[4] Applies only to Lots platted after the Effective Date or any improvements on a property after the Effective Date which increase the Building coverage or impervious coverage.
[5] Additional Setback ~~restrictions~~ standards may be applicable ~~apply~~ to properties developed adjacent to RS zoned properties. These standards include but are not limited to Section 20-1004, 20-1101, and 20-1307. ~~where expressly required elsewhere in the Development Code.~~ Where Bufferyards are required, the more restrictive standard shall apply.
~~[6] Density and Dimensional Standards for the RM12D District are the same as those for the RM12 District.~~

(b) **Nonresidential Districts**

Unless otherwise expressly stated, all development in the Commercial and Industrial Districts shall comply with the Dimensional Standards of the following table:

to reflect the deleted footnotes.

Standard	CN1	CO	CN2	CD	CC	CR	CS	IBP/GPI/H ~~[10]~~	IL	IG	OS
Min. Site Area	5,000 sq. ft	5,000 sq.ft.	2 Ac.	2,500	5 Ac.	40 Ac	-	5 Ac.	20,000 sq.ft.	5,000 sq.ft.	–
Max. Site Area	1 Ac.	–	15 Ac.	–	–	–	-	–	–	–	–
Min. Lot Area (sq. ft.)	5,000	5,000	20,000	2,500	20,000	20,000	5,000	20,000	20,000	5,000	–
Min. Lot Width (ft.) ~~[12]~~ [10]	50	50	100	25	100	150	50/100	200	100	50	–
Min. Setbacks (ft.)											
Front [9]	[6]	20	20	0	25	25	25	[1]	[1]	[1]	[3]
Side (Exterior) [2]~~[9]~~ [8]	[3]/20	[3]/20	[3]/20	[3]/0	[3]/20	[3]20	[3]15	[1]	[1]	[1]	35
Side (Interior–adj. R) ~~[9]~~ [8]	10	~~20~~ 25	~~20~~ 25	20	25	45	12	[1]	[1]	[1]	20
Side (Interior–adj. Non-R)	0	5	0	0	0	0	0	[1]	[1]	[1]	15
Rear (adj. RS) [4] [8]	25/[3]	25/[3]	25/[3]	10/[3]	25/[3]	30/[3]	25/[3]	[1]	[1]	[1]	10/[3]
Rear (adj. Non-RS) [4]~~[9]~~ [8]	20/25	15/25	20/25	0	12/25	30	12/25	[1]	[1]	[1]	0
Max. Front Setback	[6]	NA	NA	5[7]	20	0	NA	NA	NA	NA	NA
~~Max. Lot Coverage (%)~~ Max. Bldg. Coverage (% of site)	65 [5]~~[11]~~ [9]	65 [5]~~[11]~~ [9]	75 [5]~~[11]~~ [9]	100	~~85~~ 80 [5]~~[11]~~ [9]	~~80~~ 75 [5]~~[11]~~ [9]	80 [5]~~[11]~~ [9]	65 [5]~~[11]~~ [9]	~~85~~ 75 [5]~~[11]~~ [9]	~~85~~ 75 [5]~~[11]~~ [9]	NA
Max. Impervious ~~Lot~~ Surface Coverage (%)	75 [5]~~[11]~~ [9]	75 [5]~~[11]~~ [9]	80 [5]~~[11]~~ [9]	100	~~80~~ 85[5] ~~[9][11]~~ [9]	~~75~~ 80[5] ~~[9][11]~~ [9]	80 [5]~~[11]~~ [9]	75 [5]~~[11]~~ [9]	~~75~~ 85 [5]~~[11]~~ [9]	~~75~~ 85 [5]~~[11]~~ [9]	NA
Min. Outdoor Area (per unit)											
Area (sq. ft.)	50	–	50	–	–	–	50 [5]~~[11]~~ [9]	–	–	–	–
Dimensions (ft.)	5	–	5	–	–	–	5 [5]~~[11]~~ [9]	–	–	–	–
Max. Height (ft.) ~~[13]~~	25	50	45	90 [7]	50	75	45	60	~~45~~ 60	75	35

[1] Minimum Setbacks are as follows:

District	Abutting Street Right-of-Way			Abutting Other Lot Lines	
	Across From R District	Across From Non- R District		Abutting R District or Lawrence SmartCode District	Abutting Non-R District
		Arterial	Collector or Local		
IBP/GPI/H ~~[10]~~	40	40	~~40~~ 25	40	15
IL	50~~[14]~~ [11]	50	25	20~~[15]~~ [12]	15
IG	50 ~~[14]~~ [11]	50	25	50 ~~[15]~~ [12]	15

[2] First number represents minimum Exterior Setback to an abutting Side Lot Line. Second number represents minimum Exterior Setback to an abutting Rear Lot Line

[3] Same as Front Yard of abutting Lot

[4] First number represents minimum Rear Setback for Single Frontage Lot. Second number represents minimum Rear Setback for double Frontage (or through) Lot

[5] Applies only to Lots platted after the Effective Date.

[6] Setback of Building constructed after the Effective Date shall be within 1 foot of the average Setback of existing Buildings on the same Block on the

same side of the Street.
[7] Subject to location and Height limitations in Downtown Design Guidelines and Downtown Design Standards.
~~[8] Maximum Building coverage in CC and CR districts is 25%.~~
~~[9]~~ [8] Additional Setback ~~restrictions~~ standards may be applicable ~~apply~~ to properties developed adjacent to RS zoned properties. These standards include but are not limited to Section 20-1004, 20-1101, and 20-1307. ~~where expressly required elsewhere in the Development Code.~~ Where Bufferyards are required, the more restrictive standard shall apply.
~~[10] Density and Dimensional Standards for the GPI and H Districts shall be the same as those established in the IBP District.~~
~~[11]~~ [9] Applies to any Significant Development Project.
~~[12]~~ [10] First number represents the minimum existing Lot Width. The second number represents the required Lot Width for a Lot platted after the Effective Date.
~~[13] Maximum Height may be subject to the standards of Section 20-602(h)(2) when located adjacent to RS properties.~~
~~[14]~~ [11] Setback shall be 25 feet for all IG and IL properties zoned M-2 under the previous zoning code.
~~[15]~~ [12] Setback shall be 20 feet for all IG and IL properties zoned M-2 under the previous zoning code.

(c) **Mixed Use District**

Unless otherwise expressly stated, all new development in a Mixed Use District shall comply with the Density and Dimensional Standards of the following table. The standards are not applicable to existing development rezoned to the district:

Standard	Mixed Use District Development Zones		
	Primary	Secondary	Tertiary
Min. Site Area (sq. ft)	20,000		
Max. Site Area (acres)	20		
Min. Lot Area (sq. ft.)	3,000		
Min. Lot Width (ft.) [12]	25		
Max. Dwelling Units (per acre)	32	15	12
Setback Range: Minimum to Maximum (in feet)			
Front	0-10 [1]	0-20 [1]	0-25 [1]
Side (Exterior)	0-10 [1]	0-20 [1]	0-25 [1]
Side (Interior)	0-5	0-5	0/5 [2]
Rear (when abutting Alley)	0-10 [3]	0-20	10-30 [4]
Rear (no Alley) [5]	20/0-10 [1]	20/0-20 [1]	20/10-30 [1]
Max. Building Coverage (% of Lot)	100 [6]	85 [6]	75 [6]
Max. Impervious Surface Coverage (% of Lot)	100 [6]	95 [6]	85 [6]
Max. Height (ft.)	48 [7]	36 [7]	24 [7]
Minimum Outdoor Area (per Dwelling Unit)			
Area (sq. ft.)	50 [8]	50 [8]	50 [8]
Dimensions (ft.)	4 [8]	4 [8]	4 [8]
Min. Dimensions of Ground Level Nonresidential Spaces in Mixed Use Buildings			
Floor to Floor Height (ft.) [9]	12	12	12
Area (sq. ft.) [9]	800 [10]	600 [10]	500 [10]

[1] Corresponding Public Frontages shall be designed for each Development Zone.
[2] First number represents the required Setback for all attached Structures, second number represents the required Setback for detached Structures.
[3] May be up to 25 feet to accommodate service/delivery uses.
[4] Setback may be reduced to zero feet for garages or garages with internal Accessory Dwelling Units.
[5] First number represents the minimum Rear Setback for a Single Frontage Lot. Second number range represents minimum/maximum Rear Setback for double Frontage (through) Lots. The Rear Yard for double-Frontage lots shall be considered a Public Frontage and shall be designed as such in accordance with Section 20-1108(j).

[6] Applies only to Lots platted after the Effective Date.
[7] Maximum Height may only be increased by redemption of Development Bonuses as per the standards of Section 20-1108(h) or by Special Use Permit.
[8] Minimum Outdoor Area is not required for each Dwelling Unit onsite if a public park is located within ¼ of a mile of the site. If not available, the Outdoor Area shall be provided as per the standards of Section 20-602(~~g~~h).
[9] Minimum dimensions for the floor to floor Height and Gross Floor Area for ground level nonresidential uses are necessary in order to ensure that the dimensions of the space meet the needs of nonresidential tenants.
[10] Or 20% of the Lot Area when located on Lots whose width is less than 50 feet, whichever is greater.

20-602 MEASUREMENT OF AND EXCEPTIONS TO DENSITY AND DIMENSIONAL STANDARDS

(a) Generally

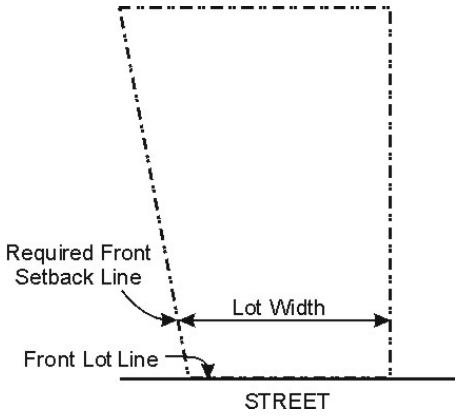
See the rules of Section 20-107(d), regarding the rounding of fractions, for all relevant calculations of minimums and maximums pursuant to this Article.

(b) Lot Area

The area of a Lot includes the total horizontal surface area within the Lot's boundaries, not including submerged lands, public Access Easements or rights-of-way. For Nonconforming Lots, see Section 20-1504.

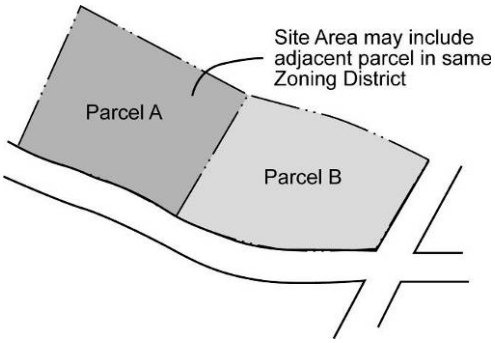
(c) Lot Width

Lot Width is the distance between Side Lot Lines measured at the point of the required Front Setback or chord thereof.



(d) Site Area

For purposes of Minimum and Maximum Site Area requirements, site area is the total contiguous land area included within a Zoning District. For example, if the minimum site area requirement of a Zoning District is 2 acres, no property may be rezoned to that District unless it includes a minimum site area of 2 acres or it abuts another Parcel in the same Zoning District and the site area of the combined Parcel is at least 2 acres in area. If there is a maximum site area requirement, no property may be rezoned to that Zoning District unless the maximum site area, including the site area of abutting Parcel in the same Zoning District, does not exceed the maximum site area for that Zoning District.



(e) Setbacks and Required Yards

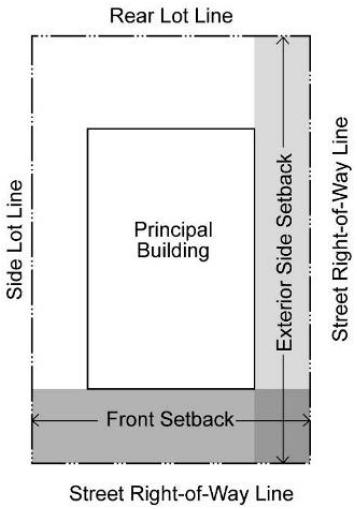
(1) Front and Exterior Side Setbacks

Front and Exterior Side Setbacks extend the full width of a Lot and are measured from the Street right-of-way line. The Front and Exterior Side Setbacks will overlap at the outside corner of the Lot. The following exceptions apply:

(i) In any District where 35% or more of the Frontage on one side of a Street between two intersecting Streets is improved with Buildings whose Front Setbacks do not vary more than 15 feet from the required Front Setbacks of the Base District, any new Building erected may comply with the average Front Setback of the existing Buildings.

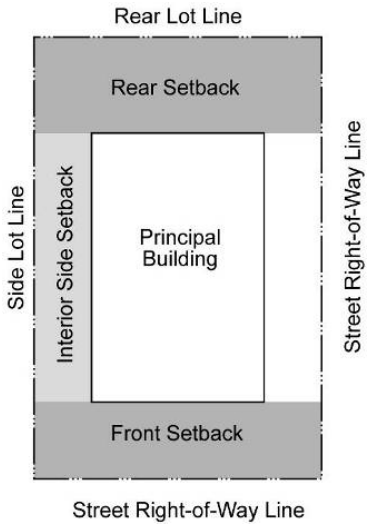
(ii) The widths of developed Lots will be used to determine the percentage of Frontage that is developed.

(iii) The actual Setbacks of Buildings fronting on the Street will be used to determine the average Front Setback.



(2) Rule for Through Lots

A Through Lot shall have two Front Setbacks, at opposite ends of the Lot. The Front Setback provisions of this section shall apply to both. Other sides of a Through Lot shall be subject to Side Setback standards.



(3) Interior Side Setbacks

(i) Measurement

Interior Side Setbacks extend from the required Front Setback line to the required Rear Setback line and are measured from the Side Lot Line. If no Front or Rear

Setback is required, the required Setback area shall run to the opposite Lot Line.

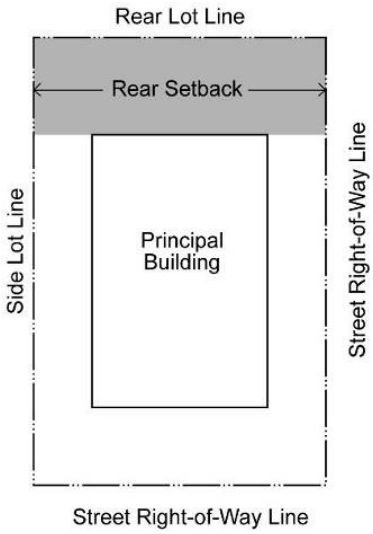
(ii) Exception
The width of one Interior Side Setback may be reduced by the Planning Director to a width of not less than 3 feet if the sum of the widths of the two Interior Side Setbacks on the same Lot is not less than the combined required minimum for both Side Setbacks. This reduction may be authorized only when the Planning Director finds the reduction is warranted by the location of existing Buildings or conducive to the desirable development of two or more Lots.

(4) Rear Setbacks

(i) Measurement
Rear Setbacks extend the full width of the Lot and are measured from the Rear Lot Line.

a. In calculating the required depth of a Rear Setback abutting an Alley, the Rear Setback may be measured from the centerline of the abutting Alley.

b. On Corner Lots in RS10 and RS7 Districts, Structures may be located at an angle, with the long axis of the Lot facing the intersecting Street Lines. In such cases, the Front and Side Setback standards of Section 20-216(d) apply, but the minimum Rear Setback is reduced to 20 feet.



(5) Setbacks for Speaker Box Systems
There shall be a minimum of one hundred (100) feet between any speaker box system, such as those commonly used at fast order food establishments, and any residence in a residential district.

(i) Screening

(ii) Any area intended or employed for a use that requires Special Use approval under Article 4 shall be located at least 50 feet from any residential Lot or District or be so Screened as to provide visual and auditory privacy to such Lot or District.

(6) Permitted Exceptions to Required Yard and Setback Standards
Required Yards and Setbacks shall be unobstructed from the ground to the sky except that the following features may be located therein to the extent indicated:

(i) Cornices, canopies, eaves or other architectural features may project into Required Yards up to 2.0 feet.

(ii) Unenclosed fire escapes may project into Required Yards and/or Setbacks, provided that they are set back at least 3 feet from all Lot Lines.

(iii) An uncovered stair and necessary landings may project into Required Yards and/or Setbacks, provided that they are set back at least 3 feet from all Lot Lines, and the stair and landing may not extend above the entrance floor of the Building except for a railing not exceeding 4 feet in Height.

(iv) Bay windows, balconies, and chimneys may project into Required Yards and/or Setbacks up to 2 feet, provided that such features do not occupy, in the aggregate, more than 1/3 the length of the Building wall on which they are located.

(v) Mechanical Structures are items such as heat pumps, air conditioners, emergency generators, and water pumps. Mechanical Structures are not allowed in required Front or Side Yards, but they may be located in required Rear Yards if they are located at least 5 feet from the Rear Lot Line.

(vi) Vertical Structures are items such as flag poles, trellises and other garden Structures, play Structures, radio Antennas, and lamp posts. Vertical Structures are allowed in Required Yards if they are no taller than 30 feet. If they are taller, they are not allowed in required Setbacks, except that flag poles are allowed in any Required Yard.

(vii) Uncovered horizontal Structures are items such as decks, stairways, entry bridges, wheelchair ramps, swimming pools, hot tubs and tennis courts that extend no more than 2.5 feet above the ground are allowed in required Setbacks; such Structures may be enclosed by fences, in accordance with other provisions of this section but shall not be otherwise enclosed. Swimming pools shall be fenced in accordance with Chapter 5, City Code.

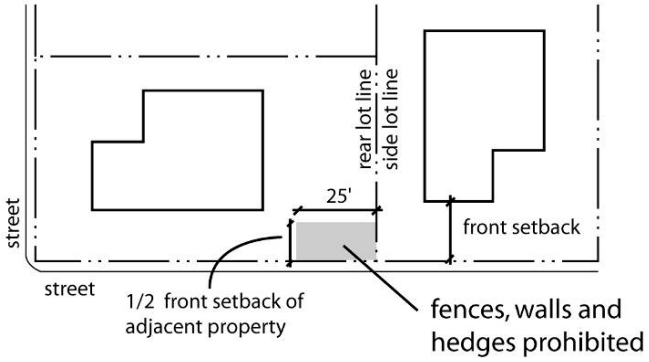
(viii) Covered Accessory Structures (Buildings) are items such as garages, greenhouses, storage Buildings, wood sheds, covered decks, coops for fowl, and covered porches. Covered Accessory Structures that are six feet or less in Height are allowed in required Side and Rear Yards, and covered Accessory Structures greater than six feet in Height are allowed in the required Rear Yard where an Alley abuts the Rear Lot Line, but no covered Accessory Structure is allowed in a required Front Yard.

In addition, coops for fowl shall meet all setback requirements established in Article 5 of Chapter III of the City Code. Setback standards contained in Article 5 of Chapter III of the City Code are not subject to Board of Zoning Appeals review.

(ix) Fences, walls or hedges up to six feet in Height (at any point) above the elevation of the surface of the ground may be located in any Required Yard, except:

a. as otherwise provided in City Code Chapter 16, Article 6; and

b. on Corner Lots with a Rear Lot Line that abuts a Side Lot Line of another Lot in a Residential District, no fence, wall or hedge within 25 feet of the common Lot Line may be closer to the Exterior Side Lot Line than one-half the depth of the actual Front Setback of the Lot that fronts on the side Street.



(7) Setbacks Along Designated Thoroughfares

The minimum Front and Exterior Side Setbacks for each Lot that abuts a Street shown on the Lawrence/Douglas County MPO Transportation Plan, as amended, shall be measured from the recommended ultimate right-of-way line for each classification of Street.

~~(f) Building Coverage~~

~~Building coverage refers to the total area of a Lot covered by Buildings or roofed areas, as measured along the outside wall at ground level, and including all projections, other than Open Porches, fire escapes, and the first 2.0 feet of a roof overhang. Ground-level Parking, open recreation areas, uncovered patios and plazas will not be counted as Building coverage.~~

~~(g)~~(f) Outdoor Area

(1) Purpose

The required outdoor area standards assure opportunities for outdoor relaxation or recreation. The standards help ensure that some of the land not covered by Buildings is of an adequate size, shape and configuration to be useable for outdoor recreation or relaxation. The requirement for outdoor area 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.

(2) Requirements

(i) The minimum outdoor area for each Dwelling Unit shall be a contiguous area and may be on the ground or above ground.

(ii) The area shall be surfaced with lawn, pavers, decking, or sport court paving that allows the area to be used for recreational purposes. User amenities, such as tables, benches, trees, planter

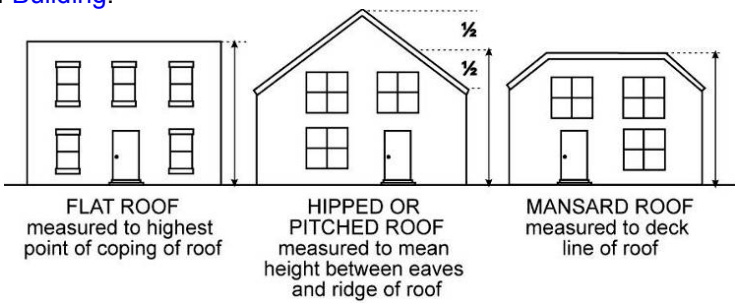
boxers, garden plots, drinking fountains, spas, or pools may be placed in the outdoor area. It may be covered, such as a covered patio, but it may not be fully enclosed. Driveways and Parking Areas may not be counted toward fulfillment of the outdoor area requirement.

(iii) The required outdoor area may not be located in the required Front Setback or Exterior Side Setback.

~~(h)~~(g) Height

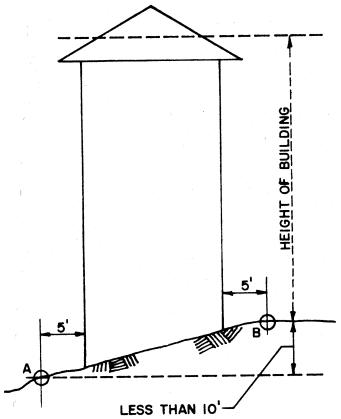
(1) **Measurement**

Building Height is measured as the distance between a reference datum and (1) the highest point of the coping of a flat roof; (2) the deck line of a mansard roof; or (3) the average Height of the highest gable of a pitched or hipped roof. The reference datum is either of the following, whichever yields a greater Height of Building:

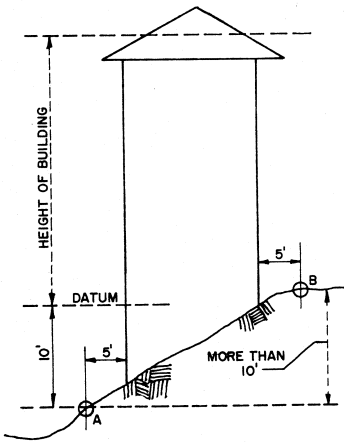


(i) The elevation of the highest adjoining sidewalk or ground surface within a 5-foot horizontal distance of the exterior wall of the Building when such sidewalk or ground surface is not more than 10 feet above lowest Grade. (See "Case I" in accompanying illustration.)

(ii) An elevation 10 feet higher than the lowest Grade when the sidewalk or ground surface described in sub-paragraph Section 20-602(~~h~~g)(1)(i) above is more than 10 feet above lowest Grade. (See "Case II" in accompanying illustration.)



CASE I

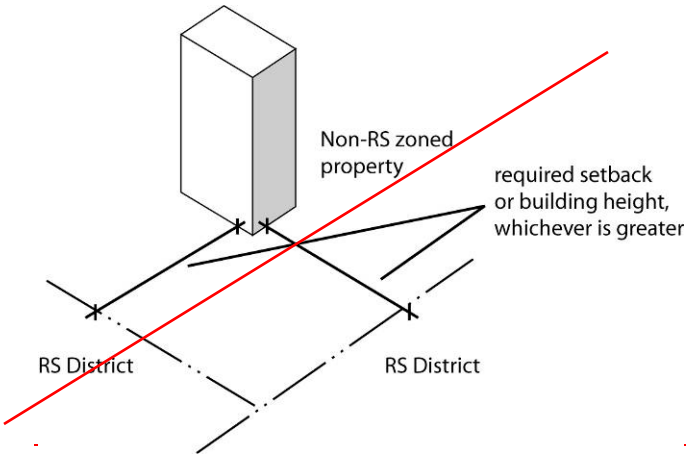


CASE II

~~(2) Height Limit on Projects Adjoining Certain Residential Zoning Districts~~

~~**(i)(iii)**Applicability~~
~~The Height limitations set out in this Section shall apply to any Building constructed in a non-RS Zoning District on a Parcel adjoining, or separated only by an Alley or a Public Street from, a Parcel of land in any RS Zoning District, except that this limit shall not apply to any Building constructed in the CD Zoning District.~~

~~**(ii)(iv)** Height Limit Related to Setback~~
~~Any Building or Structure to which this Section is applicable shall be set back from the Yard line adjoining the RS Zoning District by the minimum Setback established in Section 20-601 when the Building or Structure is the same or lesser Height than the Building or Structure on the adjoining RS Lot. When the Height of the Building or Structure exceeds the Height of the Building or Structure on the adjoining RS Lot, the minimum Setback for the non-RS zoned property shall be equal to the Building's Height.~~



~~(3)~~ **(2)Exceptions**

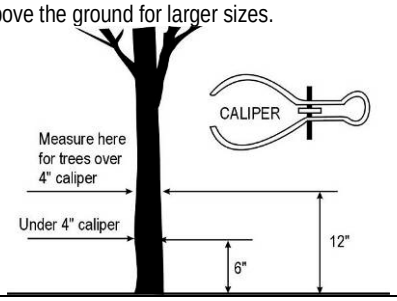
(ii) Except as specifically provided herein, the Height limits of this Development Code do not apply to any roof Structures for housing elevators, stairways, tanks, ventilating fans, solar energy Collectors, or similar equipment required in the operation or maintenance of a Building, provided that such Structures do not cover more than 33% of the roof area or extend over ten (10) feet in Height above the maximum Height allowed by the Base Districts.

(iii) Except as specifically provided herein, the Height limitations of this Development Code do not apply to radio Antennas, television Antennas, church spires, steeples, clock towers, water towers, flag poles, construction cranes, or similar attached and non-habitable Structures, which may be erected above the Height limit, nor to fire or parapet walls provided that such walls may not extend more than five (5) feet above the roof.

(iv) Telecommunication Towers may exceed the Zoning District Height limit if reviewed and approved as a Special Use in accordance with Section 20-1306.

20-1701 GENERAL TERMS

Term	Definition
Access	A way or means of approach to provide vehicular or pedestrian physical entrance to a property.
Access, Cross	A service drive providing vehicular Access between two or more contiguous sites so the driver need not enter the public Street system.
Access Management	The process of managing Access to land development while preserving the regional flow of traffic in terms of safety, capacity and speed.
Accessory Dwelling Unit	A Dwelling Unit that is incidental to and located on the same Lot as the Principal Building or use, when the Principal Building or use is a Dwelling.
Accessory Structure	A subordinate Structure, the use of which is clearly incidental to, or customarily found in connection with, and located on the same Lot as the Principal Building or use.
Accessory Use	A use that is clearly incidental to, customarily found in connection with, and (except in the case of off-Street Parking Space) located on the same Lot as the Principal Use to which it is related.
Accessway , also Access Drive	Any Driveway, Street, turnout or other means of providing for the movement of vehicles to or from the public roadway system.
Adult Care Home	See Group Home
Agent (of Owner or Applicant)	Any person who can show certified written proof that he or she is acting for the Landowner or applicant.
Airport/Lawrence Municipal Airport	The location from which take-offs and landings may be made by any manned aircraft, excluding free balloons, within the corporate limits of the City of Lawrence, Kansas.
Airport Hazard	Any Structure or tree or use of land that obstructs the airspace required for the flight of aircraft in landing or taking off at any Airport or is otherwise hazardous to such landing or taking off of aircraft.
Alley	A public or private way not more than 20 feet wide primarily designed to serve as a secondary means of Access to abutting property.
Antenna	Any system of wires, poles, rods, reflecting discs or similar devices used for the reception or transmission of electromagnetic waves which system is attached to an Antenna support Structure or attached to the exterior of any Building. The term includes devices having active elements extending in any direction, and directional beam-type arrays having elements carried by and disposed from a generally horizontal boom which may be mounted upon and rotated through a vertical mast, tower or other Antenna support Structure.
Antenna, Receive-Only	An Antenna capable of receiving but not transmitting electromagnetic waves, including Satellite Dishes.
Antenna, Amateur Radio	An Antenna owned and utilized by an FCC-licensed amateur radio operator or a citizens band radio Antenna.
Arterial	A Street classified as an Arterial in the Lawrence/Douglas County MPO Transportation Plan, as amended.
Arterial Street, Minor	A Street which is anticipated to have 2-4 travel lanes designed for speeds ranging from 30-45 mph and which is defined specifically as such on the Major Thoroughfares Map of the City.
Arterial Street, Principal	A Street which is anticipated to have 4-6 travel lanes designed for speeds ranging from 30-45 mph and which is defined specifically as such on the Major Thoroughfares Map of the City.
Assisted Living	Building or group of Buildings containing Dwellings designed for occupancy by persons 55 years or older where the Dwelling Units are independent but include special support services such as central dining and limited medical or nursing care.
Basement	Any floor level below the first Story in a Building, except that a floor level in a Building having only one floor level shall be classified as a Basement unless such floor level qualifies as a first Story as defined herein.
Base Density	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 dwelling 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 standards of Section 20-601(a), the environmental protection standards, as well as topographical or other features unique to the property.
Base District	Any Zoning District delineated on the Official Zoning District Map under the terms and provisions of this Development Code, as amended, for which regulations governing the area, use of Buildings, or use of land, and other regulations relating to the development or maintenance of existing uses or Structures, are uniform; but not including Overlay Zoning Districts.

Term	Definition
Base District, Special Purpose	A District established to accommodate a narrow or special set of uses or for special purposes. The use of this term in the Development Code applies to Districts beyond the conventional residential, commercial, industrial and agricultural districts. Examples include government and public institutional uses, open space uses, hospital use, planned unit developments that pre-date the Effective Date of this Development Code or newly annexed urban reserve areas.
Berm	An earthen mound at least two feet (2') above existing Grade designed to provide visual interest, Screen undesirable views and/or decrease noise.
Bicycle	A two-wheeled vehicle for human transportation, powered only by energy transferred from the operator's feet to the drive wheel.
Bicycle- Parking Space	An area whose minimum dimensions are two feet by six feet or two feet by four feet for upright storage.
Big Box	See Retail Establishment, Large.
Block	A Parcel of land entirely surrounded by public Streets, highways, railroad rights-of-way, public walks, parks or green strips, or drainage channels or a combination thereof.
Block Face	That portion of a Block or Tract of land facing the same side of a single Street and lying between the closest intersecting Streets.
Bufferyard	A combination of physical space and vertical elements, such as plants, Berms, fences, or walls, the purpose of which is to separate and Screen changes in land uses from each other.
Build-to-Line (minimum Building setback)	An imaginary line on which the front of a Building or Structure must be located or built and which is measured as a distance from a public right-of-way.
Building	Any Structure having a roof supported by columns or walls, used or intended to be used for the shelter or enclosure of persons, animals, or property. When such a Structure is divided into separate parts by one or more walls unpierced by doors, windows, or similar openings and extending from the ground up, each part is deemed a separate Building, except as regards minimum Side Setback requirements as herein provided.
Building Coverage	Building coverage refers to the total area of a Lot covered by Buildings or roofed areas, as measured along the outside wall at ground level, and including all projections, other than Open Porches, fire escapes, and the first 2.0 feet of a roof overhang. Ground-level Parking, open recreation areas, uncovered patios and plazas will not be counted as Building coverage.
Building Envelope	The three-dimensional space on a Lot on which a Structure can be erected consistent with existing regulations, including those governing maximum Height and bulk and the Setback lines applicable to that Lot consistent with the underlying Zoning District, or as modified pursuant to a Variance, a site review, or prior City approval.
Building Frontage	That portion of a Building or Structure that is adjacent to or faces the Public Frontage.
Building, Principal	A Building in which is conducted the Principal Use of the Building site on which it is situated. In any residential District, any Dwelling shall be deemed to be the Principal Building on the site on which the same is located.
Building Type (also referred to as housing type)	A residential Structure defined by the number of Dwelling Units contained within.
Caliper	The American Association of Nurserymen standard for trunk measurement of nursery stock, as measured at six (6) inches above the ground for trees up to and including four-inch Caliper size, and as measured at 12 inches above the ground for larger sizes. 
City Regulations	Provisions of the Lawrence City Code or other provisions located in ordinances adopted by the City.
Clear Zone	An area designated within the Public Frontage of a Mixed Use Project which reserves space for a sidewalk. The Clear Zone shall be clear of any obstruction to a minimum height of eight (8) above grade.
Cross Access Agreement	A document signed and acknowledged by Owner of two or more adjoining pieces of property establishing Easements, licenses or other continuing rights for Access across one property to one or more other properties.

Term	Definition
Collector Street	A Street which is anticipated to have two (2) travel lanes designed for speeds ranging from 25-35mph and which serves a collecting function by distributing traffic between local neighborhood Streets and Arterial Streets.
Collector Street, Minor	See Collector, Residential
Collector Street, Residential	Residential collector is a special category of collector street characterized by lower speeds & the residential nature of land uses along the corridor. Bicycle & pedestrian facilities are strongly recommended for residential collectors. Various traffic-calming treatments may be used to reduce travel speeds. Residential collector streets with adjacent residential land uses should be limited to two lanes. These streets can serve as a connector street between local streets and the thoroughfare system.
Collector Street System	A system of one (1) or more Collector Streets that allow traffic to be distributed to at least two (2) Arterial Streets.
Common Open Space	Land, water, water course, or drainageway within a development that is designed and intended for the use or enjoyment of all the residents and Landowners of the Development. Common Open Space, except for Common Open Space designated as Environmentally Sensitive may contain such supplementary Structures and improvements as are necessary and appropriate for the benefit and enjoyment of all the residents and Landowners of the Development. Common open space shall not include space devoted to streets, alleys, and parking areas. While required setbacks may function as common open space, they may not be used to meet the minimum requirements.
Comprehensive Plan also Comprehensive Land Use Plan	The Lawrence/Douglas County Comprehensive Plan, also known as "Horizon 2020," and any other applicable plans adopted by the Lawrence/Douglas County Metropolitan Planning Commission, as amended or superceded by adoption of a replacement plan from time to time.
Congregate Living	A Dwelling Unit that contains sleeping units where 5 or more unrelated residents share a kitchen and communal living areas and/or bathing rooms and where lodging is provided for compensation for persons who are not transient guests. Congregate Living is commonly referred to as a lodging house, boarding house, rooming house, or cooperative but is not considered a Dormitory, fraternity or sorority house, Assisted Living, Extended Care Facility, Group Home or similar group living use.
Conservation Easement	A non-possessory interest of a holder in real property imposing limitations or affirmative obligations, the purposes of which include retaining or protecting natural, scenic or open-space values of real property, assuring its availability for agricultural, forest, recreational or open-space use, protecting natural resources, maintaining or enhancing air or water quality, or preserving the historical, architectural, archaeological or cultural aspects of real property. In case of any conflict between this definition and K.S.A. §58-3810, as it may be amended from time to time, the amended statute shall control and shall be used in the construction and interpretation of this Development Code.
Deciduous	A tree or Shrub with foliage that is shed annually.
Deferred Item	An item that has been deferred from a published agenda by the Planning Director, Planning Commission or the City Commission (City or County Commission), or by the applicant.
Density	A measure of the number ofDwelling Units contained within a given area of land, typically expressed as units per acre.
Density Bonus	An incentive-based tool that permits property owners to increase the maximum allowable development on a property in exchange for helping the community achieve public policy goals, such as protection of environmentally sensitive areas.
Density Cap	Maximum density levels set by the Comprehensive Plan. Low-density (6 dwelling units per acre); medium density (15 dwelling units per acre) and high density (24 dwelling units per acre).
Density, Gross	The numerical value obtained by dividing the total number of Dwelling Units in a development by the total area of land upon which the Dwelling Units are proposed to be located, including rights-of-way of publicly dedicated Streets.
Density, Net	The numerical value obtained by dividing the total number of Dwelling Units in a development by the area of the actual Tract of land upon which the Dwelling Units are proposed to be located, excluding rights-of-way of publicly dedicated Streets.
Designated Transit Route	Any bus route identified on the route map published by the Lawrence Transit System or KU on Wheels transit system.
Development Activity	Any human-made change to Premises, including but not limited to: (a) the erection, conversion, expansion, reconstruction, renovation, movement or Structural Alteration, or partial or total demolition of Buildings and Structures; (b) the subdivision of land; (c) changing the use of land, or Buildings or Structures on land; or (d) mining, dredging, filling, grading, paving, excavation, drilling, or Landscaping of land or bodies of water on land.

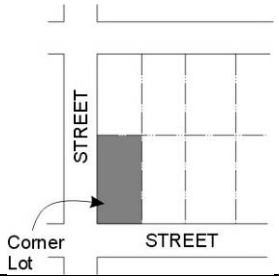
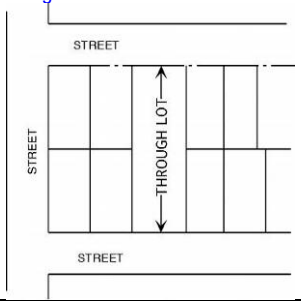
Term	Definition
Development Project, Major (Ord. 8465)	Any development proposing the following: a. Any Development Activity on a site that is vacant or otherwise undeveloped; or b. Any Significant Development Project on a site that contains existing development, defined as: 1. Any modification to a site that alters Parking Areas, drive aisles, or impacts on-site pedestrian and vehicular circulation and traffic patterns that the Planning Director determines to be significant in terms of impacting adjacent roads or adjacent properties; or 2. In the IG zoning district, the construction of one or more Building(s) or building additions that contain a Gross Floor Area of fifty percent (50%) or more of the Gross Floor Area of existing Building(s); or 3. In any zoning district other than IG, the construction of one or more Building(s) or building additions that contain a Gross Floor Area of twenty percent (20%) or more of the Gross Floor Area of existing Building(s); or 4. Separate incremental Building additions below 50% for IG zoning and 20% for all other zoning districts of the Gross Floor Area of existing Building(s) if the aggregate effect of such Development Activity over a period of 24 consecutive months would trigger the 50% (for IG) or 20% (for all other zoning districts) threshold; or 5. The installation or addition of more than 50% for IG zoning and 20% for all other zoning districts of existing Impervious Surface coverage.
Development Project, Minor (Ord. 8465)	Any development proposing the minor modification of a site, as determined by the Planning Director, which does not meet the criteria for a Standard or Major Development Project, or the proposed change in use to a less intensive use on a site which has an approved site plan on file with the Planning Office. Only sites which have an existing approved site plan on file which reflects existing site conditions are eligible for review as a Minor Development Project.

Term	Definition
Development Project, Standard (Ord. 8465)	a. For any property containing existing development which does not have an approved site plan on file with the Planning Office and which does not meet the criteria for a Major Development Project, any development proposing the following shall be considered a Standard Development Project: 1. a change in use to a less intensive use and where physical modifications to the site, excluding interior Building modifications, are proposed; or 2. A change in use to a more intensive use regardless of whether modifications to the site are proposed; or 3. the substantial modification of a site, defined as: a. The construction of any new Building(s) on the site; or b. The construction of any Building addition that contains a Gross Floor Area of ten percent (10%) or more of the Gross Floor Area of existing Building(s); or c. Separate incremental Building additions below ten percent (10%) of the Gross Floor Area of existing buildings if the aggregate effect of such Development Activity over a period of 24 months would trigger the 10% threshold; or d. The addition of Impervious Surface coverage that exceeds 10% of what exists; or e. Any modification determined by the Planning Director to be substantial. b. For property which does have an approved site plan on file with the Planning Office and which does not meet the criteria for a Major Development Project, any development proposing the following shall be considered a Standard Development Project: 1. any change in use of a site to a more intensive use regardless of whether modifications to the site are proposed; or 2. any modification of a site which meets the following criteria or proposes the following: a. A modification to a site which alters the Parking Area, drive aisles, or on-site pedestrian and vehicular circulation and traffic patterns with impacts to the interior of the site; or b. A development, redevelopment, or modifications to the exterior style, design or material type of a Structure that is subject to the Community Design Manual; or c. An outdoor dining or hospitality use in the CD and CN1 Zoning Districts and any outdoor dining use located in any other Zoning District that would result in an increase of the number of Parking Spaces required; or d. In the IG zoning district, the construction of one or more new Building(s) or building additions that contain a Gross Floor Area of less than fifty percent (50%) of the Gross Floor Area of existing Building(s); or e. In any zoning district other than IG, the construction of one or more new Building(s) or building additions that contain a Gross Floor Area of less than twenty percent (20%) of the Gross Floor Area of existing Building(s); or f. In the IG zoning district, the installation or addition of less than fifty percent (50%) of existing Impervious Surface coverage; or g. In any zoning district other than IG, the installation or addition of less than twenty percent (20%) of existing Impervious Surface coverage; or h. Any modification to an approved site plan on file with the Planning Office which proposes an adjustment to the total land area of the site plan, if determined necessary by the Planning Director.
Development Zone, Primary	Land area in a Mixed Use development designated at time of rezoning to the Mixed Use District and reserved for the most intense development proposed for the mixed use development.
Development Zone, Secondary	Land area in a Mixed Use development designated at time of rezoning to the Mixed Use District and reserved for less intense development than the Primary Development Zone, but more intense development than the Tertiary Development Zone. The Secondary Development Zone may serve as a transitional zone within a larger Mixed Use Development.
Development Zone, Tertiary	Land area in a Mixed Use development designated at time of rezoning to the Mixed Use District and reserved for the least intense development proposed for the mixed use development.
Dependent Living Facility	See Extended Care Facility

Term	Definition
Director, Planning	See Planning Director
Distance Between Structures	The shortest horizontal distance measured between the vertical walls of two Structures as herein defined perpendicular to an axis, all points along which are midway between the vertical walls.
District, Zoning	A portion of the territory of the City of Lawrence within which certain uniform regulations and requirements or various combinations thereof apply under the provisions of this Chapter.
Dormitory	A Building occupied as the more-or-less temporary abiding place of individuals who are lodged with or without meals and in which there are more than eight (8) sleeping rooms or 16 sleeping accommodations. As such the rooms are let on a weekly or monthly basis or for greater period of time and are not available to the general public on a nightly basis as distinguished from a hotel. Ingress to and egress from all rooms is made through an inside lobby or office supervised by a person in charge at all hours. General kitchen and eating facilities may be provided for the primary use of the occupants of the Building, provided that the main entrance to these facilities is from within the Building.
Drip Line	An imaginary ground line around a tree that defines the limits of the tree canopy.
Driveway	A private drive or way providing Access for vehicles to a single Lot or facility.
Driveway, Joint-Use	A privately-owned Driveway that provides Access to 2 or more Lots in a commercial or industrial Development, such as in a shopping center (without Lots) or a business or industrial park.
Driveway, Shared	A single Driveway serving two or more adjoining Lots.
Driveway Apron (or Approach)	The Driveway area or approach located between the sidewalk and the curb. When there is no sidewalk, the apron or approach shall be defined as extending a minimum of six (6) feet from the back of the curb toward the Lot Line.
Dwelling	A Building or portion thereof designed or used exclusively as the residence or sleeping place of one or more persons, but not including a tent, trailer, or Mobile Home.
Dwelling Unit	One room, or a suite of two or more rooms, designed for or used by one Family or Housekeeping Unit for living and sleeping purposes and having only one kitchen or kitchenette.
Easement	A grant by a property Owner to the use of land by the public, a corporation, or persons for specific purposes such as the construction of utilities, drainageways, pedestrian Access, and roadways.
Effective Date	The date the ordinance adopting this Development Code takes effect.
Elderhostel	A Building occupied as the more-or-less temporary abiding place of individuals who are either: 1) participating in a travel-study program for senior citizens offered by a university or college; or 2) participating in a visiting faculty program at a university or college. These individuals are lodged with or without meals. These Buildings typically contain more than eight (8) sleeping rooms or 16 sleeping accommodations. The rooms are let on a weekly or monthly basis or for greater period of time, but are not available to the general public on a nightly basis, as distinguished from a hotel. Ingress to and egress from all rooms is made through an inside lobby or office supervised by a person in charge at all hours. General kitchen and eating facilities may be provided for the primary use of the occupants of the Building, provided that the main entrance to these facilities is from within the Building.
Evergreen (Coniferous) Tree	An Evergreen Tree, usually of pine, spruce or juniper genus, bearing cones and generally used for its Screening qualities. A Coniferous Tree may be considered a Shade Tree if it is at least five (5) feet in Height when planted and reaches a mature Height of at least 20 feet.
Extended Care Facility (Dependent Living or Nursing Care Facility), General	A long term facility or a distinct part of an institution occupied by nine (9) or more persons with a disability who require the provision of health care services under medical supervision for twenty-four (24) or more consecutive hours and who need not be related by blood or marriage. An Extended Care Facility must be licensed by one (1) or more of the following regulatory agencies of the State: Department of Social and Healing Arts, Behavioral Sciences Regulatory Board, State Board of Healing Arts, or Kansas Department on Aging. Disability means, with respect to a person: (a) a physical or mental impairment which substantially limits one (1) or more of such person's major life activities; (b) a record of having such impairment; or (c) being regarded as having such impairment. Such term does not include current illegal use or addiction to a controlled substance, as defined in Sec. 102 of the Controlled Substance Act (21U.S.C.802). Extended Care Facilities include facilities for the provision of skilled nursing care, hospice care and similar services.

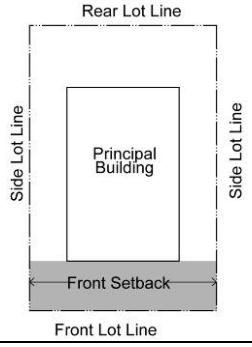
Term	Definition
Extended Care Facility (Dependent Living or Nursing Care Facility), Limited	A long term facility or a distinct part of an institution occupied by not more than ten (10) persons, including eight (8) or fewer persons with a disability who need not be related by blood or marriage, and who require the provision of health care services under medical supervision for twenty-four (24) or more consecutive hours, and also not to be occupied by more than two (2) staff residents who need not be related by blood or marriage to each other or to other residents of the home. An Extended Care Facility must be licensed by one (1) or more of the following regulatory agencies of the State: Department of Social and Healing Arts, Behavioral Sciences Regulatory Board, State Board of Healing Arts, or Kansas Department on Aging. Disability means, with respect to a person: (a) a physical or mental impairment which substantially limits one (1) or more of such person's major life activities; (b) a record of having such impairment; or (c) being regarded as having such impairment. Such term does not include current illegal use or addiction to a controlled substance, as defined in Sec. 102 of the Controlled Substance Act (21U.S.C.802). Extended Care Facilities include facilities for the provision of skilled nursing care, hospice care and similar services.
Extended Stay Lodging	A Building, including a single-Family residence, or group of Buildings providing living and sleeping accommodations for short-term occupancy, typically three (3) months or less. Bed & Breakfasts, hotels and motels are not considered extended stay facilities, although hotels and motels may provide this service. Extended stay facilities using single-Family Dwellings are not considered rental housing and are not subject to the rental licensing provisions of the City.
Exterior Storage	Outdoor storage of any and all materials related to the principal use of the Lot or site, not including areas for special events, temporary outdoor events or seasonal events, transient merchant sales areas, or any other outdoor area dedicated to the sale of retail goods, regardless of the proprietor. Outdoor storage and sales areas, open to the public and in which transactions may occur are not considered Exterior Storage areas.
Facade	Exterior face (side) of a Building which is the architectural front, sometimes distinguished by elaboration or architectural or ornamental details.
Family	(1) A person living alone; (2) two or more persons related by blood, marriage, or legal adoption; (3) in an RS Zoning District, a group of not more than three persons not related by blood or marriage, living together as a single Housekeeping Unit in aDwelling Unit, as distinguished from a group occupying a Dormitory, Congregate Living, motel, hotel, fraternity house or sorority house; or (4) in a Zoning District other than RS, a group of not more than four persons not related by blood or marriage, living together as a single Housekeeping Unit in a Dwelling Unit, as distinguished from a group occupying a Dormitory, Congregate Living, motel, hotel, fraternity house or sorority house.
Floodplain	The land inundated by a flood of a given magnitude as determined by the Flood Insurance Study or by an approved Hydrologic & Hydraulic Study.
Floor Area	The sum of the horizontal areas of each floor of a Building, measured from the interior faces of the exterior walls or from the centerline of walls separating two Buildings.
Floor Area, Gross	The sum of the horizontal areas of the several stories of a Building, measured from the exterior faces of exterior walls, or in the case of a common wall separating two Buildings, from the centerline of such common wall.
Floor Area, Net	The horizontal area of a floor or several floors of a Building or Structure; excluding those areas not directly devoted to the principal or Accessory Use of the Building or Structure, such as storage areas or stairwells, measured from the exterior faces of exterior or interior walls.
Floor Area Ratio (F.A.R.)	The sum of the horizontal areas of the several floors inside the exterior walls *(excluding basements)* of a Building or a portion thereof divided by the Lot Area.
Foot-candle	A unit of measurement referring to the illumination incident to a single point. One (1) Foot-Candle is equal to one (1) lumen uniformly distributed over an area of one (1) square foot.
Frontage	All the property on one side of a Thoroughfare between two intersecting Thoroughfares (crossing or terminating), or if the Thoroughfare is Dead-Ended, then all of the property abutting on one side between an intersecting Thoroughfare and the Dead-End.
Frontage Road, Private	Any thoroughfare that is not publicly owned and maintained and that is parallel and adjacent to any Lot Frontage as defined above.
Grade	The lowest point of elevation of the finished surface of the ground, paving or sidewalk within the area between the Building and the Lot Line or, when the Lot Line is more than 5 feet from the Building, between the Building and a line five feet from the Building.
Greek Housing	A group living Structure occupied by a university approved fraternity or sorority, certified by the Panhellenic Association or Intrafraternity Council at KU. Residential occupancy by the majority of residences primarily follows the academic calendar for fall and spring semesters each year.
Ground Cover	Living Landscape Materials or living low-growing plants other than turf grasses, installed in such a manner so as to provide a continuous cover of the ground surface and which, upon maturity, normally reach an average maximum Height of not greater than 24 inches.
Ground Floor	A level of Building floor which is located not more than 2 feet below nor 6 feet above finished Grade.

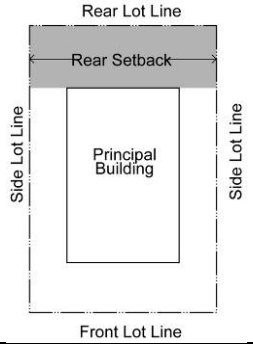
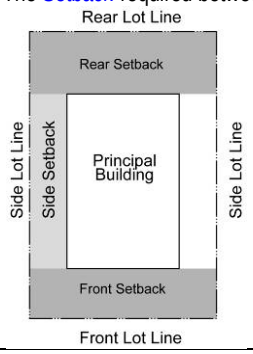
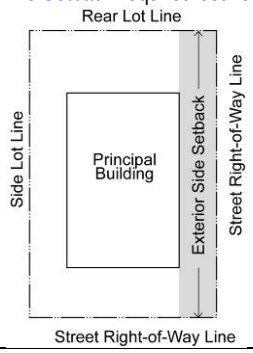
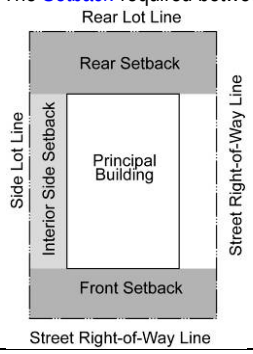
Term	Definition
Group Home (or Adult Care Home), General	Any Dwelling occupied by 11 or more persons, including eight (8) or more persons with a disability who need not be related by blood or marriage and staff residents who need not be related by blood or marriage to each other or to other residents of the home. The Dwelling is licensed by one (1) or more of the following regulatory agencies of the State: Dept. of Social and Healing Arts, Behavioral Sciences Regulatory Board, or State Board of Healing Arts. Disability means, with respect to a person: (a) a physical or mental impairment which substantially limits one (1) or more of such person's major life activities; (b) a record of having such impairment; or (c) being regarded as having such impairment. Such term does not include current illegal use or addiction to a controlled substance, as defined in Sec. 102 of the Controlled Substance Act (21U.S.C.802). A Special Use Permit is required before operation of the home can begin.
Group Home (or Adult Care Home), Limited	Any Dwelling occupied by not more than ten (10) persons, including eight (8) or fewer persons with a disability who need not be related by blood or marriage and not to exceed two (2) staff residents who need not be related by blood or marriage to each other or to other residents of the home. The Dwelling is licensed by one (1) or more of the following regulatory agencies of the State: Dept. of Social and Healing Arts, Behavioral Sciences Regulatory Board, or State Board of Healing Arts. Disability means, with respect to a person: (a) a physical or mental impairment which substantially limits one (1) or more of such person's major life activities; (b) a record of having such impairment; or (c) being regarded as having such impairment. Such term does not include current illegal use or addiction to a controlled substance, as defined in Sec. 102 of the Controlled Substance Act (21U.S.C.802).
Growing or Planting Season	From the beginning of March to the end of June and from the beginning of September to the beginning of December.
Height (Building)	Refers to the vertical distance from the finished Grade, or base flood elevation where applicable, to the highest point of the coping of: a flat roof, the deck line of a mansard roof, or the average Height of the highest gable of a pitch or hip roof.
Historic Resources Commission (HRC)	The Commission established by Sections 22-201 – 22-205, part of the Conservation of Historic Resources of the Code of the City of Lawrence
Home Occupation	An Accessory Use that complies with the provisions of Section 20-537.
Housekeeping Unit	A suite of one or more rooms having separate cooking facilities, used as the domicile or home of one Family.
Housing for the Elderly	See Assisted Living or Extended Care Facility
HRC	See Historic Resources Commission
Hydrologic and Hydraulic Study	See Hydrologic and Hydraulic Study definition in Section 20-1205
Impervious Surface	That portion of developed property which contains hard-surfaced areas (primed and sealed AB3, asphalt, concrete and Buildings) which either prevent or retard the entry of water into the soil material.
Inactive File	An application, either complete or incomplete, which has had no new information submitted within a period of twelve (12) or more months. New information within this context shall be information that responds to a request for additional information or that provides additional information essential to completing a review of the request in response to the land use review criteria, retail market information, or traffic impact analysis.
Infrastructure	Those man-made Structures which serve the common needs of the populations, such as: potable water systems, wastewater disposal systems, solid waste disposal sites or retention areas, storm drainage systems, electric, gas or other utilities, bridges, roadways, Bicycle paths or trails, pedestrian sidewalks, paths or trails and transit stops.
Jurisdictional Wetland	Wetlands which are regulated by Section 404 of the Clean Water Act and are under the regulatory jurisdiction of the Army Corps of Engineers (Corps) and the Environmental Protection Agency (EPA).
Landowner	See Owner
Landscaped Peninsula	A concrete curbed planting area typically found in Parking Lots to provide areas for trees and Shrubs between Parking Spaces and along the terminus of single and double Parking aisles.
Landscape Material	Such living material as trees, Shrubs, Ground Cover/vines, turf grasses, and non-living material such as: rocks, pebbles, sand, bark, brick pavers, earthen mounds (excluding pavement), and/or other items of a decorative or embellishing nature such as: fountains, pools, walls, fencing, sculpture, etc.
Landscaping	Any combination of living plants such as trees, Shrubs, plants, vegetative Ground Cover or turf grasses. May include structural features such as walkways, fences, benches, works of art, reflective pools, fountains or the like. Landscaping shall also include irrigation systems, Mulches, topsoil use, soil preparation, re-vegetation or the preservation, protection and replacement of trees.
Licensed Premises	A Premises where alcoholic liquor or cereal malt beverages, or both, by the individual drink as defined by K.S.A. Chapter 41, and amendments thereto, is served or provided for consumption or use on the Premises with or without charge. This term shall include drinking establishments, Class A Private Clubs, Class B Private Clubs, and cereal malt beverage retailers, all as defined by K.S.A. Chapter 41, and amendments thereto and City Regulations.

Term	Definition
Light Court	An area within the Public Frontage in a Mixed Use development adjacent to the Building Frontage which provides a means of outdoor light to reach an underground level of a Structure. It may also provide a means of emergency exit from the Structure but shall not serve as a primary entrance or exit to the Structure.
Light Truck	A truck or other motor vehicle, one ton or less in rated capacity, with a single rear axle and single pair of rear wheels.
Livestock	Any animal customarily kept for producing food or fiber.
Local Street	A Street which is anticipated to have two (2) travel lanes at desirable speeds of up to 30mph and which provides Access to abutting property and primarily serves local traffic.
Local Street System	A system of two (2) or more Local Streets that allow traffic to be distributed throughout a neighborhood.
Lot	A contiguous Parcel or Tract of land located within a single Block fronting on a dedicated public Street that is occupied or utilized, or designated to be occupied, developed, or utilized, as a unit under single Ownership or control. A Lot may or may not coincide with a Lot shown on the official tax maps or on any recorded subdivision or deed.
Lot Area	The total horizontal area within the Lot Lines of a Lot.
Lot Frontage	See Frontage
Lot, Corner	A Lot abutting upon two or more Streets at their intersection, or upon two parts of the same Street, such Streets or part of the same Street forming an angle of more than 45° and of less than 135°. The point of intersection of the Street Lines is the corner. Any portion of a Corner Lot that is more than 100 feet from the point of intersection of the two Street Lines or the two tangents of the same Street shall not be considered a Corner Lot. 
Lot, Through	A Lot abutting two Streets, not at their intersection. Any Lot meeting the definition of Corner Lot shall not be considered a Through Lot; any Lot abutting two Streets and not meeting the definition of a Corner Lot shall be considered a Through Lot. 
Lot Depth	The mean horizontal distance between the Front Lot Line and Rear Lot Line of a Lot.
Lot Line	A boundary of a Lot.
Lot Line, Exterior Side	A Side Lot Line separating a Lot from a Street other than an Alley.
Lot Line, Front	The Street Line at the front of a Lot. On Corner Lots, the Landowner may choose either Street Frontage as the Front Lot Line.
Lot Line, Rear	The Lot Line opposite and most distant from, and parallel or closest to being parallel to, the Front Lot Line. A triangular Lot has no Rear Lot Line.
Lot Line, Side	A Lot Line that is not a Front Lot Line or Rear Lot Line.
Lot Width	Lot Width is the distance between Side Lot Lines measured at the point of the required Front Setback or chord thereof.
Manufactured Home	Any Structure that is manufactured to the standards embodied in the National Manufactured Home Construction and Safety Standards (generally know as the HUD Code) established in 1976 pursuant to 42 U.S.C. Sec. 5403, but does not comply with the standards and provisions of Section 20-513.

Term	Definition
Manufactured Home, Residential-Design	Any Structure that is manufactured to the standards embodied in the National Manufactured Home Construction and Safety Standards (generally know as the HUD Code) established in 1976 pursuant to 42 U.S.C. Sec. 5403 and that also complies with the standards and provisions of Section 20-513. (Ord. 8098)
Massing	The size and shape of Structure(s) individually and their arrangements relative to other Structure(s).
Mature Trees, Stand of	An area of ½ acre (21,780 sq ft) or more located on the 'development land area', per Section 20-1101(d)(2)(ii) or on other contiguous residentially zoned properties containing trees that are 25 feet or more in height, or are greater than 8" caliper, in an amount adequate to form a continuous or nearly continuous canopy. (Canopy may be determined from resources such as, but not limited to, NAIP, National Agricultural Imaging Program; City/County GIS aerials; and field surveys.)
Minimum Elevation of Building Opening	The minimum elevation above sea level at which a Building located in the Floodplain may have a door, window, or other opening.
Mixed Use	The development of a Lot, Tract or Parcel of land, Building or Structure with two (2) or more different uses including, but not limited to: residential, office, retail, public uses, personal service or entertainment uses, designed, planned and constructed as a unit.
Mixed Use Structure, Horizontal	A Building or Structure containing both nonresidential and residential uses distributed horizontally throughout the Structure.
Mixed Use Structure, Vertical	A Building or Structure, a minimum of two stories in height, containing both nonresidential and residential uses distributed vertically throughout the Structure.
Mobile Home	Any vehicle or similar portable Structure having no foundation other than wheels or jacks or skirtings and so designed or constructed as to permit occupancy for Dwelling or sleeping purposes. Mobile Home includes any Structure that otherwise meets this description, but that was not subject to the National Manufactured Home Construction and Safety Standards (generally known as the HUD Code), established in 1976 pursuant to 42 U.S.C. Sec. 5403, at the time it was manufactured. Mobile Homes are considered to be Dwelling Units only when they are parked in a Mobile Home Park.
Moderately-Priced Dwelling Unit	A Dwelling Unit marketed and reserved for occupancy by a household whose income is equal to or less than 80% of the City of Lawrence's median household income, as defined by the most current U.S. Department of Housing and Urban Development (HUD) guidelines.
Mulch	Non-living organic material customarily used to retard soil erosion and retain moisture.
Native Prairie Remnants	Prairie areas that have remained relatively untouched on undeveloped, untilled portions of properties are 'native prairies'. Native prairie remnants will be confirmed by the Kansas Biological Survey, or a consulting firm with local expertise in these habitats, as areas that have remained primarily a mixture of native grasses interspersed with native flowering plants. (These areas have not been planted, but are original prairies). A list of approved consulting firms for prairie determination is available in the Planning Office.
Natural Drainageway	Natural rivers, streams, channels, creeks or other areas that naturally convey Stormwater runoff or portions thereof that have not been channelized and which is unaltered and retains a predominantly natural character.
Natural Open Space	Common Open Space that includes undisturbed natural resources, such as Floodplains, Wetlands, steep slopes, and Woodlands.
Nodal Development Plan	A land use plan for all four corners of an intersection that applies to the redevelopment of existing commercial center areas or new commercial development for neighborhood, community or regional commercial centers, as described in Horizon 2020, and is designed to avoid continuous lineal and shallow Lot Depth developments along Street corridors through the use of natural and man-made physical characteristics to create logical terminus points for the Node.
Node	An identifiable grouping of uses subsidiary and dependent upon a larger urban grouping of similar related uses.
Non-encroachable Area	That portion of a Lot or development set aside for enjoyment of the natural features or sensitive areas contained within it that cannot be encroached upon by Building or Development Activity, excluding encroachment for common maintenance needs of the land, its vegetation, natural stream beds, etc.
Nursing Care Facility	See Extended Care Facility
Official Zoning District Map	A map or maps outlining the various Zoning District boundaries of the City of Lawrence, Kansas.
Open Porch	A roofed space attached to a Building on one side and open on the three remaining sides.
Open Use of Land	A use that does not involve improvements other than grading, drainage, fencing, surfacing, signs, utilities, or Accessory Structures. Open uses of land include, but are not limited to, auction yards, auto wrecking yards, junk and salvage yards, dumps, sale yards, storage yards and race tracks.
Ornamental Tree	A Deciduous tree possessing qualities such as flowers, fruit, attractive foliage, bark or shape, with a mature Height generally under 40 feet.

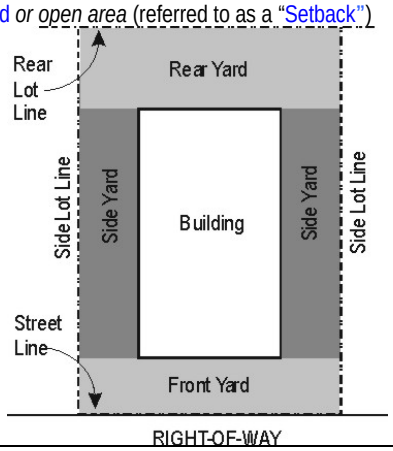
Term	Definition
Outdoor Use Zone	An area designated for outdoor use by a nonresidential or residential tenant within the Public Frontage in a Mixed Use development. At ground level, Outdoor Use Zones may include sidewalk dining, sidewalk sales, product demonstrations or any use accessory and incidental to a permitted nonresidential use in the Mixed Use District. Outdoor Use Zones may also include upper level uses such as balconies or terraces as well as Building-mounted signs.
Overlay Zoning District (or Overlay Zoning District)	Any Zoning District included in this Development Code with the word "overlay" in its title. The Overlay Zoning District regulations are found in Article 3 of this Development Code.
Owner	An individual, association, partnership or corporation having legal or equitable title to land other than legal title held only for the purpose of security. For the purpose of notice, the Owner may be determined using the latest Douglas County Appraiser's assessment roll.
Parcel	A Lot or contiguous tracts owned and recorded as the property of the same persons or controlled by a single entity.
Parking Access	Any public or private area, under or outside a Building or Structure, designed and used for parking motor vehicles including parking Lots, garages, private Driveways and legally designated areas of public Streets.
Parking Area	An area devoted to off-Street Parking of vehicles on any one Lot for public or private use.
Parking Space	A space for the parking of a motor vehicle or Bicycle within a public or private Parking Area. Typically Parking Spaces for private uses are located off the public right-of-way.
Peak Hour	The four (4) highest contiguous 15-minute traffic volume periods.
Pedestrian Scale (human scale)	Means the proportional relationship between the dimensions of a Building or Building element, Street, outdoor space or Streetscape element and the average dimensions of the human body, taking into account the perceptions and walking speed of a typical pedestrian.
Planned Development	Developments processed and considered in accordance with the procedures specified in the Planned Development Overlay Zoning District provisions of Sec. 20-701 and in the Cluster Housing Projects provisions of Sec. 20-702. Generally, an area of land controlled by the Landowner to be developed as a single entity, commonly pursuant to an Overlay Zoning District, for a number of Dwelling Units, office uses, commercial uses, or combination thereof, if any, wherein a development plan detailing the proposed development and adjacent areas directly impacted thereby is reviewed and approved by the appropriate decision maker. In approving the development plan, the decision maker may simultaneously modify specified standards of the Base District.
Planning Commission	The Lawrence-Douglas County Metropolitan Planning Commission established by City Ordinance 3951/ County Resolution 69-8 on March 24th, 1969.
Planning Director	The Director of the Lawrence-Douglas County Metropolitan Planning Commission or her or his designee.
Premises	A Lot, together with all Buildings and Structures thereon.
Principal Building	See Building, Principal
Principal Use	The primary purpose for which land or a Structure is utilized, based in part on the amount of Floor Area devoted to each identifiable use. The main use of the land or Structures as distinguished from a secondary or Accessory Use.
Public Frontage	The publicly-owned layer between the Lot line or Street Line and the edge of the vehicular lanes. The public frontage may include sidewalks, street planters, trees and other vegetated landscaping, benches, lamp posts, and other street furniture.
Public Frontage, Primary	The Public Frontage along a designated Primary Development Zone. Primary Public Frontages are commonly associated with pedestrian-oriented urban commercial and retail areas in Mixed Use settings. They are commonly served by or are accessible to public transit and may contain medium to high residential densities and Vertical Mixed Use Structures. Primary Public Frontages are designed to accommodate heavy pedestrian traffic, street vendors and sidewalk dining and typically consist of a sidewalk or clear area paved from the back of curb of the Thoroughfare to the Building Frontage or Right-of-way line, reserving space for street furniture.
Public Frontage, Secondary	The Public Frontage along a designated Secondary Development Zone. Secondary Public Frontages are commonly associated with pedestrian-oriented Thoroughfares and Mixed Use settings. They are designed to accommodate moderate amounts of pedestrian traffic and typically consist of a sidewalk or clear area adjacent to the Building Frontage or Right-of-way line, reserving space for street furniture, and a landscaped strip with street trees between the back of curb of the Thoroughfare and the sidewalk or clear area.
Public Frontage, Tertiary	The Public Frontage along a designated Tertiary Development Zone. Tertiary Public Frontages are commonly associated with pedestrian-friendly Thoroughfares in lower intensity mixed residential settings, consisting of a 5' wide sidewalk and street trees. Tertiary Public Frontages are designed to accommodate pedestrians who seek to walk to a nearby destination.
Recreational Open Space	Common Open Space that is improved and set aside, dedicated, or reserved for recreational facilities such as swimming pools, play equipment for children, ball fields, ball courts, and picnic tables.

Term	Definition
Recyclable Materials	Reusable materials including but not limited to metals, glass, plastic, paper and yard waste, which are intended for remanufacture or reconstitution for the purpose of using the altered form. Recyclable Materials do not include refuse or hazardous materials. Recyclable Materials may include used motor oil collected and transported in accordance with environmental and sanitation codes.
Registered Neighborhood Association	A neighborhood or local interest group that represents a defined area of the City and that has registered with the Planning Director in accordance with the applicable registration procedures of the Planning Director.
Regulatory Flood	See Base Flood definition in Article 12.
Regulatory Floodplain	See Floodplain definition in Article 12.
Regulatory Floodway	See Floodway definition in Article 12.
Regulatory Floodway Fringe	See Floodway Fringe definition in Article 12.
Residential Collector	See Collector, Residential
Residential-Design Manufactured Home	See Manufactured Home, Residential-Design
Retail Establishment, Large	An establishment engaged in retail sales, where the aggregate of retail uses within a Building is 100,000 or more gross square feet of Floor Area that may or may not include ancillary uses with internal Access from the Principal Use Building.
Retail Establishment, Medium	An establishment engaged in retail sales, provided the aggregate of retail uses within a Building is less than 100,000 gross square feet of Floor Area.
Retail Establishment, Specialty	An establishment engaged in retail sales where new or used goods or secondhand personal property is offered for sale to the general public by a multitude of individual vendors, usually from compartmentalized spaces within a Building. A specialty retail sales establishment shall not exceed 100,000 gross square feet of Floor Area and may have an unlimited number of individual vendors within it.
Root System Zone	A subsurface area designated within the Public Frontage in a Mixed Use development. Such zones shall reserve space for the root system of street trees and landscaping planted in the Street Tree & Furniture Zone.
Sadomasochistic Practices	Flagellation or torture by or upon a person clothed or naked, or the condition of being fettered, bound, or otherwise physically restrained on the part of one so clothed or naked.
Satellite Dish	A dish Antenna, with ancillary communications equipment, whose purpose is to receive communication or other signals from orbiting satellites and other extraterrestrial sources and carry them into the interior of a Building.
Scale	A quantitative measure of the relative Height and Massing of Structure(s) Building(s) and spaces.
Screen or Screening	A method of visually shielding, obscuring, or providing spatial separation of an abutting or nearby use or Structure from another by fencing, walls, Berms, or densely planted vegetation, or other means approved by the Planning Director.
Setback	The minimum horizontal distance by which any Building or Structure must be separated from a street right-of-way or Lot line. (See also 20-602(e))
Setback, Front	The Setback required between a Building and the Front Lot Line. 

Term	Definition
Setback, Rear	The Setback required between a Building and the Rear Lot Line. 
Setback, Side	The Setback required between a Building and the Side Lot Line. 
Setback, Side (Exterior)	The Setback required between a Building and the Exterior Side Lot Line. 
Setback, Side (Interior)	The Setback required between a Building and the Interior Side Lot Line. 
Sexually Oriented Media	Magazines, books, videotapes, movies, slides, CD-ROMs or other devices used to record computer images, or other media that are distinguished or characterized by their emphasis on matter depicting, describing or relating to Specified Sexual Activities or Specified Anatomical Areas.
Sexually Oriented Novelties	Instruments, devices or paraphernalia either designed as representations of human genital organs or female breasts, or designed or marketed primarily for use to stimulate human genital organs.
Shade Tree	Usually a Deciduous tree, rarely an Evergreen; planted primarily for its high crown of foliage or overhead Canopy.
Shared Parking	Development and use of Parking Areas on two (2) or more separate properties for joint use by the businesses or Owner of these properties.

Term	Definition
Shrub	A Deciduous, Broadleaf, or Evergreen plant, smaller than an Ornamental Tree and larger than Ground Cover, consisting of multiple stems from the ground or small branches near the ground, which attains a Height of 24 inches.
Significant Development Project	1. Any modification to a site that alters Parking Areas, drive aisles, or impacts on-site pedestrian and vehicular circulation and traffic patterns that the Planning Director determines to be significant in terms of impacting adjacent roads or adjacent properties; or 2. In the IG zoning district, the construction of one or more Building(s) or building additions that contain a Gross Floor Area of fifty percent (50%) or more of the Gross Floor Area of existing Building(s); or 3. In any zoning district other than IG, the construction of one or more Building(s) or building additions that contain a Gross Floor Area of twenty percent (20%) or more of the Gross Floor Area of existing Building(s); or 4. Separate incremental Building additions below 50% for IG zoning and 20% for all other zoning districts of the Gross Floor Area of existing Buildings if the aggregate effect of such Development Activity over a period of 24 consecutive months would trigger the 50% (for IG) or 20% (for all other zoning districts) threshold; or 5. The installation or addition of more than 50% for IG zoning and 20% for all other zoning districts of existing Impervious Surface coverage.
Slip Road	A road which provides access to and runs a course parallel to an Arterial Street or other limited access street or highway. Slip Roads are commonly used along boulevards to provide access to adjacent properties, on-street parking, and to buffer high-speed traffic lanes from pedestrian areas. Slip roads may also be known as access roads.
Special Purpose Base District	See Base District, Special Purpose
Specified Anatomical Areas	(1) Less than completely and opaquely covered: human genitals, pubic region, buttock and female breast below a point immediately above the top of the areola; and (2) human male genitals in a discernibly turgid State, even if completely and opaquely covered.
Specified Sexual Activities	Human genitals in a State of sexual stimulation or arousal or acts of human masturbation, sexual intercourse or sodomy or fondling or other erotic touching of human genitals, pubic region, buttock or female breast.
Story	That portion of a Building included between the upper surface of any floor and the upper surface of the floor next above, except that the topmost Story shall be that portion of a Building included between the upper surface of the topmost floor and the ceiling or roof above. If the finished floor level directly above a Basement or unused under-floor space is more than six (6) feet above Grade as defined herein for more than 50% of the total perimeter or is more than 12 feet above Grade as defined herein at any such point, or unused under-floor space shall be considered a Story.
Stream Corridor	A strip of land 100 feet wide, of which the centerline shall be the centerline of a stream that is not ephemeral stream: a stream where flow occurs for only a short time after extreme storms and does not have a well-defined channel, similar to a drainage way.
Street, Arterial	Arterial Streets are the highest level of Street classification, generally providing for longer distance trips with relatively high traffic volumes and high speeds for the context. Principal Arterials permit traffic flow through the urban area and between major destinations. Minor Arterials collect and distribute traffic from principal Arterials and expressway to Streets of lower classification, and, in some cases, allow traffic to directly Access destinations.
Street, Collector	A Collector Street provides for land Access and traffic circulation within and between residential neighborhoods and commercial and industrial areas. They distribute traffic movements from these areas to the Arterial Streets. Collectors do not typically accommodate long through trips and are not continuous for long distances.
Street, Cul-de-sac	A Street having only one outlet and being permanently terminated by a vehicle Turnaround at the other end.
Street, Dead-End	A Street having only one outlet and which does not benefit from a Turnaround at its end.
Street, Expressway	Any divided Street or highway with no Access from Abutting property and which has either separated or at-Grade Access from other public Streets and highways.
Street, Freeway	Any divided Street or highway with complete Access Control and Grade separated interchanges with all other public Streets and highways.
Street, Limited Local	A Local Street providing Access to not more than eight Abutting single-Family residential Lots.

Term	Definition
Street, Local	Local Streets provide direct Access to adjacent land uses. Direct Access from a Local Street to an Arterial Street should be discouraged.
Street, Marginal Access	A Street that is generally parallel and adjacent to an Arterial Street or other limited-Access Street and that is designated to provide direct Access to adjacent property. Marginal Access Streets are commonly known as "Frontage Roads."
Street, Private	Any tract of land or access easement set aside to provide vehicular Access within a Planned Development that is not dedicated or intended to be dedicated to the City and is not maintained by the City. Owners of a private street may choose to gate access to this type of street from the general public.
Street, Public	A way for vehicular traffic, whether designated as a local, collector, arterial, freeway or other designation, which is improved to City standards, dedicated for general public use, and maintained by the City. The term shall also include alleys.
Street, Ultimate Design	The Street design that is based on the planned carrying capacity of the roadway consistent with its functional classification on the Major Thoroughfares Maps in the Comprehensive Plan.
Street Line	The line separating the Street right-of-way from the abutting property.
Street Tree and Furniture Zone	An area designated within the Public Frontage in a Mixed Use development. Such zones shall reserve space for street trees and other landscaping as well as street furniture including, but not limited to benches, street lights and transit stops.
Streetscape	The built and planned elements of a street that define the street's character.
Structural Alteration	Any change in the supporting or structural members of a Building, including but not limited to bearing walls, columns, beams or girders, or any substantial change in the roof, exterior walls, or Building openings.
Structure	A Building or anything constructed that requires permanent location on the ground or attachment to something having a permanent location on the ground, including but not limited to fences, signs, billboards, and Mobile Homes.
Subsurface Utility Zone	A subsurface area designated within the Public Frontage in a Mixed Use development. Such zones shall reserve space for public utilities.
Thoroughfare	Any public right-of-way that provides a public means of Access to abutting property.
Tract (of land)	An area, Parcel, site, piece of land or property that is the subject of a development application or restriction.
Transitional Use	A permitted use or Structure that, by nature or level and scale of activity, acts as a transition or buffer between two (2) or more incompatible uses.
Tree Protection	Means the measures taken, such as temporary fencing and the use of tree wells, to protect existing trees from damage or loss during and after construction projects.
Trip Generation	The total number of vehicle trip ends produced by a specific land use or activity.
Unnecessary Hardship	The condition resulting from application of these regulations when viewing the property in its environment that is so unreasonable as to become an arbitrary and capricious interference with the basic right of private property ownership, or convincing proof exists that it is impossible to use the property for a conforming use, or sufficient factors exist to constitute a hardship that would in effect deprive the Owner of their property without compensation. Mere financial loss or the loss of a potential financial advantage does not constitute Unnecessary Hardship.
Vertical Mixed Use Structure	See Mixed Use Structure, Vertical
Woodlands	Natural hardwood forests, whether or not actively forested.
Working Days	Monday through Friday, 8AM to 5PM excluding city holidays

Term	Definition
Yard	Any Open Space located on the same Lot with a Building, unoccupied and unobstructed from the ground up, except for accessory Buildings, or such projections as are expressly permitted by these regulations. "Yard" refers to the actual open area that exists between a Building and a Lot Line, as opposed to the Required Yard *or open area* (referred to as a "Setback") 
Yard, Front	A space extending the full width of a Lot between any Building and the Front Lot Line and measured perpendicular to the Building at the closest point to the Front Lot Line.
Yard, Rear	A space extending the full width of a Lot between the Principal Building and the Rear Lot Line and measured perpendicular to the Building at the closest point to the Rear Lot Line.
Yard, Required	The unobstructed Open Space measured from a point on a Principal Building to the Lot Line from the ground upward, within which no Structure shall be located, except as permitted by this Development Code. It is the three-dimensional equivalent of the required Setbacks for every Lot.
Yard, Side	A space lying between the side line of the Lot and the nearest line of the Principal Building and extending from the Front Yard to the Rear Yard, or in the absence of either of such front or Rear Yards, to the front or Rear Lot Lines. Side-yard widths shall be measured perpendicular to the side Lot Lines of the Lot.
Zoning District	A portion of the territory of the City of Lawrence within which certain uniform regulations and requirements or various combinations thereof apply under the provisions of this Chapter.

East Lawrence Neighborhood Association
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Lawrence, KS 66044
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September 26, 2011

Planning Commission
City Hall
6 E. 6th Street
Lawrence, KS 66044

Dear Commission Members,

The East Lawrence Neighborhood Association would like to show our support for item #6 of the September 26th agenda. The tables lay out Density and Dimensional Standards especially concerning setbacks and height. The Planning Department has done a good job of clarifying and simplifying the tables to make it easier for all citizens to understand the rules and we appreciate that.

However, we are aware that LAN President Gwen Klingenberg has some further text changes she would like included and we support her changes. We feel that these further changes would go farther to help to preserve the property rights and property values in our neighborhood, and also ensure the integrity and historic identity of the East Lawrence area. Our neighborhood is on the upswing in community building and neighborhood pride, and we appreciate clear and fair standards to work with.

Sincerely,

Leslie Soden, President
East Lawrence Neighborhood Association

Dear Chairperson and Commissioners:

One of two decisions need to be made on the placement of certainty for neighborhoods which would be to retain 20-602 with some adjustments for the added standards to the table or create strong language in Art. 11 which would continue requiring protections presently in place and not downgrade our neighborhoods and that the RM12 and RMD be separated.

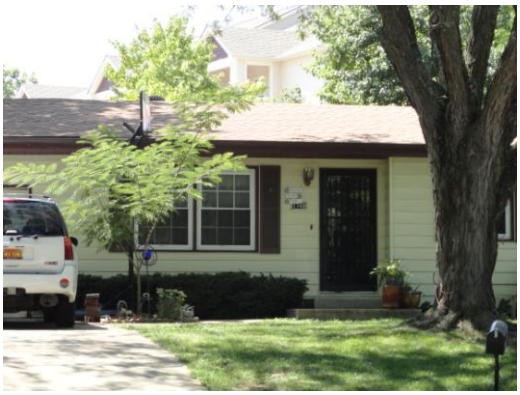
The backbone of any community is its neighborhoods. Not retail or apartments or even businesses that do not pay their employees enough to live in the community they work in. A community grows from the investment homeowners make in that community. If we downgrade or allow an attitude as stated by the staff that protections of neighborhoods are "extremely burdensome" then we encourage destabilization of our neighborhoods and not only no growth, but the reversal. Once we again pull out of the financial downfall the country is facing what is it we want in Lawrence? We worry about being business unfriendly, when we should be worrying about the loss of the third most important item and the only one we as a community can control on the list that any company is looking to set up shop and that is the quality of life a community offers. "…In neighborhoods where they are unsure or uncomfortable, a gem of a house for a great price is not worth it to them, as the perceptions of the surroundings of that home is negative." (Spilchak. T. n.d.).

Devaluing our neighborhoods deteriorates a community and the if a community has a perception of negative surroundings then no one wants to buy there. We as a community should be concerned about being family unfriendly. When an office, apartment, retail or even industrial districts are built first a homeowner may choose to live near them knowing what they are getting into. When the neighborhoods is built first then the only choice a homeowner has is to move if they do not want to live by what it being built and they feel forced out of their home they have been known to move out of town.

In several neighborhoods in this community there were stable neighborhoods with owner/occupied houses and in each case where a tall development was later built those houses along the perimeter next to the tall buildings are now rental properties. The apartments on Stuart and Comet Lane for example. The apartments on Stuart have a double parking lot with a roadway between the parking lots and a nice grassy area before the buildings and now the

owner/occupied ranch houses are now rental property where the renters even state that if the apartment buildings were any closer they would not have rented there.





Apartments on Stuart and one of the house that was owner/occupied and is now rental. Speaking with the owner after the apartments were first built and recently after she put it up as rental property. The houses on the end of the cul-de-sac our now rental. Not just this house.

Communities throughout the country are pushing smart growth while we have set aside a chapter to explicitly deal with smart growth instead of incorporating smart growth practices. Even the president of National Association of Realtors Ron Phipps supports strong neighborhoods and the NRA website states 56% of Americans prefer smart growth neighborhoods stated,

> "The survey also found that community characteristics are very important to most people. When considering a home purchase, 88 percent of respondents placed more value on the quality of the neighborhood than the size of the home,…."
> **(**Wardlaw, M. April, 2011).

There is an attached paper by Cliff Ellis which demonstrates why this practice is done throughout the country and in thriving communities do not believe that it is "extremely burdensome" on any development whether it is RM or any nonresidential district.

At the City Commission meeting it was stated that one reason it was decided to split this discussion with the PD overlay was because this discussion had farther reaching affects throughout Lawrence and it was suggested we take a look at our residential protections. That should include Art. 11 which if the section 20-602 h is completely removed neighborhoods no longer have a requirement of protections only a "may".

By removing

(2) Height Limit on Projects Adjoining Certain Residential Zoning Districts

(i) Applicability
The Height limitations set out in this Section shall apply to any Building constructed in a non-RS Zoning District on a Parcel adjoining, or separated only by an Alley or a Public Street from, a Parcel of land in any RS Zoning District, except that this limit shall not apply to any Building constructed in the CD Zoning District.
(ii) Height Limit Related to Setback

Any Building or Structure to which this Section is applicable shall be set back from the Yard line adjoining the RS Zoning District by the minimum Setback established in Section 20-601 when the Building or Structure is the same or lesser Height than the Building or Structure on the adjoining RS Lot. When the Height of the Building or Structure exceeds the Height of the Building or Structure on the adjoining RS Lot, the minimum Setback for the non-RS zoned property shall be equal to the Building's Height.

we lose the only requirement or certainty that setback buildings would not impede light, sight and privacy to family homes and would allow buildings the size of the apartments on Stuart to be built as close as 25ft from someone's backyard or worse someone's side yard. If a house has a 5 ft setback on the side yard and if for some reason a three story apartment were to be built next to the side yard a 21 ft building would be over shadowed by a three story building only 25 ft from the yard. If the apartments were in a RM12 district they could be built 10 ft from a house. The perception and reality is the loss of security, safety, and privacy.

The staff's wish to put in the tables some black and white standards that support requiring protections for residential districts with the understanding that the development community gravitates to the tables and not the text is appreciated. The staff trying to get everyone on board with the same understanding in hopes to prevent the continued disagreements between those who wish to build next to those who have already invested is also appreciated.

The changes in the tables are a great start. But we have not dealt with how we are going to protect neighborhoods if we remove certainty for a "may". That certainly being 20-602 h for the" may" in Art. 11

(a) Design and Operational Compatibility Standards—Discretionary Approvals

As a condition of approval of any Special Use Permit, Map Amendment, site plan or other discretionary approval of any multi-Family use or nonresidential use located within 500 feet of any less intensive residential district, the City Commission, Planning Director, Planning Commission or other review body may impose conditions that exceed the minimum requirements of this Chapter and that, in the opinion of the review body, are necessary to reduce or minimize any potentially adverse impacts on residential property, including, but not necessarily limited to, the following:

(1) location on a site of activities that generate potential adverse impacts on adjacent uses, such as noises and glare;
(2) placement and buffering of trash receptacles;
(3) location of loading and delivery areas;
(4) lighting location, intensity, and hours of illumination;
(5) placement and illumination of outdoor vending machines, telephones, and similar outdoor services and activities;
(6) additional Landscaping and buffering;
(7) Height restrictions to preserve light and privacy and views of significant features as viewed from public property and rights-of-way;
(8) preservation of natural lighting and solar Access;
(9) ventilation and control of odors and fumes; and
(10) paving or other surface treatment for dust control.

The standards in the table might also be enough to offset the need to equal the house size mentioned in 20-602 h to using the district height size.

When working though this discussion bufferyards were mentioned as an important part of privacy, but bufferyards do not immediately create privacy as in the case of Canyon Court. When visiting Joseph Dr. there were a few trees and now the property owners had to put in more trees and fencing at the homeowners' expense.



Canyon Court shortly after being built.



Do we truly support forcing homeowners to finance further privacy items and then make them decide they must put the property up for rental since they lost they sense of privacy, safety and security?

The second picture in this document also had a buffer yard or a no man's land between two fences:



Bufferyards are nice, but do NOT provide privacy especially at the beginning.

One of the reasons the code is more explicit in today's code is the older code had complaints of uncertainty for the development community. This alleviated the lack of specifics. Since there is no way to predict the building type and size in a various districts that will be next door to a house or block or even several blocks of houses it was easier to create the certainty that any building next to single family homes did not impede the privacy, safety and security either in

sense or reality. We lose that sense and reality if we remove 20-602 h altogether and do not find somewhere equally set in the codes.

Also, for some reason we believe that RM12 and RMD should be under the same standards and there is a picture below of RM1 (RM12 today) being three story buildings with balconies. The reason for the RMD is its use as a buffer building type and tends to be no more than two stories tall and two units and the RM12 is not and they should not be put under one category with the same standards since their use is not the same.



At the time this was built it was built as RM1 which according to the table on page 11 of our new development codes is now called RM12. If you will note the building is the same as the other buildings I have been presenting. Why would we not also provide the same setbacks for RM12 as we do the other RM districts?

Jefferson Commons on 2511 W 31st.

This building under the draft table could be set only 5 ft from one's yard or 10 ft total from bedroom windows.

After the residential protections subject is approved our neighborhoods should continue to thrive and be stable by continuing the protections that provide certainty of safety, security and privacy for homeowners who invest in Lawrence. We have RM districts that have clearly followed the step approach in Lawrence and so it is not "extremely burdensome" to build appropriately for continued stable neighborhoods.

That is why we need to either leave 20-602 in Art.6 with some variation that supports the added setback in the tables or add stronger language in Art. 11 and we need to separate RM12 from RMD since RM12 allows the same building sizes as the other RM districts and RMD is a smaller single family sized building type use as a buffer unit between taller buildings and single family building.

The very basis for community is for people to live together for our mutual benefit. Neighborhoods do not come to business, business comes to neighborhoods. Unstable neighborhoods lose business.

References

Spilchak, T., Point2 Education Coordinator (n.d.). I love this place: the importance of neighborhoods in home purchases. Point2Agent. http://www.point2agenteducation.com/z_-_The_Importance_of_Neighborhoods/page_2158633.html

Wardlaw, M. (April, 2011). NAR study finds americans prefer smart growth communities. National Association of Realtors. http://www.realtor.org/press_room/news_releases/2011/04/smart_growth

PRIVACY PERFORMANCE STANDARD BETWEEN INCOMPATIBLE USES

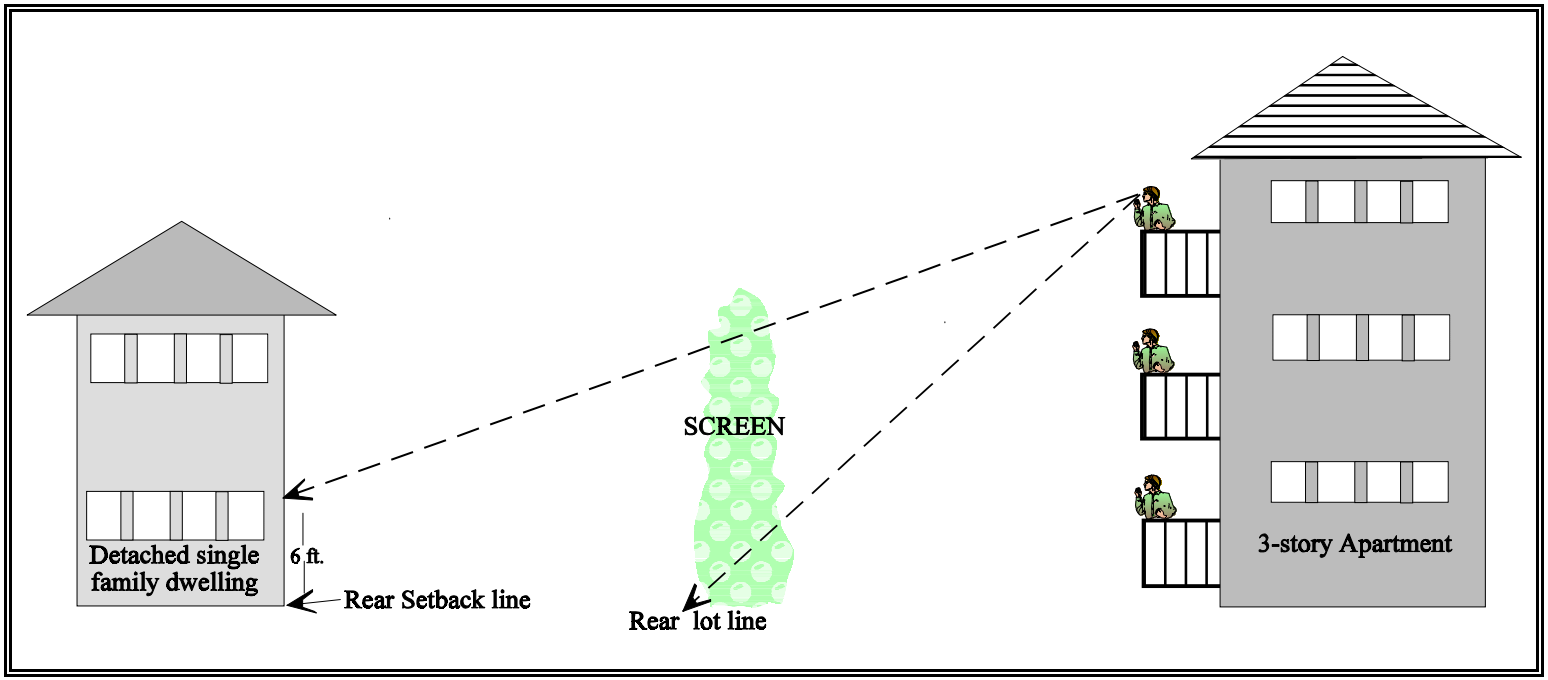


Figure 1. This is a suggestion for a performance standard where an apartment or apartments with rear balconies are planned to be built adjacent and to the rear of existing or planned single family dwellings. The dotted lines are sight lines that start six feet from the topmost balcony floor measured from its outer edge, and cover the back yard area and first floor level of the single family dwelling. The developer has a choice of providing his own method for completely interrupting the highest sight line from the ground level up to at least one foot above it for the length of the apartment rear lot line. Please note that rear balconies facing onto side lot lines of single family areas pose a similar problem with a different geometry.

The screening choices have to be listed, and would include providing for an immediate and complete view-interrupting screen of evergreen vegetation and trees, or a berm and fence of the same dimension, (a berm alone wouldn't be sufficient), or building lower profile residential buildings such as two-story duplexes, townhomes, or other lower profile housing types between the apartment and the single family area.

Meeting the performance standard would be mandatory. The standard would apply to all proposed apartments with balconies adjacent to rear lot lines of existing or planned single family areas regardless of the height of the balcony. Using sight lines gives the developer the flexibility of increasing his yard width between the lots so the height of the screening could be lower, or building a lower profile building in between, or providing some other effective view interrupting barrier from a list provided in the ordinance. Please note the term "view interrupting barrier." This means a completely view-impenetrable screen, not just a "view reducing" one.

SUBJECT: PERFORMANCE STANDARDS BETWEEN INCOMPATIBLE USES

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On 3 Apr 2004 at 16:29, licht wrote:

>
> Dear Prof. Ellis:
>
> This is a follow-up to the telephone conversation on transitional standards between incompatible
> uses that we need to add to our draft new code. The zoning provisions of the Land Development
> Code have been approved by the Planning Commission and now will soon be coming before the
> City Commission. This is a conventional district, and because of that, all design standards must
> be written into the code. The Code does include performance standards of a sort, so this might
> be the way to go to bolster areas where it is so inadequate.
>
> As you remember, our multiple family districts make no distinctions in housing types, and we
> have no transitional district, so zoning alone is no protection between incompatible uses. We do
> have chapters on Use Regulations and Density and Dimensional Standards, and a chapter on
> General Development Standards that has one Section on Protection Standards for Residential
> Districts, but these are totally inadequate and permissive, besides.
>
> I reviewed my copy of Anton Nelesson's book, and could not find what might be applicable to our
> need for performance standards between incompatible uses. Peter Calthorpe's approach of
> using TODs seems a bit more like Lawrence in that he surrounds the mixed use commercial
> centers (usually located on an arterial intersection) with a planned sequence of housing types
> and neighborhood oriented non-residential uses, all pedestrian oriented and with transit hubs.
> People accuse him of only supporting rail transportation, but he designs neighborhood-size bus
> TODs, too.
>
> The nightmare that sent me to the drawing board was an apartment built off of Sixth Street that
> has balconies facing directly behind two single family homes on Joseph Drive. This is only one
> example. In the next message I will send you a picture of this. Following this, is a stab at a
> performance standard to deal with such a situation, because potentially it has become a real
> problem here.
>
> If you know of any codes that have approaches that would be similarly applicable, our Land Use
> Committee would be most grateful to have these references. I know how busy you must be, and
> we want to avoid imposing on your time.
>
> Two messages will follow with attachments. Thank you very much for your interest.
>
> Betty Lichtwardt
> 2131 Terrace RD, 66049
> 842-0547
> licht@ku.edu
>

Cliff Ellis, Ph.D., AICP
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The following section of this message contains a file attachment
prepared for transmission using the Internet MIME message format.
If you are using Pegasus Mail, or any another MIME-compliant system,
you should be able to save it or view it from within your mailer.
If you cannot, please ask your system administrator for assistance.

---- File information -----------
File: IncompatibleLandUses.doc
Date: 12 Apr 2004, 12:04
Size: 1534976 bytes.
Type: Unknown

ANSWER FROM PROF. ELLIS

Dear Betty:

I finally had a little time to take a closer look at your transitional standard diagrams. I'm sure that there are many ordinances governing this type of situation around the country, but I would have to do some research to find them. Also, the American Planning Association may have some publications on this particular topic (screening and buffering adjacent land uses), but I don't have any titles off the top of my head. I wish that I had more time to help out, but this is a pretty hectic time of the semester.

Offhand, your formulation looks pretty good, if you really want to achieve full privacy for the people in the single-family homes. However, I was wondering just how tall the trees and fences would have to be in order to provide full screening from the third floor balcony. It might be advisable to run a test and see exactly how high that would be. Then, the issue is what type of tree would provide full screening all year around? Probably a tall evergreen. But what if those trees would have to be 20-30 feet tall? Would the developer of the apartment building have to import fully grown, 30 foot evergreens? (It can be done, but would be expensive). Or would he be allowed to plant trees that would (within a certain number of years) grow tall enough to provide full screening?

For the view from the third-floor balcony, I don't think that any regular fence would be tall enough to provide effective screening. There really are limits to how high a fence can go before it becomes an eyesore in itself.

Gwen, this is the crux of our problem. We are now eliminating the band aids.

As we discussed, the genesis of the problem is the placing of the land uses in such close proximity. Using New Urbanist principles, there would be a more gradual transition from apartment buildings to single-family homes (a "density gradient"), not an abrupt transition across a property line. The land use pattern is forcing you to use berms, fences, and landscaping to erect a visual wall between land uses that shouldn't be so close together to begin with.* In the attachment to this message, I have provided a few schematic illustrations of how the problem is managed in New Urbanist developments. First, the progression of land uses is a gradual gradient from the center of the neighborhood to the periphery. Second, streets, alleys, and civic spaces are used to separate different land uses (e.g., a single-family block from a townhouse block), rather than berms, fences, and landscaping (although these certainly can play a role.....). Mixed uses integrated into walkable neighborhoods are a good thing, but they have to be designed properly in order to work.

In the image of the Lakeside project in Texas, there is also the use of a "step-down" configuration of the apartment building, to make it compatible with the adjacent single-family homes. Landscaping is also used. But the landscaping required to provide some screening of backyard areas is much more manageable when the apartment building steps down to a lower elevation, to match with the scale of the single-family homes.

Sorry that I can't think of any "magic bullet" documents. You could surf the Internet using Google (typing in keywords such as visual performance standards, zoning buffers, screening land uses, etc.) and see if you can turn up any model ordinances.

---

* Underlining has been added.

I think that the basic idea of your proposed performance standard is OK. It's hard to imagine what else could be done, given the situation that you describe. But I do wonder about exactly how high the trees would have to be to provide full screening. I think that you need to pin that down before hand. It isn't such an easy matter to create a huge, opaque wall of tall evergreens. (A landscape architect would be able to provide an estimate of cost and feasibility.) A person standing on a third-floor balcony has a very elevated view of the surrounding landscape, and it may not be so easy to provide a screen that sticks up high enough to interrupt the line of site. (Also, evergreens taper at the top, reducing their effectiveness at blocking views. Deciduous trees have full canopies at the top, but shed their leaves in the fall and may not provide the full screening that you want during the fall and winter months.)

Anyway, those are a few thoughts. I doubt that much of what I've said is particularly helpful for the fine-tuning of your particular performance standard. I don't deal with this kind of thing on a daily basis. (Do any of the staff of the Lawrence-Douglas County Planning Department have detailed experience with the writing of such performance standards?)

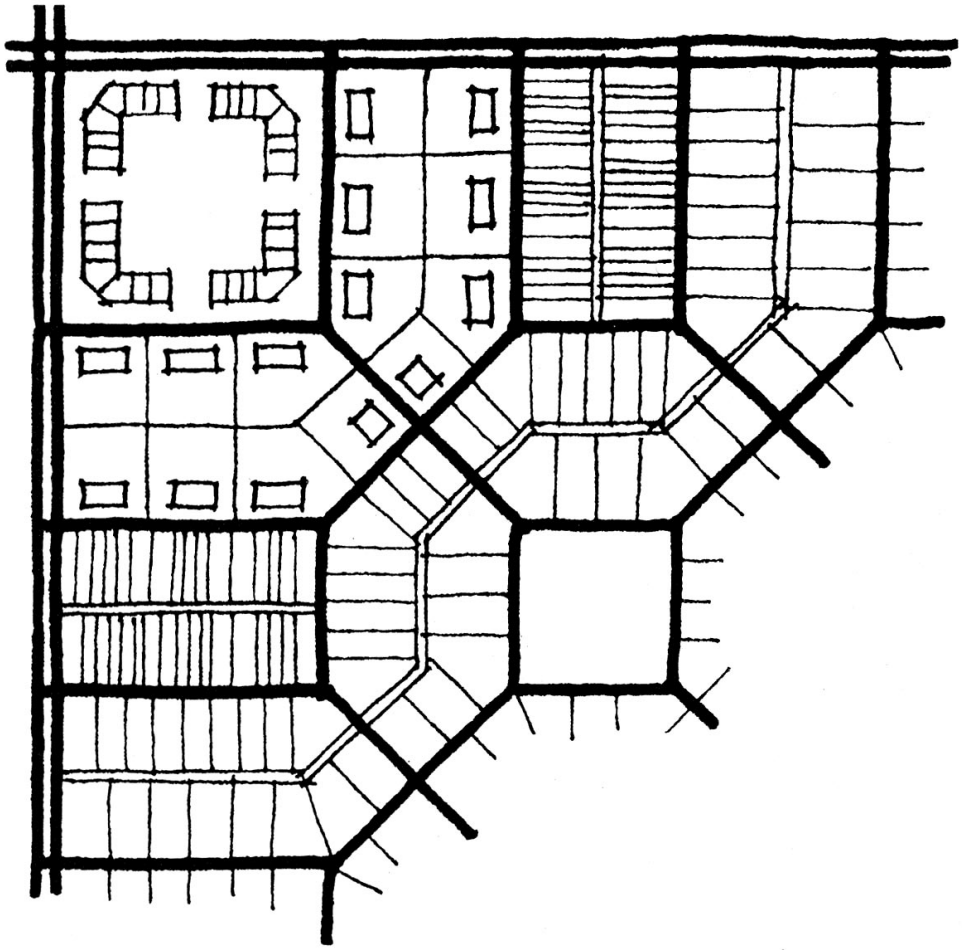
Good luck with your effort. Let me know if you have any more questions. And it would be interesting to find out how everything turns out in the end, after it is debated and a final decision is made.

Best regards,

Cliff Ellis

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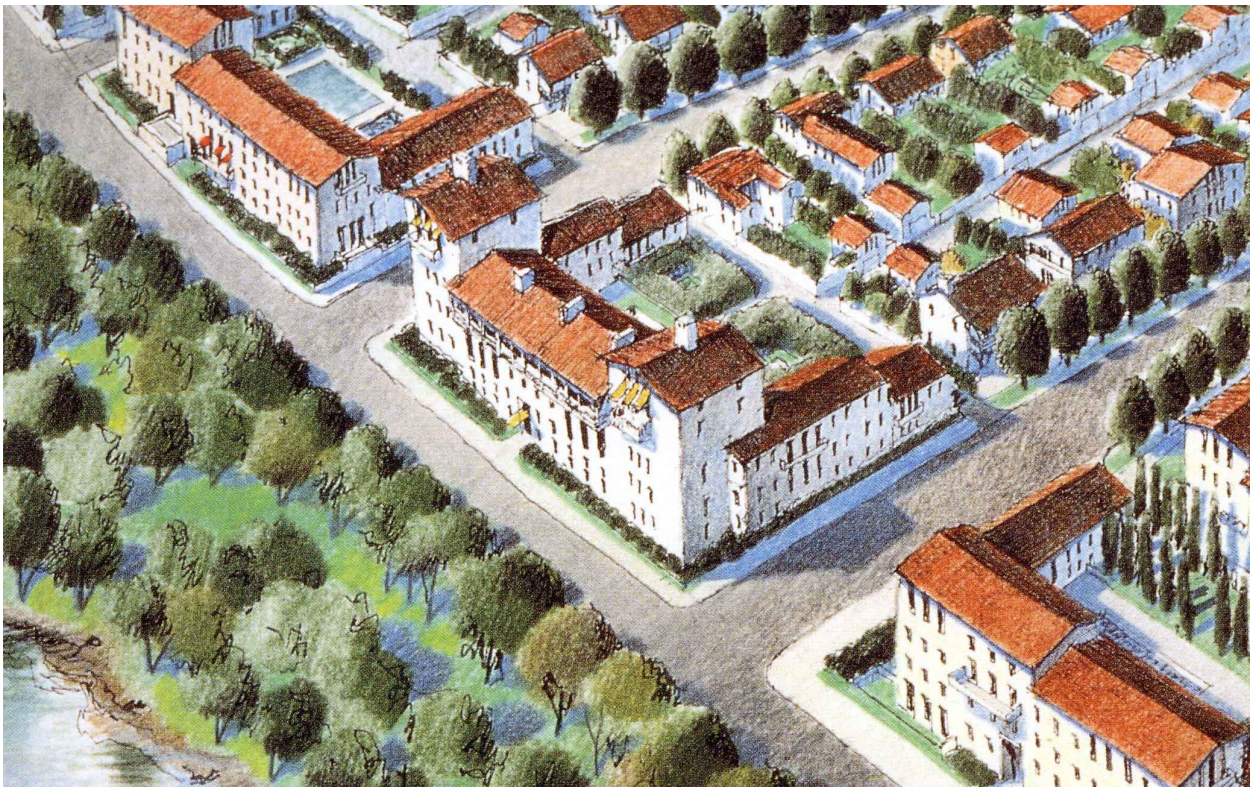
USE OF STREETS AND ALLEYS TO SEPARATE LAND USES (WHILE STILL MAINTAINING WALKABILITY AND A NETWORK OF INTERCONNECTED STREETS



Commercial, offices, apartments, townhouses, and medium- and low-density housing can all occur in a confined area and be served by a continuous, interconnected street network. A logical, orderly progression of land uses can coexist without having to use setbacks, landscaping, and fences extensively as blocking or transitional elements. Instead, streets and alleys serve as the transitional elements. (*Paraphrase from text)*

Source: Hall, Kenneth B., and Gerald A. Porterfield. 2001. *Community by Design: New Urbanism for Suburbs and Small Communities*. New York: McGraw-Hill.

USE OF A "STEP-DOWN" BUILDING DESIGN, ALONG WITH AN ALLEY (AND SOME LANDSCAPING), TO IMPROVE THE COMPATIBILITY OF AN APARTMENT BUILDING AND SINGLE FAMILY HOUSES.



This is the shorefront for the village of Lakeside in Texas by DPZ (1995). The six story apartment buildings step down to join the scale of the first adjacent house in the residential street behind. The adjustment of the scale is not the only tool available; the shared syntax of windows and walls and pitched roofs helps significantly in integrating smaller and larger buildings. *(Paraphrase from text)*

Source: Duany, Andres, Elizabeth Plater-Zyberk, and Robert Alminana. 2003. *The New Civic Art: Elements of Town Planning*. New York: Rizzoli.

League of Women Voters of Lawrence-Douglas County
P.O. Box 1072, Lawrence, Kansas 66044

RECEIVED
SEP 26 2011
City County Planning Office
Lawrence, Kansas

September 25, 2011

Mr. Richard Hird, Chairman
Members
Lawrence-Douglas County Metropolitan Planning Commission
City Hall
Lawrence, Kansas 66044

RE. ITEM NO. 6: TEXT AMENDMENT TA-8-12-11 TO CITY OF LAWRENCE DEVELOPMENT CODE; CHP 20 (MJL)

Dear Chairman Hird and Planning Commissioners:

We urgently request that you not approve Text Amendment TA-8-12-11 to our Lawrence Land Development Code as it is now proposed. We request that you consider three changes to this TA.

(1) that you leave in our Code Section 20-602(h) as it is presently written. This provision requires that a non-RS building adjacent to an RS building either be the same height as the RS building or the non-RS building shall be set back from the lot line the distance of its own height.

(2) that you initiate a change to Table 20-601(a) with a text amendment that separates the RM12D (duplex) District from the RM12 (general multiple family) District and gives the RM12D (duplex) District its own column and places the RM12 District where it belongs with the other general multiple family districts in its own separate column. It should have the general multiple family height and setback restrictions—the same required setbacks as the other general RM districts, since there is no distinction between the RM12 District and other general RM Districts except density.

(3) if you do not follow our above two requests, then we ask that you make the provisions of Sections 20-1101(a) through (c) mandatory. This is the only article and sections that provide protections to single-family areas. These sections are now only permissive and apparently have never been used since their adoption.

We ask for these changes for the following reason:

One of our most important League positions on Environmental Quality and Land Use since the 1970s has been the support of good neighborhood planning, with the goal of creating strong, viable and stable neighborhoods. Over the years it has been shown that thriving cities have stable, vibrant neighborhoods. What creates the environment for this has been the same as for any economic investment: the predictability of a present and future compatible, supportive environment. When land uses such as out-of scale buildings, apartments and other incompatible uses are foisted on neighborhoods inappropriately, even at the edges, it has a deteriorating effect that spreads. Single-family homes become rental properties. Landlords of these houses don't have the same incentives for good maintenance as their former owner-occupants had. Neighborhoods deteriorate. As neighborhoods go, cities deteriorate. We can't afford to let this happen. We must provide the land use and regulatory protections needed for stable neighborhoods and high percentages of owner-occupied housing.

We also suggest that this would be the time to review our current land use policies and regulations involving neighborhoods. We believe that our planners have misinterpreted the principles of "smart growth." Some of our newest areas are so poorly planned that they provide no areas where people looking for single-family homes in stable neighborhoods can go. We would like to review these issues with you.

Again, we ask that you seriously consider our three requests.

Sincerely yours,

Kay Hale
Kay Hale
President

Alan Black
Alan Black, Chairman
Land Use Committee