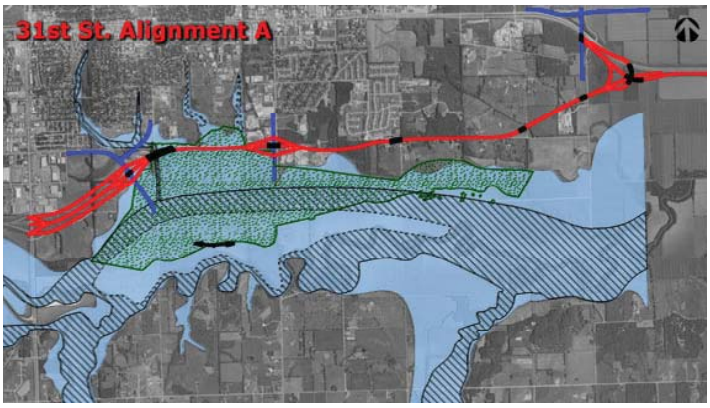
Other Pertinent Information

Understanding the History

The 31st Street project from O'Connell Road to Haskell Avenue has been a topic of discussion for years. Back in the late 1980's, this section of roadway was considered to be the best alignment option for a future expressway encompassing the south part of the City (the majority of the ground then being in Douglas County). The proposed roadway was later named the South Lawrence Trafficway (SLT). Although a portion of the SLT has been constructed from Iowa Street westerly and northerly to Interstate 70, the eastern section has been the topic of heated discussions, lawsuits, and a variety of studies. The exhibit drawing below was presented as an alignment option. The Federal Highway Administration is expected to make a ruling on the 4(f) permit application in mid to late July 2007.



This is the history that we, the Consultant Team, need to understand when we work with the community to develop the project specific design criteria and amenities that will be used to guide the project design for this new section of roadway. Prior to the City issuing the RFQ, our firm wanted to get a more complete understanding of the project. We spoke with various members of the City and County staffs to get their perspectives regarding the project. Mike Novak and Ric Johnson attended the City Commission meeting on April 24th when the resolution to enter into the City-State agreement for the design of the 31st Street project was considered. During the discussions it became very clear to us that there was a need to expand our information gathering to be able to effectively address the "community goals." Mr. Mike Caron attended the City Commission meeting and made a very pointed statement.

He said if a defacto trafficway was being jammed down the City's throat, he guaranteed the community would rise up and be split badly. He said if a true arterial was placed in there with deep thinking about how it could be done in ways that preserved Haskell's interests and protected the wetlands, and truly created something that was not a barrier, there were ways this could be done, but the way it was approached and the attitudes were going to make all the difference in the world.

It was very clear that people within the Lawrence community have been thinking about and monitoring this project for some time. We contacted Mr. Caron and asked him to elaborate on comments he made during the Commission meeting. Mr. Caron coordinated a meeting for us to meet with himself and of members of the Haskell community. We had the pleasure to meet and visit with Thomasine Ross, Stan Ross, and their son and his fiancée, and Cecilia Flores. When we told everyone that we were there to **listen** to their ideas, concerns, and issues about the future improvements to 31st Street, they said that no one had ever sat down and **asked** for opinions prior to someone showing them prepared drawings of roadway options. They understand that a roadway will need to be built to handle the growth in the area. They understand that there are some constraints that are needed for safety. However, they would like the opportunity to express their ideas and be involved in the process.

This is only one segment of the community that we have met with that wants to be involved. We're confident that other legitimate community interests will need to be assessed and incorporated into the project. The use of an open, context sensitive design approach will benefit Lawrence and Douglas County by delivering a supported community based public improvement.

Public Outreach / Context Sensitive Solutions

As we stated, there are a variety of community issues that will benefit the project by utilizing a more "hands on" process to develop design parameters used in the project. The "process" for gathering these ideas, issues, and concerns is critical to a successful project outcome. The idea is to "to create visions, and to establish project goals or criteria, which can later serve as measures for evaluating the project upon its completion. The evaluation of project alternatives and alternative designs (including non-traditional solutions) is important because it allows stakeholders the ability to assess the advantages and

disadvantages of a variety of approaches to addressing a project's purpose and need.

Overview of the Planning Process

Patti Banks Associates (PBA) knows that roadway design and construction efforts can be challenging and are at times difficult for the public to accept. We understand that the presence of valuable natural and cultural resources, such as the Baker Wetlands, the Mary's Lake area, Prairie Park Nature Preserve, Haskell Indian Nations University (HINU), and the issues associated with the anticipated development of the SLT will keep the extension of 31st Street east of Haskell Avenue in the forefront of the community's mind. Maintaining open communication with the public, especially key stakeholders like HINU, adjoining neighborhood homeowners associations, other property owners, environmental advocacy groups, biking and pedestrian community, and more will be critical to the long-term success of the project.

We understand that the City of Lawrence seeks to provide meaningful opportunities for interested citizens, stakeholders, and organizations to participate in the improvements planned for 31st Street between Haskell Avenue and O'Connell Road, the approach below explains how PBA will involve and engage the public throughout design process. The approach has been planned so that community outreach efforts will:

- *Blend information sharing with information gathering in a way that allows community issues, priorities, and values to be clearly understood.*
- *Facilitate communication between diverse groups so that problems are addressed and solutions are developed.*
- *Allow participation and input from stakeholders needed for plan buy in and implementation.*
- *Provide for consideration of a range of ideas and possibilities.*
- *Help achieve agreement on the future character of the corridor.*

Issues, Vision, and Guiding Principals

After the Consultant Team completes the inventory and analysis phase of the project, PBA will take what is learned, and through a facilitated round table discussion with targeted community stakeholder groups will coordinate with WCI and City officials to determine the issues and vision for the project. The vision will include key guiding principles that will be used as the conceptual and preferred alternatives for the 31st Street extension are developed. Visioning questions may be as follows:

- *What one or two words could be used to describe 31st Street east of Haskell Avenue today?*
- *Picturing 31st Street in 25 years, what qualities would it have?*
- *What's one thing about 31st Street that needs to be fixed?*
- *What are the corridor's current strengths?*
- *What are the corridor's current weaknesses?*
- *What are the constraints in the corridor?*
- *What are the potential opportunities in the corridor?*
- *What uses has the corridor served in the last 10 years?*
- *What purposes can the corridor serve in the next 10 years that no other area in the community can/ should serve?*
- *What are the unique assets of the corridor that could attract or retain users, e.g. cyclists, and walkers?*
- *What are the perceptions of the corridor, in terms of assets and liabilities, as a transportation route?*

Input from Stakeholders, Public, and City Officials

Effective community outreach informs stakeholders, the public, and city officials about the project, provides a mechanism for community understanding and support, solicits input, and develops a relationship for future implementation. Because public input cannot be part of every decision linked to the project, PBA will coordinate with the City to determine:

- *What the public can decide.*
- *What public input is valuable.*
- *What factors, such as continued funding and timing, influence the message to the public.*
- *If public support is necessary for implementation, who will be affected and whose support is needed.*
- *How the community will continue to be informed.*

PBA recommends community input happen at three important points in the planning process:

- *To raise issues and help mold the vision and guiding*

principles for the project.

- *To review and provide feedback on the conceptual alternatives and streetscape/landscape theme that can be used to shape the final preferred alternative.*
- *To review and provide feedback on the preferred alternative.*

Our approach would necessitate that meetings with City Staff and Officials, a Technical Advisory Committee, Community Stakeholders, and the general public to discuss issues and vision, for example, are scheduled and coordinated to occur throughout a particular day. Input from each of these groups is central to this process:

- *The Technical Advisory Committee would meet regularly throughout the design process and Committee members would be involved, not only with Committee meetings and workshops, but also with public workshops in a special parallel track that will allow more intense consideration of the issues. PBA anticipates that the Committee may include representatives from the Departments of Public Works, Parks and Recreation, Utilities, etc.*

- *PBA would conduct a Round Table Discussion with targeted groups of Community Stakeholders representing a diverse cross-section of the community including but not limited to, neighborhoods (Prairie Park and Mary's Lake), businesses, the Wetlands Preservation Organization, Sierra Club, Kansas Ottoman Society, HINU, Baker University, University of Kansas, Lawrence Bicycle Club, and Kennedy Elementary School, over a 3-hour period as a way of gathering early input about community issues, vision, and goals for the project and building consensus. The Consultant Team will coordinate with City Officials to identify stakeholders but anticipates that City Staff will secure stakeholder agreement to meet for the discussion, find and reserve the meeting location, and help with logistics.*

- *Public Workshops would take place at three major input points and will include a separate track for Technical Committee members that will join the general public where appropriate. The workshops will include hands-on activities and visual preference exercises to clarify points of view and gain agreement. The Consultant Team anticipates that City Staff will be an integral part of the public workshops, as they help with workshop facilitation, find and reserve meeting locations, and help with logistic coordination.*
  - *The first Workshop will focus on Issues, Vision, and Guiding Principles. It will be formatted as a formal presentation after which meeting participants will be broken into small groups to participate in an interactive exercise. Report back and a discussion of next steps will follow.*
  - *The second Workshop will center on Review of Conceptual Alternatives and Streetscape/Landscape Theme. It will be structured as a formal presentation followed by an interactive open house.*
  - *The third Workshop will focus on Review of the Initial Draft Comprehensive Plan. It will be formatted as a formal presentation followed by an open house.*

- *The Consultant Team would brief, seek advice from, and make presentations to City Officials including City Council, at key points during the process:*
  - *At the fist input stage, an informal briefing to key City Officials to let them know about the process and seek their guidance and knowledge. City Staff will be expected to notify the City Council at this point that the design process is starting, roughly what it will consist of, and when they can expect to review the preferred alternative.*
  - *At the alternative stage, an informal briefing with key City Officials to get input on alternatives.*
  - *At the preferred alternative stage, a formal presentation will be given to the City Council with a PowerPoint presentation and display boards.*

Outreach Methods & Strategies

The Consultant Team would employ a variety of community outreach methods and strategies to gain meaningful feedback throughout the design process including:

- *General Comments*
  - *Determine What the Public Can Decide: PBA considers what segment of the population will be affected; is one group of people affected more than the other; and whose blessing is necessary.*
  - *Use Previous Public Comments: Public comment from past studies, e.g. 31st Street Corridor Study and Southeast Area Plan, and other projects and surveys within the project area will be taken into account during design and can serve as a tool throughout the entire process.*
  - *Be Sensitive to Diverse Audiences: At public meetings, the project team and staff will attempt to communicate as effectively as possible. Technical jargon should be avoided. The project team will monitor the success of their approach, and refine the public involvement approach based upon the needs of the audience.*
  - *Be Realistic with Participants: In public meetings, PBA staff and other*

participants will emphasize the realistic nature of the design process, helping people understand that results may not be seen quickly. This will help create realistic expectations and build trust between staff and participants.

- *Facilitated Format*
  - *Define the Framework: At each meeting PBA will set up the discussion by defining where this particular meeting falls in the scope of the design process, what the role of the participants is, what decisions can and cannot be made, and then providing the background information needed for successful discussions and decisions.*
  - *Structure Hands-on Workshops: The approach is a learning model where we learn from the past and learn from each other, then use that information to make informed decisions. PBA uses a number of "hands-on" techniques that can be tailored to client need in order to improve understanding and generate ideas. We also use maps and markers for hands-on learning and discussions, as well as other techniques. A part of this approach is the "No Wrong Answers" method for structuring community exercises. This builds the exercises on decisions that have already been made so that the answers will be relevant to the design process.*
  - *Focus & Elevate the Discussion: Information gathered from interviews with Community Stakeholders will provide early insight into neighborhood issues and can serve as a tool to elevate the discussion for the first public meeting. This information could be used to demonstrate that we are listening and to focus and elevate discussion.*

- *Open House Format: An open-house format involves separating into areas for greeting, display, and recording comments. This may be done with large, single room or a group of smaller rooms. One or more greeters stationed at the entrance to the room or rooms ask people upon arrival to fill out a sign-in sheet and direct them to exhibit areas. Each person is provided a handout. Several sets of exhibits should be available in order to provide visitors ample opportunity to see the information. The exhibits of the project should be of sufficient quality and scale such that key areas are easily identifiable.*

- *Community Stakeholder Identification: Generally, stakeholders would include anyone that has a stake in the outcome of the design process. Everyone who lives, works, or owns property within the project area will be considered a stakeholder. Stakeholders to be identified will be individuals or groups who have an interest in the specific issue due to its potential impact on them. Example community stakeholders would include neighborhood groups, umbrella organizations, advocacy groups, and more. Relationships with these groups should be maintained for future partnerships in the implementation process.*

- *Stakeholder Communications: Use the City's Web Site: The City of Lawrence's web site, www.lawrenceks.org, offers opportunities to involve the public. Project newsletters, flyers and/or postcards could be used to keep residents up to date about the project and advise them to visit the city's website to learn more or ask questions. Project notices and materials could also be posted to the site prior to and during the project. Example web site features could include downloadable study documents, summaries from Committee meetings and Public Open Houses, and a special "How to get involved" icon should be provided on the home page and linked to information about how people can get involved in the design process. The website address should be included on all other publications and advertisements.*

- *Documentation of Public Comments: All input received from the public would be documented to provide a record that the comment was received and assist the Consultant Team with review of public input, which could then be used in the development of the comprehensive plan update. Comment from the public meetings would be documented through the use of sign-in sheets, comment cards, and notes taken on note pads. All comment would be summarized in a written record outlining the major points and themes.*

Geotechnical Issues

An important design issue is to address is to review any reports on-file with the City's Parks and Recreation Department on the stability of the Mary's Lake Dam. If one is not available, we recommend that a geotechnical firm provide an analysis of the earthen structure. WCI has extensive experience with dam evaluations. We are currently under contract to provide dam rehabilitation analysis for several of the State Fishing Lakes across the State of Kansas. From our initial observations, the City has been very proactive in keeping the downstream slope

clear of trees and shrubs. If the proposed 31st Street vertical alignment would extend onto the toe of the dam, we would want to make sure that we would not be detrimentally affecting its stability.

During our field investigation, we noted the construction debris land fill south of the Mary's Lake dam. We observed a variety of materials being dumped including dirt, rock, broken concrete, and asphalt (see photo below). It appears that the fill material extends to the tree line located just south of the Mary's Lake dam. A detailed analysis of the fill material will need to be completed for the area under the proposed roadway footprint (and possibly with the proposed right-of-way) or the material will need to be removed to the existing groundline and replaced with a controlled fill to achieve the minimum density requires to prevent settlement and damage to the proposed improvements.

It should be noted that it appears that the height of the fill material is approximately the same height as the Mary's Lake dam. There is a drainage channel at the toe of the dam that convey stormwater runoff to the east along the toe.

In a quick attempt to ascertain the types of in situ soils that we expect to encounter, we pulled the soils information from the USDA website. A copy of these reports are located in the next section (6) for your information. Basically, the soils are loams and silty-loams. According to the report, the soils drain well, however, we have reviewed another report that indicates the soils in this area are highly susceptible to errosion and should be protected during construction. The photo below shows a section of exposed sandstone southwest of Mary's Lake. Our firm has had experience with using natural rock formations in cut areas versus constructing a retaining wall. The natural rock (assuming that it is stable) can provide a more natural look that blends better with the terrain and the proposed vegetation used for landscaping.

Field Survey / Property Investigation

Our survey approach has been divided into the following project topics Ownership Surveys, Control Surveys, Design and Topographic Surveys and Quality Control and Assurance. All surveying and related services will meet the minimum standards for property surveys in the State of Kansas.

Ownership Surveys

When performing ownership surveying, Peridian Group, Inc. (PGI) will provide these four basic technical steps:

1. *Title Reports* — PGI has identified one of the key components to keeping a right-of-way or boundary project on schedule is to ensure that title reports and upfront research is prepared as early as the affected parcels can be identified. By obtaining title

reports early, the maps will accurately represent any encumbrances that may affect the subject parcels and will also eliminate many revisions to the right-of-way maps. **For example, we are concerned initially with the title information for the home located within the apparent existing 31st Street right-of-way at the O'Connell Road intersection. The drawing provided by the City at the pre-proposal meeting shows that this house appears to be encroaching into the right-of-way.**

2. *Monument Locations* — After the property is defined, our crews will perform a diligent search for monuments that define the property. These monuments and any evidence of occupation, including fences, will be located. It is also a very important responsibility for the field surveyor to locate all other features that may reflect on the value of the properties. Fence locations, utility poles, walls, structures, septic tanks, wells, and existing easements will be located since these features may affect the property value or de-valuation.

3. *Ownership Preparation* — Upon completion of monument search, we will prepare a preliminary boundary compilation determining the existing boundary and easements encumbering the property. For right-of-way surveys, PGI will determine a survey centerline to utilize as the alignment for the maps. Right of way maps will be prepared as per the minimum standards for property surveying in Kansas. The right-of -way maps will serve as the base map for acquisition and final right-of-way certification. A metes and bound legal descriptions for each individual right-of-way take will be prepared. Each legal description will be used in the acquisition/condemnation of each parcel.
4. *Monumentation* — PGI will set monumentation per said minimum standards for surveying for all the takes. All monuments will be an 18" long, 5/8"-diameter rebar with a survey cap stamped with the licensed surveyor's professional survey number.

Design and Topographic Surveys

For design and topographic surveys, our surveyors utilize the combination of RTK and total station collection instruments, which are powerful arsenals for both sparse and remote areas as well as dense city and town sites. The following are important when providing these types of services:

1. *Digital Terrain Modeling* — PGI surveyors are trained in defining "breaklines" that define the actual breaks in the topography. Typically, they locate these in a cross-sectional format. Spot elevations are obtained in a grid format usually at 50-foot intervals for one-foot contours or dependant upon the terrain. Cross sections shall be obtained at a minimum 50-foot interval.
2. *Utility Locating* — Prior to beginning any design survey, a telephone call is placed to Kansas One Call requesting utility spots. Visible utilities such as water valves, manholes, vaults, overhead electric fire hydrants, and underground utilities defined by spots are located. Actual planimetric lines are drawn in the field connecting the utility spots. Manholes are opened, and inverts and pipe sizes are measured.
3. *Structures* — Existing inlets, pipes, and box culverts are detailed by locating the inverts, abutments, pipe sizes, and materials. Planimetrics are located and incorporated into the electronic file. Photographs and sketches are recorded and provided as a deliverable.
4. *Planimetric Features* — Existing planimetric features such as fences, edge of roads, curb and gutter, buildings, finished floor elevations, sidewalks, trees, and shrubs are located and

provided as part of the design survey as "existing conditions."

Utility Coordination

Our approach to utility coordination revolves around strategic meetings in combination with the standard City staff meetings. Underground utilities are by their nature hidden from view. Without careful research and data collection, underground utilities that are not discovered during the design phase will usually always result in construction delays and increased costs.

WILSON & COMPANY

UTILITY LOCATION REPORT

The purpose of this report is to provide a better understanding of the existing utilities located within the project limits. As part of our standard plan development procedures and required by law, our office has contacted or will be contacting the state One-Call Program for utility locates.

Attached is a drawing that provides a general location of the project. Please return a copy of this form and any information noted below to this office as soon as possible. Thank you for your cooperation and assistance. If you have any questions, please feel free to contact our project manager.

Project Manager:	Ric Johnson			Date:	July 11, 2007
Office Address:	Wilson & Company, Inc. 8735 Rosehill Road, Suite 200, Lenexa, KS 66215				
Phone:	913-492-6365	Fax:	913-492-0838	E-Mail:	ric.johnson@wilsonco.com
WCI File No.:	07 100 6xx				
Project Name:	31st Street Improvements				
Project Location:	Lawrence, Kansas (between O'Connell Road and Haskell Avenue)				
Project Description:	Design of the roadway improvements for 31st Street. Proposed construction includes underground drainage, water main extension, pedestrian trail, bike lanes, and landscaping.				
Utility Company Name:					
Type of utility:					
Utility size (diameter, voltage, etc.):					
Material type (plastic, steel, fiber, etc.):					
Location of utility (right-of-way or, easement; above or below ground):					
Approximate depth:					
Age of utility:					

☐ Note: All proprietary information provided will remain confidential. Only utility location will be provided on the plans if requested. Please check the box to the left for confidentiality.

General Questions

1. Does the Utility Company have an easement? (If yes, please submit a copy of the legal description.) ____ Yes ____ No
2. Are Utility Plans available: (If yes, please submit a copy.) ____ Yes ____ No
3. Are there any plans in progress for additional facilities or other improvements within the project limits? ____ Yes ____ No

Through the years, communities have been frustrated by lack of apparent, active participation in project improvements by the utility companies. Many times this lack of progress is due to the consultant not "engaging" the utility companies early in the design process. In 2000, Wilson & Company developed a simple Utility Location Report form in an effort to gather information and formally demonstrate the desire of the City to work with their utility.

This form is transmitted to all utility companies within the area that could be affected by the proposed improvements. The information requested includes contact names and telephone numbers during design and construction, information about the size, depth and age of the existing utility, request for any maps and/or private easement information, and specific limitations that may need special attention during the design process. Our goal is to obtain this information while the surveyors are gathering field information. The maps that we can obtain from the utility companies are beneficial in conjunction with the field locates to supplement the paint marks and flagging that can be less than comprehensive that we obtain through the one-call locate system.

The photo to the left was taken near the 31st Street and Haskell Avenue intersection. The fiber optic marker indicates that there is a utility running north-south along Haskell Avenue. Any intersection improvements may effect this facility. The photo below shows the presence of an underground telephone and water main along the south side of 31st Street. Coordination of utilities like these on any project is challenging and the utility issues in this project since we are trying to determine the current and ultimate roadway and right-of-way footprint are even more challenging. For this particular project, we know that there will be several utilities that may be interested in extending their facilities along the project corridor.

During our walk-through of the project, we logged information regarding high pressure gas, power poles, fiber optic, telecable, telephone, and the existing water main. An effective utility management program will provide the City with an ability to coordinate the future utility infrastructure in such a way to minimize traffic disruption and to protect the roadway investment. We believe that utility coordination should be a cooperative, partnering process.

The first utility coordination meeting should occur shortly after the receiving the notice to proceed. This meeting will bring all potentially affected utilities together to discuss the location of their facilities, obtaining any record drawings that they may have, provide information about the project, and open a dialogue for specific issues that they may want the Project Team to address during the design process. In respect of the City staff's time constraints with other projects and normal City issues, we propose to utilize two of the monthly project progress meetings in both the Concept Development and Field Check Plan phases with the City to invite the affected utility companies to maintain open communication during the design process.

Items of discussion can include proximity to other utilities, potential crossing conflicts, project scheduling, or any other issue that could impact the relocation process. The more conversations the utility companies have during the design, the less likelihood of conflicts during construction. Copies of the utility coordination meetings will be made available to the contractor to provide them with a history of the progress and issues that were faced in the design phases.

Traffic

The City has identified 31st Street from Haskell Avenue to O'Connell Road as a "principal arterial." According to the City's Horizon 2020 plan (we recognize that the Transportation section has not been adopted), the principal arterial roadway will be four-lanes handling a large volume of traffic. The use of a divided section is recommended for these types of roadway to control access and improve the safety.

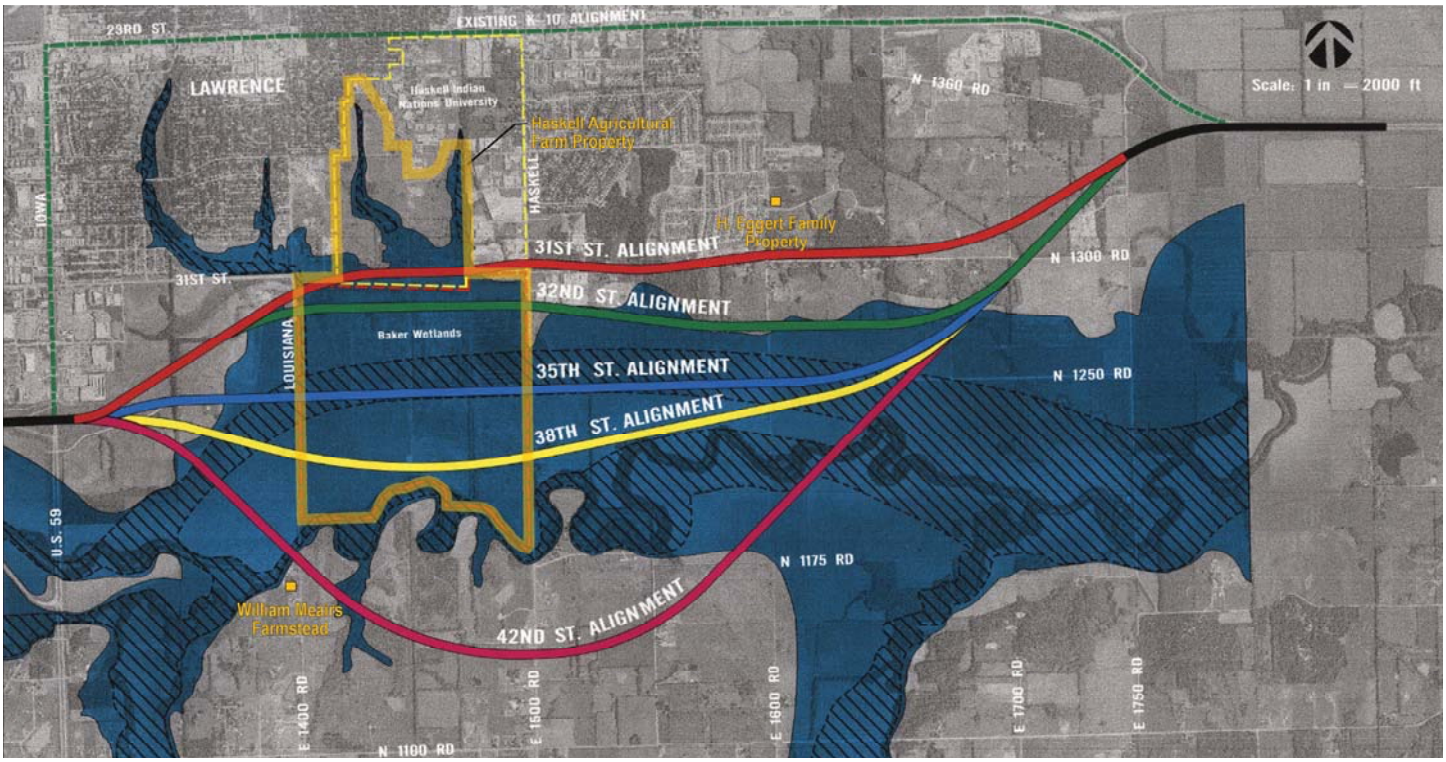
However, the Kansas Department of Transportation has this same roadway designated as a "minor arterial." This should be addressed with the State to make sure that any decisions/solutions developed in the Public Workshops will not conflict with the monies earmarked for this project.

The analysis of the proposed traffic volumes will be a challenge. The decision on the SLT will have a direct impact on the traffic that would use 31st Street. Even if the SLT is approved, KDOT has admitted that there is no funding currently assigned to construct the project. In the meantime, the City of Lawrence is growing and the traffic volumes are increasing.

If the SLT is approved for the recommended 32nd Street alignment, then 31st Street will more than likely act more as a collector roadway. Since the access is limited the O'Connell Road intersection and the existing businesses on the west end of the project corridor, a 2-lane section with a center turn lane (as needed) may be a viable solution.

However, we are aware that if the 32nd Street alignment is approved, there will more than likely be lawsuits filed in court to stop the project. A similar lawsuit was filed to stop the construction of the SLT on its original alignment. The courts sided with the plantiffs and the SLT was stopped.

If the same situation occurs and the SLT is stopped or a more southern route is chosen, then 31st Street will act more like the arterial roadway as identified by the City. The 31st Street corridor has the potential to be the only other east-west route from Iowa Street to K-10 south of 23rd Street.



Our firm is familiar with a variety of different modeling softwares used throughout the country. We have been the corridor manager for Interstate 25 in Colorado Springs for several years. Our same traffic engineering group will be assigned to analyze these various scenarios. The City's traffic model will need to be supplemented with data to show the effects of these various alternative scenarios. These volumes will affect the ultimate roadway section used for establishing the proposed right-of-way and future construction costs.

Mr. Stan Ross commented that he was concerned about the speed of the traffic along the existing section of 31st Street from Louisiana Road to Haskell Avenue. There are very few access points in this area. From our own observations, we can confirm that the traffic does drive well above the speed limit during the evening hours. This roadway is not lighted and presents safety issues that may be similar to the proposed improvements between Haskell Avenue and O'Connell Road if they are not addressed.

In preparation for this proposal, we did some research on alternatives that are recognized by the Institute of Transportation Engineers. Roundabouts by their simple nature require traffic to slow to a controllable level as they circumnavigate the route. We have discussed the potential of constructing roundabouts at the Haskell Avenue and O'Connell Road intersections. A mid-point roundabout could be constructed near Mary's Lake to provide a pedestrian refuge for people wanting to cross the roadway and access the park. Another option to consider is a curvilinear alignment. However, this will require additional property acquisition that will increase the costs of the project. Any of these options will need to be carefully reviewed based on their merits against their ultimate effect on the traffic flow.

Typical Sections / Alignment Options

During our initial discussions with the City and County staff, they both stated that there would need to be a serious review of how this roadway system would function. As we stated earlier, much will depend on the ultimate alignment of the SLT. Commissioner Dever stated in the April 24th Commission meeting,

> *There were a lot of people who had moved into that neighborhood and thought it was important to provide them a safe alternative to move west, even if it was just to Haskell and off of the grid, which was 23rd Street. He said he was not sure if there was money, time, or opportunity to do anything more, but it was a great opportunity to think forward and differently than an SLT if it was how they needed to go.*

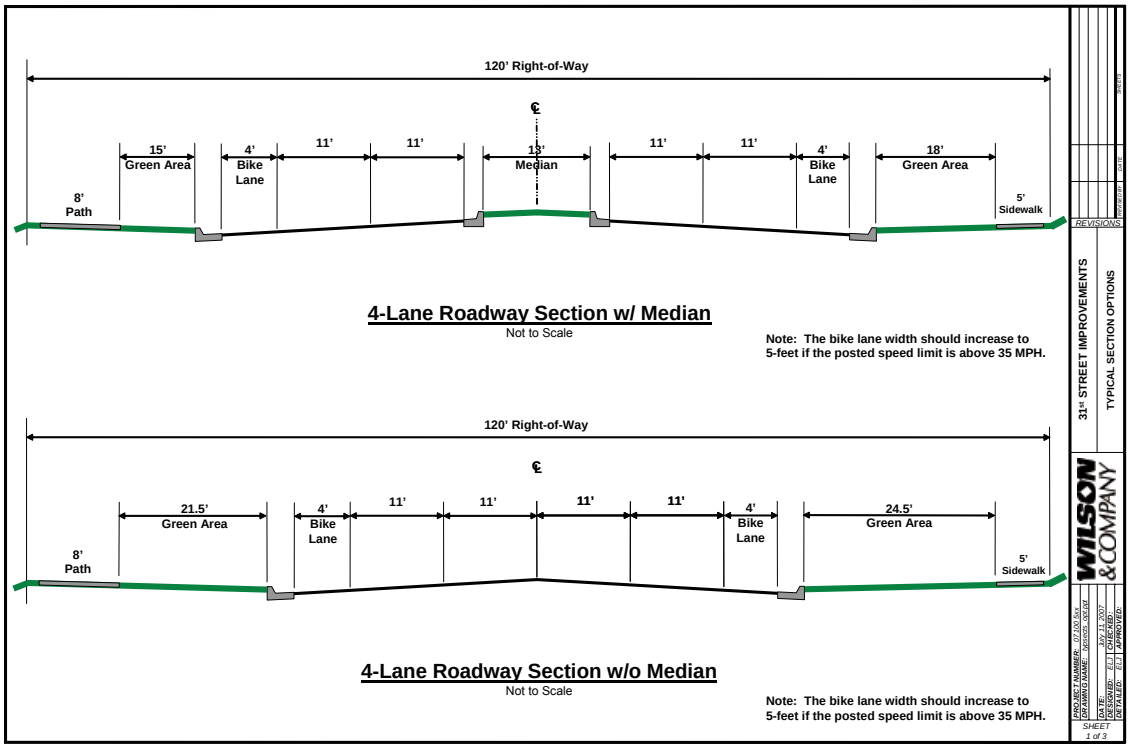
In the same meeting, Commissioner Chestnut added,

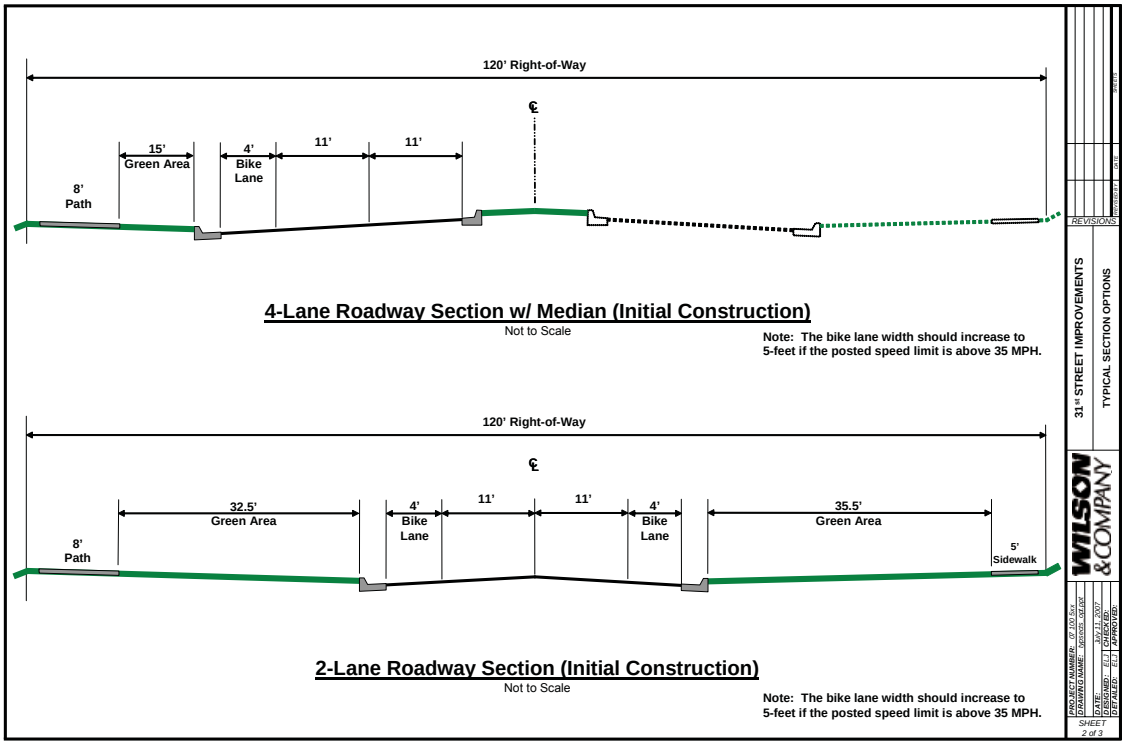
> *Regardless of what happened with the SLT, design work would be needed on 31st Street on that corridor. They would want to explore what options were available and understand whether it was a two lane road, a four lane road, whether the SLT went in or not, they had to look at the mile stretch and figure out what they were getting into as far as environmental issues and possible alignments. He said he agreed with spending less of the money on design and more on right-of-way because the early design work was going to be very "iffy" because there were so many other variables involved. The more ability the City had to acquire right-of-way, gave the City more options to react to whatever happened in that SLT.*

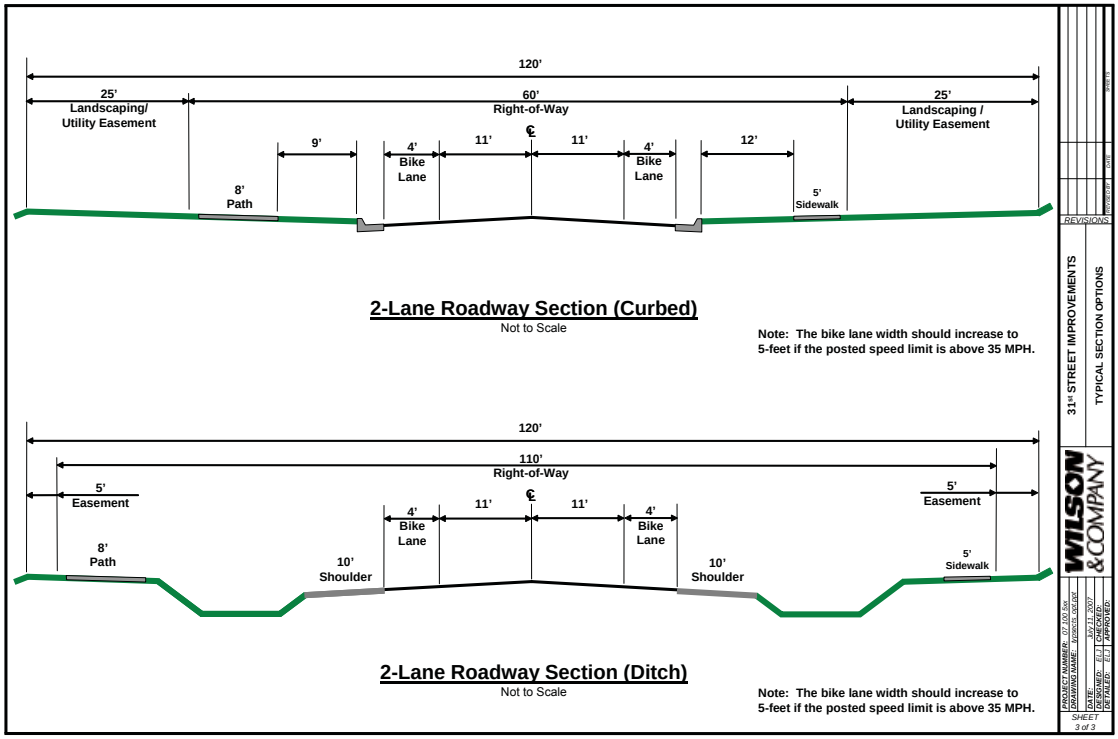
Based on these statements, it's clear that the consultant team needs to review the current City standards and also provide alternative solutions to save cost and provide roadway footprint that suited the needs of the community.

For example, the standard lane widths used within most communities are 12-feet. We recommend that the City consider using 11-foot lanes. This simple change has a two-fold effect. 1) It reduces the cost of the project (approximately $28,000 per lane-mile); and 2) it requires additional driver's attention to maintain their vehicle in a reduced lane width thereby indirectly improving safety by driver awareness. Within this section of the proposal, we have provided a few typical sections to consider. These range from the 4-lane divided roadway to a 2-lane ditch section with utility and landscaping easements to conserve right-of-way. Each of these options can be discussed in the proposed workshops as alternatives. All parties involved need to understand the advantages and disadvantages of how this roadway should be designed. We have included several typical sections that could be reviewed as part of the proposed improvements. An item that gets lost in the

discussion about the width of lanes, the number and type of sidewalks, and other hard surface amenities is the space allocated for the utilities. At our first utility meeting we will address the minimum requirements for the extension, relocation or construction of water mains, sanitary sewers, power, telephone, fiber optic, gas, and telecable facilities. Most of the time, it is preferred not to have these facilities located under any paved surface. Therefore, there needs to be sufficient "green space" to install them safely to prevent conflicts. For the purposes of this proposal, we have shown a 120-foot wide footprint for an ultimate build-out section (4-lanes). Variations of this width are presented only as a basis of conversation and a point to begin discussing the alternatives that could be further studied.







The 31st Street improvements will face minimal access issues. There are no access points east of the commercial area located near Haskell Avenue. The current 31st Street / Haskell Avenue intersection is stop-controlled. It's apparent that the majority of the traffic movements are southbound to westbound and eastbound to northbound, depending on the time of day. Each leg of the intersection has 2-lanes, except for eastbound 31st Street. The City has added a left-turn lane to handle the heavier traffic movement. The aerial photograph on the right shows 3 vehicles lined up to make the left-turn movement from the west side of the intersection.

We will use VISSIM software to model a roundabout option at this intersection. Once the simulation is complete, we will compare the results with RODEL software. We are concerned about the unbalanced traffic volumes moving through the intersection. For a roundabout to work properly, the traffic needs to have some form of uniformity so that one leg of the intersection will not dominate the movements thereby not creating sufficient gaps for other traffic to enter the intersection.

This takes us back to the importance of the proper development of the City's traffic model to determine the amount of traffic approaching and departing each intersection.

The same situation will need to be analyzed for the 31st Street / O'Connell Road intersection. A roundabout was constructed north of the 31st Street intersection at 28th Street. Note the bike lanes and how they enter and exit the intersection.

Other options to consider are the alignments of the roadway, both horizontal and vertical. A proactive approach to reviewing the alternatives could enhance the quality of the project by working around some of the natural amenities of the area and/or creating specific features where there were none in the beginning.

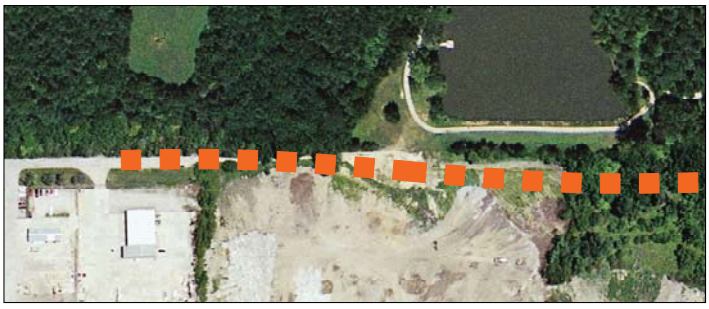
The existing vertical grades established at either end of the project will need to remain somewhat unchanged to prevent negative impacts to the existing businesses and

the connection to the existing intersections. The photo below is looking west from the last business entrance. Note the elevations and locations of the various business entrances and sideroad entering onto 31st Street. This section would benefit from a continuous center turn lane to move the turning traffic out of the way of the through traffic.

As we noted in the Geotechnical portion of the Project Approach, there is an existing sandstone outcropping located southwest of the old Mary's Lake entrance. This entrance was closed in 2000 at the direction of the Parks and Recreation Department to control access into the facility. This same location appears to have a vertical sight distance issue that will require lowering the hill. The sandstone could be cut or excavated in such a way as to create a vertical face. This would provide a more natural look and would eliminate the costs of a retaining wall or the additional grading to achieve the required slopes. We recently achieved the same visual effect in the grading around the Monticello Road project. An existing limestone ledge was cut to provide a shear face adjacent to the Coon Creek Bridge and create a visual enhancement to Lake Lenexa.

In addition to considerations for sight distance issues at the crest of hills, we need to evaluate the crossings of the natural streamways that we'll encounter along the alignment. Depending on the volume of drainage that will be encountered at these crossings, we could evaluate alternative crossroad materials. The use of certain culvert structures could provide for a natural bottom in lieu of the old-fashioned multiple pipes with end sections approach to conveying water. Recent studies have indicated that the water quality of a stream (including habitat quality) is improved by not disrupting a natural stream. Animals will tend to cross at these structures rather than become trapped in a manmade pipe or take their chances crossing over the roadway surface. These benefits will need to weighed against the feasibility and cost over other potential solutions to the environmental issues. The photo to the right was taken from a Contech brochure to provide an example of an aesthetic structural option to consider.

The horizontal alignment is an issue that will need to be addressed carefully. Based on the property ownership drawing presented by the City, there is a large quantity of existing right-of-way that somewhat follows the section line. Any deviation from a straight line alignment may require additional right-of-way. Below is an aerial photograph of the area near Mary's Lake. This area could be improved by deviating from the section line as shown to minimize and/or eliminate any encroachments with the dam structure. The alignment crosses into the landfill area. The geotechnical investigation will determine the extent of the removal needed to achieve and solid roadway foundation to construct our improvements.



A similar situation occurs on the east end of the project. A curvilinear alignment could benefit the roadway by eliminating the encroachment into the platted green space in the Prairie Park subdivision. Please note the location of

the existing home that appears to be located within the existing 31st Street right-of-way (see blue circle). As we noted in the Field Survey section of the Project Approach, the property will need to be carefully researched to determine the actual property limits.

Project Aesthetics / Pedestrians / Bicycles

Landscape Site Analysis

An initial visit to the project site is the first step to assess the existing topography, drainage patterns, vegetation, structures and overall character for use in designing enhancements that are ecologically sensitive and compliment the surrounding landscape and architecture. This effort will include a review of existing planimetric and GIS data, City aerial photography, and any known historical data relevant to the project.

Theme Development

From the collaborative effort resulting from the public workshops with the City of Lawrence, stakeholders and public we will develop a working theme which will be used to create the overall character of design enhancements for the street, trails, and landscape improvements. A theme is often crucial to developing a project that is context sensitive, cohesive, and meaningful.

Streetscape

Design concepts for streetscape enhancements will be prepared and presented to the client for approval. These concepts will be prepared based upon the preferred alignment option and roadway section for streetscape elements along 31st Street, for general roadway plantings, for including the roundabouts, or where preferred by the client.

These concepts may include both hardscape and landscape materials that depict the aesthetic theme and/or character of the project. Hardscape materials can vary from specialty pavements, fencing, retaining walls, and site furnishings to architectural or artistic elements.

Landscape materials may include street trees, shrubs, perennials, seed, sod and other accent plantings along the street, intersections, entries, or seating areas. These enhancements may also be used at the roundabouts, if applicable.

Plantings will be selected based on their compatibility with those native to the Kansas and specifically the Lawrence region. Normally these types of plantings require less overall maintenance, water, and fertilizer. We believe that the selection of native plants will help to unify newly vegetated areas with existing plantings at the Prairie Park Nature Center and the wetlands.

Pedestrian / Bicycle Facilities

PBA has been actively involved in a variety of pedestrian and bicycle connectivity in the projects. They will review the area and design a trail system that serves the critical links as determined by the City, stakeholders, and public. These critical links may include the future South Lawrence Trafficway trail, Mary's Lake and the Prairie Park Nature Center, the future rails-to-trails west of Haskell Avenue, the Haskell-Baker Wetlands south of the Haskell Indian Nations University (HINU), and other schools and public facilities. Also, the trail system should ultimately tie into the HINU on-campus pedestrian system. Concepts will be produced showing general information such as trail plans, access control locations, potential trailhead locations, and a determination of bridge or low-water crossings. Trail gradients will be reviewed for accessibility issues.

Trail amenities such as rest area seating, bike racks, water fountains and signage will also be considered. Signage opportunities include trailhead signage and distance markers as well as interpretive signage for plants and wildlife. Not only can interpretive elements inform and educate but, along with a trail, they can unify distinct areas and spread the project theme.

The proposed trails will be designed to standards as set forth in the AASHTO (American Association of State Highway and Transportation Officials) Guide for the Development of Bicycle Facilities and the Americans with Disabilities Act (ADA) where appropriate.

Drainage

The terrain along 31st Street from Haskell Avenue to O'Connell Road is rolling. There are several low points along the proposed street alignment with four major watersheds in this area that cause the varying slope along the proposed roadway.

1. Starting on western portion of the project at the intersection of 31st Street and Haskell Avenue
   - *Basin = Naismith Creek*
   - *Tributary = Naismith Creek*
   - *River = Wakarusa River*

2. Along the northern side of the proposed 31st Street around Mary's Lake
   - *Basin = Mary's Lake*
   - *Tributary = Naismith Creek*
   - *River = Wakarusa River*

3. Starting at a point 0.42 miles west of the intersection of 31st Street and O'Connell Road
   - *Basin = Prairie Park*
   - *Tributary = Naismith Creek*
   - *River = Wakarusa River*

4. Ending on the eastern portion of the project at the intersection of 31st Street and O'Connell Road
   - *Basin = O'Connell*
   - *Tributary = Naismith Creek*
   - *River = Wakarusa River*

Mary's Lake is located 0.4 miles east of the intersection of 31st Street and Haskell Avenue. The dam for the lake is located along the proposed street alignment of 31st Street. As stated in the first part of the Project Approach, the dam should be reviewed to ensure its integrity.

Naismith Creek runs along the south side of the proposed 31st Street roadway improvements. The construction of the proposed roadway should not impact the creek.

There is an existing enclosed storm sewer system at the intersection of 31st Street and Haskell Avenue. The stormwater drains to an end section on the north side of 31st Street. Once entering into the system, the stormwater is conveyed to the south through a crossroad culvert pipe to a grass-lined channel, eventually flowing to Naismith Creek to the south.

There is also an existing enclosed storm sewer system located north of the intersection of 31st Street and O'Connell Road. The stormwater flows through several different pipe systems to the southeast, eventually flowing to Naismith Creek to the south.

Another enclosed storm sewer structures and pipes system is located around the development of Prairie Park. These storm systems flow to an end section to a stream in the Prairie Park watershed, eventually flowing to the Naismith Creek to the south.

Proposed Storm Sewer Improvements

Assuming that a curb and gutter section is selected as the preferred alternative, additional storm sewer inlets will need to be constructed along 31st Street to accommodate the stormwater runoff. Depending on the alignment of the roadway, these inlets will be placed along the roadway to collect the runoff both on-grade and in sag conditions of the vertical alignment. In addition, modifications to the existing storm inlets, and associate storm pipes, located at the intersection of 31st Street and Haskell Avenue may need to be adjusted to accommodate the proposed roadway.

The storm sewer system will be designed using the current City of Lawrence Stormwater Design Criteria.

Water Quality

Our proposed design team from PGI has a broad background in stormwater runoff and water quality. Joel Riggs has over 15 years of combined experience in engineering design and construction of street, drainage, utilities and other municipal and environmental projects. His background as the Stormwater Engineer for Johnson County will be a valuable resource in developing an erosion and sediment control plan for this project. Joel served as the co-chair of the APWA technical committee to update the Erosion and Sediment Control Standards and Specifications. He also helped both Hillsdale Lake and Springhill update their Erosion and Sediment Control Standards.

Curt Talcott will be working with Joel in creating a stormwater management plan that is specific to the needs

of the 31st Street project. He has previously managed the design of several benefit district projects in Lawrence including Folks Road, Congressional Drive, Overland Drive and Crossgrate Drive. As project manager for many stormwater projects, Curt's project responsibilities have included complete preparation of studies and preparation of detailed engineering plans and specifications.

The specific stormwater task manager assigned to the 31st Street project is Alysen Abel. Alysen brings experience with both roadway design and benefit districts. She helped draft the Erosion and Sediment Control Standards and Specifications for the KC Metro Chapter of APWA. Alysen also helped draft the Storm Drainage Manual for KDOT.

She drafted an exceptional report that will serve as a model for the Preliminary Stormwater Management Plan for the Landings at Lake Lenexa in the City of Lenexa. This report outlined the Best Management Practices (BMPs) for both water quantity and water quality for the residential development. Many of these same principals could be utilized on this project to protect the natural drainage ways along the corridor.

Environmental Clearances

In an effort to prevent duplication of effort, we would encourage the City to use as much of the SLT environmental analysis as possible. Obviously there will need to be changes and supplements to the collected information that will be specific to the preferred alignment and roadway section created from the public workshops. These environmental issues for a categorical exclusion include:

The level of effort for this phase of the project is focused on obtaining a Categorical Exclusion (CE) clearance. If additional information is required, this will need to be completed as part of the development of the Final Plans. WCI will prepare a CE checklist as a guide to prepare the report for this project. The following items will be reviewed.

a. Using the Douglas County appraiser's database of information, WCI will review the age of the existing structures located along the project corridor. The State historical office will be contacted to obtain a clearance letter stating that the proposed improvements will not likely have an effect on the historic or archaeological resources and there will be no impact to any property listed or eligible for the National Register of Historic Places. WCI will take photographs of each structure located along the project as record evidence and supporting documentation for this submittal.
b. We will coordinate with the Lawrence Parks and Recreation Department to determine if there are any Section 4(f) properties that will be affected by the proposed improvements. We will need a letter from this department as supporting documentation of this finding.
c. WCI will prepare the calculations of the acreage of farmland converted for the proposed 31st Street improvements.
d. WCI will review the following sources for potential hazardous and solid waste concerns: Federal Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS); National Response Center Hotline data base; Kansas Department of Water Resources (DWR) for confirmed abandoned or uncontrolled hazardous waste disposal sites; Kansas list of hazardous waste treatment, storage, and disposal facilities; Kansas list of solid waste facilities; Kansas database of underground storage tanks; and Center for Agricultural, Resource and Environmental Systems. WCI will prepare a statement regarding the findings of the review for the report.
e. WCI will contact the US Department of Interior Fish and Wildlife Service and the Kansas Wildlife and Parks Department to obtain a letter stating that the project will not impact any federally listed or proposed to be listed endangered or threatened species protected by the Endangered Species Act.
f. WCI will review the impact to the low-income properties along the project corridor. The document will need to locate which properties will be removed and or effected by the proposed improvements. A statement will need to be prepared that addresses the adequacy of relocation housing in the area that is available.
g. WCI will review KDOT's approved noise policy statement giving consideration to providing noise abatement to noise-sensitive receptors identified by analysis to have a predicted dBA noise level that approaches or exceeds the FHWA noise abatement criteria (66dBA) for the various land use activities. No field measurements will be made at

this time. The report will only provide a statement addressing this issue.

h. WCI will review the air quality agreements on file with the State and FHWA. Normally a detailed air quality analysis for inclusion in an environmental document is only required on federally funded highway projects when the present or predicted average daily traffic volume on the project exceeds 50,000 vehicles in the year of project construction. Therefore, a detailed air quality analysis may not be required for this project. WCI will prepare a statement in the environmental report that addresses this issue.

i. A SWPP will be prepared as part of the Final Plan development that follows the City's established requirements for BMP Water Quality. WCI will prepare a statement in the environmental report that addresses this issue.

j. WCI will prepare the Categorical Exclusion report to provide the City based on the information obtained above.

Project Schedule

From our discussions with the City staff, the project schedule is will need to provide for an anticipated letting date in October 2008. This will require Final Plans to be delivered to KDOT by May 2008. Although this schedule can be accomplished, KDOT will need to be coordinated into the review schedule. Their minimum time required for Field Check and Office Check may impact this schedule assuming a Notice to Proceed date in August 2007.

The driving factor for the project schedule will be the Public Involvement process. Based on the number of meetings, coordination with utility companies and the completion of the field survey, we anticipate that Field Check Plans can be presented to the City within seven months of receiving a notice to proceed.