

**PLANNING COMMISSION REPORT**  
**Regular Agenda –Public Hearing Item**

PC Staff Report  
4/25/16

**ITEM NO. 5C    CONDITIONAL USE PERMIT; KING'S RECYCLE CENTER; N 1300 RD & E 1750 RD (MKM)**

**CUP-16-00069:** Consider a Conditional Use Permit for King's Recycling Center, located at N 1300 Rd & E 1750 Rd. The CUP proposes the operation of a borrow pit and recycling of construction materials, as well as continued residential and agricultural uses on the property. Submitted by Landplan Engineering PA, for Dan King, Denise King, Kent King & Patricia King, property owners of record.

**STAFF RECOMMENDATION:** Staff provides the following recommendations on the items included in the CUP plans:

1. Staff recommends approval of the Conditional Use Permit for the Borrow Pit.
2. Staff recommends approval of the Conditional Use Permit for the residence within an Industrial Zoning District, if the I-3 Zoning request is approved.
3. Staff recommends denial of the site plan for the recycling facility *unless* the I-3 Zoning request is approved. If the I-3 Zoning request is approved, staff would recommend approval of the site plan.

These recommendations are subject to the following conditions:

1. The Conditional Use Permit shall be administratively reviewed every 5 years. The Conditional Use Approval for the borrow pit use shall expire 10 years from the date of the Board of County Commissioner's approval.
2. Commercial truck traffic to the facility is limited to the following roads:  
E 1750 Road/Noria Road; N 1400 Road (Old K-10 Highway); E 1700 Road; K-10 Highway east or west.
3. Only clean construction rubble shall be stockpiled or processed on the site.
4. Well water usage is limited to the office and employees until the property is serviced by a Rural Water District.
5. The borrow pit shall be excavated no deeper than Elev. 800 Ft. (NAVD).
6. Provision of a revised CUP plan with the following changes to the landscaping, per Planning approval:
  - a. Provide a mix of evergreen and deciduous trees for screening landscaping along N 1300 Road.
  - b. Revise the landscaping shown along E 1750 Road to include evergreen trees west of the street trees that are shown and to extend the landscaping to the north property line.
  - c. Label the species of the trees along E 1750 Road to match those listed on the Master Street Tree Plan, when approved.
  - d. List Conditions No. 1-5 on the plan.

**Reason for Request:** *"Develop a Recycle Center for Construction Material."*

## KEY POINTS

- The application is for the approval of two Conditional Uses, a borrow pit which is classified as a *Mining and Excavation* use and a residence that, if the property is rezoned to an industrial district, requires approval as a Conditional Use. This report will evaluate these two Conditional Uses for conformance with the Golden Factors. The CUP plans include the construction materials recycling facility, that will be located on the site if the associated rezoning request to the I-3 District is approved. The recycling facility will not be included in the discussion of the Golden Factors in this report, as it was included in the discussion in the I-3 rezoning report, but will be discussed in the Site Plan section at the end of the report.
- A Borrow Pit is classified as a *Mining and Excavation* use and requires approval of a Conditional Use Permit. Borrow pits associated with the K10 Bypass (SLT) were approved through the Temporary Business Permit process. A Temporary Business Permit requires approval of the Board of County Commissioners but does not require a public hearing before the Planning Commission. This process was used for these borrow pits to expedite the reviews in conjunction with KDOT's construction schedule for the bypass. This borrow pit was approved with Temporary Business Use Permit ZTBU-2013-0006 on November 27, 2013. This permit will expire on October 21, 2016. The continued use of the borrow pit beyond that date requires approval of a Conditional Use Permit.
- A caretaker or manager's residence is permitted in the I-3 District; however, a single-family residence that is not accessory to an industrial use requires approval of a Conditional Use Permit. The residence on the site is not planned to serve as a caretaker or manager's residence; therefore, it is included in the Conditional Use Permit application. A Conditional Use Permit is required for the residence only if the I-3 Zoning request is approved.
- The recycling facility will include an office, scale house, rock crusher, and stockpile/sales areas for raw and recycled construction materials. The recycling of construction materials is not specifically defined in the list of permitted uses, but is most similar to the *Concrete Central Mixing And Proportioning Plant* in operational characteristics and impacts. These uses are permitted in the I-3 District with approval of a site plan.

## ATTACHMENT

- A --CUP Plans
- B --Traffic Impact Study (TIS)

## OTHER ACTION REQUIRED

- Approval of the Conditional Use application and Site Plan by the Board of County Commissioners.
- Applicant shall obtain a permit for the Conditional Use from the Zoning and Codes Office prior to commencing the use.
- Applicant shall obtain building permits from the Zoning and Codes Office prior to construction of structures.

## PUBLIC COMMENT

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

## GENERAL INFORMATION

Current Zoning and Land Use: A (County-Agricultural) and V-C (County-Valley Channel) Districts with F-F (County-Floodway Fringe Overlay) District;

*Residential Detached Dwelling, Mining and Excavation* (borrow pit), and *Agriculture*. A rezoning request to the I-3 (Heavy Industrial) District has been submitted and is being considered by the Planning Commission at their April meeting concurrently with this Conditional Use Permit application.

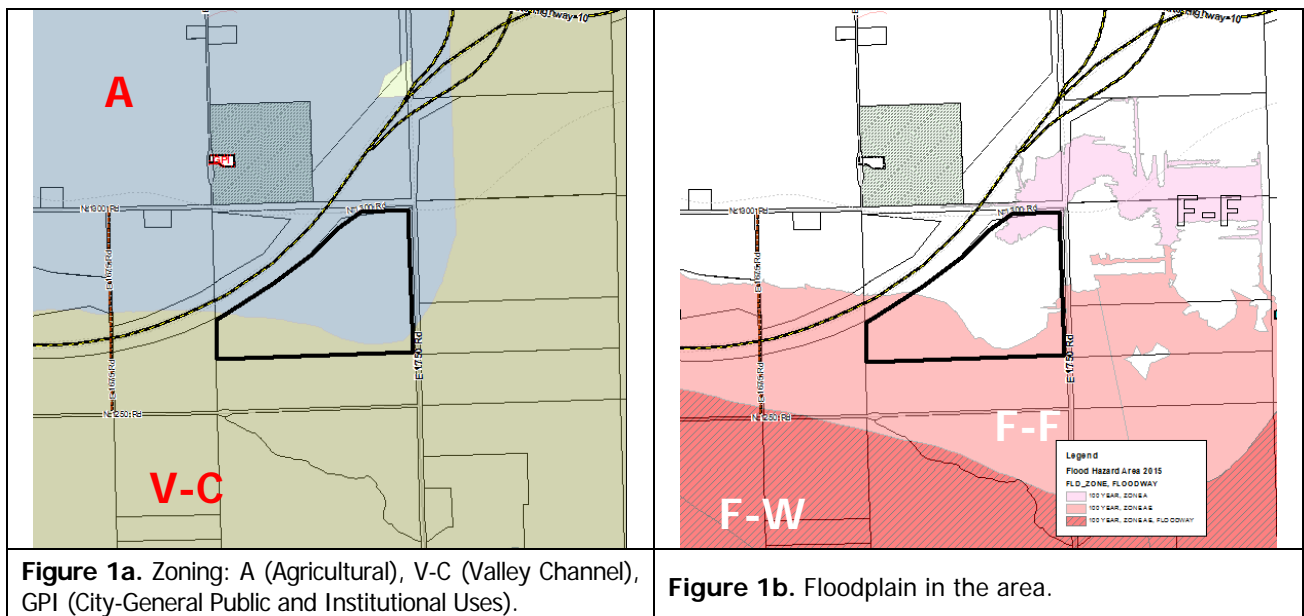
Surrounding Zoning and Land Use:  
(Figure 1)

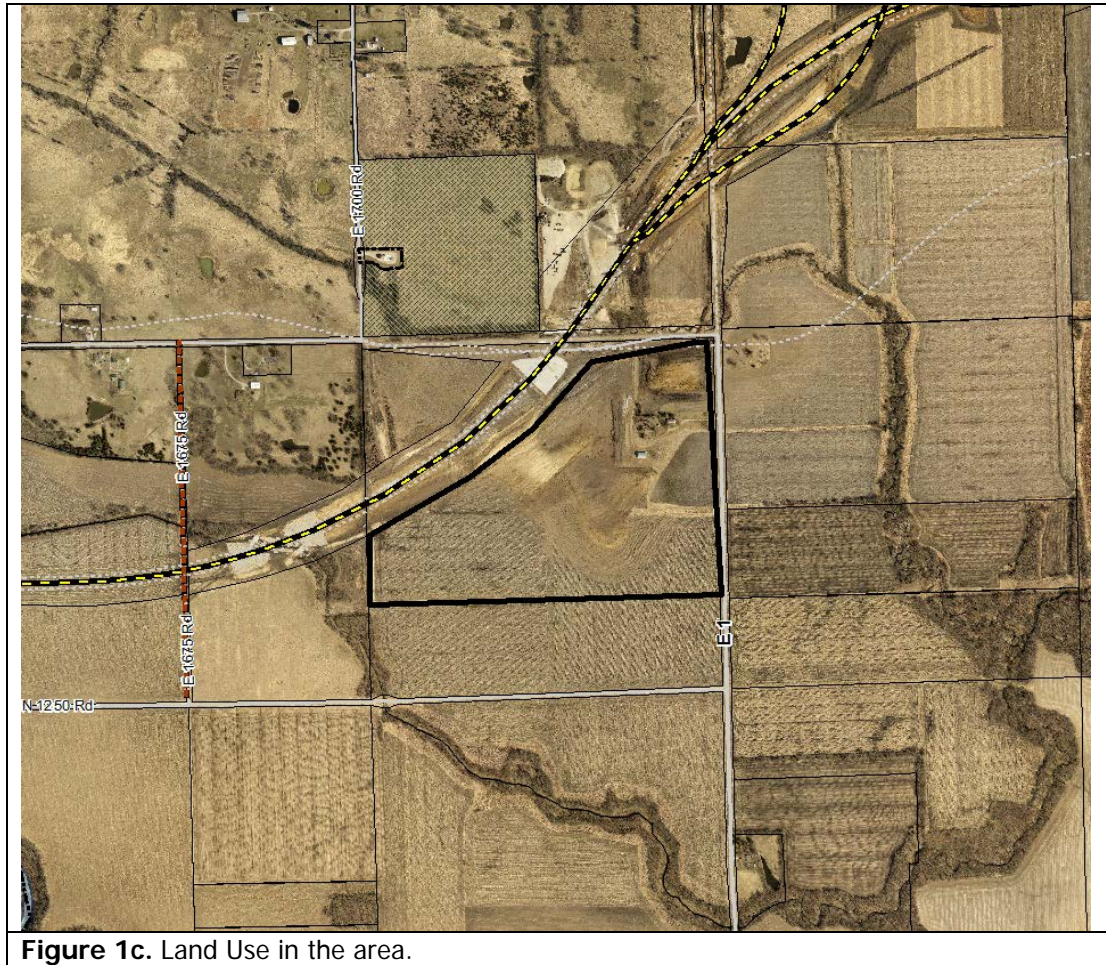
To the north: A (County-Agricultural) District with F-F (Floodway Fringe) Overlay District / and GPI (City-General Public and Institutional Uses) District; *Agriculture, Residential Detached Dwelling*, undeveloped City park, the SLT/K10 Highway, / and a sanitary sewer pump station, a *Minor Utility*, in the GPI District.

To the west: A (County-Agricultural) and V-C (County-Valley Channel) Districts with F-F (Floodway Fringe) Overlay District; *Agriculture*, the SLT/K-10 Highway, and *Residential Detached Dwelling*.

To the south: V-C (County-Valley Channel) Districts with F-F (Floodway Fringe) and F-W (Floodway) Overlay Districts / and GPI-FP (City-General Public and Institutional Uses with Floodplain Management Regulations Overlay District); *Agriculture*, the Wakarusa River corridor / and a City Wastewater Treatment Facility, a *Major Utility*, currently under development in the GPI-FP District.

To the east: A (County-Agricultural) and V-C (County-Valley Channel) Districts with F-F (Floodway Fringe) Overlay District; *Agriculture*, northern parcel has Conditional Use approval for a soccer facility, *Athletic Field*.





### Summary of Request

The subject property, approximately 76 acres, is intended to be used for the storage of raw and processed construction materials associated with a construction materials recycling facility. A rock crusher will be on site to process the raw construction materials. A shop facility and a truck/equipment storage area will be included with the recycling facility. A borrow pit was approved for the property with the construction of the SLT/K10 Highway with a Temporary Business Permit to accommodate the construction schedule for the SLT/K10 highway. The continued use of the property for a borrow pit would require approval of a Conditional Use Permit (CUP). An existing residence on the site will remain. Some of the proposed uses require a rezoning to the I-3 (Heavy Industrial) District and site plan approval, and some require approval of a Conditional Use Permit. The following table lists the proposed uses and what approvals are required for each:

USE	Current A Zoning	Proposed I-3 Zoning
Residence	Permitted, no Planning Approvals required	CUP
Borrow Pit	CUP	CUP
Recycling Facility	Not allowed	Site Plan



The applicant indicated that the facility would recycle only clean construction rubble, no other materials will be brought to or stored on the site. The Kansas Department of Health and Environment define Clean Rubble as: “... *the following types of construction and demolition waste: concrete and concrete products including reinforcing steel, asphalt pavement, brick, rock, and uncontaminated soil as defined in rules and regulations adopted by the secretary.*” Clean Rubble will be brought to the site and a rock crushing plant will reduce the rubble into more usable sizes for resale and reuse. The facility will include stockpile areas for both raw and processed materials. The processed materials will be used for construction projects in the area and will also be available for sale to the public. A truck parking area, scale house and office will be constructed on the access drive to N 1300 Road. The facility will be open for operation on weekdays and some Saturdays as necessary for projects and is expected to be staffed by five employees. The plan shows that portions of the borrow pit will be, or have been, reclaimed for agricultural use and where the borrow pit will be reclaimed as ponds. Information provided with the preliminary plat application noted that the elevation of the water table was approximately 25 ft below grade level on the south side of the property and approximately 50 to 60 ft in the center portion of the property. The City GIS maps show the elevation of the property ranging from 812 at the lowest point to 836 at the highest. The CUP site plan shows the bottom elevation of the ponds as 800, which would be above the water table. The depth of excavation should be limited to 800 to insure the borrow pit does not impact the water table.

#### CONDITIONAL USES:

The following proposed uses are permitted in the I-3 District when approved with a Conditional Use Permit, as noted below:

#### ***12-319-4.04 Single-Family Dwellings in an Industrial District*** ***12-319-4.05 Mining and Excavation***

#### USES PERMITTED WITH SITE PLAN APPROVAL IN THE I-3 DISTRICT

A construction material recycling facility is not listed in the list of uses permitted in the I-3 District; however, the recycling facility has been determined to be similar in characteristics and impacts to a concrete mixing plant which is permitted in the I-3 District.

#### ***12-313-2.05 Concrete central mixing and proportioning plant***

The proposed conditional uses, borrow pit and residence in an industrial district, have been reviewed with the following criteria provided in Section 12-319-1.02 of the Zoning Regulations:

#### **I. ZONING AND USES OF PROPERTY NEARBY**

Nearby property is zoned A (Agricultural), V-C (Valley Channel), F-F (Floodway Fringe Overlay) and F-W (Floodway Overlay) Districts and is used primarily for *Agriculture*. A Conditional Use Permit application for a soccer complex for the property to the east of the subject property was approved by the Board of County Commissioners in February 2016, but the complex hasn't yet been developed. An approximately 40 acre parcel to the northwest of the subject property is designated as a future City park. Approximately one acre of this park area was annexed into the City of Lawrence through an island annexation, rezoned to GPI (General Public and Institutional Uses) District and developed with a City sanitary sewer pump station. Approximately 77 acres to the north of the subject property is owned by Unified School District No. 497. Plans have not been submitted for this property, but it is possible that it could be developed with a public school. (Figure 2)

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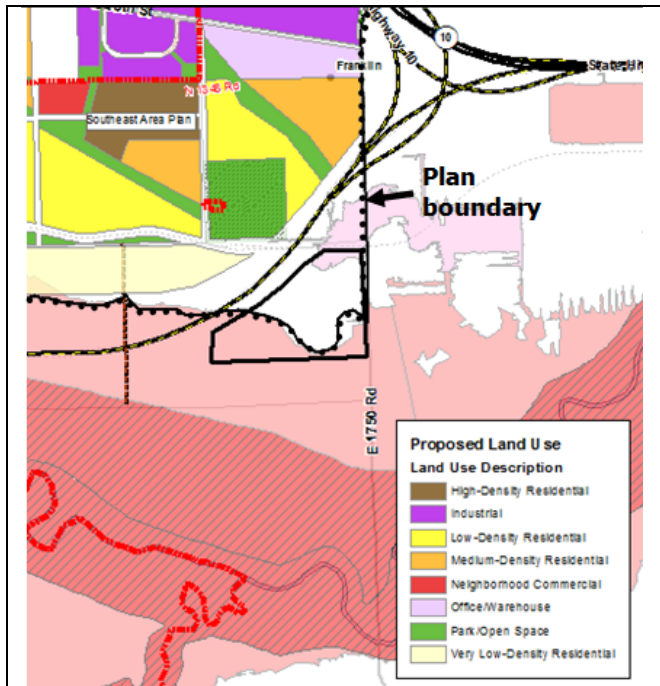
Figure 2. Recreational Uses or Open Space in the area. City limits dashed red lines.

The property is located within the Urban Growth Area boundaries of the City of Lawrence and is approximately 1 mile east of the city limits. The area is divided from the southwest to the northeast by the SLT/K10 Highway and is bounded on the south by the Wakarusa River Corridor and floodplain. While agriculture is the predominate land use, recreation and open space is also present or planned in the area. A soccer facility to the east of the subject property has development approvals and a wildlife conservation area is located further to the east (Figure 2). A ski lake and a driving range are located in the northeast portion of the area. Future City parkland is north of the subject property and is adjacent to property that is owned by Unified School District #497. The area is also characterized by the Wakarusa River Floodway and Floodplain. Figure 3 shows the future land uses recommended in the adopted Southeast Area Plan. Land to the north and northwest of the subject property is designated in the plan as park/open space (green), and varying densities of residential uses (yellow, tan and brown). Industrial uses and a limited amount of commercial uses are shown to the north, near the main leg of the K10 highway.

**Staff Finding –** The area is rural in character with agriculture being the predominate land use. The area contains the following open space recreational facilities: ski lake, and a wildlife conservation area. The following future open space recreational facilities are planned in the area:

city park, soccer facility, and areas denoted in the Southeast Area Plan as linear parks. The SLT/K10 bypass was recently constructed through the area to connect with K10 Highway to the north. The uses which require approval as Conditional Uses, the residence in the Industrial District and the borrow pit, should be compatible with the current and future surrounding land uses. The area is currently rural in nature but is expected to urbanize.

Expiration dates are often applied to Conditional Uses so they may be re-evaluated to determine if they remain compatible with the development in the area. A borrow pit is an appropriate temporary use, but should have a limited time frame for operation (ten years) so the compatibility of the use can be re-evaluated with the character of the area at that time.



**Figure 3.** Land uses proposed in the Approved Long Range plan for the area to the north and west.

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

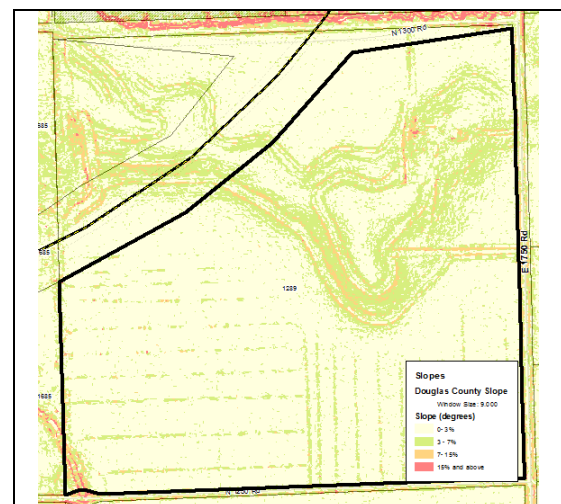
Applicant's Response:

*"The purpose is to provide a service in the community to recycle construction waste without filling up the existing landfills."*

The subject property is zoned A (Agricultural) and V-C (Valley Channel).

Uses allowed in the A District include: farms, truck gardens, orchards, or nurseries for the growing or propagation of plants, trees and shrubs in addition other types of open land uses. It also includes residential detached dwellings, churches, hospitals and clinics for large and small animals, commercial dog kennels, and rural home occupations. The V-C District allows a more limited range of uses which include agriculture, recreational, and farm residential. In addition, uses enumerated in Section 12-319 which are not listed as permitted uses in the A or V-C Districts, may be permitted when approved as Conditional Uses.

The property is relatively level, as shown in Figure 4, and contains an active borrow pit and a residence. The property is well suited for these uses.



**Figure 4.** Topography of site.



**Staff Finding** – The property is well suited for the uses to which it is restricted with the A and V-C Zoning and for the uses which would require Conditional Use Approval: a borrow pit, *Mining and Excavation* and a *Residence in an Industrial Zoning District*.

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

**Staff Finding** – The property is not vacant. The Douglas County Appraiser's records indicate that the residence on the property was built in 1920. A Temporary Business Permit was administratively approved by the Zoning and Codes Director for a borrow pit on November 27, 2013.

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

Applicant's Response:

*"This area has been used as a borrow area for the past two years for the development of the South Lawrence Trafficway."*

Section 12-319-1.01 of the County Zoning Regulations recognize that *"certain uses may be desirable when located in the community, but that these uses may be incompatible with other uses permitted in a district...when found to be in the interest of the public health, safety, morals and general welfare of the community may be permitted, except as otherwise specified in any district from which they are prohibited."* The residence and borrow pit are included in the Conditional Uses enumerated in Section 12-319-4 of the Zoning Regulations for the Unincorporated Territory of Douglas County as *Single-family Dwellings in an Industrial District*, and *Mining and Excavation*.

No negative impact is expected from the continued use of the residence. The borrow pit has been in operation for approximately two years. Impacts from a borrow pit are usually related to the truck traffic to and from the site. When the borrow pit was used for the construction of the SLT/K10 highway, the truck traffic was kept fairly local. It is expected that additional truck traffic will occur through the area with the operation of the borrow pit for other projects. A Traffic Impact Study provided with the application indicated that the road network was adequate for the proposed uses, including the recycling facility and that no improvements were needed.

The Traffic Study evaluated the impacts of the trips to be generated by this development on the following intersections:

- a. E 1750 Road (Noria Road) and N 1300 Road;
- b. E 1750 Road (Noria road) and N 1360 Road;
- c. E 1750 Road (Noria Road) and County Road 442 (N 1400 Road); and
- d. N 1300 Road and E 1700 Road.

The recommendations for improvement were related to signage and trimming of vegetation. No physical changes were recommended to the intersections.

The study noted that the truck route would be from the entrance off N 1300 Road, then east to E 1750 Road (Noria Road) then north to N 1400 Road (Old Hwy 10), east to E 1900 road, then south to the K-10 Highway. (Figure 5) This truck route should be noted on the plan.

The study concluded that the facility would have no negative impact on the nearby roads but did recommend that the first 100 ft of the driveway be paved to insure gravel is not tracked on to N



1300 Road. The access drive into the site will be concrete for approximately 500 ft. Dedicated turn lanes are not warranted at this time, but the study recommended the need be re-evaluated as the background traffic grows with new developments in the area.

Another potential for negative impacts with this type of use is the glare or light trespass from exterior lighting. The applicant indicated that 40 watt exterior wall mounted lighting is being proposed

and lighting spec sheets have been provided to the Planning Office. The lighting should not result in off-site glare or light trespass. In staff's opinion, the borrow pit and the residence, the Conditional Uses, would have noise levels that are compatible with existing nearby land uses.



**Figure 5.** Truck Route shown in red.

The Conditional Uses should be administratively reviewed by the Zoning and Codes Office every 5 years to insure compliance with the standards of the Conditional Use Permit. Expiration dates are often applied to Conditional Uses so they may be re-evaluated to determine if they remain compatible with the development in the area. The borrow pit is compatible with the current development, but may become incompatible as the area develops further. A 10-year expiration on the borrow pit use is recommended.

**Staff Finding –** The County Engineer indicated that the expected traffic for the facility can be accommodated without any road improvements. Due to the agricultural nature of the nearby properties and the fact that the residence has been on the site since the 1920s and the borrow pit has been in operation for two years, the activities related to the borrow pit and residence should have no negative impact on nearby properties. The CUP for the borrow pit should have a ten year expiration date so the compatibility of the use can be re-evaluated with the development of the area at that time.

## **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:

*"This business has provided an outlet that has not been available to the construction industry for a long time. This will also slow down the filling of our landfills in the area."*

Approval of the request for the Conditional Uses would allow the continued use of the residence following rezoning to the I-3 District and the continued use of the borrow pit. The borrow pit would provide soil for projects throughout the area which would benefit the public welfare.

No benefit would be afforded to the public health, safety, or welfare by the denial of the request for the Conditional Uses (residence and borrow pit) as these are currently in existence and have relatively low impacts on nearby properties.

**Staff Finding –** In staff's opinion, there would be no gain to the public health, safety, and welfare by the denial of the request for the Conditional Uses: the residence and the borrow pit, as they are both low impact uses. The hardship to the property owner of denial would be that the

residence could not continue to be used--if the zoning to the I-3 District is approved. If the Conditional Use for the borrow pit is denied, the borrow pit use would end with the expiration of the Temporary Business Permit on October 21, 2016.

## VII. CONFORMANCE WITH THE COMPREHENSIVE PLAN

Applicant's Response:

*"The area is generally in agricultural land use with adjacent land use zoned for industrial land use with the East Hills Business Park to the north along with other industrial uses in the area."*

An evaluation of the conformance of a Conditional Use Permit request with the comprehensive plan is based on the strategies, goals, policies and recommendations contained within *Horizon 2020*. The comprehensive plan does not directly address Conditional Use Permits; however it does contain recommendations for properties within the Urban Growth Area in Chapter 4, Growth Management. The plan recommends that the Urban Growth Area not be developed to urban densities until infrastructure is in place and recommends that developing properties be annexed. The CUP proposal will maintain the existing rural residence and agricultural uses and the borrow pit, which would not require the extension of infrastructure. The proposed uses are compliant with the comprehensive plan recommendations for properties within an Urban Growth Area.

**Staff Finding** –The proposed Conditional Uses are in compliance with recommendations in the Comprehensive plan regarding development within the Urban Growth Area.

## CUP/SITE PLAN REVIEW

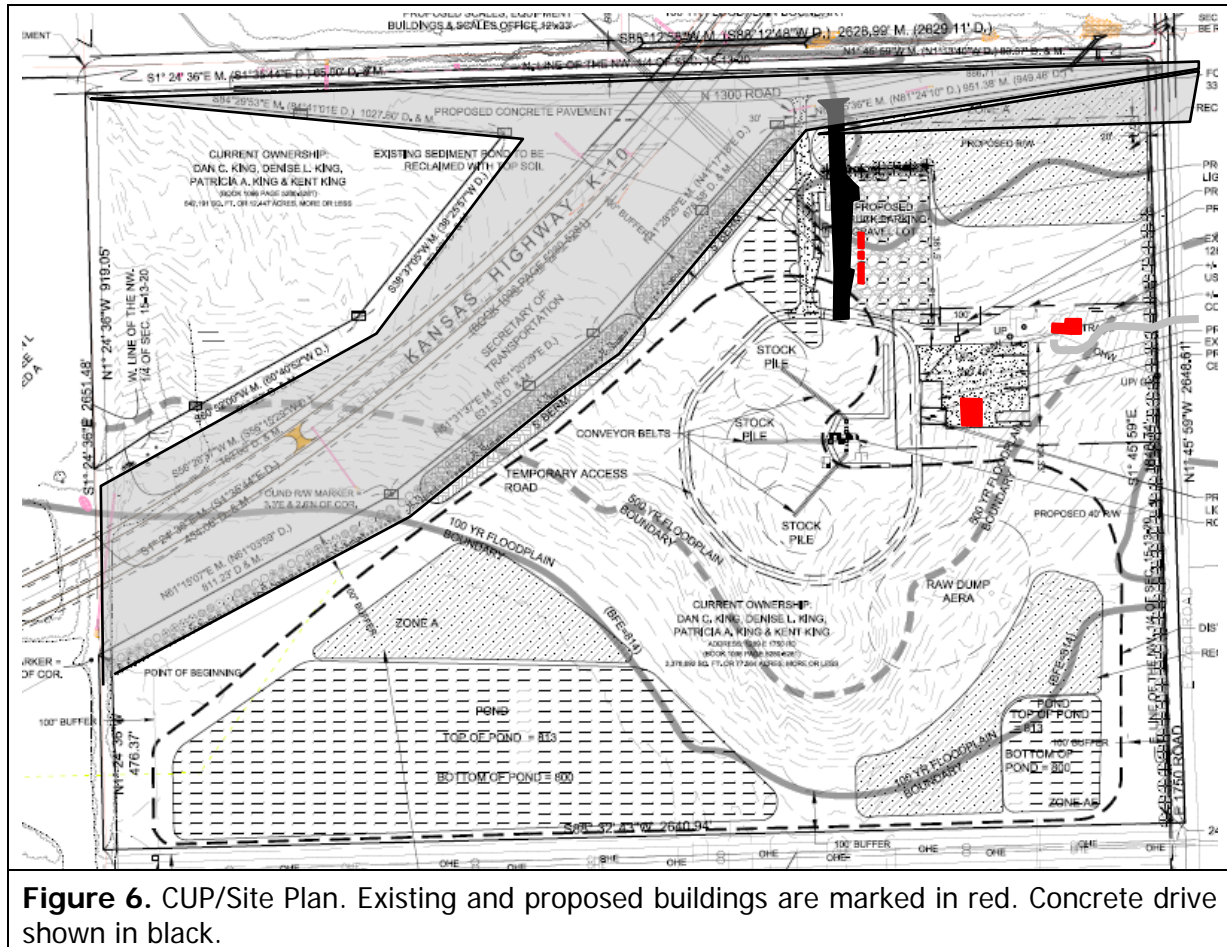
This portion of the report will evaluate the site plan for the residence, borrow pit and the recycling facility. The review will include the conditions listed in Section 12-319A-5 of the Zoning Regulations for site plan approval.

The development area contains approximately 77.5 acres and includes the following new and converted buildings (Figure 6):

1. Scales will be installed and a 12 ft x 33 ft (396 sq ft) equipment building with an office will be constructed to the east side of the access from N 1300 Road.
2. New shop building, 50 ft x 65 ft (3,250 sq ft).
3. Existing 1 story tin outbuilding, 40 ft x 61 ft (2440 sq ft), that will be used for storage. (This change in use and modifications to the building may require a building permit from the Zoning and Codes Office.)
4. Existing residence on east side of property, with access to E 1750 Road.

Other features of the plan include:

5. Gravel parking area for trucks, 381.5 ft x 255. 22 ft (97,366 sq ft).
6. 25 ft wide access drive from N 1300 Road which will be concrete for approximately 500 ft.
7. A temporary access drive will circle the stockpiles and the stockpile pens for loading and customer pick-up.
8. Reclaimed pond areas near the north end of the property. One with reclamation complete and another labeled 'to be reclaimed with topsoil'.
9. Landscaping is provided along the SLT/K10 Highway and E 1750 Road. (Landscaping is discussed in detail later in this report.)



**Height, Area, and Density Standards:** The I-3 District requires the following minimum setbacks: 25 ft front yard, 10 ft side yard, 20 ft rear yard. The buildings located on the site will observe these setbacks.

**Parking and Access:** The Zoning Regulations require 1 parking space per residence. The current parking for the residence meets this requirement. The borrow pit and recycling facility would be included in the parking use classification of manufacturing or industrial establishment which requires 1 parking space per 2 employees. The Traffic Impact Study noted that there would be 5 employees; therefore, 3 parking spaces are required. The parking will occur in the truck parking area. Employee parking spaces should be shown on the plan and marked on the site.

**Water/Sewage Management:** Rural water is not currently available in this area. The applicant intends to use well water for employees and in the office. Water for the rock crusher shall be brought to the site, or water may be used from the on-site ponds. The conditions should note that well water usage is limited to only the employees and office use.

The residence will continue to take access from the existing drive on E 1750 Road. The plan notes that this access is for 'residential use only'. The borrow pit and recycling facility uses will take access from N 1300 Road. The location of the access was approved by the County Engineer as it places the access as far from the N 1300 Road / E 1750 Road intersection as possible.

### **Screening:**

The plan shows landscaping along the SLT/K10 right-of-way and along E 1750 Road. A mix of trees and shrubs are shown along the SLT/K10 right-of-way; however, with the highway being elevated it is unlikely that the shrubs would contribute to the buffering effect. The majority of the trees shown are deciduous. A mix of evergreens and deciduous trees would provide a more effective year-round buffer. This landscaping should be revised to include an even mix of evergreen and deciduous trees. The species for the trees along E 1750 Road are not identified at this time as the species that are approved with the Master Street Tree Plan with the final plat will be used. Evergreen trees in this location will also provide a more effective year round buffer; however, they are not acceptable as street trees. In addition to the trees shown on the plan, additional evergreen trees should be included behind the street trees to provide a buffer from noise and dust.

The plan proposes an area of approximately 2 acres for truck/equipment storage south of N 1300 Road. This area will be visible from N 1300 and E 1750 Roads and should be screened with landscaping. A mix of deciduous and evergreen trees should be provided along N 1300 Road for screening of this equipment area and other activities on the site.

### **Site Plan Conditions of Approval:**

The following is a summary of the site plan review with the conditions of approval listed in Section 12-319A-5 of the Zoning Regulations.

1. The proposed uses are allowed in the zoning district. (The recycling facility requires rezoning to the I-3 District. The borrow pit and the residence are permitted in either the current zoning district or the proposed I-3 District, either by right or with a CUP)
2. The proposed arrangement of buildings, off-street parking, access, lighting, landscaping, and drainage is compatible with adjacent land uses. While the noise and activity associated with the proposed recycling facility may not be compatible with adjacent land uses, the proposed layout of the site is compatible.
3. That the vehicular ingress and egress and circulation within the site provides for safe, efficient and convenient movement of traffic not only with the site but on adjacent roadways as well. The industrial and residential uses will utilize separate access points. The access on N 1300 Road was located to provide as much separation from the N 1300/E 1750 intersection as possible. A concrete access drive will provide access to the truck parking and to the temporary access drive to the stockpile areas.
4. That the site plan provides for the safe movement of pedestrians within the site. No pedestrians are anticipated with this use.
5. Sufficient mixture of grass, trees, so the development is in harmony with adjacent land uses and will provide a pleasing appearance to the public. Additional landscaping is recommended in the event the I-3 rezoning request allowing the recycling facility is approved; however, in staff's opinion, landscaping cannot adequately buffer or screen the open air recycling facility. The landscaping is adequate for the borrow pit and residence.

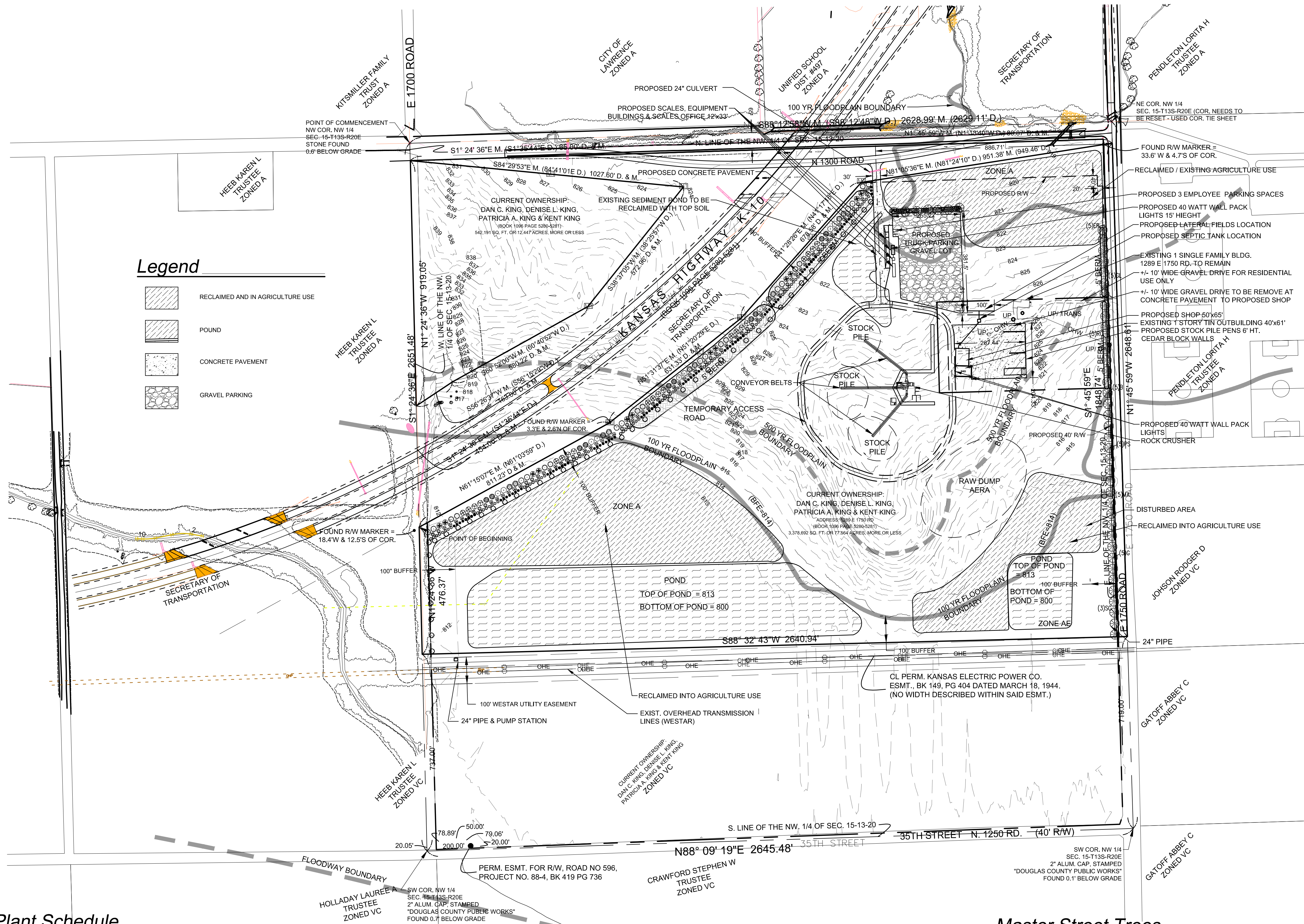
### **Conclusion**

The Conditional Uses proposed comply with the County Zoning Regulations and the land use recommendation of *Horizon 2020*. These uses, as conditioned, should be compatible with the surrounding land uses.



















The recycling facility, which requires I-3 zoning, may have impacts on nearby properties. These impacts were discussed in the I-3 rezoning staff report. Staff is recommending denial of the rezoning request, but provided this site plan review in the event the Commission determines the rezoning and use are appropriate.












## Plant Schedule

SYMBOL	PROPOSED QTY.	SPECIES	SIZE	COND.
DECIDUOUS TREES				
	10	HACKBERRY CELTIS OCCIDENTALIS	MIN. 2.5' CAL.	B&B
	10	SKYLINE HONEY LOCUST GLEBETSA TRACANTHOS 'SKYLINE'	MIN. 2.5' CAL.	B&B
	10	PIN OAK QUERCUS PALUSTRIS	MIN. 2.5' CAL.	B&B
	10	RED OAK QUERCUS RUBRA	MIN. 2.5' CAL.	B&B
	10	BUR OAK QUERCUS MACROCARPA	MIN. 2.5' CAL.	B&B
	12	HICKORY CARYA	MIN. 2.5' CAL.	B&B
	12	EASTERN COTTONWOOD POPULUS DELTOIDES	MIN. 2.5' CAL.	B&B
	12	LACERBARK ELM ULMUS PARVIFOLIA	MIN. 2.5' CAL.	B&B

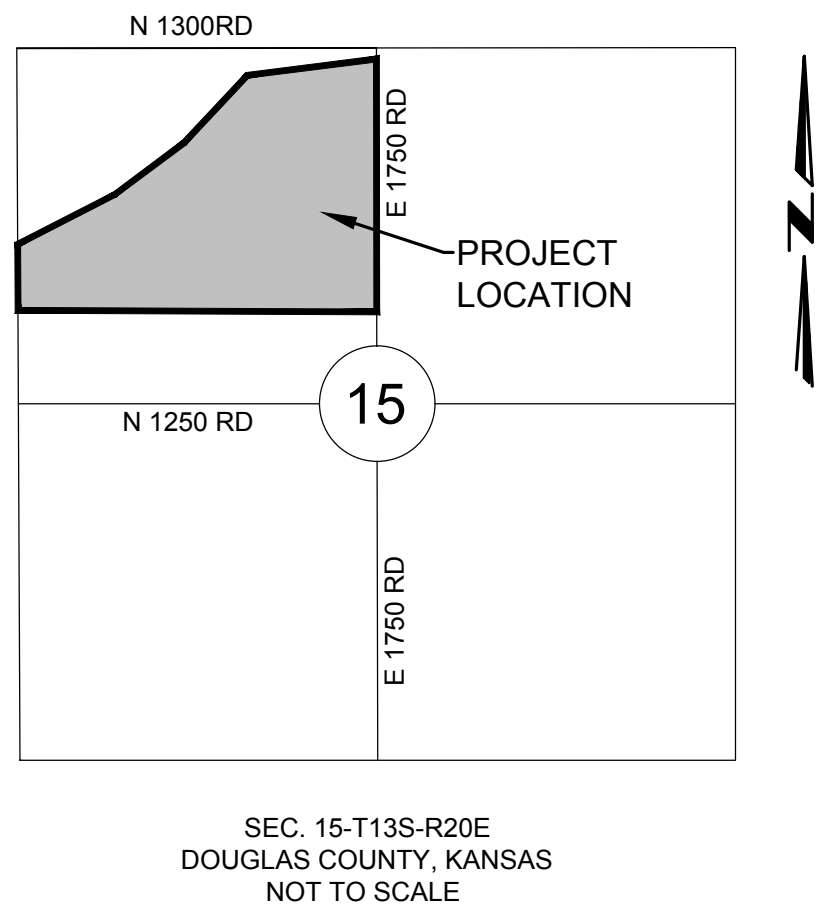
SYMBOL	PROPOSED QTY.	SPECIES	SIZE	COND.
<b>ORNAMENTAL TREES</b>				
   	22	AMUR MAPLE (CLUMP) ACER GINNALA	MIN. 2" CAL.	B&G
	32	RED BUD CERCIS CANADENSIS	MIN. 2" CAL.	B&G
	22	CRABAPPLE MALUS SP.	MIN. 2" CAL.	B&G
	10	AMERICAN PLUM PRUNUS AMERICANA	MIN. 2" CAL.	B&G
<b>EVERGREEN TREES</b>				
   	20	CANAERT JUNIPER JUNIPERUS VIRGINIANA 'CANAERTII'	MIN. 2" CAL.	B&G
	64	KETELEERI CHINESE JUNIPER JUNIPERUS CHINENSIS KETELEERI	MIN. 2" CAL.	B&G
	44	BALD CYPRESS TAXODIUM DISTICHUM	MIN. 2" CAL.	B&G
	97	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	MIN. 2" CAL.	B&G

SYMBOL	PROPOSED QTY.	SPECIES	SIZE	COND.
DECIDUOUS SHRUBS				
	10	LITTLE PRINCESS SPIREA SPIREA JAPONICA 'LITTLE PRINCESS'	36" MIN.	CONT.
	7	BOTTONBUSH CEPHALANTHUS OCCIDENTALIS	36" MIN.	CONT.
	10	LYNWOOD GOLD FORTSYTHIA FORTSYTHIA X INTERMEDIA 'LYNWOOD'	36" MIN.	CONT.
	12	MARIESI VIBURNUM VIBURNUM PLICATUM VAR. TOMENTOSUM 'MARIESI'	36" MIN.	CONT.
	12	CHOKEBERRY ARONIA	36" MIN.	CONT.
	5	FRAGRANT SUMAC RHUS AROMATICA	36" MIN.	CONT.

## Master Street Trees

SYMBOL	PROPOSED QTY.	ID	SPECIES	SIZE	COND.
DECIDUOUS TREES					
	5	QL	GREENSPIRE LINDEN TILIA CORDATA 'GREENSPIRE'	MIN. 2.5" CAL.	B&B
	5	B	BALD CYPRESS TAXODIUM DISTICHUM		
	5	RO	NORTHERN RED OAK QUERCUS RUBRA		
	5	PS	PACIFIC SUNSET MAPLE ACER TRUNCATUM X PLATANOIDES 'WARRENRED'		
	5	AM	AMUR MAPLE ACER GINNALA		
	5	ER	EASTERN REDBUD CERIS CANADENSIS		
	5	G	GOLDENRAIN TREE KOLREUTERIA PANICULATA		
	3	SC	SNOWDRIFT CRABAPPLE MALUS 'SNOWDRIFT'		

Location Map



## General Notes

OWNER: DAN C. KING, DENISE L. KING, PATRICIA A. KING, KENT KING  
2015 WALNUT STREET  
OSKALOOSA, KANSAS 66066-4000

1. LAND PLANNER/ ENGINEER: LANDPLAN ENGINEERING, P.A.  
1310 WAKARUSA DRIVE  
LAWRENCE, KS 66049

2. TOPOGRAPHIC INFORMATION OBTAINED FROM 2012 DOUGLAS COUNTY LIDAR AERIAL DATA.

3. EXISTING LAND USE: BORROW PIT /AGRICULTURAL / SINGLE FAMILY

4. PROPOSED LAND USE: RECYCLE CENTER, AGRICULTURAL, BORROW PIT, SINGLE FAMILY

5. EXISTING ZONING: AGRICULTURAL / VALLEY CHANNEL

6. PROPOSES ZONING: I-3

7. PROPOSED OPERATION OF THE BORROW PIT:  
REMOVE MATERIAL FROM BORROW PIT, DELIVER TO CONSTRUCTION SITE, DEVELOP POND,  
STABILIZE ALL DISTURBED AREAS, DIVULGE CONSTRUCTION MATERIAL (CONCRETE, BRICK,  
ASPHALT, CONCRETE BLOCKS, STONE).

8. A STORMWATER POLLUTION PREVENTION PLAN (SWP3) HAS BEEN SUBMITTED TO KANSAS  
DEPARTMENT OF HEALTH AND ENVIRONMENT (KDHE) AND IS ON FILE.

9. A KANSAS DEPARTMENT OF AGRICULTURE, DIVISION OF WATER RESOURCES PERMIT IS NOT  
REQUIRED AS ONLY BORROW, NO FILL, WILL OCCUR AT THE SITE.

10. HOURS OF OPERATION MON-FRI 7:00AM-4:00PM, OCCASIONALLY SAT 7:00AM-12:00AM

## Site Summary

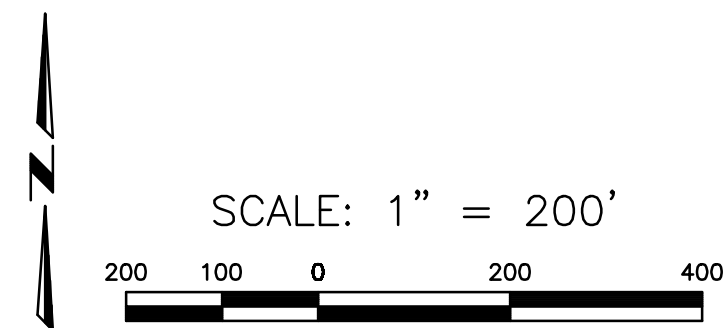
GROSS AREA:	3,378,692 SF / 77.564 AC
RIGHTS-OF-WAY AREA:	60,937 SF / 1.399 AC
NET AREA:	3,317,755 SF / 76.165 AC
AVG. LOT SIZE:	3,317,755 SF / 76.165 AC
TOTAL LOTS:	1

### Legal Description

LOT 1

ALL THAT PART OF THE NORTHWEST QUARTER OF SECTION 15, TOWNSHIP 13 SOUTH, RANGE 20 EAST IN DOUGLAS COUNTY, KANSAS, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF THE NORTHWEST QUARTER OF SAID SECTION 15; THENCE SOUTH 01 DEGREE 24 MINUTES 36 SECONDS EAST ALONG THE WEST LINE OF THE NORTHWEST QUARTER OF SAID SECTION 15, A DISTANCE OF 1438.11 FEET TO A POINT ON THE SOUTHWESTERLY RIGHT-OF-WAY LINE OF KANSAS HIGHWAY K-10 AS DESCRIBED IN GENERAL WARRANTY DEED, BOOK 1096 AT PAGE 5280-5281, DATED JANUARY 8TH, 2013, RECORDED IN SAID COUNTY AND STATE AND THE POINT OF BEGINNING; THENCE NORTH 61.1 DEGREES 15 MINUTES 07 SECONDS EAST ALONG THE SOUTHWESTERLY RIGHT-OF-WAY LINE OF KANSAS HIGHWAY K-10, A DISTANCE OF 101.07 FEET; THENCE NORTH 37 DEGREES 08 MINUTES 37 SECONDS EAST ALONG SAID SOUTHWESTERLY RIGHT-OF-WAY LINE OF K-10, A DISTANCE OF 631.33 FEET; THENCE NORTH 41 DEGREES 28 MINUTES 26 SECONDS EAST CONTINUING ALONG THE SOUTHERLY RIGHT-OF-WAY LINE OF SAID K-10, A DISTANCE OF 678.58 FEET; THENCE NORTH 81 DEGREES 05 MINUTES 36 SECONDS EAST ALONG THE SOUTHERLY RIGHT-OF-WAY LINE OF SAID K-10, A DISTANCE OF 951.38 FEET TO A POINT ON THE EAST LINE OF THE NORTHWEST QUARTER OF SAID SECTION 15, ALSO BEING 80.87 FEET SOUTH OF THE NORTHEAST CORNER THEREOF; THENCE SOUTH 01 DEGREE 45 MINUTES 59 SECONDS EAST ALONG THE EAST LINE OF THE NORTHWEST QUARTER OF SAID SECTION 15, A DISTANCE OF 1848.74 FEET TO A POINT 50 FEET NORTHERLY OF THE CENTERLINE OF A KANSAS ELECTRIC POWER COMPANY EASEMENT, AS DESCRIBED IN BOOK 149 OF A KANSAS ELECTRIC POWER COMPANY RECORD, SAID COUNTY AND STATE (THE "WIDTH DESCRIBED SAID EASEMENT"); THENCE SOUTH 88 DEGREES 38 MINUTES 45 SECONDS WEST, BEING 50 FEET NORTHERLY OF AND PARALLEL WITH THE CENTERLINE OF SAID ELECTRIC EASEMENT, A DISTANCE OF 2640.94 FEET TO A POINT ON THE WEST LINE OF THE NORTHWEST QUARTER OF SAID SECTION 15; THENCE NORTH 01 DEGREE 24 MINUTES 36 SECONDS WEST ALONG THE WEST LINE OF THE NORTHWEST QUARTER OF SAID SECTION 15, A DISTANCE OF 476.37 FEET TO THE POINT OF BEGINNING, CONTAINING 3,378,692 SQUARE FEET OR 77.564 ACRES, MORE OR LESS.



**KING'S RECYCLING  
CENTER**

*Douglas County, Kansas*

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**KING'S RECYCLE CENTER  
BORROW AREA, SINGLE FAMILY HOME  
DOUGLAS CNTY, KANSAS  
N1250 ROAD AND E 1750 ROAD**

REV	DATE	DESCRIPTION
1	2.23.16	ZONING NOTE
2	3.02.16	ACCESS DRIVE
3	3.09.16	OWNERS UPDATE
4	3.31.16	PLANNING COMMENTS
5	4.13.16	PLANNING COMMENTS
6	4.20.16	UPDATE NOTES/TREES

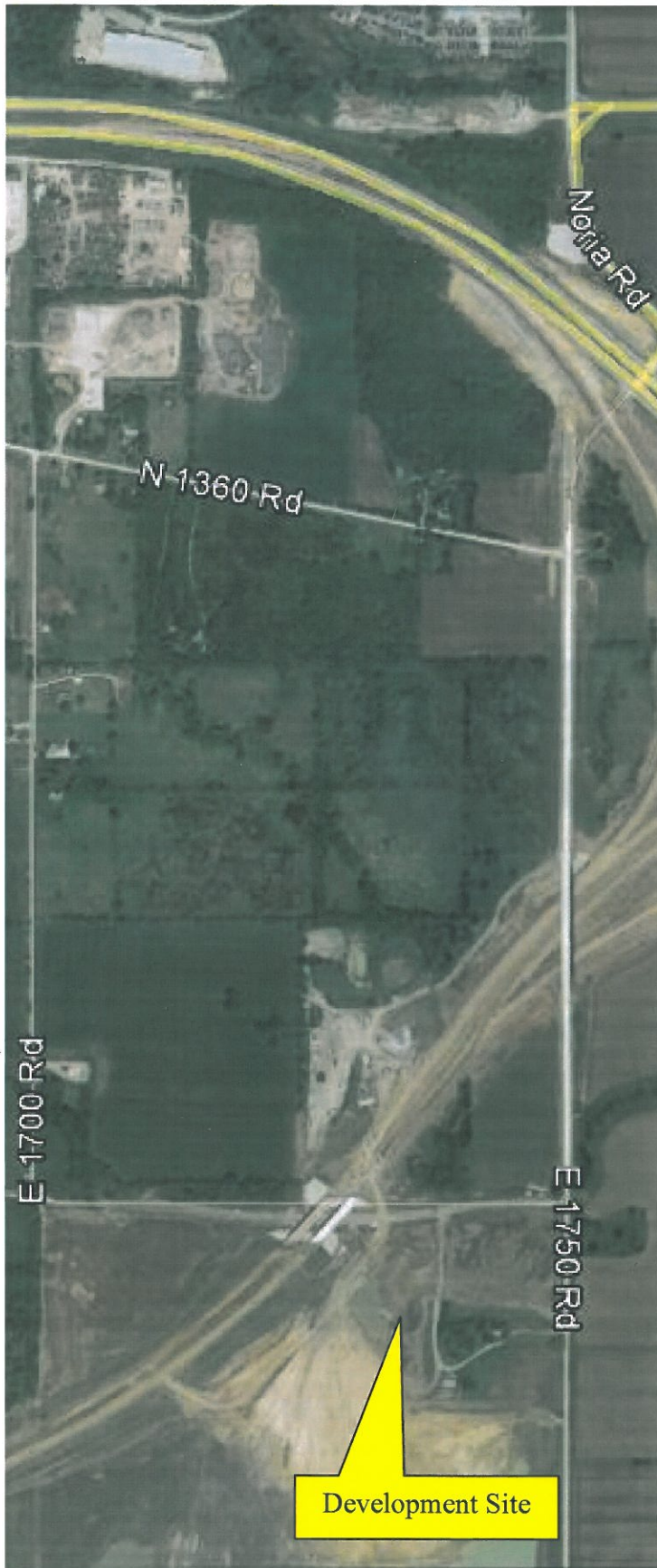
[illegible]

DATE:	March 2, 2016
PROJECT NO.:	20133027
DESIGNED BY:	LPE
DRAWN BY:	CLM
CHECKED BY:	CLM

ISSUE	SHEET NO.
<b>A</b>	<b>C-001</b>
OF 1 SHEETS	





# Traffic Impact Study

for

## King's Recycling Center

SWC of E. 1750 Rd. and N. 1300 Rd.

Douglas County, Kansas

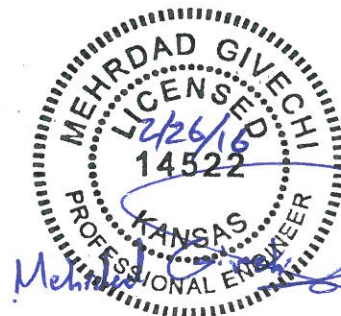
Prepared  
for

Landplan Engineering, P.A.

Prepared  
By



*Serving Communities Through Excellence*  
Kansas - Missouri - Michigan - California



Mehrdad Givechi, P.E., P.T.O.E.

**February 2016**

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## **Appendix**

- Location Map
- Site Plan
- T2040 Major Thoroughfares Map, Douglas County, Kansas
- 2011 Traffic Count and Speed Study Results for N. 1300 Road  
(Source: Douglas County)
- 2013 Traffic Count Map for Lawrence (Source: KDOT)
- Excerpts from the Preliminary Alignment Study for 31<sup>st</sup> Street/N. 1300 Road, dated August 31, 2010
  - Appendix A1- Year 2005 Daily Traffic Volumes
  - Appendix A3 – Year 2030 Daily Traffic Volumes (With SLT)
  - Appendix A5 – Year 2030 AM and PM Peak-Hour Traffic Volumes  
[31<sup>st</sup> Street (Two-Lanes) With SLT]
  - Appendix A6 – Year 2030 AM and PM Peak-Hour Traffic Volumes  
[31<sup>st</sup> Street (Four-Lanes) With SLT]
  - Appendix A9 – Year 2030 Intersection Geometry, Traffic Control and LOS  
31<sup>st</sup> Street (Two-Lanes) With SLT]
  - Appendix A10 – Year 2030 Intersection Geometry, Traffic Control and LOS  
31<sup>st</sup> Street (Four-Lanes) With SLT]



## ***Introduction***

### ***Proposed Development***

The proposed “King’s Recycling Center” development comprises approximately 77 acres on the south side of N. 1300 Road (31<sup>st</sup> Street extension), between E. 1750 Road (Noria Road) and South Lawrence Trafficway (SLT) in Douglas County, Kansas (See Location Map, Figure 1 of Appendix I). The site was a borrow pit for construction of the SLT.

The primary function of this recycling center is to haul construction waste material such as concrete, brick, asphalt, cinder block and stone from demolition job sites, store them on site and recycle them into gravel and other products. The site will also be open to public as well as contractors. The facility will be open for operation on weekdays and some Saturdays as necessary for projects and will be staffed by as many as five (5) employees.

### ***Access***

Access to the site will be provided at one location onto N. 1300 Road approximately 850 feet (centerline to centerline) west of N. 1750 Road. No other access points are proposed for the site.

### ***Zoning***

The existing zoning for the site is agricultural. The proposed zoning is Industrial (I-3). According to the 2011 Amendment of the Horizon 2020, Map 3-3, the site is located in the Urban Growth Area of Douglas County.

### ***Existing and Other Proposed Developments***

Currently, vast majority of the land in proximity of the site is undeveloped agricultural land with exception of a few scattered homes along N. 1300 Road and E. 1700 Road. In the recent months, a youth soccer park, for the southeast corner of the intersection of E. 1750 Road and N. 1300 Road, has been proposed and is in the process of being approved.

### Purpose

The purpose of this study is to evaluate:

1. Evaluate the existing operating conditions of traffic at the intersections of
  - a. E. 1750 Road (Noria Road) and N. 1300 Road;
  - b. E. 1750 Road (Noria Road) and N. 1360 Road;
  - c. E. 1750 Road (Noria Road) and County Road 442; and
  - d. N. 1300 Road and E. 1700 Road.
2. Assess impact of the trips generated by this development on the above mentioned intersections and roadway network; and
3. Recommend off-site improvements needed (if any) as the result of this development.

### ***Data Collection and Summary***

In order to assess traffic impacts of this development on the intersections under study, in addition to pertinent information obtained from local agencies, field observations and measurements were also conducted. The following paragraphs summarize the results of data collection tasks for this project.

#### Roadway Network Geometric & Operating Characteristics

In the vicinity of the development site, the street network consists of:

- SLT, running northeast/southwest above the grade on the west side of the site, designated as “Freeway” on County’s T2040 Thoroughfare Map, as “Other Freeways/ Expressways” on the KDOT’s Functional Classification Map, as “Route C” on the KDOT’s Route Classification System Map, and as “C – Statewide Arterial System; integrated with A and B” on the KDOT’s Access Management Plan Map.
- N. 1300 Road (31<sup>st</sup> Street extension), running east/west along the north side of the site, designated as “Principal Arterial” on the County’s T2040 Thoroughfare Map. It is a two-way blacktop roadway with open drainage ditch on both sides

and posted speed limit of 35 mph. From O'Connell Road to a short distance east of E. 1700 Road, its cross-section consists of a 22-foot pavement with no shoulders. The remaining section of the roadway thence east to E. 1750 Road has recently been improved to have a 28-foot asphalt pavement and 6-foot gravel shoulders on both sides as part of the SLT overpass construction.

- E. 1750 Road (Noria Road), running north/south along the east side of the site, designated as "Minor Arterial" on the County's T2040 Thoroughfare Map. North of N. 1300 Road, the road is currently under construction as part of the SLT project and has a 24-foot concrete pavement with 8-foot concrete shoulder on both sides. The posted speed limit along this section of E. 1750 Road is 45 mph. South of N. 1300 Road, the road is 22 feet wide (mostly gravel) with no shoulders and no posted speed limits.
- E. 1700 Road, running north/south approximately ½ mile west of the site, designated as "Collector" on the County's T2040 Thoroughfare Map. This is two-way blacktop road with 20-foot pavement, no shoulders and no posted speed limit.
- N. 1360 Road, running east/west approximately ½ mile north of the site, designated as "Collector" on the County's T2040 Thoroughfare Map. This is a two-way blacktop road with 22-foot pavement, no shoulders and no posted speed limit. West of E. 1700 Road, the road is within the city limits of Lawrence and has a posted speed limit of 30 mph.
- Douglas County 442, running east/west approximately one mile north of the site, designated as "Minor Arterial" on the County's T2040 Thoroughfare Map. It is a two-way blacktop road with 22-foot pavement and unpaved 4'-6' shoulders. The posted speed limit on this facility changes from 45 mph within the city limits of Lawrence (near Noria Road) to 55 mph in the county (west of Eudora).
- Currently, the intersection of E. 1750 Road (Noria Road) and N. 1300 Road is a "T" intersection controlled by stop sign on N. 1300 Road. Based on the information provided by the County Public Works Department (Preliminary Alignment Study for 31<sup>st</sup> Street/N. 1300 Road, dated August 31, 2010), the future plan for this intersection calls for a single lane roundabout.

- The intersection of N. 1300 Road and E. 1700 Road is also a “T” intersection controlled by stop sign on E. 1700 Road.
- The intersection of N. 1360 Road and E. 1750 Road is also a “T” intersection controlled by stop sign on E. 1360 Road.
- The intersection of E. 1750 Road and County Road 442 is also a “T” intersection controlled by stop sign on Route 442.

### Traffic Counts

At the time this study was conducted, SLT was under construction and E. 1750 Road (Noria Road), north of N. 1300 Road, was closed to traffic. It was, therefore, not practical to conduct traffic volume counts in the area as the results would not be representative of the actual conditions. For the purpose of this analysis, however, traffic volume data from available sources (i.e. County and KDOT records as well as the Preliminary Alignment Study for 31<sup>st</sup> Street/N. 1300 Road, dated August 31, 2010) were utilized. In summary (see Appendix for details):

- County records (2011 data) show that N. 1300 Road carries daily traffic volumes of approximately 30 vpd.
- KDOT’s 2013 Traffic Count Map shows daily traffic volumes of approximately 85 vpd for N. 1300 Road, 30 vpd for E. 1700 Road and 195 vpd for E. 1750 Road (north of E. 1300 Road), all considered to be very low volume roads.
- The result of a speed study conducted by the county in 2011 indicates that 85<sup>th</sup> percentile speed (operating speed) along N. 1300 Road just west of E. 1700 Road is 44 mph.
- According to the 31<sup>st</sup> Street Preliminary Alignment Study, with completion of SLT, the projected future volumes (target year 2030) on the street network surrounding the development site are estimated as follows:
  - N. 1300 Road will carry approximately 6,500 – 8,000 vpd west of E. 1750 Road and 3,200 – 3,900 vpd thence east.
  - E. 1750 Road (Noria Road) will carry approximately 6,100 – 6,500 vpd north of N. 1300 Road and 2,900 – 3,000 vpd thence south.



### Sight Distance

Field observations of the study area indicate that the only location that sight distance may be of concern is the departure triangle on the northeast corner of the intersection of E. 1700 Road and N. 1300 Road, where the tree lines obstruct the sight line.

### **Reasoning:**

Operating speed (85<sup>th</sup> percentile) = 44 mph

Required intersection sight distance (for right turn) = 420 ft.

Measured intersection sight distance (for right turn) = 350 ft. < 420 ft. (inadequate)

Required intersection sight distance (for left-turn) = 485 ft.

Measured intersection sight distance (for left-turn) = 620 ft. > 485 ft. (adequate)

### ***Volume/Capacity Analysis***

A volume/capacity analysis (using methodologies outlined in the 2000 Highway Capacity Manual (HCM) published by the Transportation Research Board) was conducted to determine the level-of-service (LOS) for all movements at the intersections under study during the afternoon peak-hour of a typical weekday.

Level-of-service, as defined in the HCM, describes the quality of traffic operating condition and ranges from “A” to “F”, with LOS “A” representing the best (most desirable with minimum delay) conditions and LOS “F” the worst (severely congested with excessive delays). The following chart outlines the level-of-service criteria for unsignalized and signalized intersections.

Level-Of-Service	Control Delay for Unsignalized Intersections (seconds/vehicle)	Control Delay for Signalized Intersections (seconds/vehicle)	Volume/Capacity Ratio for Roundabouts (aaSIDRA Criteria)
A	0 – 10	0 – 10	< 0.6
B	> 10 – 15	> 10 – 20	0.6 – 0.7
C	> 15 – 25	> 20 – 35	0.7 – 0.8
D	> 25 – 35	> 35 – 55	0.8 – 0.9
E	> 35 – 50	> 55 – 80	0.9 – 1.0
F	> 50	> 80	> 1.0

Under the existing conditions, all roadways in the vicinity of the site are very low volume roads with high LOS for all approaches. The results of analysis for target year 2030, as shown in the 31<sup>st</sup> Street Preliminary Alignment Study and included in the Appendix, indicate that, the intersection of E. 1750 Road and N. 1300 Road will likely operate at LOS “D” under stop-controlled condition; and at LOS “A” with a single lane roundabout.

### ***Trip Generation Analysis***

Typically, trips generated by a proposed development are estimated using trip generation rates suggested by the latest edition of the Institute of Transportation Engineers, Trip Generation Manual (currently 9<sup>th</sup> Edition). Since the Manual does not have information for land use type “Recycling”, the following procedure was used for analysis:

- For the recycling component of this development, number of trucks generated by this site will be difficult to estimate. The facility will be open for operation on weekdays and some Saturdays as necessary for projects and will be staffed by as many as five (5) employees. The operation will not be every day but per the demolition job, frequency and size of which are difficult to anticipate. For

instance, demolition of a small commercial building (4,000 sq. ft.) would require less than 10 truck load of material over a day or two. A job like the KU residence hall (still on-going) would be several months of a 10 to 15 trucks daily.

- For the “Office” component of this development with 5 employees, ITE Land Use Codes 710 (General Office Building) and 715 (Single Tenant Office) are selected as the most relevant land use types with “Number of Employees” as the independent variable. The results indicate that this component of the development will likely generate:
  - On average, 3 trip-ends (2 inbound and 1 outbound) during the morning peak-hour of a typical weekday;
  - On average, 3 trip-ends (1 inbound and 2 outbound) during the afternoon peak-hour of a typical weekday; and
  - On average, 18 trip-ends during 24-hour period of a typical weekday.

### ***Trip Distribution and Assignment Analysis***

Based on the information provided by the applicant, the truck route will be from the entrance off N. 1300 Road (31<sup>st</sup> Street) east to E. 1750 Road (Noria Road) then north to County Road 442 (Old Hwy 10) and east to E. 1900 Road, then south to K-10 Highway. From there the trucks can go west to Lawrence or east to Kansas City area. The plan is not to use 31<sup>st</sup> Street west of the site, or go south to 35<sup>th</sup> Street, or use E. 1700 Road and/or N. 1360 Road to go to Lawrence because these roads are not suitable for truck traffic.

## **Recommendations**

### **Existing Conditions**

- 1- Currently, there are no indications of any operational deficiencies in the study area. Movements at all intersections under study operate at high LOS with ample reserve capacity.
- 2- Field observations indicate that the study area is on a relatively flat terrain with no restriction on sight distance at any intersection, except for the northeast corner of the intersection of N. 1300 Road and E. 1700 Road where the departure sight triangle is partially obstructed by a tree line.

**Mitigation Measure:** Remove/trim some of the trees and shrubs along the north of N. 1300 Road, east of E. 1700 Road.

- 3- Field observations indicate that some of the signs in the study area appear to be low in height and may not be in compliance with the Manual on Uniform Traffic Control Devices (MUTCD).

**Mitigation Measure:** Consider inspecting the signage in the study area for proper height installation.

- 4- Field observations indicate that the culvert headwalls located on N. 1360 Road just west of E. 1700 Road (inside the City limits) is not properly delineated.

**Mitigation Measure:** Install Object Markers (OM3) on the headwalls for both directions.

### **Existing + Proposed King's Recycling Center**

- 5- The proposed "King's Recycling Center" will have a no impact on the capacity of the roadway network because the roads in the study area are, currently, very low volume roads (< 400 vpd) with ample reserve capacity.

6- Field observations indicate that in the vicinity of the development site, the following roadway segments are **not** suitable to handle truck traffic with heavy payload.

- E. 1750 Road (Noria Road) south of N. 1300 Road (31<sup>st</sup> Street);
- N. 1300 Road (31<sup>st</sup> Street) west of E. 1700 Road;
- E. 1700 Road between N. 1300 Road (31<sup>st</sup> Street) and N. 1360 Road; and
- N. 1360 Road west of E. 1750 Road (Noria Road)

**Mitigation Measure:** It is recommended that site generated truck traffic **not** to use any road segments mentioned above. Their designated route, as mentioned earlier, should follow:

- N. 1300 Road (31<sup>st</sup> Street) east of the site access drive;
- E. 1750 Road (Noria Road) north of N. 1300 Road (31<sup>st</sup> Street);
- County Road 442 (Old K-10) east of E. 1750 Road (Noria Road);
- E. 1900 Road south of Route 442; and
- K-10 Highway east to Kansas City metro area or west to Lawrence.

7- The proposed driveway to the site is located approximately 850 feet (centerline to centerline) west of E. 1750 Road with no sight distance restrictions. If this is a gravel driveway, the following mitigation measure is recommended.

**Mitigation Measure:** For safety reasons, the first 100 feet of this driveway (where it intersects N. 1300 Road) should be paved in order to keep the gravel from being tracked onto N. 1300 Road.

8- Under the existing conditions and for a foreseeable future, no dedicated turn lanes are warranted at any intersection in the study area including the proposed driveway location to the site. The need for dedicated turn lanes in future (e.g. for target year 2030) should be evaluated as the background traffic grows with new developments in the area.

9- For design purposes, the swept path of the site's largest truck should be considered when:

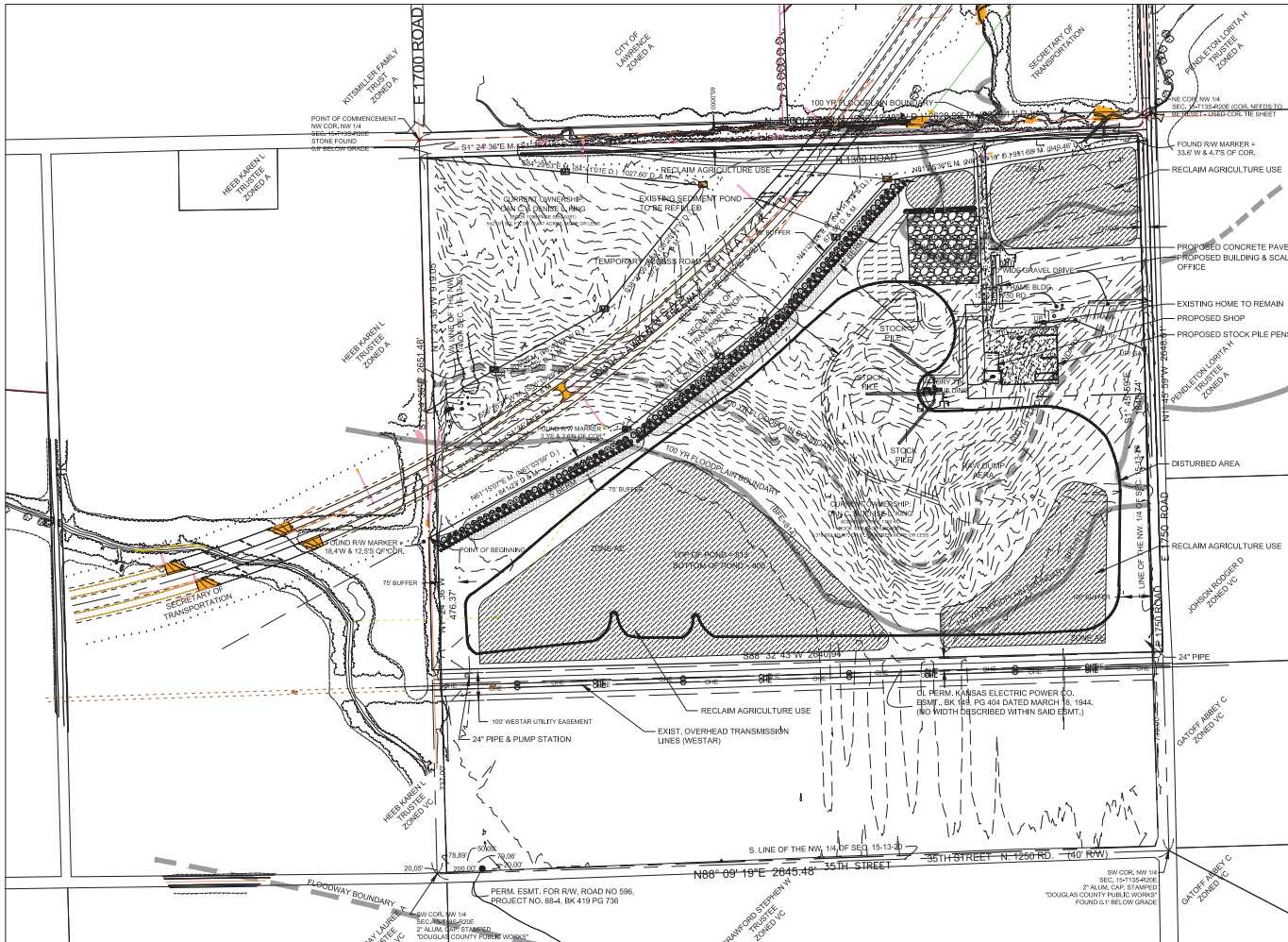


- Establishing turning radii at the driveway location to the site;
- Evaluating turning radii at the northwest corner of the intersection of N. 1300 Road (31<sup>st</sup> Street) and E. 1750 Road (Noria Road). This is because there is a large box culvert that runs under the north leg of this intersection very close to the intersection. This culvert has a very narrow gravel shoulder followed by a steep (non-traversable) side slope with no headwalls, which may potentially create an unsafe condition for off-tracking trucks negotiating southbound to westbound maneuver; and
- Designing the future single-lane roundabout at the intersection of N. 1300 Road (31<sup>st</sup> Street) and E. 1750 Road (Noria Road).

# **APPENDIX**



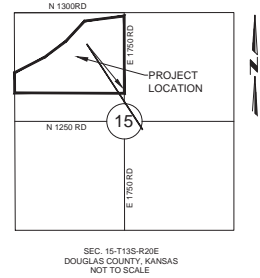
Figure 1: Location Map



Plant Schedule

S. SYMBOL	PROPOSED QTY.	SPECIES	SIZE	COND.	S. SYMBOL	PROPOSED QTY.	SPECIES	SIZE	COND.	S. SYMBOL	PROPOSED QTY.	SPECIES	SIZE	COND.
DECIDUOUS TREES					DECIDUOUS TREES					DECIDUOUS TREES				
10	10	HACKBERRY CELTIS OCCIDENTALIS	MIN. 2.5" CAL.	B&B	22	22	AMUR MAPLE (CLUMP) AIZER GRABALA	MIN. 2" CAL.	B&B	10	10	LITTLE PRINCESS SPIREA SPARGANUS JAPANESE LITTLE PRINCESS	30" MIN.	CONT.
10	10	SKUNK HONEY LOCUST GLYCERHODIA THACANTHOS 'SKUNK'	MIN. 2.5" CAL.	B&B	32	32	RED BUD CELTIS CANADENSIS	MIN. 2" CAL.	B&B	7	7	BOTTENBUSH OPUNTIA MONSIEUR LECHE	30" MIN.	CONT.
10	10	PINK OAK QUERCUS PAULSTRI	MIN. 2.5" CAL.	B&B	22	22	CHERRYBARK MALUS SP.	MIN. 2" CAL.	B&B	10	10	LINWOOD GOLD FORTYTHREE FORTYTHREE X INTERMEDIATE LINWOOD	30" MIN.	CONT.
10	10	RED OAK QUERCUS RUBRA	MIN. 2.5" CAL.	B&B	10	10	AMERICAN PLUM PRUNUS AMERICANA	MIN. 2" CAL.	B&B	12	12	WINTER WINDSOR WINTER WINDSOR VAR. TONICUS VAR. WINTER	30" MIN.	CONT.
10	10	BUR OAK QUERCUS MACROCARPA	MIN. 2.5" CAL.	B&B	20	20	CHERRYBARK JUNIPER HORIZONTALIS 'CANADENSIS'	MIN. 2" CAL.	B&B	12	12	CHERRYBARK JUNIPER HORIZONTALIS 'CANADENSIS'	30" MIN.	CONT.
12	12	HICKORY CORYLUS	MIN. 2.5" CAL.	B&B	44	44	KETTERLEIGH CHERRY JUNIPER HORIZONTALIS 'CANADENSIS'	MIN. 2" CAL.	B&B	12	12	CHERRYBARK JUNIPER HORIZONTALIS 'CANADENSIS'	30" MIN.	CONT.
12	12	EASTERN COTONWOOD POPULUS DELTOIDES	MIN. 2.5" CAL.	B&B	44	44	BALD CYPRESS TAXODIUM DISTICHUM	MIN. 2" CAL.	B&B	5	5	FRAGRANT YEW TAXUS AMERICANA	30" MIN.	CONT.
12	12	LACINIAE CUM LACINIAE CUM	MIN. 2.5" CAL.	B&B										

## Location Map



## General Notes

- OWNER: FOUR KING'S LLC  
2015 WALNUT STREET  
TOPEKA, KANSAS 66606-4000
- LAND PLANNER/ LANDPLAN ENGINEERING, P.A.  
1310 MARQUETTE DRIVE  
LAWRENCE, KS 66049
  - TOPOGRAPHIC INFORMATION OBTAINED FROM 2013 DOUGLAS COUNTY LIDAR AERIAL DATA.
  - EXISTING LAND USE: BORROW PIT / AGRICULTURAL.
  - PROPOSED LAND USE: RECYCLING CENTER / AGRICULTURAL.
  - EXISTING ZONING: AGRICULTURAL / VALLEY CHANNEL.
  - PROPOSED ZONING: AGRICULTURAL / VALLEY CHANNEL.
  - PROPOSED OPERATION OF THE BORROW PIT:  
REMOVE MATERIAL FROM BORROW PIT, DELIVER TO CONSTRUCTION SITE, DEVELOP POND, STABILIZE ALL DISTURBED AREAS, RECYCLE CONSTRUCTION MATERIAL (CONCRETE, BRICK, ASPHALT, CEMENT, STONE).
  - A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) HAS BEEN SUBMITTED TO KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT (KDEH) AND IS ON FILE.
  - A KANSAS DEPARTMENT OF AGRICULTURE, DIVISION OF WATER RESOURCES PERMIT IS NOT REQUIRED AS ONLY BORROW, NO FILL, WILL OCCUR AT THE SITE.

## Site Summary

GROSS AREA:	3,378,692 SF / 77,564 AC
RIGHTS-OF-WAY AREA:	60,937 SF / 1,399 AC
NET AREA:	3,317,755 SF / 76,165 AC
TOTAL LOTS:	1

## Legal Description

LOT 1

ALL THAT PART OF THE NORTHWEST QUARTER OF SECTION 15, TOWNSHIP 13 SOUTH, RANGE 20 EAST IN THE CITY OF LAWRENCE, DOUGLAS COUNTY, KANSAS, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF THE NORTHWEST QUARTER OF SAID SECTION 15; THENCE SOUTH 01 DEGREE 24 MINUTES 36 SECONDS EAST ALONG THE WEST LINE OF THE NORTHWEST QUARTER OF SAID SECTION 15, A DISTANCE OF 1438.11 FEET TO A POINT ON THE SOUTHWESTERLY RIGHT-OF-WAY LINE OF KANSAS HIGHWAY K-10 AS DESCRIBED IN GENERAL WARRANTY DEED, BOOK 1096 AT PAGE 5280-5281, DATED JANUARY 8TH, 2013 RECORDED IN SAID COUNTY AND STATE AND THE POINT OF BEGINNING; THENCE NORTH 61 DEGREES 19 MINUTES 07 SECONDS EAST ALONG THE SOUTHWESTERLY RIGHT-OF-WAY LINE OF SAID K-10, A DISTANCE OF 811.23 FEET; THENCE NORTH 81 DEGREES 31 MINUTES 37 SECONDS EAST ALONG SAID SOUTHWESTERLY RIGHT-OF-WAY LINE OF SAID K-10, A DISTANCE OF 631.33 FEET; THENCE NORTH 41 DEGREES 28 MINUTES 28 SECONDS EAST CONTINUING ALONG THE SOUTHERLY RIGHT-OF-WAY LINE OF SAID K-10, A DISTANCE OF 678.58 FEET; THENCE NORTH 81 DEGREES 09 MINUTES 36 SECONDS EAST ALONG THE SOUTHERLY RIGHT-OF-WAY LINE OF SAID K-10, A DISTANCE OF 801.38 FEET TO A POINT ON THE EAST LINE OF THE NORTHWEST QUARTER OF SAID SECTION 15, ALSO BEING 80.87 FEET SOUTH OF THE NORTHEAST CORNER THEREOF; THENCE SOUTH 01 DEGREE 45 MINUTES 59 SECONDS EAST ALONG THE EAST LINE OF THE NORTHWEST QUARTER OF SAID SECTION 15, A DISTANCE OF 1848.74 FEET TO A POINT 50 FEET NORTHERLY OF THE CENTERLINE OF A KANSAS ELECTRIC POWER COMPANY EASEMENT, AS DESCRIBED IN BOOK 149 AT PAGE 404, DATED MARCH 18, 1944 AND RECORDED IN SAID COUNTY AND STATE (NO WIDTH DESCRIBED IN SAID EASEMENT); THENCE SOUTH 88 DEGREES 32 MINUTES 43 SECONDS WEST, BEING 50 FEET NORTHERLY OF AND PARALLEL WITH THE CENTERLINE OF SAID ELECTRIC EASEMENT, A DISTANCE OF 2640.94 FEET TO A POINT ON THE WEST LINE OF THE NORTHWEST QUARTER OF SAID SECTION 15; THENCE NORTH 01 DEGREE 24 MINUTES 36 SECONDS WEST ALONG THE WEST LINE OF THE NORTHWEST QUARTER OF SAID SECTION 15, A DISTANCE OF 476.37 FEET TO THE POINT OF BEGINNING, CONTAINING 3,378,692 SQUARE FEET OR 77,564 ACRES, MORE OR LESS.

**KING'S RECYCLING CENTER**  
Douglas County, Kansas

Civil Engineering  
Landscape Architecture  
Community Planning  
Surveying

Landplan Engineering, P.A.  
1310 MARQUETTE DRIVE  
LAWRENCE, KS 66049  
TEL: 781-220-2200  
WWW.LANDPLANENGINEERING.COM

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COUNTY ROAD E1750 - BORROW PIT  
DOUGLAS COUNTY, KANSAS  
N1250 ROAD AND E 1750 ROAD

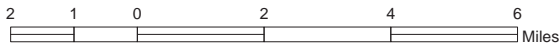
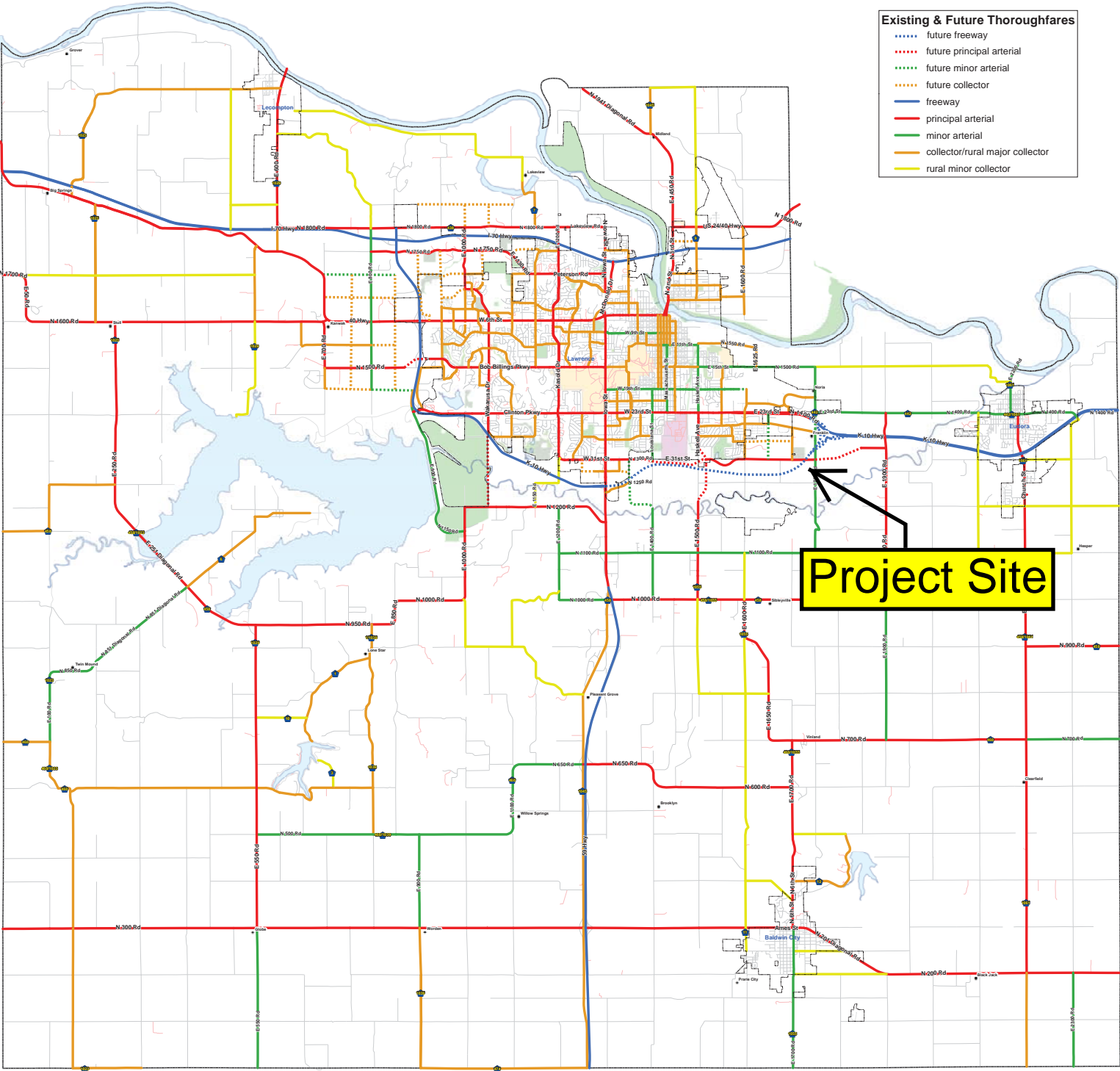
REV.	DATE	DESCRIPTION
1	2/22/2016	ISSUE FOR PERMIT

DATE: February 22, 2016  
PROJECT NO.: 2013027  
DESIGNED BY: LPE  
DRAWN BY: CLM  
CHECKED BY: CLM

ISSUE: A  
SHEET NO.: C-001  
OF 1 SHEETS



# T2040 Major Thoroughfares Map, Douglas County, Kansas

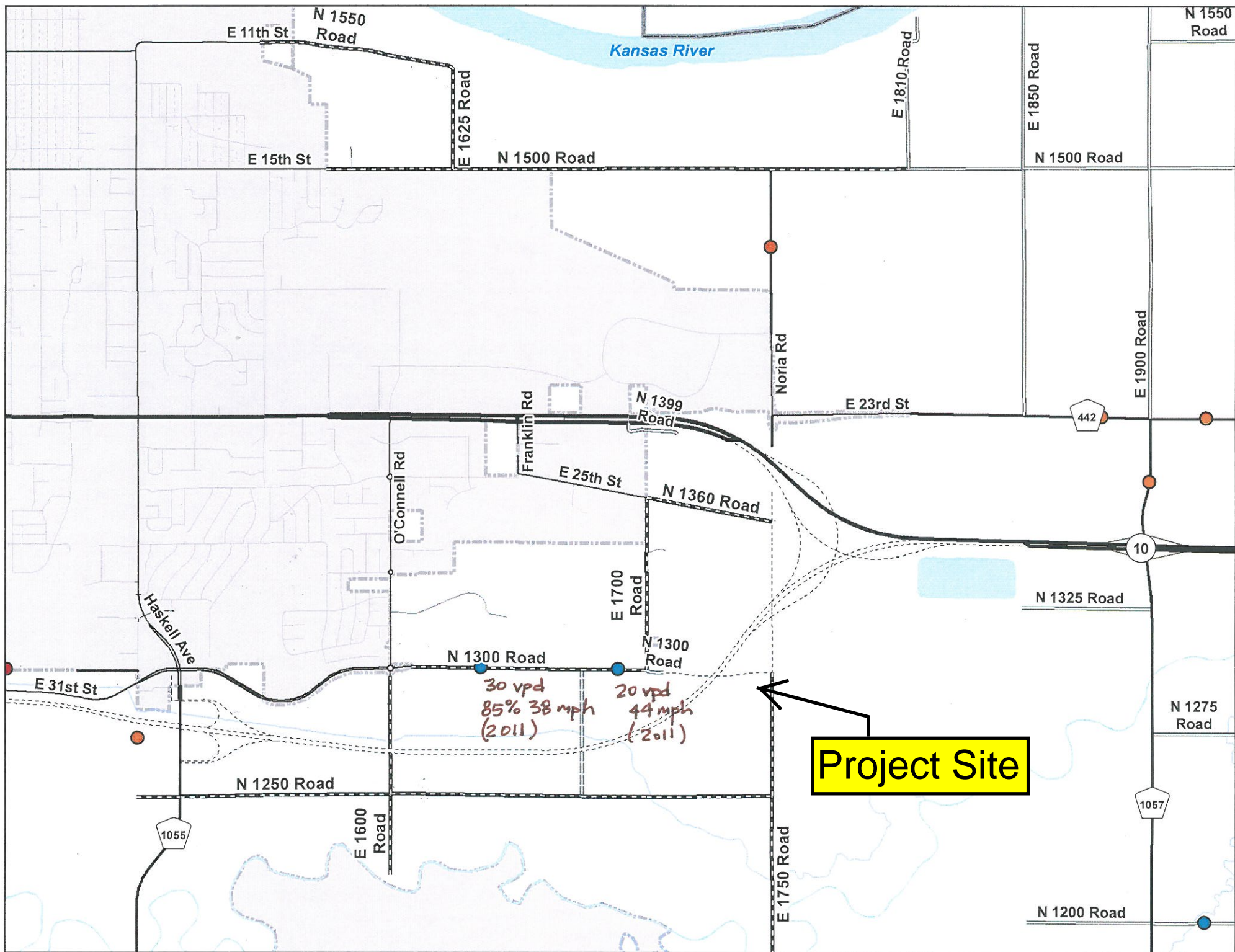


Map Prepared by Lawrence-Douglas County Planning and Development  
Services Department for the Lawrence-Douglas County MPO  
March 21, 2013

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



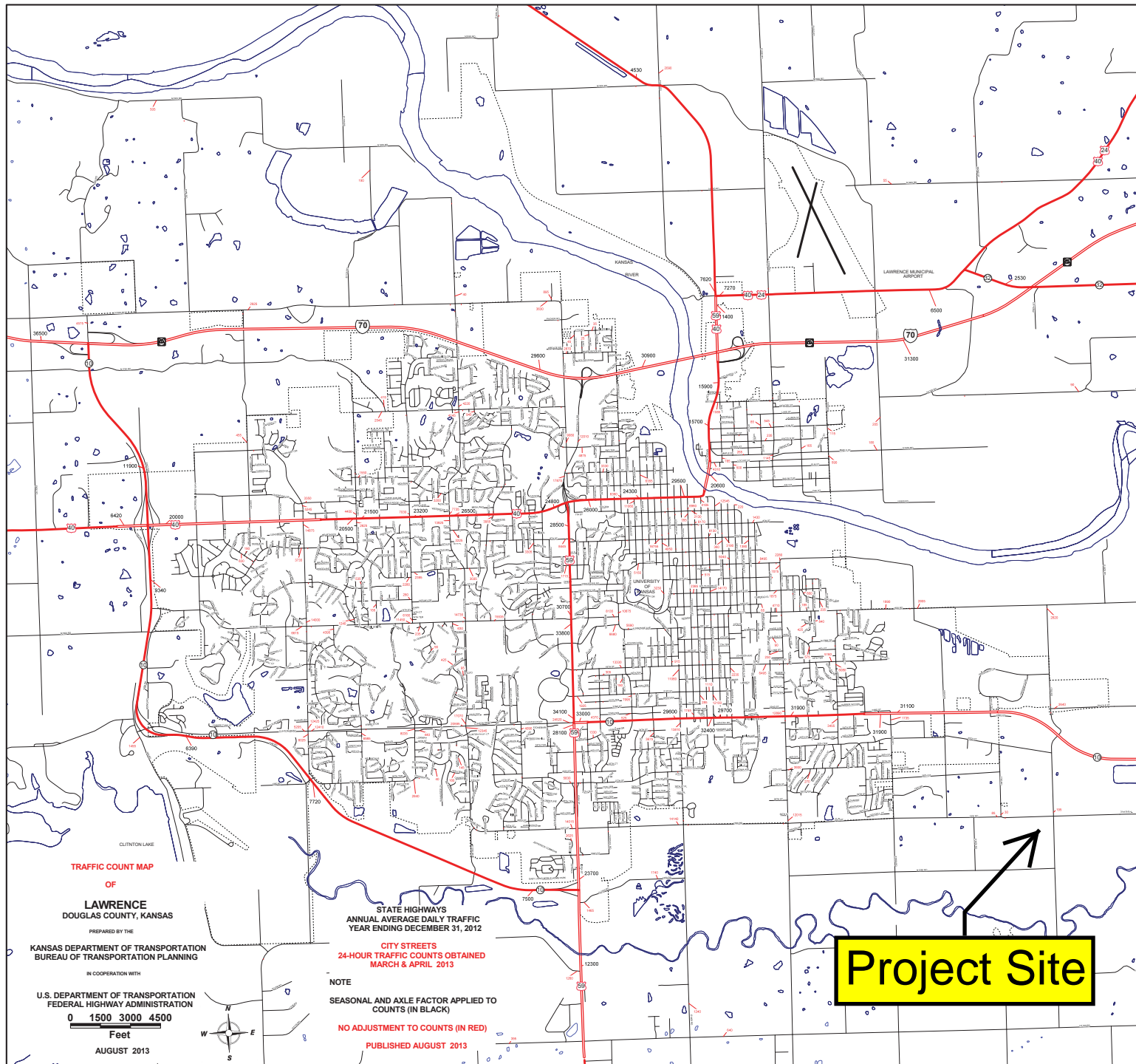


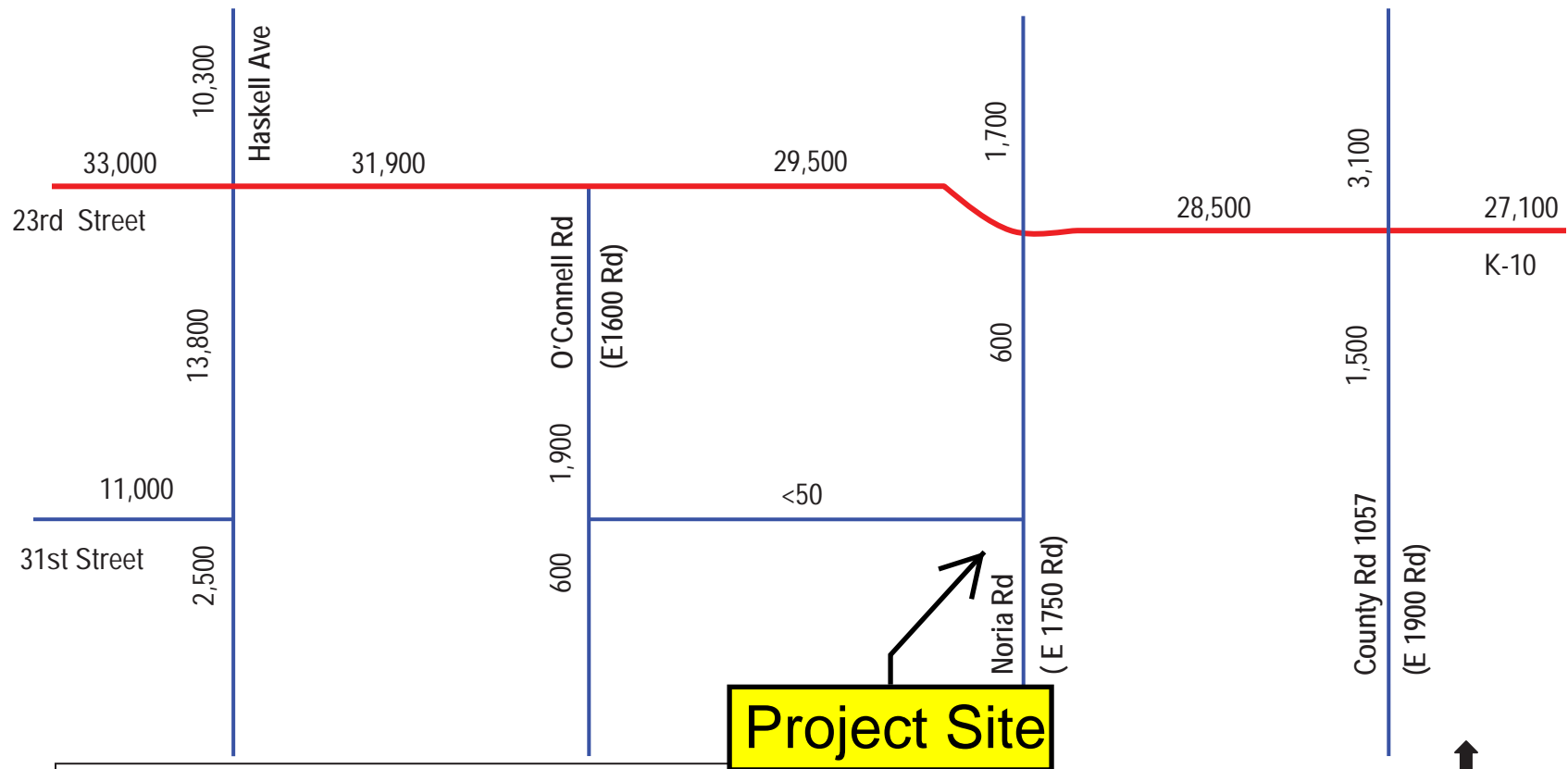


Project Site

30 vpd  
85% 38 mph  
(2011)

20 vpd  
44 mph  
(2011)





#### LEGEND

X,XXX DAILY TRAFFIC VOLUMES

— TWO LANE ROAD

— FOUR LANE ROAD

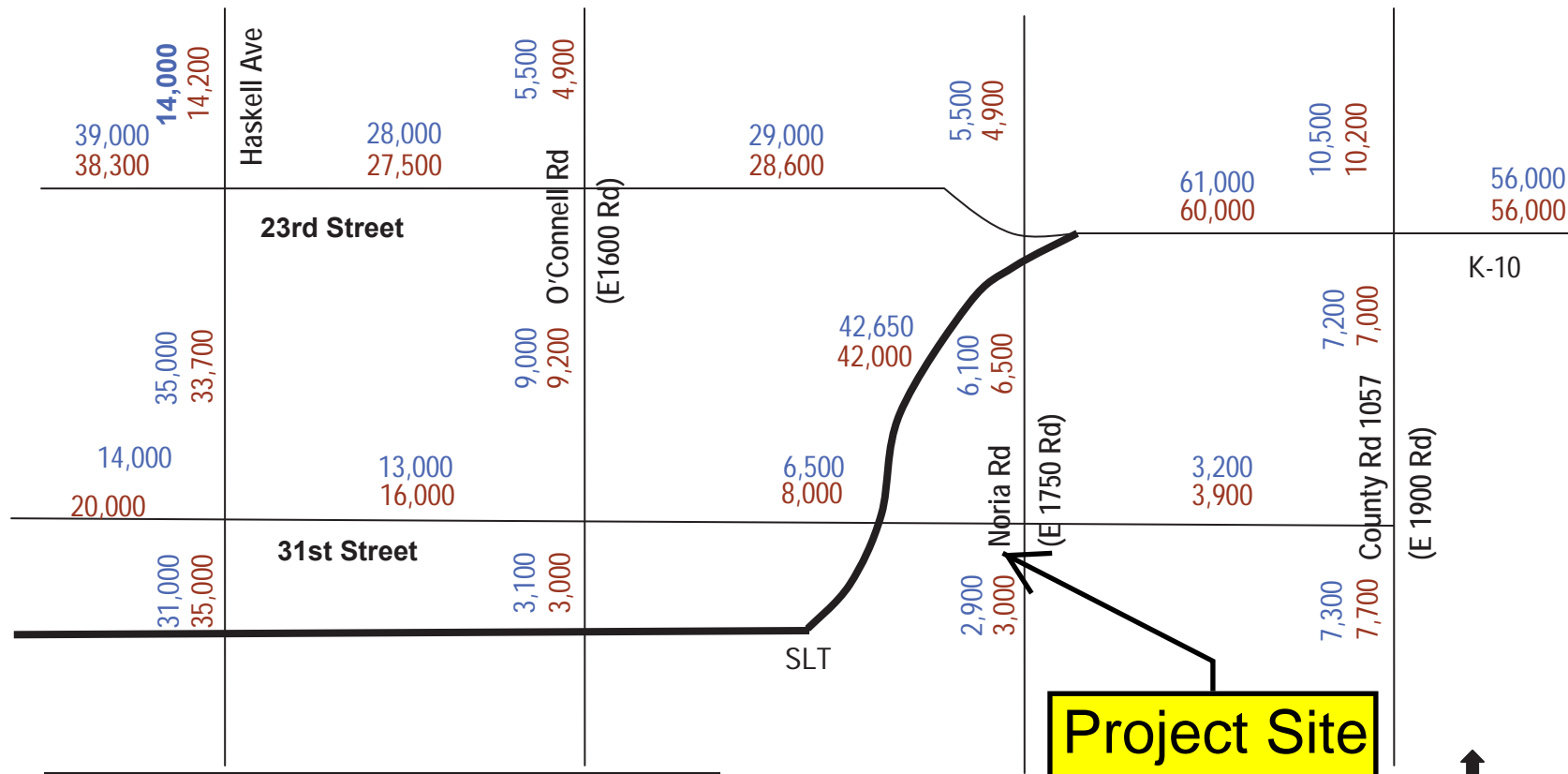
**Project Site**

#### APPENDIX A1

Year 2005 Daily Traffic Volumes



NOT TO SCALE



#### LEGEND

**X,XXX** DAILY TRAFFIC VOLUMES  
31st STREET TWO LANES WITH SLT

**X,XXX** DAILY TRAFFIC VOLUMES  
31st STREET FOUR LANES WITH SLT

**Project Site**

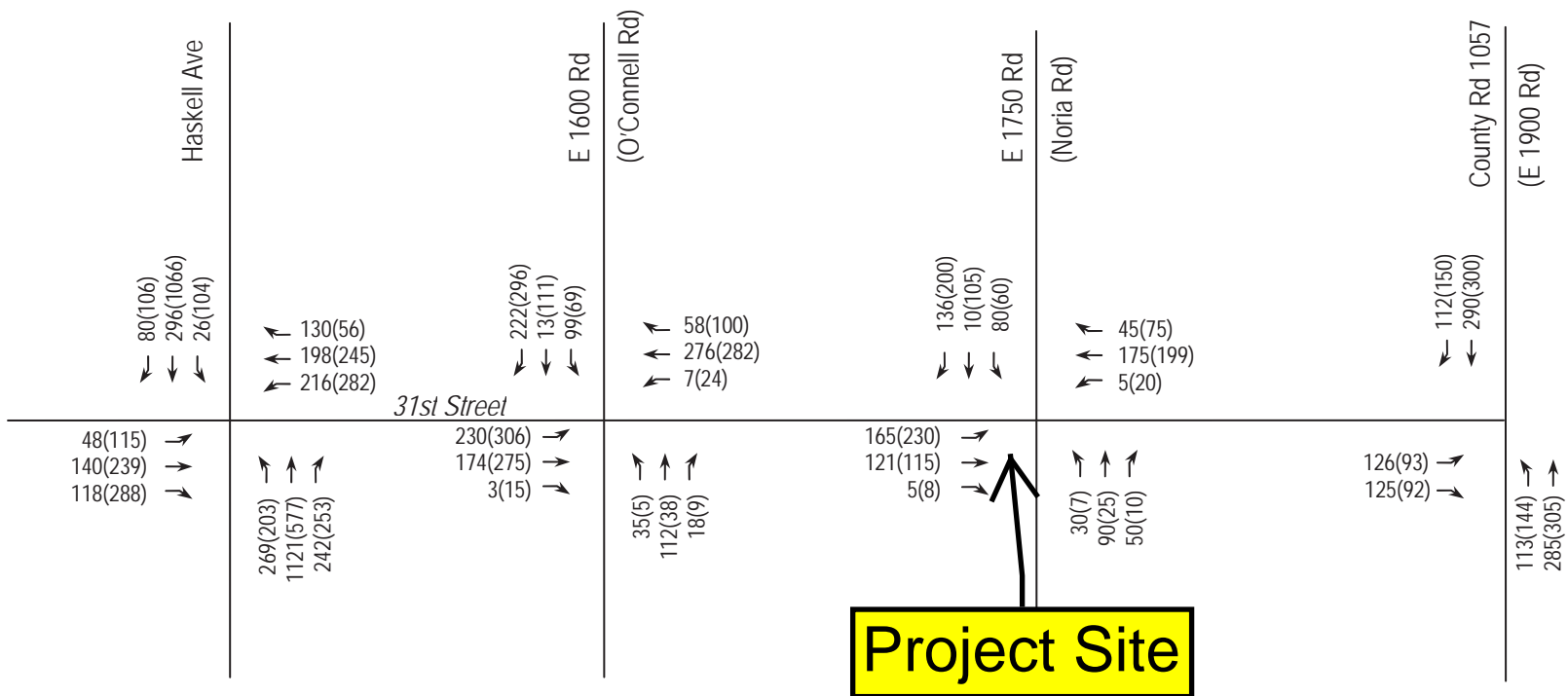


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NOT TO SCALE

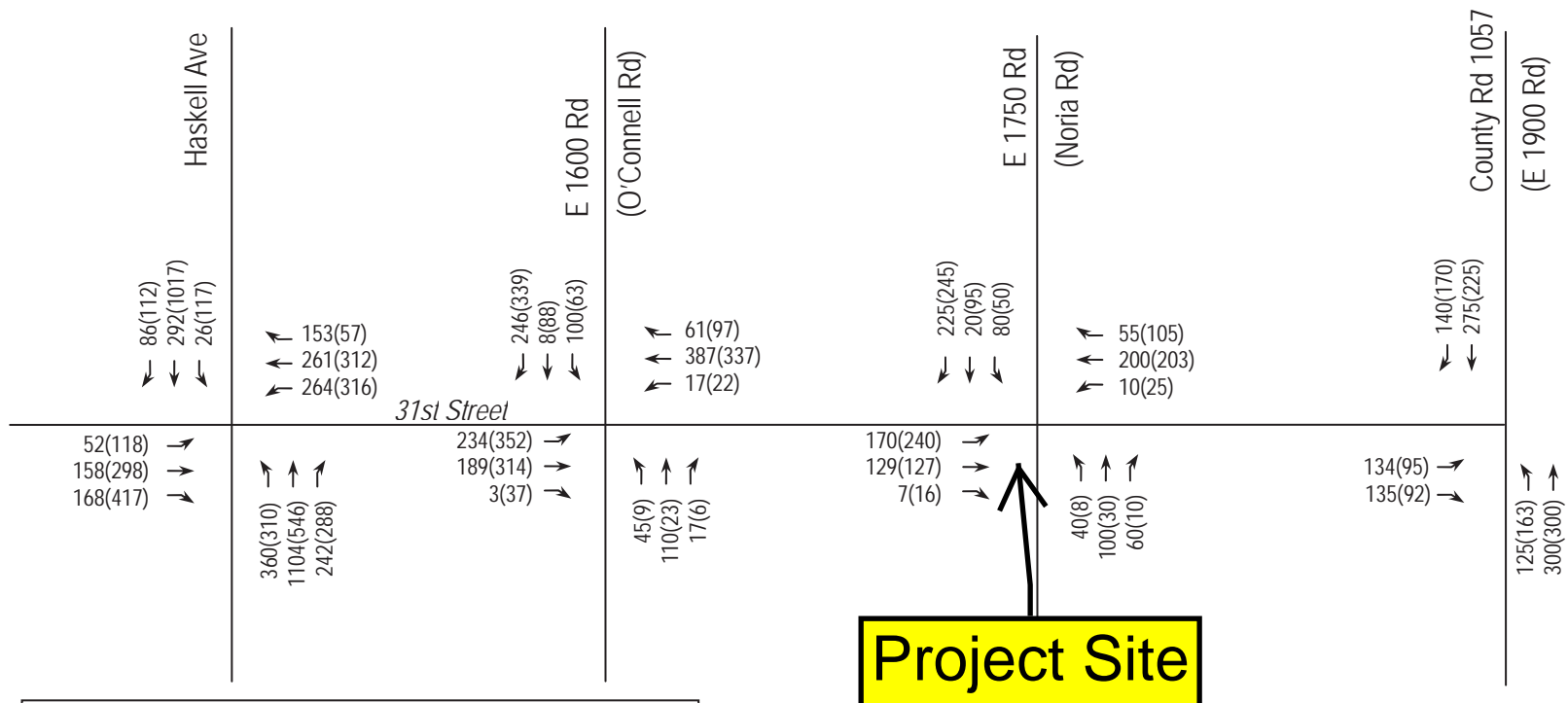
#### APPENDIX A3

Year 2030 Daily Traffic Volumes  
With South Lawrence Trafficway



# **APPENDIX A5**





**LEGEND:**

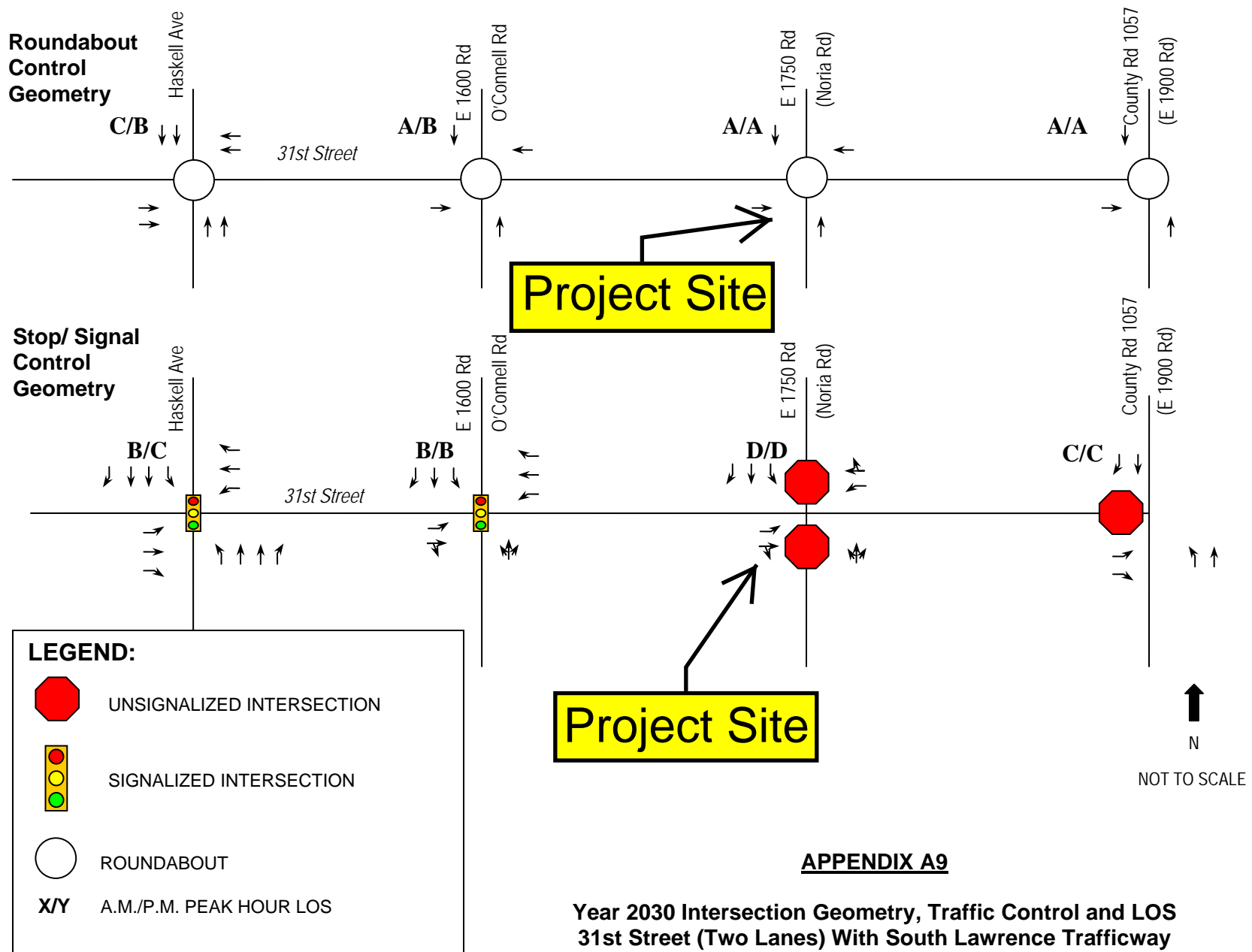
x(x) AM(PM) PEAK HOUR TRAFFIC VOLUMES

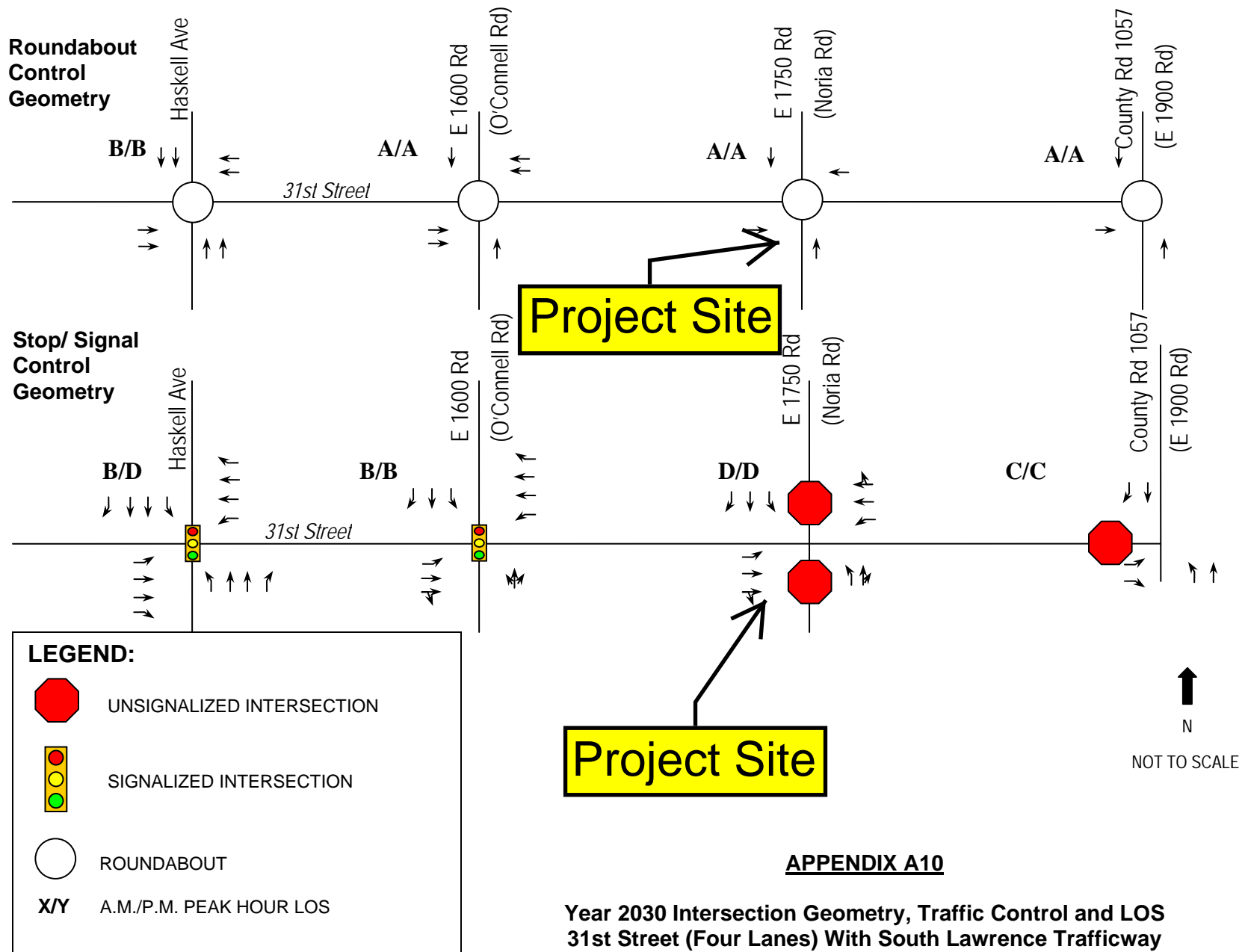
**APPENDIX A6**

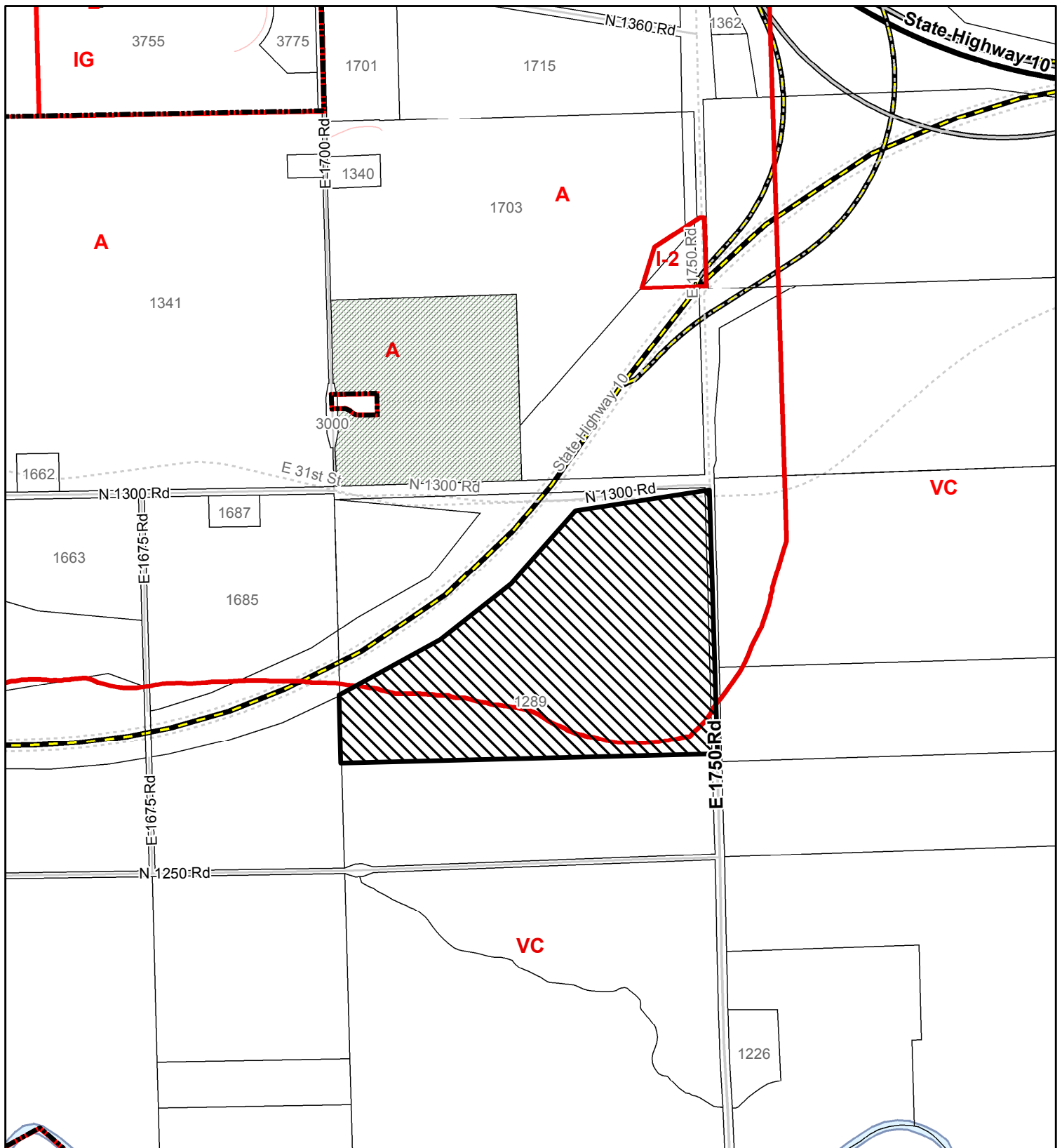
**Year 2030 AM and PM Peak Hour Traffic Volumes  
31st Street (Four Lanes) With South Lawrence Trafficway**



NOT TO SCALE







**Z-16-00067: Rezone Approximately 77.5 acres from County A District and County VC District to County I-3 District**

**PP-16-00068: Preliminary Plat for Four King's Subdivision**

**CUP-16-00069: Conditional Use Permit for King's Recycling Center  
Located on the Southwest Corner of E 1750 Road and N 1300 Road**

