

# BOARD OF COUNTY COMMISSIONERS OF DOUGLAS COUNTY, KANSAS

## WEDNESDAY, MAY 11, 2011

6:35 p.m.

-Convene

### CONSENT AGENDA

- (1) (a) Consider approval of Commission Orders; and
- (b) Consider recommendation for contract of Youth Services security system upgrade (Jackie Waggoner/Pam Weigand)
- (c) Consider approval of temporary easement acquisition documents associated with KDOT's planned project to replace the 23<sup>rd</sup> Street bridge just northwest of the Public Works Operations Division facilities (Keith Browning)

### REGULAR AGENDA

- (2) Consider approval of **SP-3-12-11**, a Site Plan for office addition to an agricultural facility located at 1676 E 1550 Rd. Submitted by Paul Werner Architects for Nunemaker-Ross, Inc, property owner of record. (Mary Miller is the Planner)
- (3) Consider approving Comprehensive Plan Amendment, CPA-6-5-09, to Horizon 2020 – Chapter 14 to include the Northeast Sector Plan and adopt joint Ordinance No. 8591/Resolution for Comprehensive Plan Amendment (CPA-6-5-09) amending Horizon 2020 - Chapter 14 to include the Northeast Sector Plan. (PC Item 4; approved 5-4 on 9/20/10) (Dan Warner is the Planner)
- (4) Other Business
  - (a) Consider approval of Accounts Payable (if necessary)
  - (b) Appointments:
    - Property Crimes Compensation Board 04/30/11**
    - Lawrence-Douglas County Metropolitan Planning Commission 05/31/11**
    - Board of Zoning Appeals 10/2011 (2 positions-current not eligible for reappointment)**
    - Heritage Conservation Council**
  - (c) Miscellaneous
  - (d) Public Comment
- (5) Adjourn

## WEDNESDAY, MAY 18, 2011 (No 4 pm session; 6:35 only)

**-SP-3-16-11:** A site plan for construction of a 24,000 SF industrial building for McFarlane Aviation Products, on approximately 41.96 acres located at 696 E 1700 Road, southeast of the intersection of N 1700 and E 700 Roads. Site plan was submitted by Landplan Engineering, for Land & Sky, LC, property owner of record. (Sandra Day is the Planner)

**-CUP-10-6-10:** Consider a Conditional Use Permit for Kaw Valley Eudora Sand Facility, located at 2102 N 1500 Road, NE of SW Cor. SW ¼ S32-T12S-R21E, on approximately 196.58 acres. Submitted by Landplan Engineering, P.A., for Kaw Valley Companies, Inc., contract purchaser, for James and Ronda Bigger and Wellsville Bank, property owners of record. (Sandra Day is the Planner)

## WEDNESDAY, MAY 25, 2011 – Light Agenda

## WEDNESDAY, JUNE 1, 2011

## WEDNESDAY, JUNE 8, 2011

## WEDNESDAY, JUNE 15, 2011

WEDNESDAY, JUNE 22, 2011

WEDNESDAY, JUNE 29, 2011

**Note:** *The Douglas County Commission meets regularly on Wednesdays at 4:00 P.M. for administrative items and 6:35 P.M. for public items at the Douglas County Courthouse. Specific regular meeting dates that are not listed above have not been cancelled unless specifically noted on this schedule.*

MEMO TO: The Board of County Commissioners  
 Craig Weinaug, County Administrator

FROM: Jackie Waggoner, Purchasing Director  
 Division of Purchasing

SUBJECT: Consider Recommendation for Contract of Youth Services  
 Security System Upgrade

DATE: May 3, 2011

Back in 2010 the Board approved a consulting contract with Latta Technical Services, and the solicitation of proposals for a security system upgrade at Douglas County Youth Services.

In our initial discussions with the consultant we planned to replace the security system with touch screen panels using our existing recording equipment. This included maintaining 36 analog cameras. Our RFP included an alternate to relocate the control room door, power, and data outlets serving their fax and copier devices. We also asked for prepaid maintenance cost for years three, four, and five. We required two year warranty to be included in their base bid. The proposals received are summarized in the table below:

Company	Base Bid	Alternate 1	Year 3	Year 4	Year 5	Total Cost
Southern-Folger	\$209,000	\$37,300	\$ 8,115	\$ 8,359	\$ 8,610	\$271,384
Stanley Security	\$167,760	\$19,065	\$ 8,265	\$ 8,265	\$ 8,265	\$211,620
Simplex Grinnell	\$268,000	\$12,200	\$11,919	\$12,277	\$12,645	\$317,041
Norment	\$296,922	\$21,418	\$13,500	\$14,000	\$14,500	\$360,340
Sierra Detention	\$158,700	\$ 3,475	\$22,122	\$23,892	\$25,804	\$233,993

Sierra Detention's response was incomplete and was eliminated from consideration. The consultants and staff both concluded Southern-Folger and Stanley Security Solutions offered the best proposals. We invited both companies in for an interview and demonstration of their security system. Following this process, the evaluating committee (Pam Weigand, Leigh Houseman, Elmer Fetter, and myself) felt that Stanley Security's system was more user friendly and offered features which would be beneficial to staff.

During the demonstration we discussed our recording system and what it would mean to switch from our analog cameras to digital IP cameras in the future. Our options are:

- Maintain current design maintaining existing DVR's (recording equipment) and installing new monitors for system integration with touch screen. This option would allow us to switch to the IP cameras without digital capabilities.
- Upgrade recording system and all analog cameras. The cost for this option would be significant and exceed available funds.
- Replace existing recording equipment and install a digital video management system. This solution would provide us the ability to integrate the IP cameras progressively.

After reviewing our options and due to the cost received in our original response, we requested both Southern-Folger and Stanley Security Solutions submit an amended proposal to upgrade our system with a digital video management system. Following review, our consultants did not consider the Southern-Folger amended proposal to be responsive. The table below summarizes both the original and amended proposals from Stanley.

<b>Description</b>	<b>Original Proposal</b>	<b>Amended Proposal</b>
Base Bid	\$167,760	\$162,660
Alternate 1 – Move control door	\$ 19,065	\$ 19,065
Add Network Video Recording System	Not included	\$ 71,455
Change Touch Screens to 24”	Not Included	\$ 2,870
Add 7 3MP IP Cameras (\$2,130 each)	Not Included	\$ 14,910
Change Ethernet Switch to POE Switch	NA	\$ 4,270
Deduct for Analog Equipment	NA	\$ 10,975
Deduct for Ethernet Switch	NA	\$ 1,800
*Pre-Paid Extended Warranty (following 2 year warranty)	3 <sup>rd</sup> Year: \$8,265 4 <sup>th</sup> Year: \$8,265 5 <sup>th</sup> Year: \$8,265	3 <sup>rd</sup> Year: \$11,265 4 <sup>th</sup> Year: \$11,265 5 <sup>th</sup> Year: \$11,265
Cap Future Maintenance Agreements	NA	3% annually
<b>TOTAL COST</b>	<b>\$211,620</b>	<b>\$296,250</b>

\*by purchasing the pre-paid warranty will allow us to change additional analog cameras to IP during the 3<sup>rd</sup>, 4<sup>th</sup>, or 5<sup>th</sup> year without incurring additional maintenance cost.

As you can see, the total cost includes accepting the pre-paid extended warranty for years 3, 4, and 5. Funds are available for the amended proposal. Pam Weigand and I will be available at the commission meeting to answer any questions you may have.

**RECOMMENDATION:** The Board of County Commissioners accepts the amended proposal for a security system upgrade from Stanley Security Solutions in the amount of \$296,250.

**MEMORANDUM**

To : Board of County Commissioners

From : Keith A. Browning, P.E., Director of Public Works/County Engineer

Date : May 4, 2011

Re : Consent Agenda approval of KDOT Temporary Easement documents  
KDOT replacement of 23<sup>rd</sup> Street bridge near Operations Division facility  
KDOT Project No. 10-23 KA 0685-01

KDOT plans to replace the bridge just northwest of our Operations Division facilities (the "Shop") carrying 23<sup>rd</sup> Street (K-10 highway) over the abandoned railroad tracks (now a rail trail). The project is scheduled for construction from early April 2012 to September 2012. In order to construct the project, KDOT requires some temporary easement from Douglas County property. More significantly, KDOT requires we temporarily relocate our fence to allow temporary access via our current east entrance to businesses east of the Shop.

During the project, access into our Shop will be from the E. Perimeter Road on the HINU campus. KDOT will construct an entrance that accesses Shop property approximately 400 feet south of our existing northwest gate. Traffic on 23<sup>rd</sup> Street will be carried by two temporary "shoofly" roads. Eastbound traffic on 23<sup>rd</sup> Street will be carried on a roadway along the Shop's north property line. During the project, the only available access to our Shop will be from eastbound 23<sup>rd</sup> Street to E. Perimeter Road on the HINU campus.

The attached documents stipulate KDOT will pay Douglas County a total of \$53,445, broken down as follows:

Temporary Easement 315 sq.ft.	\$ 380.00
Temporary Easement 18,317 sq.ft.	\$21,985.00
Temporary Easement 759 sq.ft.	\$ 915.00
Damages – planter box	\$ 2,955.00
Damages – temporary & permanent fencing	<u>\$27,210.00</u>
Total	\$53,445.00

Mike Perkins, Operations Division Manager, and I have met with KDOT several times through the plan development process. Mike has also met with KDOT right-of-way acquisition personnel and fence contractors. We are satisfied the proposed damages amount for fence relocation is adequate. We also had KDOT include a clause in the Temporary Easement Contract stating that if the cost of fence relocation increases, KDOT will compensate us for the additional, unanticipated costs.

Action Required: Consent Agenda approval of temporary easement acquisition documents associated with KDOT's planned project to replace the 23<sup>rd</sup> Street bridge just northwest of the Public Works Operations Division facilities.

**KANSAS DEPARTMENT OF TRANSPORTATION  
DISBURSEMENT OF PROCEEDS STATEMENT**

**PROJECT: 10-23 KA 0685-01**

**TRACT: 13**

**JOB: 3300**

**DATE OF CONVEYANCE:**

**GROSS PROCEEDS: \$53,445.00**

**Landowner(s), Purchaser(s) Under Contract and Parties of Interest Receiving All or Any Portion of Gross Proceeds**

<u>NAME</u>	<u>DESCRIPTION</u>	<u>GROSS PROCEEDS DISBURSEMENT</u>
County of Douglas, Kansas 1242 Massachusetts Lawrence, KS 66044	TE (a) - 315 sf - \$380.00 TE (b) - 18,317 sf - \$21,985.00 TE (c) - 759 sf - \$915.00 Damages - \$30,165.00	\$53,445.00

I agree and authorize KDOT to disburse the gross proceeds as allocated above. If a Disbursement of Proceeds Statement is not provided, IRS Regulations Sec. 1.6056-4 requires the gross proceeds to be reported to each seller. I further understand this disbursement will be used for tax liability purposes.

County of Douglas, Kansas

VERIFIED BY \_\_\_\_\_ DATE \_\_\_\_\_  
Jim Flory, Chairman

VERIFIED BY \_\_\_\_\_ DATE \_\_\_\_\_  
Mike Gaughan, Commissioner

VERIFIED BY \_\_\_\_\_ DATE \_\_\_\_\_  
Nancy Phellman, Commissioner

Form **W-9**  
(Rev. January 2005)  
Department of the Treasury  
Internal Revenue Service

**Request for Taxpayer  
Identification Number and Certification**

Give form to the  
requester. Do not  
send to the IRS.

Print or type  
See Specific Instructions on page 2.

Name (as shown on your income tax return)  
**County of Douglas, Kansas, Jim Flory, Chairman**

Business name, if different from above

Check appropriate box:  Individual/  
Sole proprietor  Corporation  Partnership  Other  Exempt from backup  
withholding

Address (number, street, and apt. or suite no.)  
**1242 Massachusetts**

City, state, and ZIP code  
**Lawrence, KS 66044**

List account number(s) here (optional)

Requester's name and address (optional)

**Part I Taxpayer Identification Number (TIN)**

Enter your TIN in the appropriate box. The TIN provided must match the name given on Line 1 to avoid backup withholding. For individuals, this is your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

**Note.** If the account is in more than one name, see the chart on page 4 for guidelines on whose number to enter.

Social security number								
or								
Employer identification number								
4	8	6	0	3	3	5	3	8

**Part II Certification**

Under penalties of perjury, I certify that:

- The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), and
- I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding, and
- I am a U.S. person (including a U.S. resident alien).

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the Certification, but you must provide your correct TIN. (See the instructions on page 4.)

**Sign Here**      Signature of U.S. person       Date

**Purpose of Form**

A person who is required to file an information return with the IRS, must obtain your correct taxpayer identification number (TIN) to report, for example, income paid to you, real estate transactions, mortgage interest you paid, acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA.

**U.S. person.** Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN to the person requesting it (the requester) and, when applicable, to:

- Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
  - Certify that you are not subject to backup withholding,
- or
- Claim exemption from backup withholding if you are a U.S. exempt payee.

**Note.** If a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

For federal tax purposes you are considered a person if you are:

- An individual who is a citizen or resident of the United States,
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States, or

- Any estate (other than a foreign estate) or trust. See Regulations sections 301.7701-6(a) and 7(a) for additional information.

**Foreign person.** If you are a foreign person, do not use Form W-9. Instead, use the appropriate Form W-8 (see Publication 515, Withholding of Tax on Nonresident Aliens and Foreign Entities).

**Nonresident alien who becomes a resident alien.**

Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the recipient has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items:

- The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.
- The treaty article addressing the income.
- The article number (or location) in the tax treaty that contains the saving clause and its exceptions.

**PROJECT: 10-23 KA 0685-01**  
**COUNTY: Douglas**

**DATE:**  
**TRACT NO.: 13**

## KANSAS DEPARTMENT OF TRANSPORTATION

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### TEMPORARY EASEMENT CONTRACT

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**THIS AGREEMENT** Made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, 2011, by and between

County of Douglas, Kansas  
County Commissioners  
1242 Massachusetts  
Lawrence, KS 66044

landowner(s), and the Secretary of Transportation of the State of Kansas.

For consideration as hereinafter set forth, the landowner(s) agree(s) to grant to the Secretary of Transportation, his duly authorized agents, contractors and assigns the right to enter upon the following described real estate in the County of Douglas, State of Kansas:

(a) A tract of land in Lot 1, The South East Lawrence Suburban Acres Division, Douglas County, Kansas, according to the recorded plat thereof, situated in the Northeast Quarter of Section 7, Township 13 South, Range 20 East of the 6th P.M., described as follows: BEGINNING at the intersection of the Southerly right of way line of existing K-10 Highway and the West line of said Lot 1, which point is South 83 degrees 41 minutes 25 seconds West, 1,281.70 feet from the Northeast corner of said Quarter Section, the North line of said Quarter Section having an assumed bearing of South 89 degrees 01 minute 32 seconds West; FIRST COURSE, thence South 01 degree 37 minutes 57 seconds East, 39.88 feet along said West line; SECOND COURSE, thence North 11 degrees 37 minutes 35 seconds East, 39.00 feet; THIRD COURSE, thence North 88 degrees 38 minutes 03 seconds East, 67.00 feet; FOURTH COURSE, thence North 01 degree 21 minutes 57 seconds West, 1.93 feet to said Southerly right of way line; FIFTH COURSE, thence South 88 degrees 36 minutes 08 seconds West, 75.95 feet along said Southerly right of way line to the POINT OF BEGINNING. The above described tract contains 315 square feet, more or less.

(b) A tract of land in Lot 3, The South East Lawrence Suburban Acres Division, Douglas County, Kansas, according to the recorded plat thereof, situated in the Northeast Quarter of Section 7, Township 13 South, Range 20 East of the 6th P.M., described as follows: BEGINNING at the intersection of the Southerly right of way line of existing K-10 Highway and the East line of said Lot 3, which point is South 80 degrees 07 minutes 22 seconds West, 914.44 feet from the Northeast corner of said Quarter Section, the North line of said Quarter Section having an assumed bearing of South 89 degrees 01 minute 32 seconds West; FIRST COURSE, thence



South 01 degree 28 minutes 46 seconds East, 270.00 feet along said East line; SECOND COURSE, thence South 88 degrees 38 minutes 03 seconds West, 67.14 feet; THIRD COURSE, thence North 01 degree 04 minutes 09 seconds West, 193.00 feet; FOURTH COURSE, thence North 21 degrees 09 minutes 53 seconds West, 26.57 feet; FIFTH COURSE, thence North 01 degree 21 minutes 57 seconds West, 34.00 feet; SIXTH COURSE, thence North 40 degrees 16 minutes 03 seconds East, 24.08 feet to said Southerly right of way line; SEVENTH COURSE, thence North 88 degrees 38 minutes 03 seconds East, 58.60 feet along said Southerly right of way line to the POINT OF BEGINNING. The above described tract contains 18,317 square feet, more or less.

(c) A tract of land in Lot 1, The South East Lawrence Suburban Acres Division, Douglas County, Kansas, according to the recorded plat thereof, situated in the Northeast Quarter of Section 7, Township 13 South, Range 20 East of the 6th P.M., described as follows: COMMENCING at the intersection of the Southerly right of way line of existing K-10 Highway and the West line of said Lot 1, which point is South 83 degrees 41 minutes 25 seconds West, 1,281.70 feet from the Northeast corner of said Quarter Section, the North line of said Quarter Section having an assumed bearing of South 89 degrees 01 minute 32 seconds West; thence South 01 degree 37 minutes 57 seconds East, 349.89 feet along said West line to the POINT OF BEGINNING; FIRST COURSE, thence continuing South 01 degree 37 minutes 57 seconds East, 69.96 feet along said West line; SECOND COURSE, thence North 68 degrees 49 minutes 13 seconds East, 11.69 feet; THIRD COURSE, thence North 01 degree 21 minutes 57 seconds West, 66.00 feet; FOURTH COURSE, thence South 88 degrees 38 minutes 03 seconds West, 11.32 feet to the POINT OF BEGINNING. The above described tract contains 759 square feet, more or less.

For the purpose of highway construction as shown by the plans of road project 10-23 KA 0685-01.

Said right of entrance, occupation and use to continue only during the construction and completion of the above project.

It is further agreed by and between the parties hereto that this easement is not intended to change the highway right of way line as it now exists.

The Secretary of Transportation agrees to pay the landowner(s) a lump sum of Fifty-Three Thousand Four Hundred Forty-Five Dollars for the temporary easement over and upon the above described property. The above amount includes the following: temporary easement: a) 315.00 sq. ft. -\$380.00, b) 18,317.00 sq. ft. - \$21,985, c) 759 sq. ft. - \$915.00; Damages including but not limited to: Planter box -\$2,955.00; Fencing Bid for temporary and Permanent fencing -\$27,210.00

The Secretary agrees to negotiate in good faith to compensate the County in the event that expenses associated with the County's fence relocation have increased due to market increases, but not due to the County's lack of purchasing fencing contractor services and materials in a timely manner.

It is understood and agreed that the consideration for said temporary easement is in full payment for the purchase of said easement and all damages arising from the transfer of said property interest and its use for the purpose above set out.

This easement expires ninety days (90) after completion of the highway construction project for which this easement is acquired.

IN WITNESS WHEREOF the parties have signed this agreement on the day and year first above written.

Landowner(s):  
County of Douglas

\_\_\_\_\_  
Jim Flory, Chairman

\_\_\_\_\_  
Mike Gaughan, Commissioner

\_\_\_\_\_  
Nancy Phellman, Commissioner

\_\_\_\_\_

ATTEST:

Jerome T. Younger, P.E.  
Deputy Secretary for Engineering and  
State Transportation Engineer

Recommended by:

BY: \_\_\_\_\_  
WILLIAM F. VICORY, CHIEF  
BUREAU OF RIGHT OF WAY

\_\_\_\_\_  
Melinda L. Marlar, Right of Way Agent

**KANSAS DEPARTMENT OF TRANSPORTATION**  
**TEMPORARY EASEMENT**

**THIS AGREEMENT** Made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, 2011, by and between

County of Douglas, Kansas  
County Commissioners  
1242 Massachusetts  
Lawrence, KS 66044

landowner(s), and the Secretary of Transportation of the State of Kansas.

For consideration as hereinafter set forth, the landowner(s) agree(s) to grant to the Secretary of Transportation, his duly authorized agents, contractors and assigns the right to enter upon the following described real estate in the County of Douglas, State of Kansas:

(a) A tract of land in Lot 1, The South East Lawrence Suburban Acres Division, Douglas County, Kansas, according to the recorded plat thereof, situated in the Northeast Quarter of Section 7, Township 13 South, Range 20 East of the 6th P.M., described as follows: BEGINNING at the intersection of the Southerly right of way line of existing K-10 Highway and the West line of said Lot 1, which point is South 83 degrees 41 minutes 25 seconds West, 1,281.70 feet from the Northeast corner of said Quarter Section, the North line of said Quarter Section having an assumed bearing of South 89 degrees 01 minute 32 seconds West; FIRST COURSE, thence South 01 degree 37 minutes 57 seconds East, 39.88 feet along said West line; SECOND COURSE, thence North 11 degrees 37 minutes 35 seconds East, 39.00 feet; THIRD COURSE, thence North 88 degrees 38 minutes 03 seconds East, 67.00 feet; FOURTH COURSE, thence North 01 degree 21 minutes 57 seconds West, 1.93 feet to said Southerly right of way line; FIFTH COURSE, thence South 88 degrees 36 minutes 08 seconds West, 75.95 feet along said Southerly right of way line to the POINT OF BEGINNING. The above described tract contains 315 square feet, more or less.

(b) A tract of land in Lot 3, The South East Lawrence Suburban Acres Division, Douglas County, Kansas, according to the recorded plat thereof, situated in the Northeast Quarter of Section 7, Township 13 South, Range 20 East of the 6th P.M., described as follows: BEGINNING at the intersection of the Southerly right of way line of existing K-10 Highway and the East line of said Lot 3, which point is South 80 degrees 07 minutes 22 seconds West, 914.44 feet from the Northeast corner of said Quarter Section, the North line of said Quarter Section having an assumed bearing of South 89 degrees 01 minute 32 seconds West; FIRST COURSE, thence South 01 degree 28 minutes 46 seconds East, 270.00 feet along said East line; SECOND COURSE, thence South 88 degrees 38 minutes 03 seconds West, 67.14 feet; THIRD COURSE, thence North 01 degree 04 minutes 09 seconds West, 193.00 feet; FOURTH COURSE, thence North 21 degrees 09 minutes 53 seconds West, 26.57 feet; FIFTH COURSE, thence North 01 degree 21 minutes 57 seconds West, 34.00 feet; SIXTH COURSE, thence North 40 degrees 16 minutes 03 seconds East, 24.08 feet to said Southerly right of way line; SEVENTH COURSE, thence North 88 degrees 38 minutes 03 seconds East, 58.60 feet along said Southerly right of way line to the POINT OF BEGINNING. The above described tract contains 18,317 square feet, more or less.

Said right of entrance, occupation and use to continue only during the construction and completion of the above project.

It is further agreed by and between the parties hereto that this easement is not intended to change the highway right of way line as it now exists.

The Secretary of Transportation agrees to pay the landowner(s) a lump sum of One Dollars for the temporary easement over and upon the above described property.

It is understood and agreed that the consideration for said temporary easement is in full payment for the purchase of said easement and all damages arising from the transfer of said property interest and its use for the purpose above set out.

This easement expires ninety days (90) after completion of the highway construction project for which this easement is acquired.

IN WITNESS WHEREOF the parties have signed this agreement on the day and year first above written.

Landowner(s):

County of Douglas, Kansas

\_\_\_\_\_  
Jim Flory, Chairman

\_\_\_\_\_  
Mike Gaughan, Commissioner

\_\_\_\_\_  
Nancy Phellman, Commissioner

ATTEST:

Jerome T. Younger, P.E.  
Deputy Secretary for Engineering and  
State Transportation Engineer

Recommended by:

BY: \_\_\_\_\_  
WILLIAM VICORY, CHIEF  
BUREAU OF RIGHT OF WAY

\_\_\_\_\_  
Melinda L. Marlar, Right of Way Agent

STATE OF Kansas, Douglas COUNTY, SS.

On this \_\_\_\_\_ day of \_\_\_\_\_ A.D. 2011, before me, a notary public in and for said county and state, personally appeared

Jim Flory, Chairman of County of Douglas, Kansas

to me known to be the person(s) named in and who executed the foregoing instrument, and duly acknowledge the execution thereof.

\_\_\_\_\_

, NOTARY PUBLIC

My commission expires

STATE OF Kansas, Douglas COUNTY, SS.

On this \_\_\_\_\_ day of \_\_\_\_\_ A.D. 2011, before me, a notary public in and for said county and state, personally appeared

Mike Gaughan, Commissioner of County of Douglas, Kansas

to me known to be the person(s) named in and who executed the foregoing instrument, and duly acknowledge the execution thereof.

\_\_\_\_\_

, NOTARY PUBLIC

My commission expires

STATE OF Kansas, Douglas COUNTY, SS.

On this \_\_\_\_\_ day of \_\_\_\_\_ A.D. 2011, before me, a notary public in and for said county and state, personally appeared

Nancy Phellman, Commissioner of County of Douglas, Kansas

to me known to be the person(s) named in and who executed the foregoing instrument, and duly acknowledge the execution thereof.

\_\_\_\_\_

, NOTARY PUBLIC

My commission expires

# KANSAS DEPARTMENT OF TRANSPORTATION

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## TEMPORARY EASEMENT

---

**THIS AGREEMENT** Made and entered into this            day of            , 2011, by and between

County of Douglas, Kansas

County Commissioners

1242 Massachusetts

Lawrence, KS 66044

landowner(s), and the Secretary of Transportation of the State of Kansas.

For consideration as hereinafter set forth, the landowner(s) agree(s) to grant to the Secretary of Transportation, his duly authorized agents, contractors and assigns the right to enter upon the following described real estate in the County of Douglas, State of Kansas:

(c) A tract of land in Lot 1, The South East Lawrence Suburban Acres Division, Douglas County, Kansas, according to the recorded plat thereof, situated in the Northeast Quarter of Section 7, Township 13 South, Range 20 East of the 6th P.M., described as follows: COMMENCING at the intersection of the Southerly right of way line of existing K-10 Highway and the West line of said Lot 1, which point is South 83 degrees 41 minutes 25 seconds West, 1,281.70 feet from the Northeast corner of said Quarter Section, the North line of said Quarter Section having an assumed bearing of South 89 degrees 01 minute 32 seconds West; thence South 01 degree 37 minutes 57 seconds East, 349.89 feet along said West line to the POINT OF BEGINNING; FIRST COURSE, thence continuing South 01 degree 37 minutes 57 seconds East, 69.96 feet along said West line; SECOND COURSE, thence North 68 degrees 49 minutes 13 seconds East, 11.69 feet; THIRD COURSE, thence North 01 degree 21 minutes 57 seconds West, 66.00 feet; FOURTH COURSE, thence South 88 degrees 38 minutes 03 seconds West, 11.32 feet to the POINT OF BEGINNING. The above described tract contains 759 square feet, more or less.

Said right of entrance, occupation and use to continue only during the construction and completion of the above project.

It is further agreed by and between the parties hereto that this easement is not intended to change the highway right of way line as it now exists.

The Secretary of Transportation agrees to pay the landowner(s) a lump sum of One Dollars for the temporary easement over and upon the above described property.

It is understood and agreed that the consideration for said temporary easement is in full payment for the purchase of said easement and all damages arising from the transfer of said property interest and its use for the purpose above set out.

This easement expires ninety days (90) after completion of the highway construction project for which this easement is acquired.

IN WITNESS WHEREOF the parties have signed this agreement on the day and year first above written.

Landowner(s):

County of Douglas, Kansas

\_\_\_\_\_  
Jim Flory, Chairman

\_\_\_\_\_  
Mike Gaughan, Commissioner

\_\_\_\_\_  
Nancy Phellman, Commissioner

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\_\_\_\_\_

ATTEST:

Jerome T. Younger, P.E.  
Deputy Secretary for Engineering and  
State Transportation Engineer

Recommended by:

BY: \_\_\_\_\_  
WILLIAM VICORY, CHIEF  
BUREAU OF RIGHT OF WAY

\_\_\_\_\_  
Melinda L. Marlar, Right of Way Agent



On this \_\_\_\_\_ day of \_\_\_\_\_ A.D. 2011, before me, a notary public in and for said county and state, personally appeared

Jim Flory, Chairman of County of Douglas, Kansas

to me known to be the person(s) named in and who executed the foregoing instrument, and duly acknowledge the execution thereof.

\_\_\_\_\_

, NOTARY PUBLIC

My commission expires

STATE OF Kansas, Douglas COUNTY, SS.

On this \_\_\_\_\_ day of \_\_\_\_\_ A.D. 2011, before me, a notary public in and for said county and state, personally appeared

Mike Gaughan, Commissioner of County of Douglas, Kansas

to me known to be the person(s) named in and who executed the foregoing instrument, and duly acknowledge the execution thereof.

\_\_\_\_\_

, NOTARY PUBLIC

My commission expires

STATE OF Kansas, Douglas COUNTY, SS.

On this \_\_\_\_\_ day of \_\_\_\_\_ A.D. 2011, before me, a notary public in and for said county and state, personally appeared

Nancy Phellman, Commissioner of County of Douglas, Kansas

to me known to be the person(s) named in and who executed the foregoing instrument, and duly acknowledge the execution thereof.

\_\_\_\_\_

, NOTARY PUBLIC

My commission expires

**PAYMENT VOUCHER**

Tract: 13

Warrant No.	
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Agency No. 276	Div. No.	Current Doc. No. V
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Sheet \_\_\_\_\_ of \_\_\_\_\_

Document Date:	Effective Date:	Due Date:
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Vendor Information	
No./Sfx: 486033538	Electronic Deposit <input checked="" type="checkbox"/> A
Name: <u>County of Douglas, Kansas</u>	
Street: <u>1242 Massachusetts</u>	
City: <u>Lawrence</u>	
State: <u>KS</u>	ZIP: <u>66044</u>

Paying Agency Name & Address
<b>Kansas Department of Transportation</b> William F. Vicory, Chief Bureau of Right of Way Eisenhower State Office Building 700 SW Harrison - 14th Floor Topeka, Kansas 66603

Sfx	T/C	Ref. Doc.	Sfx	M	Fund	BFY	Index	PCA	Sub-Obj	Det	Amount	
01	703				4100	11	0763	7120	4310		53,445.00	
Invoice No.	Description		Agency Use									
02												
Invoice No.	Description		Agency Use									
03												
Invoice No.	Description		Agency Use									
04												
Invoice No.	Description		Agency Use							Document Total		\$53,445.00

Date and Invoice No.	Quantity	Unit	Description	Unit Price	Amount
		(a)	315 SQFT EASE for Hwy Constr in Lot 1, SE Lawrence Suburban Acres Division, NE 1/4 07-13S-20E .....		\$380.00
		(b)	18,317 SQFT EASE for Hwy Constr in Lot 3, SE Lawrence Suburban Acres Division, NE 1/4 07-13S-20E .....		\$21,985.00
		(c)	759 SQFT EASE for an entrance in Lot 1, SE Lawrence Suburban Acres Division, NE 1/4 07-13S-20E .....		\$915.00
			Damages including but not limited to: replace a planter box-\$2,955; Temporary and permanent fencing + sales tax-\$27,210		\$30,165.00
			Douglas County 10-23 KA-0685-01 01242011		
			Document Total		\$53,445.00

Audited:	Coded:	Approved:	Approved:	Approved:
		officer in charge	Bureau Chief/Dist. Eng.	State Transportation Controller

I do hereby certify that the above bill is just, correct, and remains due and unpaid, and that the amount claimed therein is actually due according to the law.

(Claimant sign here) \_\_\_\_\_  
 (Firm Name)

By Jim Flory, Chairman

Date \_\_\_\_\_, 20 11

I do hereby certify that the within was contracted for the State, under authority of law, and that the amount therein claimed is correct according to such contract and is unpaid.

\_\_\_\_\_

**SITE PLAN REVIEW**  
**BOARD OF COUNTY COMMISSIONERS STAFF REPORT**  
**May 11, 2011**

**A. SUMMARY**

**SP-3-12-11**, Site Plan for office addition to an agricultural facility located at 1676 E 1550 Rd. Submitted by Paul Werner Architects for Nunemaker-Ross, Inc, property owner of record.

**B. GENERAL INFORMATION**

Current Zoning and Land Use: I-3 (County-Heavy Industrial) District and F-F (County-Floodway Fringe) Overlay District; a farm developed with a number of agricultural structures and grain storage.

Surrounding Zoning and Land Use: To the east: Narrow area of I-3 (County-Heavy Industrial) and A (County-Agriculture) Districts and F-F (County-Floodway Fringe) Overlay District; agricultural uses.

To the west: RS7 and RS20 (City-Single-Dwelling Residential) Districts and FP (City-Floodplain Management Regulations) Overlay District; agricultural uses and detached dwellings.

To the south: IG (City-General Industrial) and I-4 (County-Heavy Industrial) District and F-F (County-Floodway Fringe) Overlay District; railroad right-of-way and a phosphate engineering and production facility, *heavy industry*.

To the north: strip of I-3 (County-Heavy Industrial) and A (County-Agricultural) Districts and F-F (County-Floodway Fringe) and F-W (County-Floodway) Overlay Districts; agriculture and open space.

See Figure 1.

**Parking Requirement:**

(1 space per 400 square feet of office floor area)

Parking Required:  $1,200 \text{ square feet} / 400 = 3 \text{ parking spaces} / 1 \text{ ADA}$

Parking Provided: 5 parking spaces / 1 ADA

**C. STAFF REVIEW**

The subject property, approximately 55.54 acres, is developed with a farm and is located at 1676 E 1550 Rd. This site plan is for the addition of a 1200 sq ft office, accessory to the existing farm. As the property is located within an industrial zoning district, the office could be used for other than agricultural purposes; therefore, the office has been required to be site planned. The property is located within the Floodway Fringe Overlay District; therefore a Floodplain Development Permit must be approved prior to the release of the site plan for building permits. The base flood elevation in this location is noted on the site plan as 820. The site plan should indicate the proposed floor elevation for the office.

The Lawrence-Douglas County Health Department indicated that a 1000 gallon septic tank and 200 lineal feet of lateral trenches which are 3 ft wide would be required for the office. Health Department staff will meet with the applicants at the site to conduct a soil profile test to determine the appropriate location of the septic system. The site plan will not be released for building permits until this test has been completed and the septic system location shown on the plan has been approved by the Health Department.

Well water will be utilized for the office, as Rural Water is not available in this location and the extension of City water services would require annexation. The location of the water well should be shown on the site plan to insure adequate separation from the septic system.

The site plan shows a 52' distance southwest from the lateral fields. The applicant indicated this dimension was included in error. This dimension will be removed from the site plan.

#### **D. FINDINGS**

Per Section 12-319A-5 of the Zoning Regulations, staff shall first find that the following conditions have been met:

**(a) That the proposed use is a permitted use in the district in which the property is located;**

The subject property is zoned I-3 (Heavy Industrial) District. An office is a permitted use in the I-3 District.

**(b) That the proposed arrangement of buildings, off-street parking, access, lighting, landscaping, and drainage is compatible with adjacent land uses;**

The office is located to the west of the main interior access aisle, and parking is provided adjacent to the aisle. Based on the scale of the detail drawing, the building is located approximately 17 ft from the north property line and a 10 ft side setback is required in this location. The distance between the building and the north property line should be noted on the plan. The property to the north is within the Lawrence city limits and is under the same ownership as the farm. The location of the office and parking is compatible with adjacent land uses. No exterior lighting is proposed with the office, and a note on the site plan indicates that the addition of exterior lighting would require a revision to the site plan.

**(c) That the vehicular ingress and egress to and from the site and circulation within the site provides for safe, efficient and convenient movement of traffic not only within the site but on adjacent roadways as well;**

Vehicular ingress and egress to and from the site will not change from the existing condition which is safe, efficient and convenient for the site. The Public Works Director indicated that a neighboring property owner had concerns about E 1550 Road being gated; however this is not associated with this site plan. The property has access on both E 1550 and E 1600 Roads. The access onto E 1550 Road crosses a property that is under separate ownership: Century Building Solutions and Pearl Investments Group LLC. The two property owners have entered into an agreement for the use of this driveway. The site plan should clearly delineate the boundary of the site plan so it is clear that the Century Building Solutions, Inc property is not included.

**(d) That the site plan provides for the safe movement of pedestrians within the site;**

The proposed office will not alter the movement of pedestrians within the site. A sidewalk connects the parking area to the front entry.

- (e) That there is a sufficient mixture of grass, trees, and shrubs within the interior and perimeter (including public right-of-way) of site so that the proposed development will be in harmony with adjacent land uses and will provide a pleasing appearance to the public. Any part of the site plan area not used for buildings, structures, parking, or accessways shall be landscaped with a mixture of grass, trees and shrubs;**

The site is approximately 55 acres and contains a working farm. The site plan shows the location of the farm buildings for context, but the only building being site planned at this time is the office. No landscaping is being proposed with the office building, and landscaping is not required on the farm.

- (f) That all outdoor trash storage areas are screened;**

No outdoor trash storage facilities are proposed.

#### **E. CONCLUSION**

This proposal is for the construction of a 1200 sq ft office, accessory to a farm located in the I-3 (Heavy Industrial) District. The proposed request is consistent with the regulations in the Douglas County Zoning Regulations.

#### **F. STAFF RECOMMENDATION**

Staff recommends that SP-3-12-11, a site plan for an office on the Nunemaker-Ross farm at 1676 E 1550 Road be approved subject to the following conditions:

The site plan shall be revised with the following changes:

1. Clearly delineate the boundary of the area being site-planned so it is clear that the Century Building Solutions, Inc property is not included.
2. Note the proposed floor elevation for the office.
3. Show the location of the water well to insure adequate separation from the septic system.
4. Dimension the distance from the building to the north property line.
5. Remove the 52' dimensioned area shown adjacent to the lateral lines.

The site plan will not be released for building permits until the following have occurred:

1. A soil profile test has been conducted with a Health Department staff person on site and the septic system location shown on the plan has been approved by the Health Department.
2. A Floodplain Development Permit has been obtained from the Douglas County Zoning and Codes Office.



**Figure 1a.** Zoning Map of Area. Subject property outlined in green.

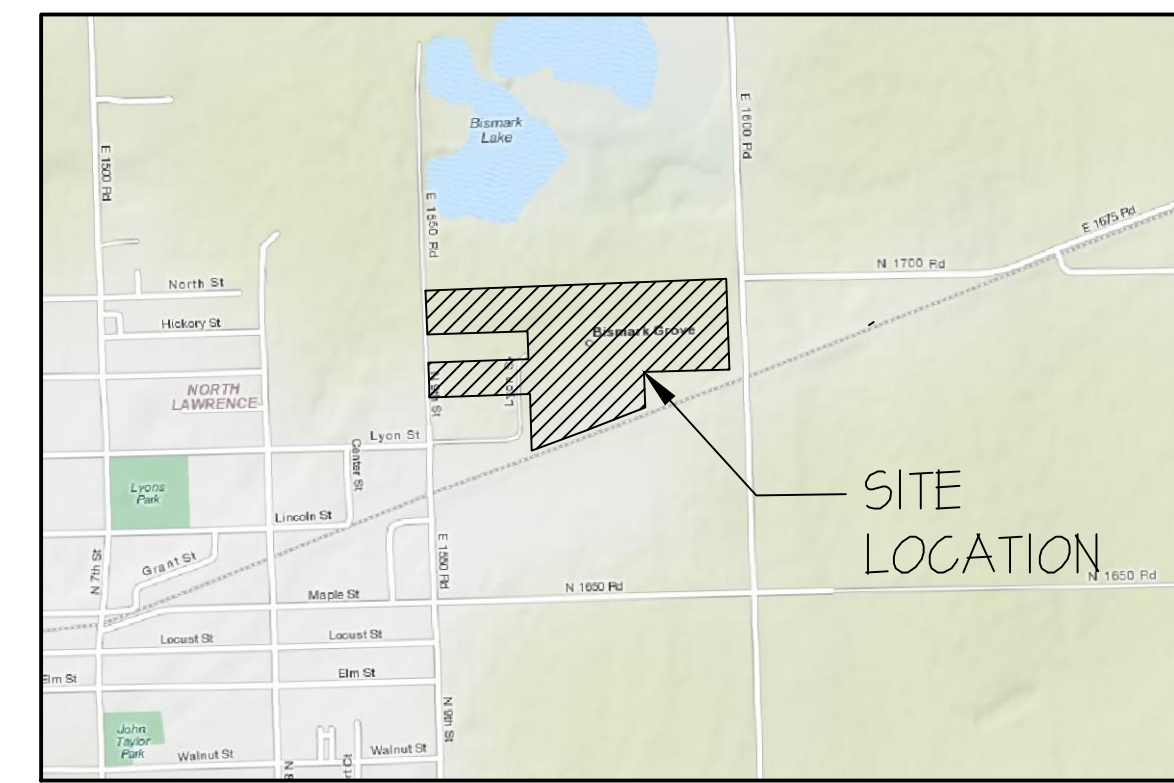


**Figure 1b.** Land Uses of Area. Subject property outlined in green.



**SITE PLAN**  
SCALE: 1" = 100'-0"

**LOCATION MAP**



**LEGAL DESCRIPTION**

THAT PART OF THE NE ¼ OF SECTION 24, TOWNSHIP 12 SOUTH, RANGE 20 EAST DESCRIBED AS FOLLOWS: BEGINNING AT THE NORTHEAST CORNER OF SAID SECTION, THENCE SOUTH 711 FEET, THENCE SOUTHWESTERLY 40.9 FEET, THENCE WEST 685 FEET, THENCE SOUTH 244 FEET TO THE NORTH RIGHT-OF-WAY OF UNION PACIFIC RAILROAD, THENCE SOUTHWESTERLY ALONG THE RIGHT-OF-WAY 1,035 FEET, THENCE NORTH 445 FEET, THENCE WEST 905 FEET SOUTH, THENCE NORTH 300 FEET, THENCE EAST 841 FEET, THENCE NORTH 243 FEET, THENCE WEST 841 FEET, THENCE NORTH 370 FEET, THENCE EAST 2,635 FEET TO THE POINT OF BEGINNING. THE ABOVE DESCRIBED PROPERTY ALL LIES IN DOUGLAS COUNTY KANSAS AND CONTAINS 55.54 ACRES MORE OR LESS.

**SITE SUMMARY**

SITE AREA:	2,414,632 S.F. (55.54 ACRES)
IMPERVIOUS - EXISTING BUILDINGS:	40,711 S.F.
EXISTING GRAIN STORAGE:	12,504 S.F.
PROPOSED BUILDING:	1,200 S.F.
PERVIOUS -	2,365,217 S.F. (54.30 ACRES)

**PARKING REQUIREMENTS**

PROPOSED OFFICE: 1 SPACE PER 400 S.F. OF FLOOR AREA  
1,200 S.F. / 400 = 3 SPACES REQUIRED  
5 SPACES PROVIDED INCLUDING 1 ADA STALL

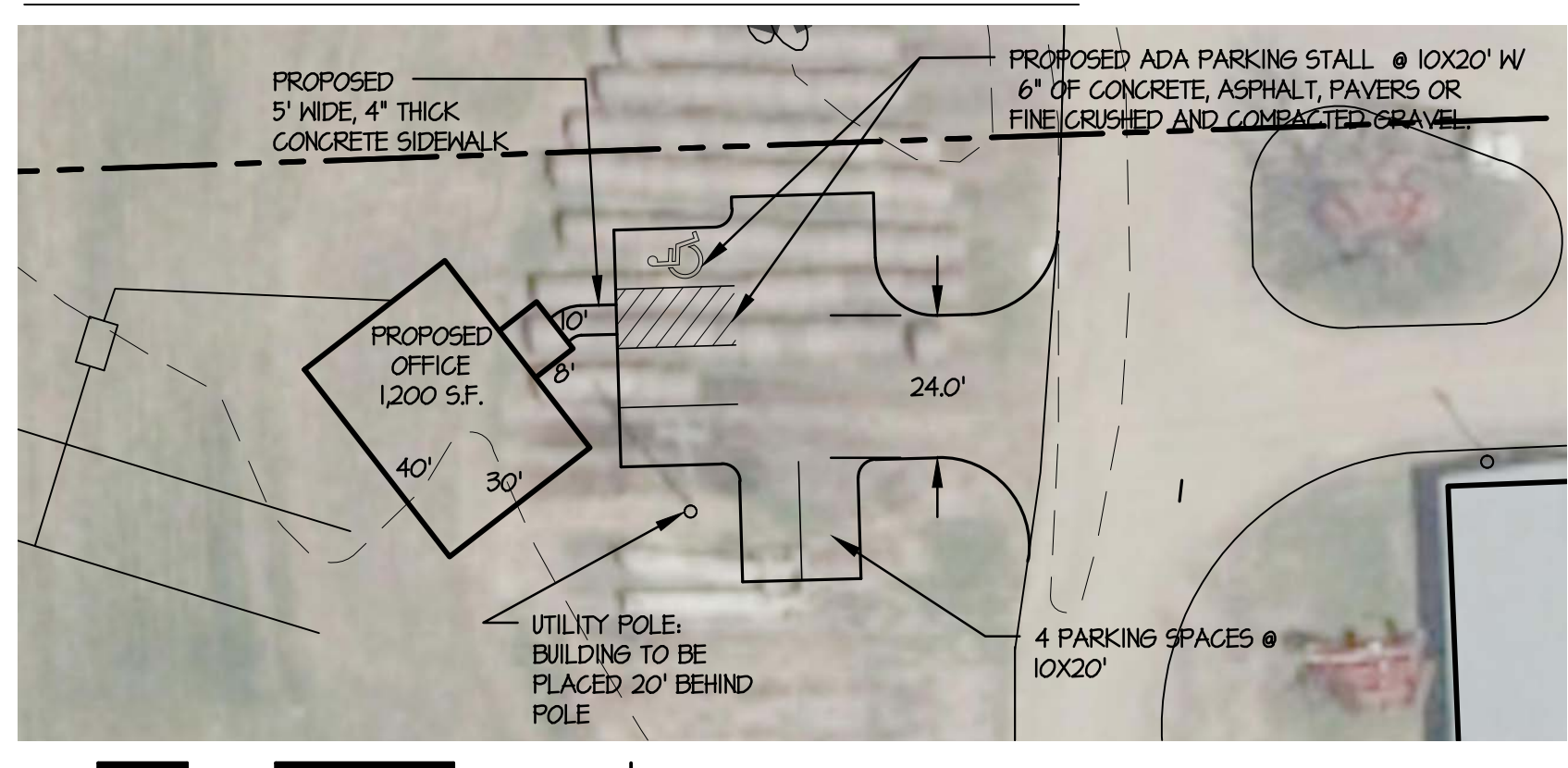
**GENERAL NOTES**

- OWNER: NUNEMAKER - ROSS, INC., 1616 E. 1550 ROAD LAWRENCE, KS 66044
- ARCHITECT/PLANNER: PAUL WERNER ARCHITECTS 123 SUITE B2 LAWRENCE, KS 66044
- TOPOGRAPHIC INFORMATION TAKEN FROM THE CITY OF LAWRENCE 2009 AERIAL TOPOGRAPHY
- EXISTING USE: AGRICULTURE
- PROPOSED USE: AGRICULTURE AND ACCESSORY OFFICE USE
- EXISTING AND PROPOSED ZONING: I-3
- THIS SITE PLAN HAS BEEN DESIGNED TO COMPLY WITH THE PROVISIONS OF THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG) FOR BUILDINGS AND FACILITIES, APPENDIX A TO 20 CFR PART 36.
- THIS SITE PLAN WILL NEED REVISED IF EXTERIOR LIGHTING IS PROPOSED IN THE FUTURE.

**FLOODPLAIN**

THE FLOODPLAIN INFORMATION SHOWN ON THE SITE PLAN WAS TAKEN FROM MAP 2004SCOTTID DATED AUGUST 5, 2010. THE B.F.E. FOR THE PROPOSED OFFICE LOCATION IS 820.

**PROPOSED OFFICE BUILDING LAYOUT**



**paulwerner**  
ARCHITECTS

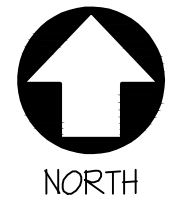
123 W. 8TH STREET  
SUITE B2  
LAWRENCE, KS 66044  
OFFICE: 785.832.0804  
FAX: 785.832.0890  
INFO@PAULWERNERARCHITECTS.COM

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WITHOUT THE WRITTEN PERMISSION OF PAUL  
WERNER ARCHITECTS, L.L.C.

**NUNEMAKER-ROSS, INC.**  
1616 E. 1550 ROAD  
LAWRENCE, KANSAS

PROJECT # 210-850

RELEASE: 1 3-2-2011  
2 3-31-2011



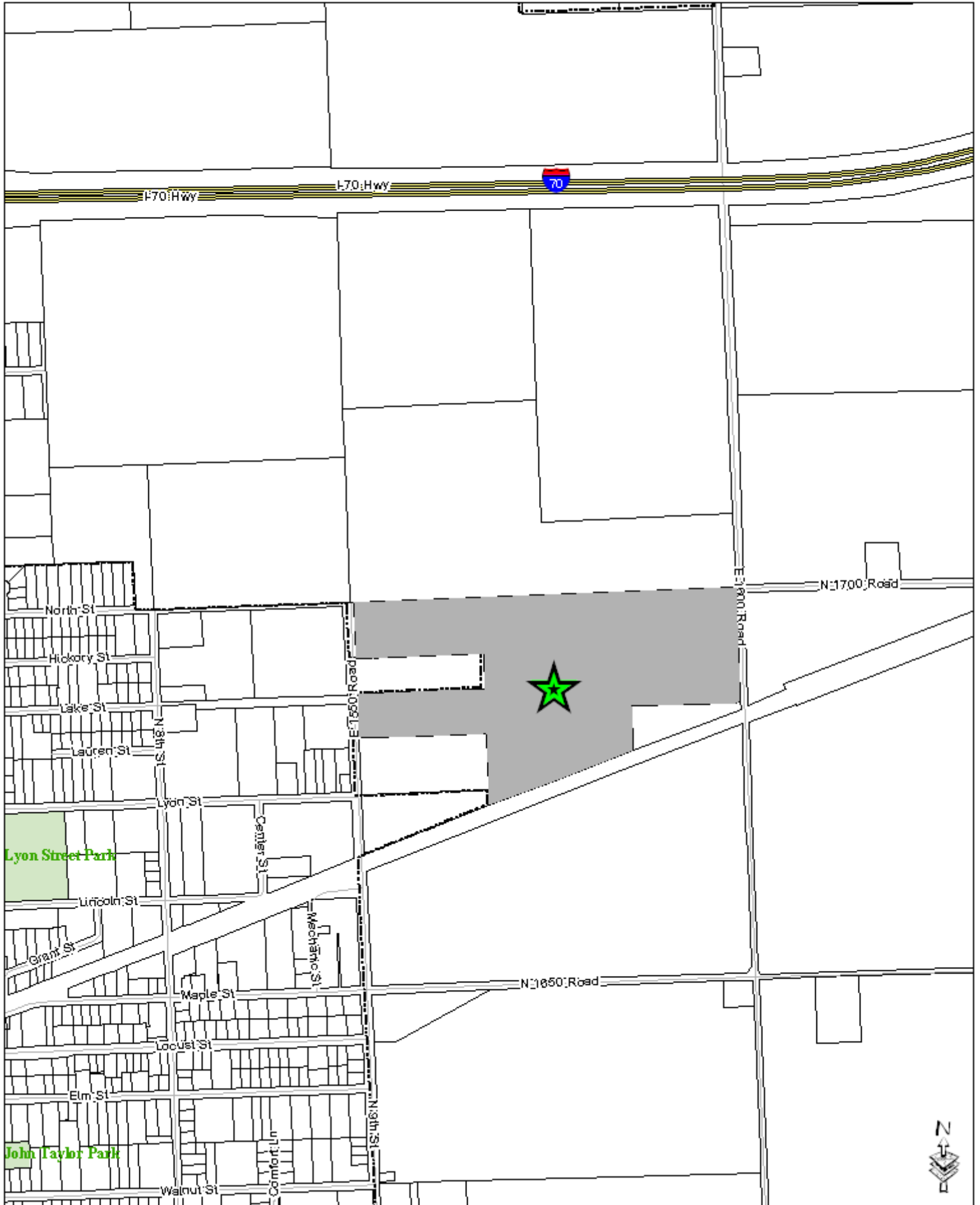


DISCLAIMER NOTICE

# Location Map 1676 E 1550 Road

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

Date: 5/5/2011



**A RESOLUTION ADOPTING AMENDMENTS TO HORIZON 2020, THE COMPREHENSIVE PLAN FOR THE CITY OF LAWRENCE AND UNINCORPORATED DOUGLAS COUNTY, KANSAS PERTAINING TO THE NORTHEAST SECTOR PLAN.**

**WHEREAS**, the City Commission of Lawrence, Kansas and the Board of County Commissioners of Douglas County, Kansas, for the purpose of promoting the public health, safety, morals, comfort and general welfare, conserving and protecting property values throughout Lawrence and Douglas County, are authorized by K.S.A. 12-741 *et seq.* to provide for the preparation, adoption, amendment, extension and carrying out of a comprehensive plan; and

**WHEREAS**, the Lawrence-Douglas County Metropolitan Planning Commission, the City Commission of Lawrence, Kansas and the Board of County Commissioners of Douglas County, Kansas have adopted an official comprehensive plan for the coordination of development in accordance with the present and future needs and to conserve the natural resources of the City and County, ensure efficient expenditure of public funds and promote the health, safety, convenience, prosperity and general welfare of the citizens of Lawrence and Douglas County; and

**WHEREAS**, the Lawrence-Douglas County Metropolitan Planning Commission held public hearings on July 26, 2010 and September 20, 2010 for the proposed amendments to Horizon 2020, the Comprehensive Plan, contained in Planning Staff Report CPA 6-5-09, to adopt and approve the Northeast Sector Plan and amend Chapter 14 – Specific Plans to add the Northeast Sector Plan, after notice by publication in the official city and county newspaper.

BE IT RESOLVED BY THE LAWRENCE-DOUGLAS COUNTY METROPOLITAN PLANNING COMMISSION:

**SECTION ONE:** The above stated recitals are by reference incorporated herein, and shall be as effective as if repeated verbatim.

**SECTION TWO:** Pursuant to K.S.A. 12-747, the Lawrence-Douglas County Metropolitan Planning Commission adopts and recommends for approval the amendments to Horizon 2020, the Comprehensive Plan for the City of Lawrence and Unincorporated Douglas County, to adopt the Northeast Sector Plan and amend the Chapter 14 - Specific Plans to add the Northeast Sector Plan.

**SECTION THREE:** The amendment to *Horizon 2020*, Chapter 14 – Specific Plans, Specific Plans reads as follows:

**Specific Plans**

- **6th and SLT Nodal Plan**  
**Location:** The intersection of 6<sup>th</sup> Street (US Highway 40) and the SLT (South Lawrence Trafficway)  
**Adoption Date:** November 11, 2003 by Lawrence City Commission  
**Review Date:** 2009
- **6<sup>th</sup> and Wakarusa Area Plan**  
**Location:** The intersection of 6<sup>th</sup> Street and Wakarusa Drive  
**Adoption Date:** December 2, 2003 by Lawrence City Commission  
**Review Date:** 2009
- **HOP District Plan**

**Location:** Bordered by W. 5<sup>th</sup> St. on the north, California St. on the west, W. 7<sup>th</sup> St. on the south and Alabama St. on the east.

**Adoption Date:** May 10, 2005 by Lawrence City Commission

**Review Date:** 2010

- **Burroughs Creek Corridor Plan**

**Location:** Area around the former BNSF railroad corridor between E. 9<sup>th</sup> St. and E 31<sup>st</sup> St.

**Adoption Date:** February 14, 2006 by Lawrence City Commission

**Review Date:** 2011

- **East Lawrence Neighborhood Revitalization Plan**

**Location:** Bordered by the Kansas River on the North; Rhode Island Street from the Kansas River to E. 9<sup>th</sup> Street, New Hampshire Street from E. 9<sup>th</sup> Street to approximately E. 11<sup>th</sup> Street, Massachusetts Street from approximately E. 11<sup>th</sup> Street to E. 15<sup>th</sup> Street on the west; E. 15<sup>th</sup> Street on the south; BNSF railroad on the east.

**Adoption Date:** November 21, 2000 by Lawrence City Commission

**Review Date:** 2010

- **Revised Southern Development Plan**

**Location:** Bounded roughly to the north by W. 31<sup>st</sup> Street and the properties north of W. 31<sup>st</sup> Street between Ousdahl Road and Louisiana Street; to the west by E. 1150 Road extended( Kasold Drive); to the south by the north side of the Wakarusa River; and to the east by E. 1500 Road (Haskell Avenue).

**Adoption Date:** December 18, 2007 by Lawrence City Commission

January 7, 2008 by the Douglas County Board of Commissioners

**Review Date:** 2017

- **Southeast Area Plan**

**Location:** Bounded roughly to the north by E. 23<sup>rd</sup> Street/K-10 Highway; to the west by O'Connell Road; to the south by the northern boundary of the FEMA designated floodplain for the Wakarusa River; and to the east by E. 1750 Road (Noria Road).

**Adoption Date:** January 8, 2008 by Lawrence City Commission

January 28, 2008 by the Douglas County Board of Commissioners

REVISED

June 14, 2008 by Lawrence City Commission

July 24, 2008 by Douglas County Board of Commissioners

REVISED

October 7, 2008 by Lawrence City Commission

November 10, 2008 by Douglas County Board of Commissioners

**Review Date:** 2018

- **Farmland Industries Redevelopment Plan**

**Location:** The former Farmland Industries property is located east of Lawrence along K-10 Highway and just west of the East Hills Business Park. It is approximately one half mile south of the Kansas River.

**Adoption Date:** March 11, 2008 by Lawrence City Commission

March 31, 2008 by Douglas County Board of Commissioners

**Review Date:** 2013

- **K-10 & Farmer's Turnpike Plan**

**Location:** Generally located around the intersection of I-70 and K-10 and to the east approximately four miles.

**Adoption Date:** December 9, 2008 by Lawrence City Commission

January 7, 2009 by Douglas County Board of Commissioners

**Review Date:** 2019

- **Lawrence SmartCode Infill Plan**  
**Location:** General areas are: 19<sup>th</sup> St. and Haskell Ave., 23<sup>rd</sup> St. and Louisiana St.  
**Adoption Date:** January 27, 2009 by Lawrence City Commission  
February 23, 2009 by Douglas County Board of Commissioners  
**Review Date:** 2019
- **West of K-10 Plan**  
**Location:** Generally located north and south of Highway 40 and west of K-10 Highway.  
It does contain some land east of K-10 Highway  
**Adoption Date:** June 9, 2009 by Lawrence City Commission  
May 6, 2009 by Douglas County Board of Commissioners  
**Review Date:** 2019
- **Northeast Sector Plan**  
**Location:** Generally located north and east of Lawrence and north of the Kansas River to the Douglas County line.

**SECTION FOUR:** The Northeast Sector Plan attached as Exhibit 1 shall be incorporated as part of Horizon 2020 the Comprehensive Plan of the City of Lawrence and Unincorporated Douglas County.

**SECTION FIVE:** This resolution together with a certified copy of the amendments to Horizon 2020, the Comprehensive Plan for the City of Lawrence and Unincorporated Douglas County, and a written summary of the public hearing shall be submitted to the City Commission and the Board of County Commissioners, as appropriate.

Adopted by the Lawrence-Douglas County Metropolitan Planning Commission on this, the 20th day of September, 2010.

Charles P. Blasen  
Chair  
Lawrence-Douglas County Metropolitan  
Planning Commission

Absent  
Vice-Chair  
Lawrence-Douglas County Metropolitan  
Planning Commission

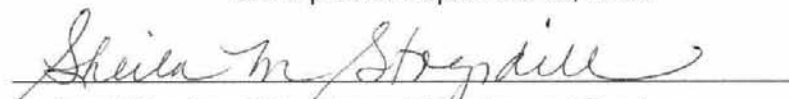
Scott McCullough  
Scott McCullough, Secretary  
Lawrence-Douglas County Metropolitan  
Planning Commission

# Northeast Sector Plan

**Lawrence-Douglas County Planning and Development Services**

**Lawrence-Douglas County Planning Commission – 09/20/10  
Douglas County Board of County Commissioners –  
Lawrence City Commission –**

I hereby certify that this is a true and correct copy of the comprehensive plan or part of the plan; that the Lawrence-Douglas County Metropolitan Planning Commission adopted said comprehensive plan or part of the plan on September 20, 2010.

  
Assistant Director of Planning and Development Services.



# Table of Contents

	Page
Section 1 Introduction	
Purpose .....	1-1
Description of Planning Area .....	1-2
Policy Framework .....	1-6
Section 2 Existing Conditions	
Land Uses .....	2-1
Zoning Patterns .....	2-4
Infrastructure .....	2-6
Environmental Conditions .....	2-16
Community Facilities .....	2-23
Section 3 Recommendations	
Goals and Policies .....	3-1
Land Use .....	3-9
Implementation .....	3-14

## List of Tables

Table 2-1 Existing Land Use Summary .....	2-2
Table 2-2 County Zoning Classifications.....	2-4
Table 2-3 City Zoning Classifications .....	2-4

## List of Maps

Map 1-1 Planning Area Boundary in Relation to Lawrence .....	1-4
Map 1-2 Planning Area Boundary and Parcels .....	1-5
Map 2-1 Existing Land Use .....	2-3
Map 2-2 Existing Zoning.....	2-5
Map 2-3 Existing Water Facilities.....	2-7
Map 2-4 Existing Wastewater & Stormwater Infrastructure .....	2-8
Map 2-5 Existing Gas & Electric Utilities Infrastructure .....	2-9
Map 2-6 Drainage Districts .....	2-10
Map 2-7 Existing and Future Road Classifications .....	2-14
Map 2-8 Existing and Future Bicycle Facilities.....	2-15
Map 2-9 Regulatory Flood Hazard Area and Streams .....	2-18
Map 2-10 Land Cover .....	2-19
Map 2-11 Contours.....	2-20
Map 2-12 Steep Slopes .....	2-21
Map 2-13 Class I and II Soils.....	2-22
Map 2-14 Community Facilities .....	2-25
Map 2-15 Airspace Overlay Zones.....	2-26
Map 2-16 FAA Wildlife Mitigation Buffer.....	2-27
Map 3-1 Future Land Use .....	3-13





## **Section 1: Introduction**

### **1.1 Purpose**

The purpose of the *Northeast Sector Plan* is to outline specific land use goals, policies and recommendations for the planning area shown on Map 1-1, while being consistent with the overall adopted comprehensive plan for the community. Portions of the planning area are adjacent to the city of Lawrence and because of their proximity to the city and highways, they are likely to be areas of rural and urban development pressure. However, this plan recognizes that this area is unique in its development potential and the community may benefit most by limited development.

The plan outlines future land uses for the planning area to be used as a guide for rural and urban development. This plan does not annex property nor does it rezone property upon adoption. These types of proposals are typically requested by the property owners and/or developers that have a stake in such property and wish to develop within Douglas County and within the city of Lawrence.

The plan should fit like a puzzle piece into the larger context of the surrounding street, utility, and land use network of the entire community. Logical connections between the planning area and adjacent neighborhoods are a key factor in the development of the plan. The recommendations contained within this plan are intended to guide the area's future growth patterns.

It is expected that development in the planning area will occur within the span of decades as the market demands and as urban services are able to be provided. It is anticipated that rural and agricultural uses will continue to be present and maintained as the planning area urbanizes. Because of the long timeframe of the plan, it should be reviewed on a regular basis.

## 1.2 Description of Planning Area

The *Northeast Sector Plan* planning area is located north of the city of Lawrence (see Map 1-1) and within Grant Township, in northeastern Douglas County, Kansas. The planning area contains approximately 10,640 gross acres and encompasses Grant Township north of the Kansas River.

The planning area boundaries are: E 1700 Road on the east, N 2100 Road on the north, the riverfront park on the west, and the Lawrence city limits and the Kansas River on the south. See Map 1-1. The planning area encompasses the Lawrence Urban Growth Area (UGA) in northeast Douglas County, as currently identified in *Horizon 2020*. A majority of the planning area is located in Service Area 4 which is the outer most service area in *Horizon 2020*. For Service Area 4 *Horizon 2020* states: "The land uses north of US-24/40 shall be primarily non-residential uses such as industrial, warehouse and office" and "Urban development in Service Area 4 north of the Kansas River shall not occur until after an extensive drainage study for the area north of the Kansas River has been completed." The North Lawrence Drainage Study was completed in 2005.

A portion of the planning area, south of Highway 24/40 is located in Service Area 2. *Horizon 2020* states: "Until these areas, are served by the extension of municipal services, residential urban densities of development or non-residential urban development will not be permitted. Divisions of land for rural residential development shall be permitted only when the following criteria exist: access to paved roads, conformance with minimum road frontage requirements, and availability of rural water meters. Development shall not be permitted on steep slopes (15% or greater), regulatory floodplains or other environmentally sensitive areas, and state or federally designated historic sites or landmarks. The pattern and lot layout of rural residential developments shall provide, through early planning, dedications or reservations for the logical extension of public roads and infrastructure" and "Development of these areas to urban densities should be allowed only after coordination with the phasing of municipal services and public infrastructure improvements to serve these new urban densities."

As mentioned earlier, the entire planning area is within the Lawrence UGA. The UGA was expanded to the Douglas County line in this area in 2004. This action was largely in response to concerns that the Douglas County Subdivision Regulations did not regulate rural residential growth, i.e., the 5 and 10 acre exemptions allowed the creation of residential lots without platting. The UGA was expanded into this area to help regulate rural residential growth.

The subdivision regulations for Douglas County were amended and adopted in 2007 and put in place standards to regulate rural residential growth. These standards regulate rural residential growth in the Rural Area, as well as the UGA. Since there are now standards for the division of property in the Rural Area, one of the reasons for expanding the UGA to the county line in this area is no longer necessary.



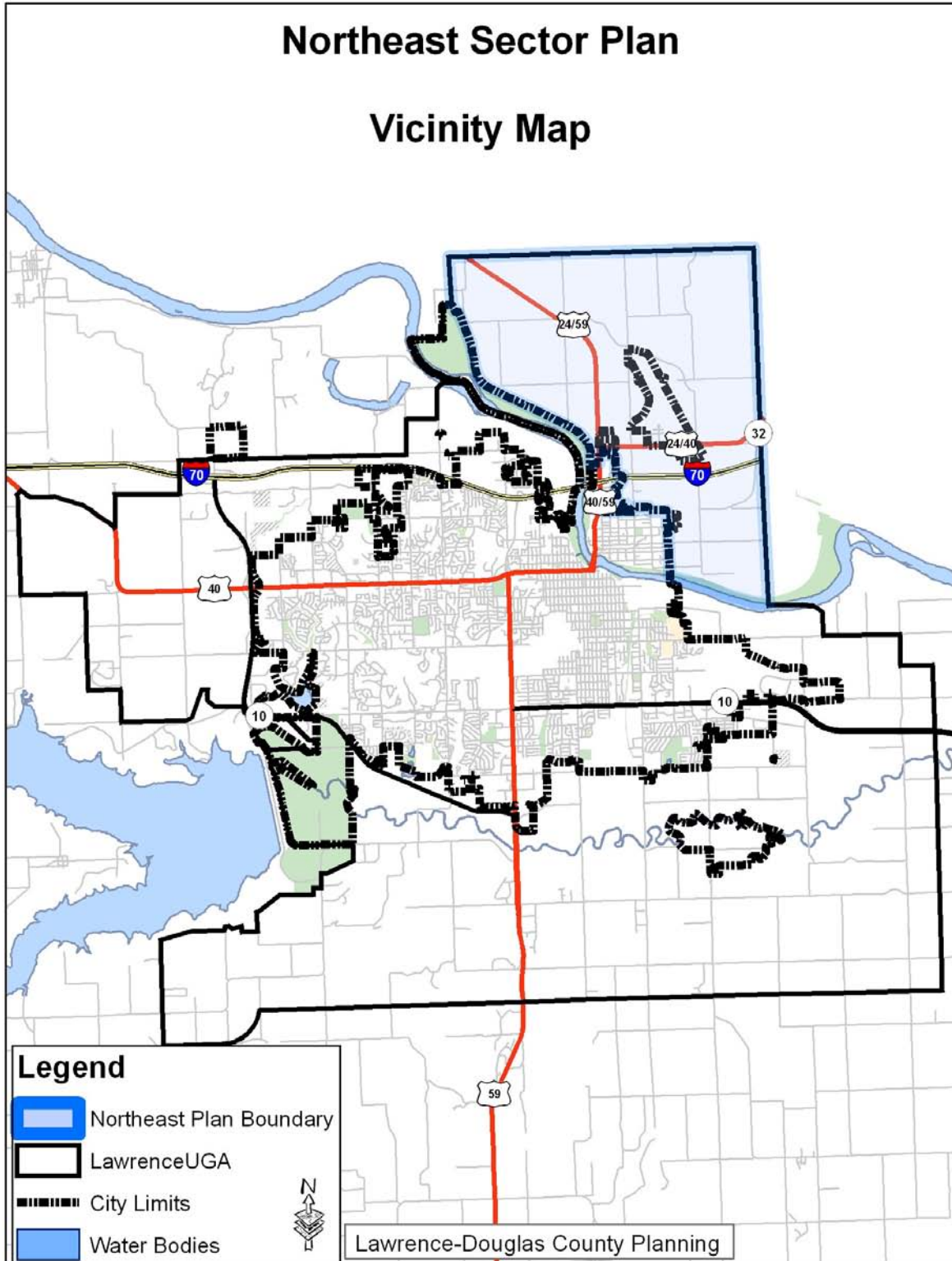
The dominant character of the area is rural in nature although there are a variety of uses within the planning area. The main rural uses in the flat, lower parts of the planning area are agriculture row crop, livestock production, and pastureland uses.

Rural residential uses are found in the higher northern parts of the planning area. Rural uses dominate those portions of Jefferson County that are north of the planning area and also those parts of Leavenworth County east of the planning area. The KU Field Station is located in the northeast corner of the planning area and also within Jefferson and Leavenworth counties.

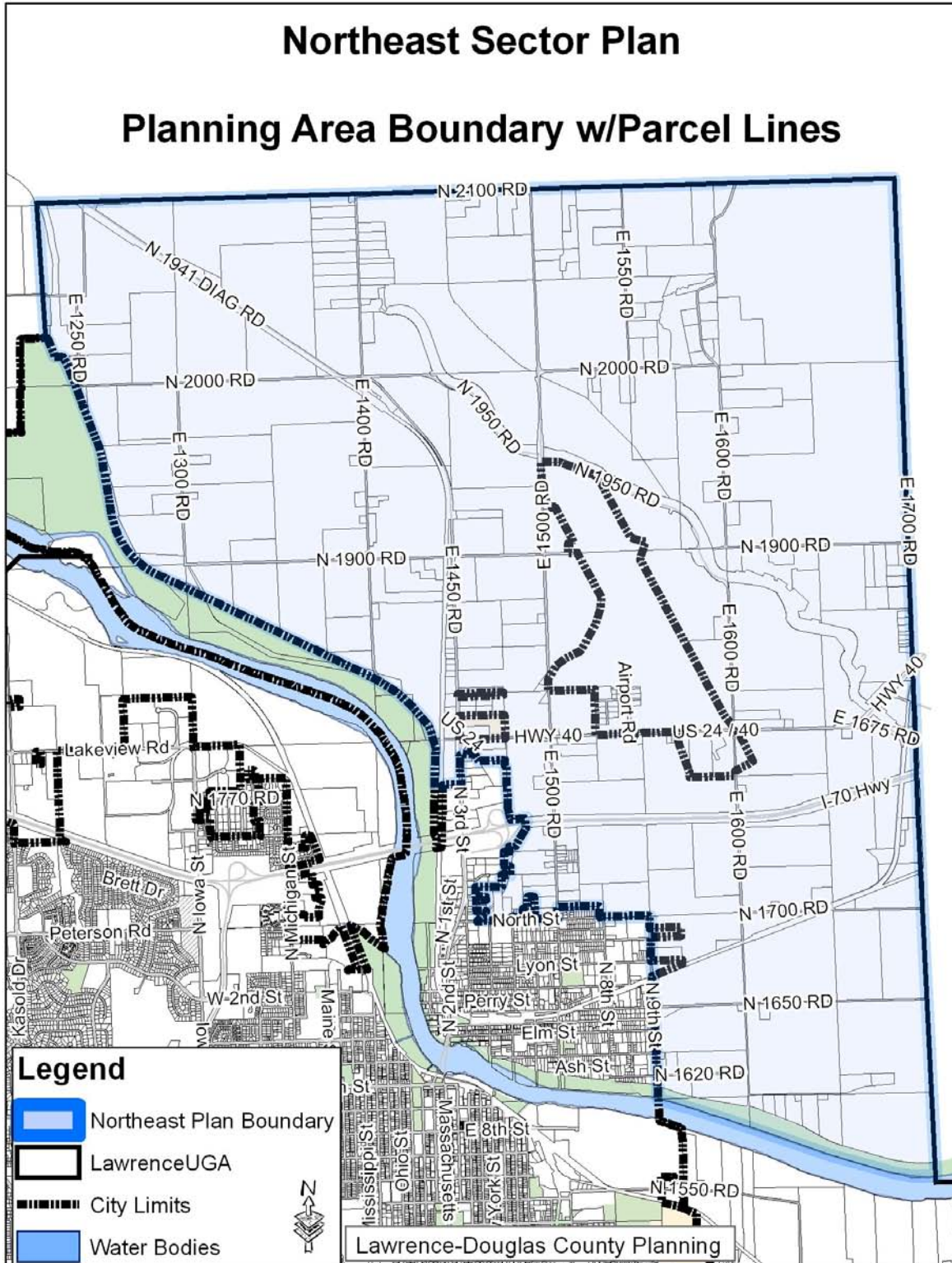
I-70 and a toll plaza, along with Highways 24/40/59 are major elements within the area. Industrial and commercial uses are located along Highway 24/59 and Highway 24/40. The Lawrence Municipal Airport is another major element within the planning area. The airport is annexed into the city, but is an island not contiguous with the corporate boundary of Lawrence. The Kansas River is generally west and south of the planning area. Urban uses within Lawrence are generally south of the planning area.

The planning area boundaries and parcel composition are illustrated in Map 1-2.

Map 1.1 – Vicinity Map



Map 1.2



### 1.3 Policy Framework

*Horizon 2020* serves as the overall planning guide and policy document for this plan. In addition to *Horizon 2020*, guiding policy is also obtained in other adopted physical element plans. Together, these plans provide the general “umbrella” policies under which this plan is developed. Listed, these plans are:

- *Horizon 2020*, the Comprehensive Plan for Lawrence and Unincorporated Douglas County. Lawrence-Douglas County Metropolitan Planning Office. 1998 as amended.
- *Transportation 2030*, Lawrence/Douglas County Long Range Transportation Plan. Lawrence/ Douglas County Metropolitan Planning Office and Parsons Brinkerhoff. March 26, 2008.
- *Lawrence-Douglas County Bicycle Plan*, Lawrence/Douglas County Metropolitan Planning Office. May 2004.
- *Lawrence Parks & Recreation Department A Comprehensive Master Plan*. Leon Younger & PROS. 2000.
- *City of Lawrence, Kansas Water Master Plan*. Black & Veatch. December 2003.
- *City of Lawrence, Kansas Wastewater Master Plan*. Black & Veatch. December 2003.
- *2008-2013 Capital Improvement Plan*. City of Lawrence. June 26, 2007.
- *North Lawrence Drainage Study*. 2005

## Section 2 - Existing Conditions

The inventory and analysis of existing conditions in this plan are intended to serve as a resource and background for the recommendations included in Section 3 of this plan.

### 2.1 Land Uses

#### 2.1.1 Existing Land Uses

There are currently a variety of land uses within the planning area. The planning area has approximately 10,116 acres of land dedicated to uses other than public rights-of-way. The source information for the existing land use summary and map are based on the County Appraisers' land use code and updated by planning staff.

Agricultural uses, in the form of row crops, livestock production, pasturelands, and farms are the dominant land uses and encompass approximately 7,330 acres of land, which accounts for 72% of the planning area. There are farms of varying sizes (less than 5 acres up to hundreds of acres) within the planning area. Production includes row crops, local market production and animal production. Farms are owner operated or leased to larger operations. The City leases land around the airport for agriculture use.

The second largest land use category is parks/rec/open space use with approximately 956 acres. The parks/rec/open space use category includes the KU Field Station properties in the northeast portion of the planning area.

The third largest land use category is transport/communication/utility. This land use category includes the Lawrence Municipal Airport.

The next largest category is single family residential use. This category includes property with one dwelling unit located on it. The *Douglas County Zoning Regulations* define a dwelling as, "Any building or portion thereof designed or used for residential purposes. This shall include structures designed as underground structures but shall not include trailers or mobile homes". The single-family residential use is seen within the planning area primarily in the rural form – typically a house on 1 to 10 acres (although some larger single family properties in the area range between 10 – 40 acres).

The remaining land is designated a variety of uses ranging from industrial/warehouse/distribution to public/institutional uses. These uses are located primarily along Highway 24/59. The existing land uses are shown on Map 2-1 and the planning area breakdown is described in Table 2-1.



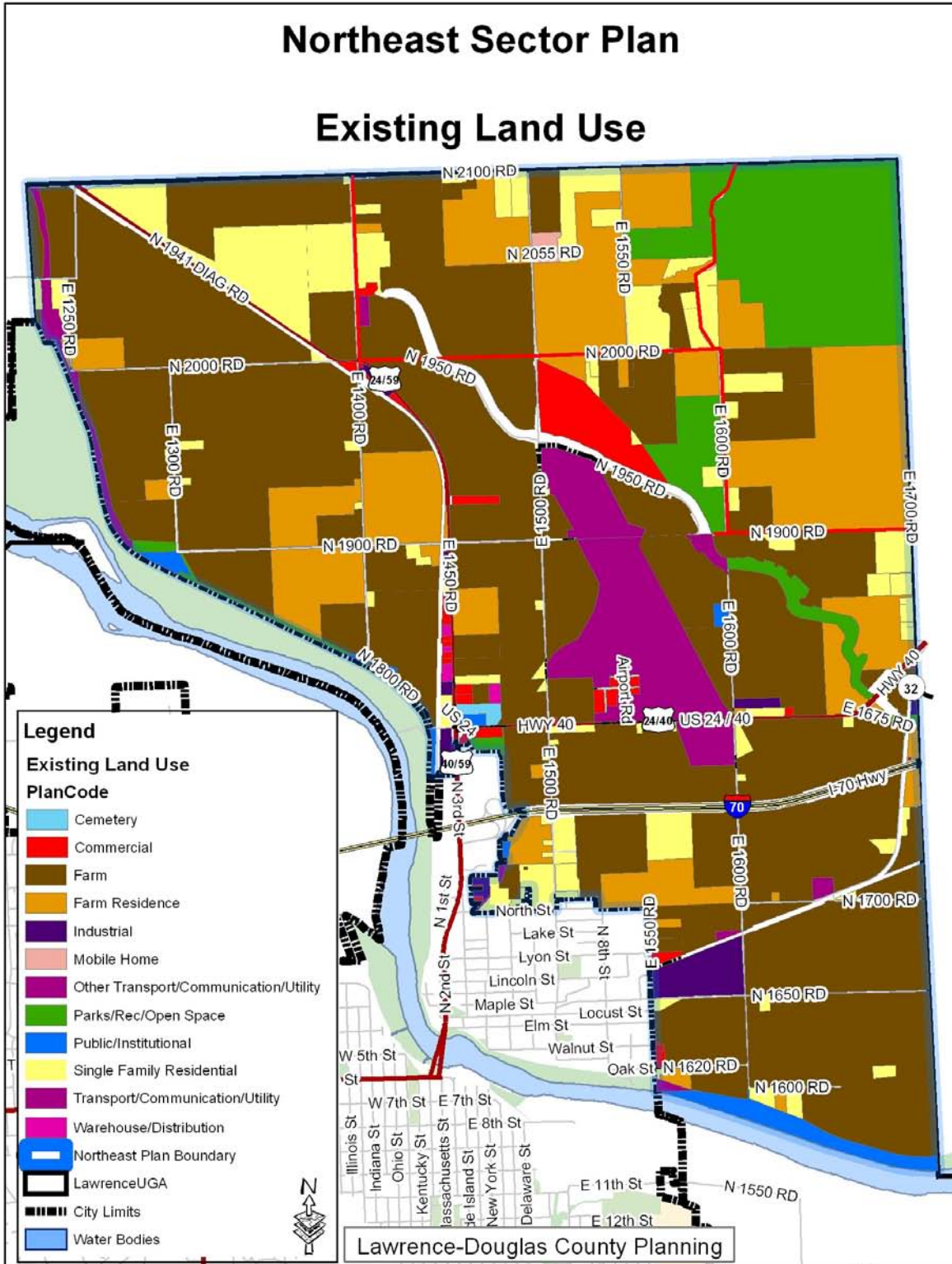
TABLE 2-1: EXISTING LAND USE SUMMARY

Land use	Acres	Percent
Agricultural	7,330	72%
Single Family Residential	550	5%
Vacant Residential	232	2%
Residential - Other	72	1%
Commercial	186	2%
Industrial/Warehouse/Distribution	125	1%
Public/Institutional	110	1%
Parks/Rec/Open Space	956	10%
Transport/Communication/Utility	555	6%
TOTAL	10,116	100%

*2.1.1 Historic Resources*

Currently, there is one structure listed on the National Register of Historic Places within the planning area. The Vermilya Boener House is located at the northwest corner of N 1900 Rd. and E 1400 Rd and was listed in 1992.

Map 2.1 – Existing Land Use



## 2.2 Zoning Patterns

The planning area encompasses approximately 10,640 acres of land including public rights-of-ways. Approximately 520 acres are located within the city of Lawrence and the rest is located within the unincorporated area of Douglas County. The majority of the planning area that is located within unincorporated Douglas County is zoned A (Agriculture District). This is mainly used for row crops, pasture land and farm purposes. Industrial zoning is found in the planning area with specific areas zoned I-1, I-2, I-3 and I-4 Districts. There is also some B-2 (General Business District) zoning along Hwy. 24/40. See Map 2-2.

The main portion of the planning area located within the city of Lawrence is the Lawrence Municipal Airport, which is zoned IG (General Industrial). The Maple Grove Cemetery is also within the city of Lawrence and is zoned OS (Open Space District). Both of these properties are islands that are not contiguous to the corporate limits of Lawrence. See Map 2-2.

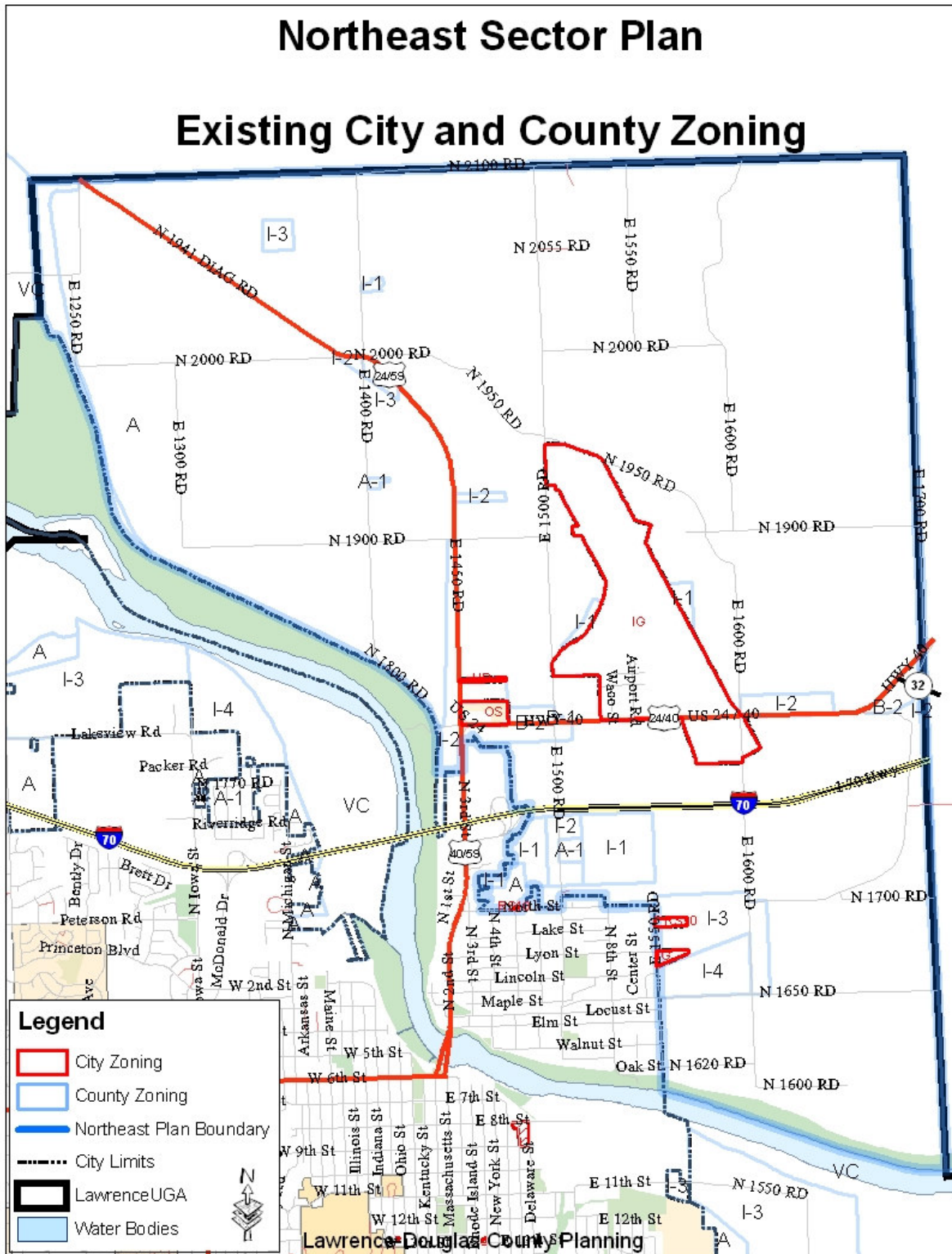
Table 2-2 County Zoning Classifications

County Zoning	District Name	Comprehensive Plan Designation
A	Agricultural	Agriculture
A-1	Suburban Homes	Very Low-Density Residential
I-1	Limited Industrial	Industrial
I-2	Light Industrial	Industrial
I-3	Heavy Industrial	Industrial
I-4	Heavy Industrial	Industrial
VC	Valley Channel	N/A

Table 2-3 City Zoning Classifications

City Zoning	District Name	Comprehensive Plan Designation
RS20	Single-Dwelling Residential (20,000 sq. feet per dwelling unit)	Low-Density Residential
IG	General Industrial	Warehouse and Distribution or Industrial
OS	Open Space	N/A

Map 2.2 – Existing Zoning



## **2.3 Infrastructure**

### *2.3.1 Water and Wastewater Infrastructure*

A summary of the existing water utilities is shown on Map 2-3 and wastewater utilities (sanitary sewer) is shown on Map 2-4. Municipal water and wastewater is provided to the majority of those properties that are within the current city limits. Properties that are within the planning area, but outside the city limits, are served by Jefferson County Rural Water District #13, or private wells, and private septic systems.

The city of Lawrence sanitary sewer infrastructure does not extend outside the current city limits. The City, however, recently approved extending water and sewer infrastructure to serve the municipal airport. The flat topography of the area poses a challenge to providing urban wastewater infrastructure to the planning area. The flatness of the area makes it difficult to gravity flow wastewater and thus drives up the the relative cost of providing those services.

A portion of the planning area will be included in the City's Wastewater Master Plan update, underway in 2010. That update will provide a better idea of the actual cost of extending wastewater infrastructure. It is important to note that prior to any wastewater infrastructure extensions to the planning area, impacts to the downstream wastewater system will also have to be evaluated. Improvements to that system may also be part of the cost to extend infrastructure to the area.

### *2.3.2 Stormwater Infrastructure*

A summary of the existing stormwater utilities, channels, and natural streams are shown on Map 2-4. The majority of the stormwater is handled by open channels and streams. The stormwater drains to the south, by way of the tributaries, to the Kansas River.

### *2.3.3 Gas Infrastructure*

The planning area includes three natural gas lines. One pipeline owned by Southern Star Gas enters the planning area from the north and crosses to the east through the center of the planning area. A second Southern Star Gas pipeline enters the planning area in the southeast corner, proceeds northeast and exits the planning area near Highway 24/40 and Highway 32. Another pipeline is owned by Williams Natural Gas and it enters the planning area on the west center portion and crosses northeast through the planning area. See Map 2-5.

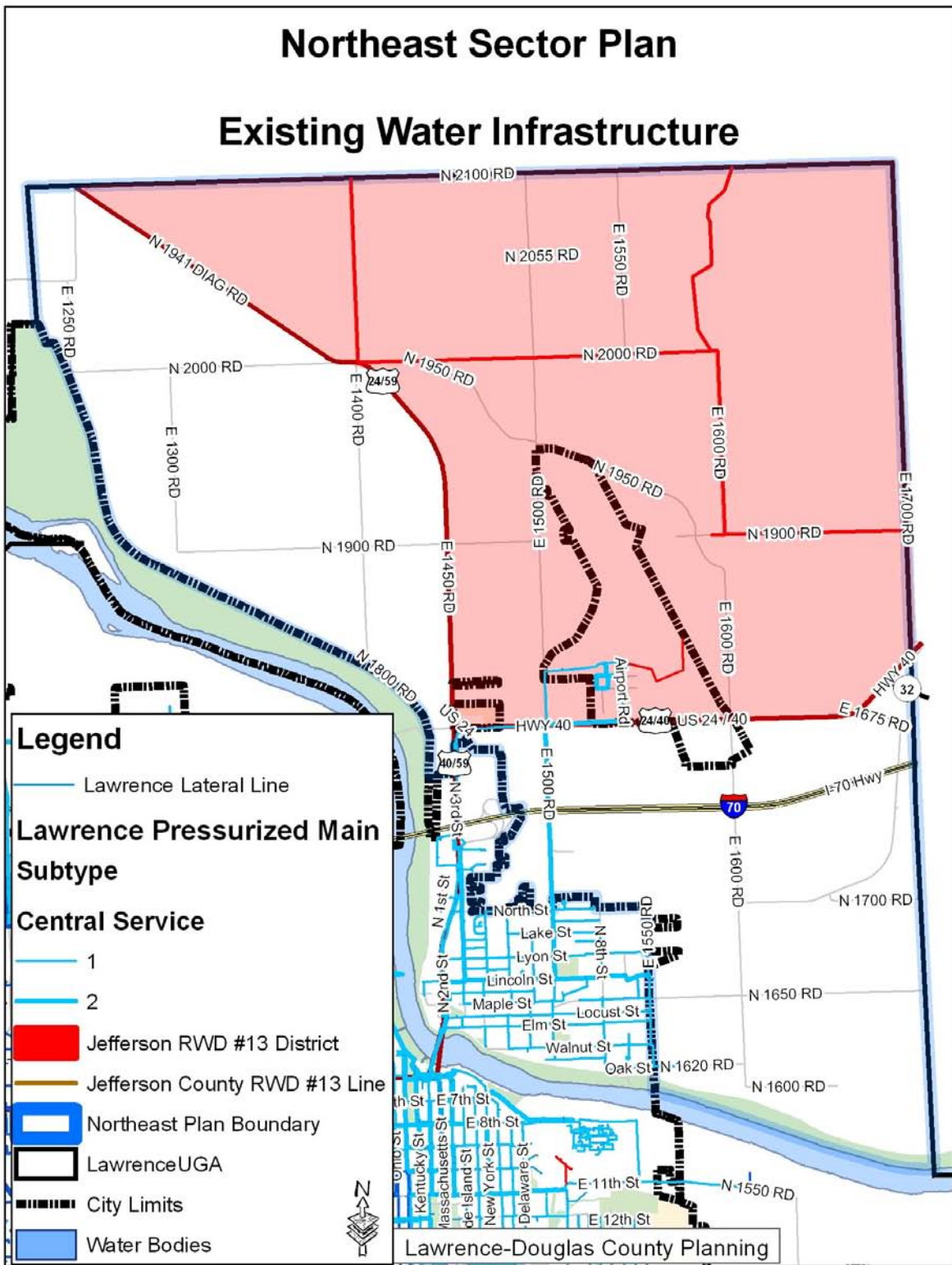
### *2.3.4 Electric Infrastructure*

Westar serves the planning area. Large electric transmission lines also traverse the planning area. See Map 2-5.

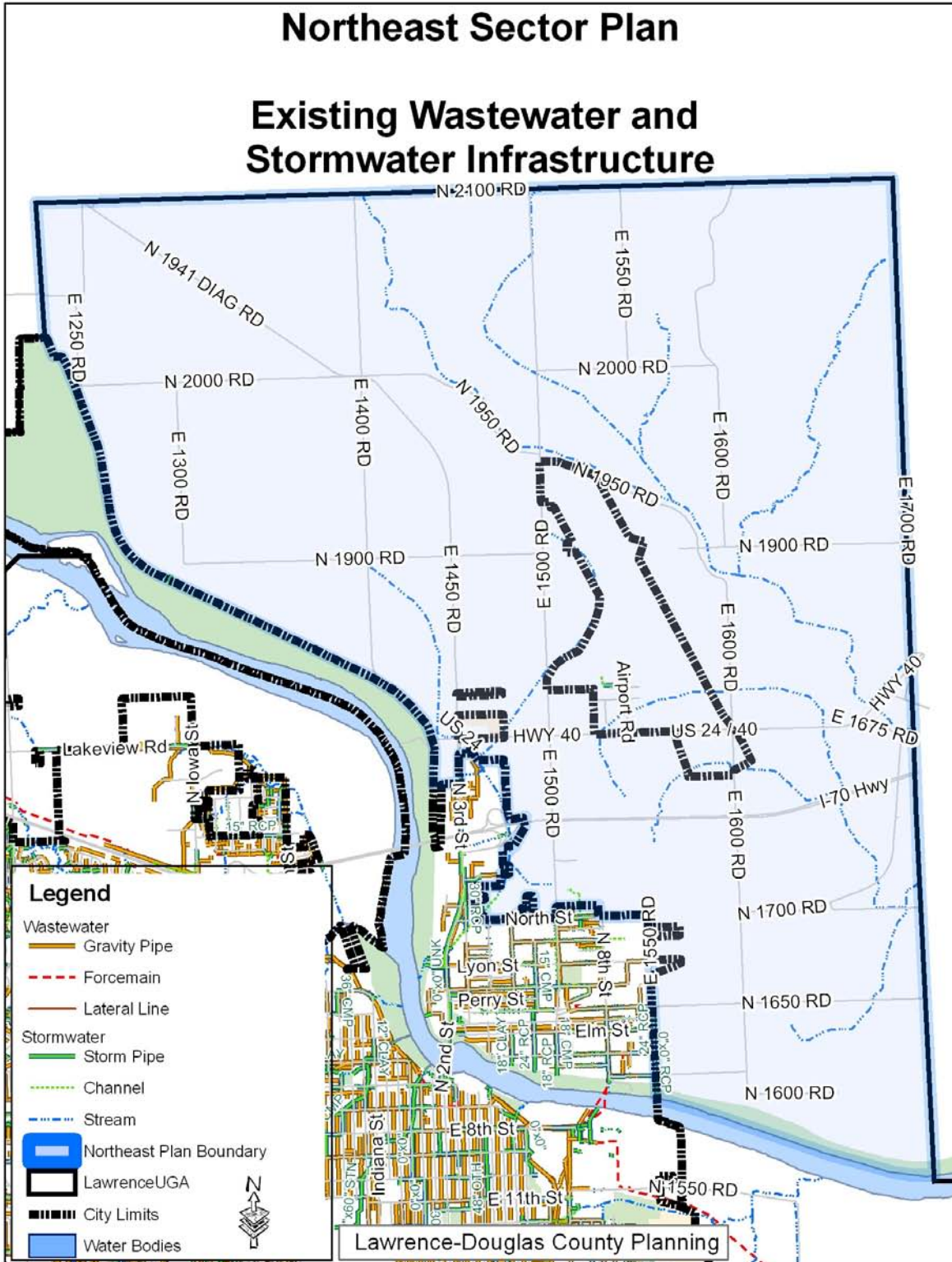
### *2.3.5 Drainage Districts*

The Douglas County KAW Drainage District is the only drainage district in the planning area, but it does not cover the entire planning area. See Map 2-6.

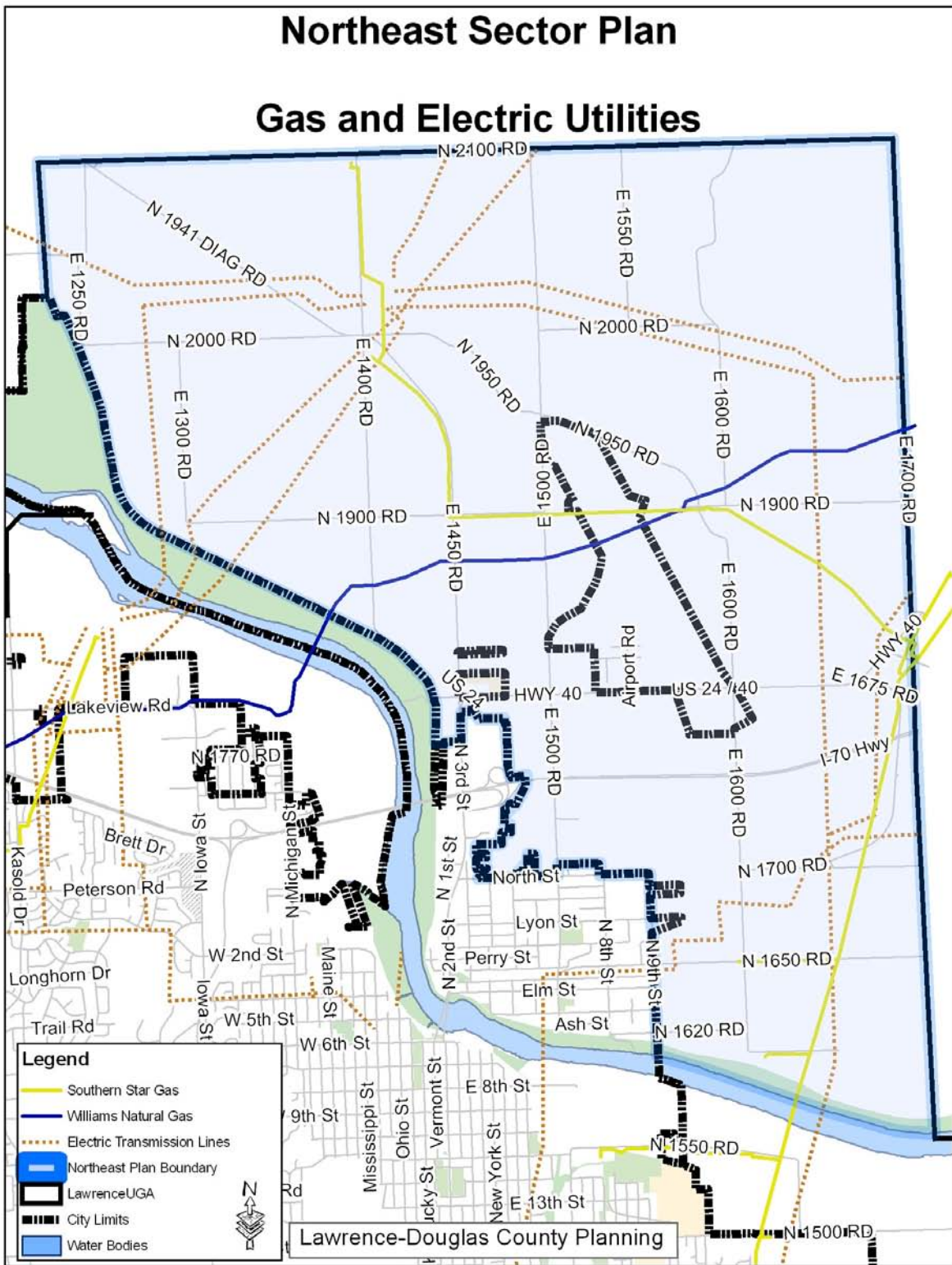
**Map 2-3 – Water Infrastructure**



Map 2-4 – Wastewater and Stormwater Infrastructure

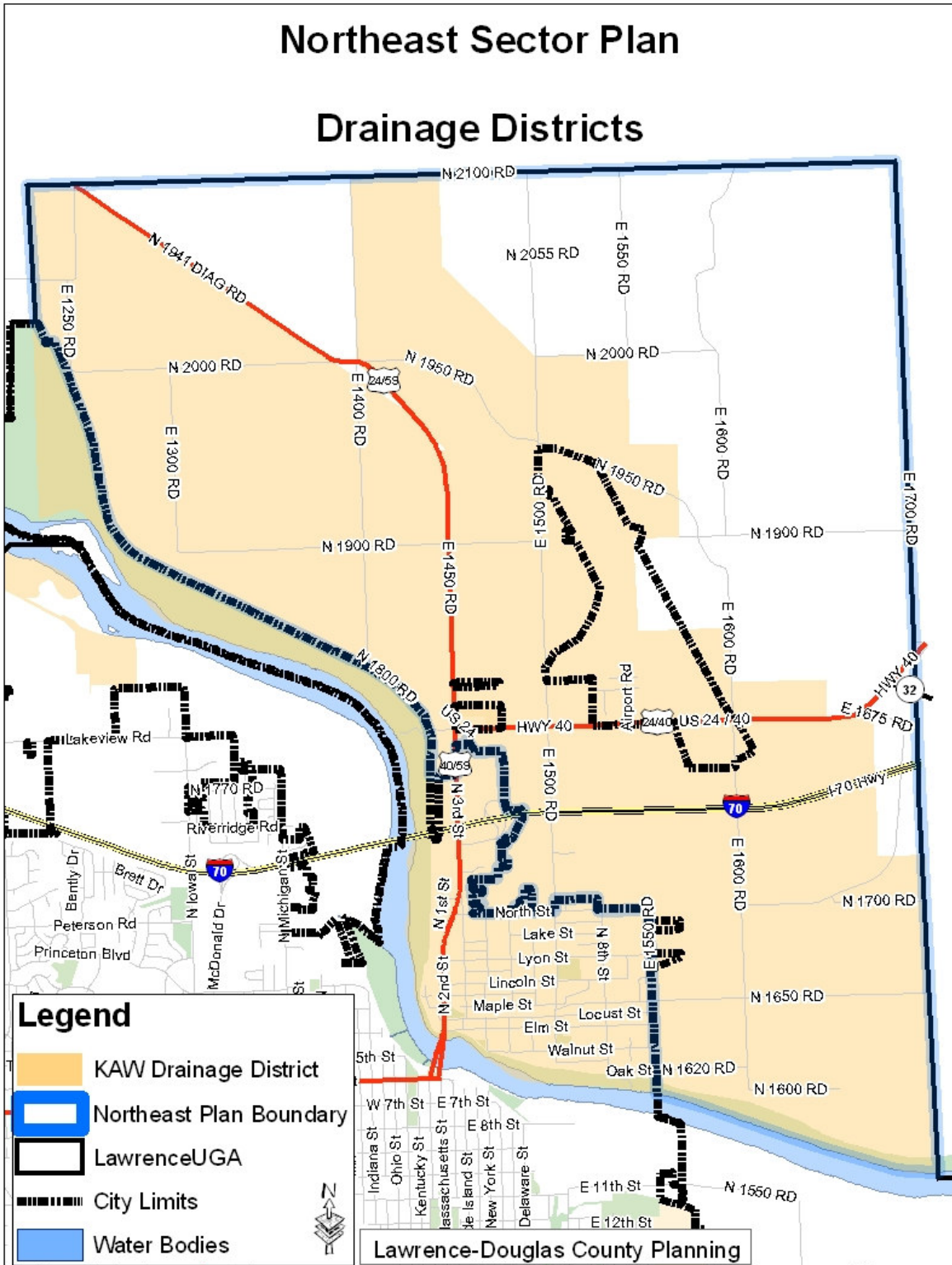


Map 2-5 – Gas and Electric Utilities





Map 2-6 Drainage Districts



## 2.3.5 Transportation

### 2.3.5.1 Road and Streets

The majority of the roads in the planning area are rural township roads, most of which are gravel. Grant Township maintains the majority of the roads in Grant Township. However, Douglas County has maintenance responsibility over Douglas County Route 9 (E 1500 Rd from city limits north to Highway 24/40) and Wellman Road north of Midland Junction to the Jefferson County line. KDOT has responsibility over Highways 24/59 and 24/40.

Douglas County has adopted access management standards that spell out minimum frontage and access standards for rural roads based upon road classifications.

*Transportation 2030* (T2030) is the comprehensive, long-range transportation plan for the metropolitan area. T2030 designates streets according to their functional classification or their primary purpose. These functional classifications are shown on Map 2-7. The classification system can be described as a hierarchy from the lowest order, (local roads and streets) that serve to provide direct access to adjacent property, to (collector streets) that carry traffic from local roads and streets, to major thoroughfares (arterial streets) that carry traffic across the entire city and county. Freeways and expressways are the highest order of streets and are designed with limited access to provide the highest degree of mobility to serve large traffic volumes with long trip lengths.



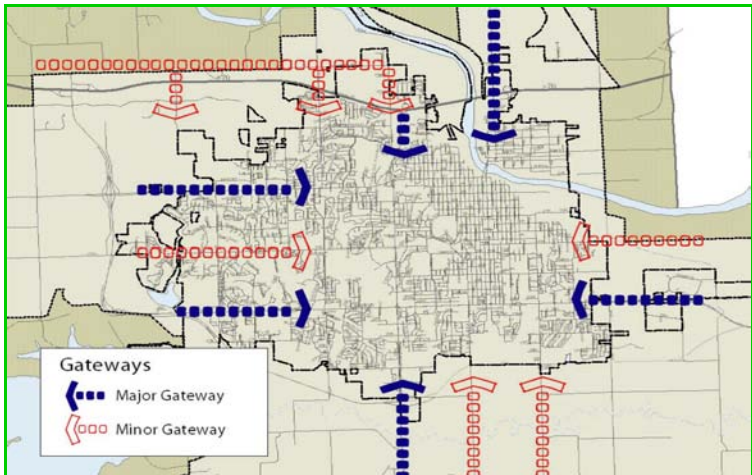
T2030 was adopted in 2008 and is updated at least every 5 years. This area should be fully studied during the next update to address the future street network.

### 2.3.5.2 Gateways

Chapter 2 of T2030 discusses and identifies minor and major gateway into and out of Lawrence. T2030 states, "Gateways are locations on transportation corridors that define the entrances to cities. These provide visitors with a first impression of the city and often indicate the transition from rural to urban land uses. As such, cities desire to make these locations as attractive and informative as possible. As noted in T2030 in Figure 2.4, there are several roadways that represent gateways into the city of Lawrence or into smaller communities within the region that should be reviewed for aesthetic and informational enhancements when they are improved."

T2030 identifies Highway 24/59 as a major gateway into Lawrence based on the corporate boundaries shown in Figure 2.4 of T2030.

T2030 Figure 2.4  
**Lawrence Gateways**



### 2.3.5.3 Rail

There are also rail lines that weave through the planning area. All lines are currently active and make a number of trips through the area over the course of a typical day. These rail lines pose issues at the various crossings in the area. See Map 2-7 and Map 3-1 for the location of the rail lines.

### 2.3.5.4 Transit



Lawrence has a public transportation system (The T) which operates throughout the city. This system allows people to travel to other areas of the city without relying on a personal automobile. There are currently no transit routes that travel into the planning area. However, paratransit service is available to all of Douglas County. Paratransit service is a demand response service available to seniors and people with disabilities.

### 2.3.5.5 Bicycle Facilities

Lawrence and Douglas County have a joint bicycle plan for the community, the *Lawrence-Douglas County Bicycle Plan*. This plan identifies existing and future bicycle routes, lanes, and multi-use paths. A bicycle route is a network of streets to enable direct, convenient and safe access for bicyclists. A bicycle lane is a separate space designated with striping, signage or pavement markings for exclusive use by bicycles within a street. A multi-use path is a separate path adjacent to and independent of the street and is intended solely for non-motorized travel.



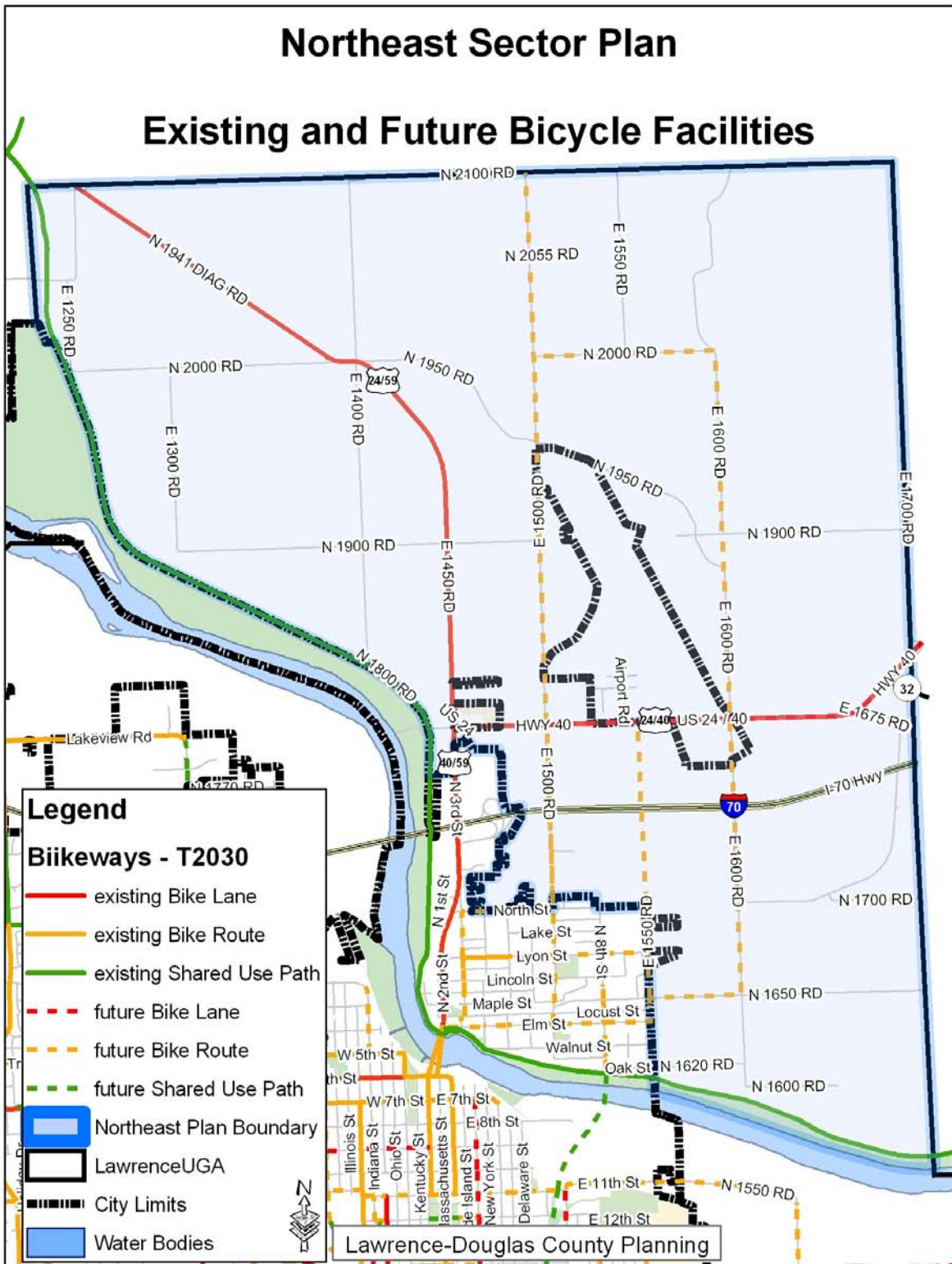
Map 2-8 identifies existing and future bicycle facilities that include:

- An existing multi-use path along the north side of the Kansas River Levee.
- A future bike lane identified along Highway 24/40.
- A future bike route is identified along E 1600 Road, via N 1650 Road east from Lawrence, north to N 2000 Road.

- A future bike route is identified along E 1500 Road from Lawrence north to the county line.
- Another future bike route is identified along E 1550 Road from Lawrence to Highway 24/40.
- A future bike route identified along North Street in Lawrence.



Map 2-8 – Existing and Future Bicycle Facilities



## 2.4 Environmental Conditions

The planning area is made up of several drainage basins which drain to the Kansas River. There is Federal Emergency Management Agency (FEMA) designated floodplain and floodway located within the planning area. These are areas around Mud Creek and its tributaries, Maple Grove Creek, and the Kansas River. See Map 2-9. The floodplain is any land area susceptible to being inundated by flood waters from any source. The floodway is the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height. Developing in the floodplain is allowed both in the city and in the county based on the corresponding regulations. No development is allowed in the floodway except for flood control structures, road improvements, easements and rights-of-way, or structures for bridging the floodway.

Mud Creek and its tributaries flow through portions of the planning area. The Kansas River is immediately outside of the west and south parts of the planning area.

The North Lawrence Drainage Study was commissioned by the City in 2005 to develop a stormwater plan for the North Lawrence watershed. Several alternatives were investigated in the overall North Lawrence Drainage Study watershed to reduce flood elevations, lessen impacts on the "Internal Drainage System" facilities, provide drainage in the event of high flows on the Kansas River, and assess the effects of development in the floodplain. The investigations led to the four major recommendations below. The first bullet item is the key to reducing the burden on the Internal System from areas beyond the existing city limits.

- Drainage from north of 24/40 Highway should be cutoff by the highway embankment and the water should be pumped over the levee at a point just east of the 24/40 intersection to reduce the burden on the 2<sup>nd</sup> Street Pump Station
- Future development in the watershed should maintain the current conveyance levels in the 100-year floodplain – development should not reduce the capacity for floodplain storage
- The City should purchase parcels of land as necessary for use as dedicated ponding areas
- Major roads and hydraulic structures should be improved to meet the current APWA criteria with regard to overtopping during the 100-year event, in order to provide adequate emergency services to the area

Tens of millions of dollars of cost were identified to accomplish the recommendations of the study for dealing with existing stormwater issues and future ones that will be created with development.

The majority of the land coverage within the planning area is agricultural land used for crop and animal production. The planning area also contains areas of prairie, grazing land and reserved areas of land that are a part of the KU Field Station. There are some water bodies and woodlands are also present in the northwest and northeast parts of the planning area. See Map 2-10 for a land coverage summary.

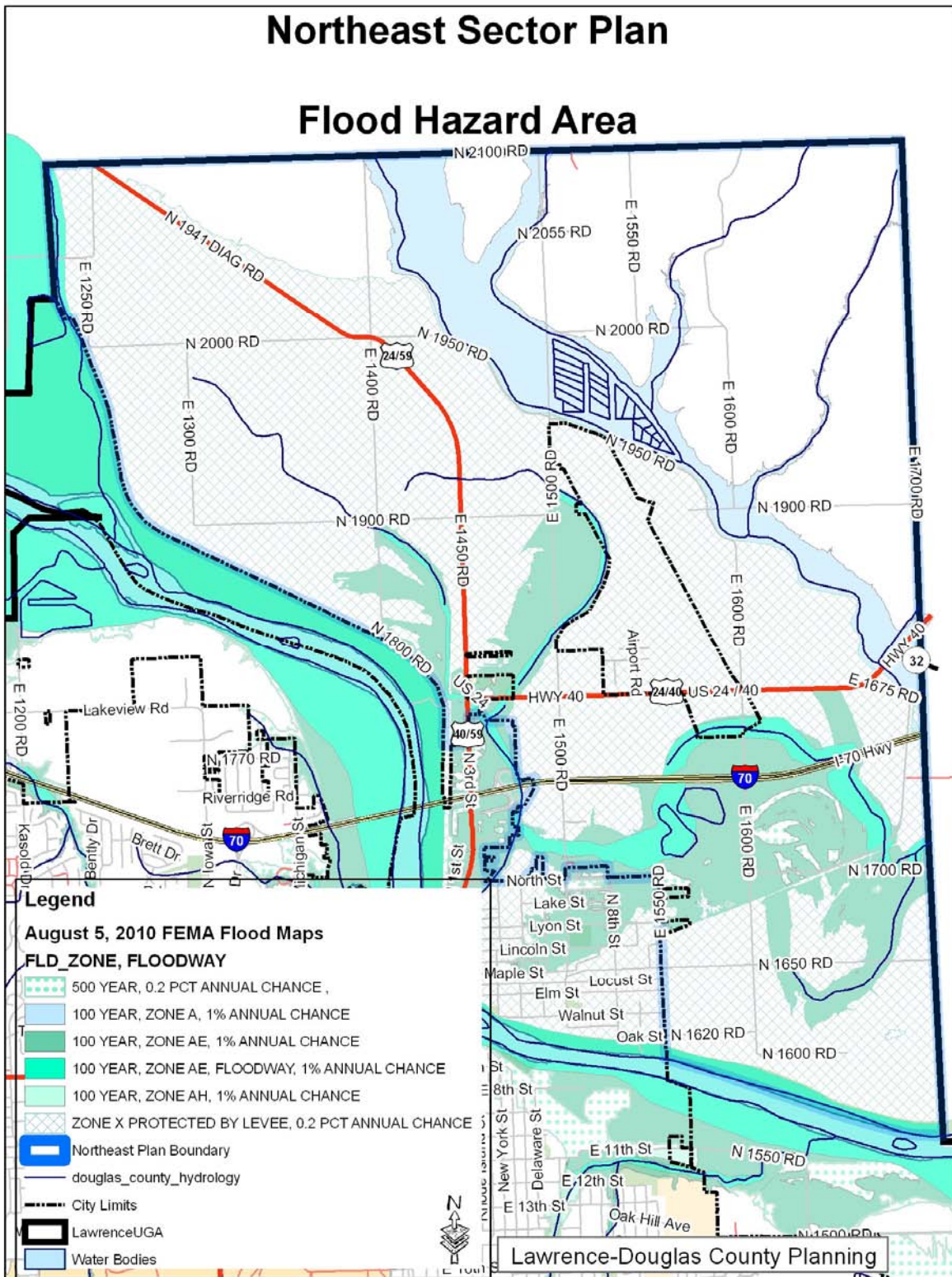
There is a range of topography within the planning area. The high points are along the northern and northeastern portions of the planning area north of the airport and Highway 24/59. The low points are essentially the rest of the planning area. This area is notable for the fact that it is so flat. As such, it is this area that has portions encumbered by floodplain. See

Map 2-11 and Map 2-12. Detailed topographic surveys will be required as individual properties are developed.

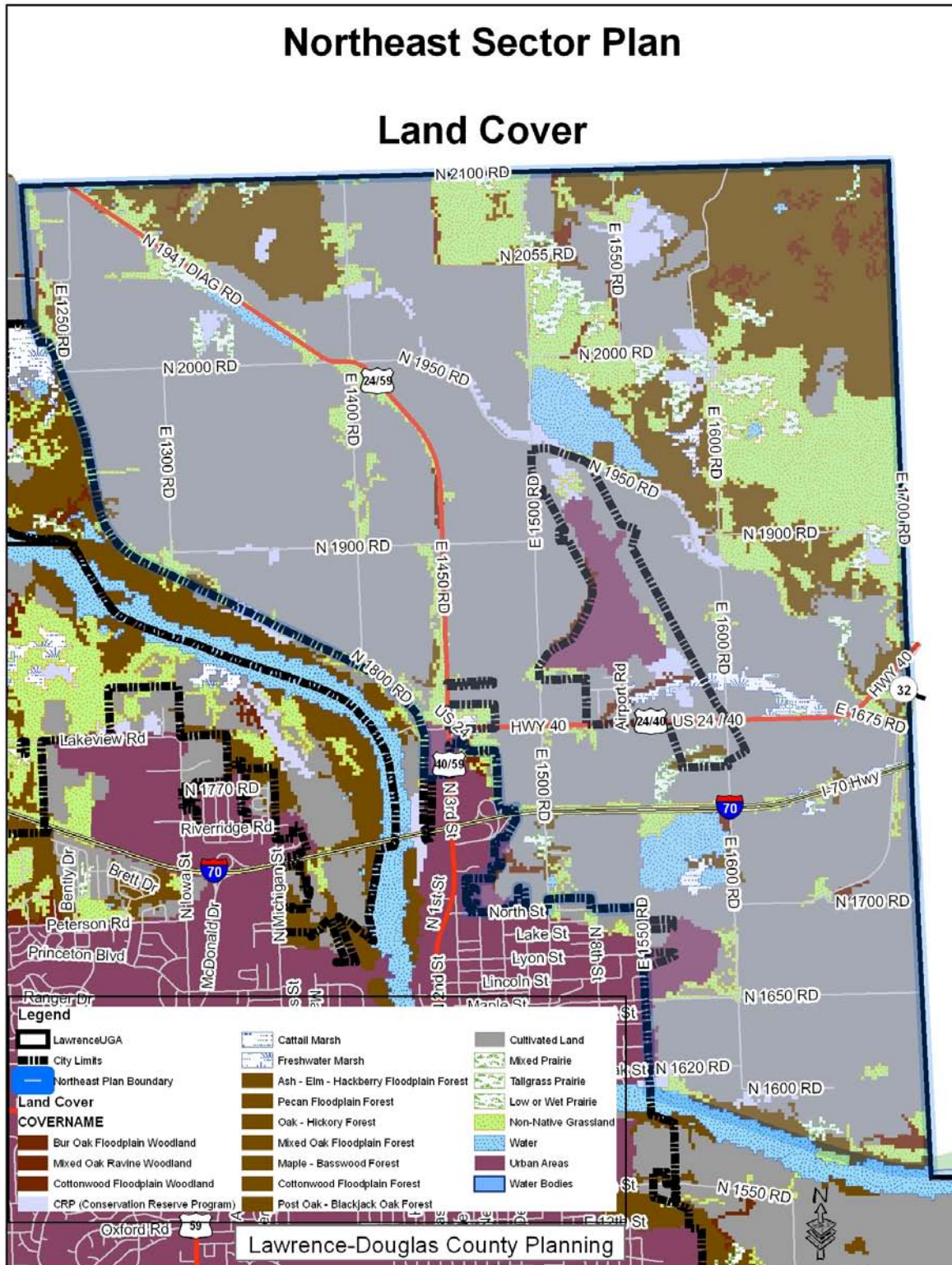
The planning area also contains Class I and II soils as determined by the Natural Resources Conservation Service, a division of the United States Department of Agriculture. These soils are considered to be high quality agricultural land. Horizon 2020, Chapter 7 Industrial and Employment Related Land Use states *"The preservation of high-quality agricultural land, which has been recognized as a finite resource that is important to the regional economy, is of important value to the community. High-quality agricultural land is generally defined as available land that has good soil quality and produces high yields of crops. Within Douglas County these are capability class (non-irrigated) I and II, as identified by the National Resources Conservation Service."* These soils are highly permeable and assist in stormwater management. See Map 2-13.



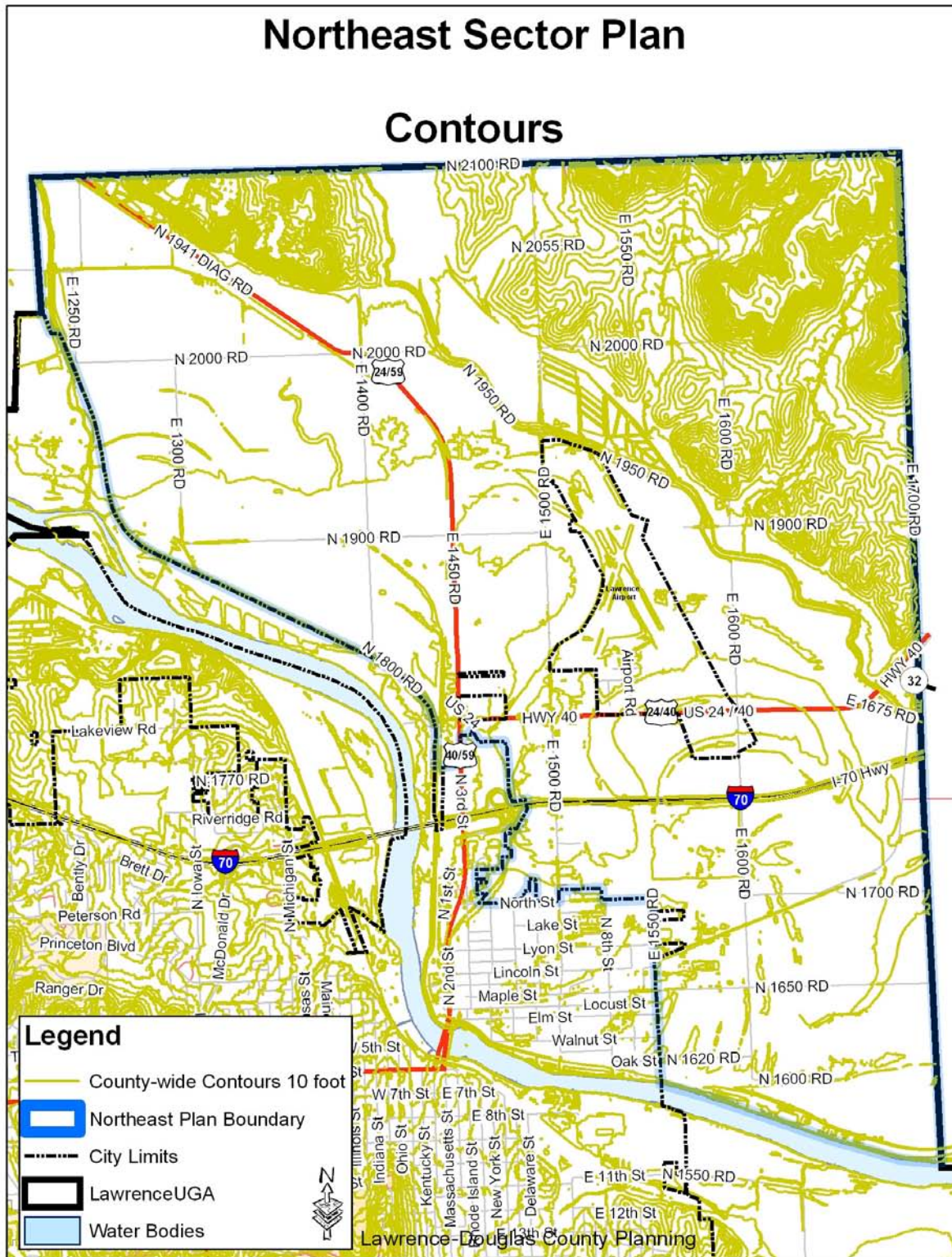
Map 2-9 – Regulatory Flood Hazard Area and Streams



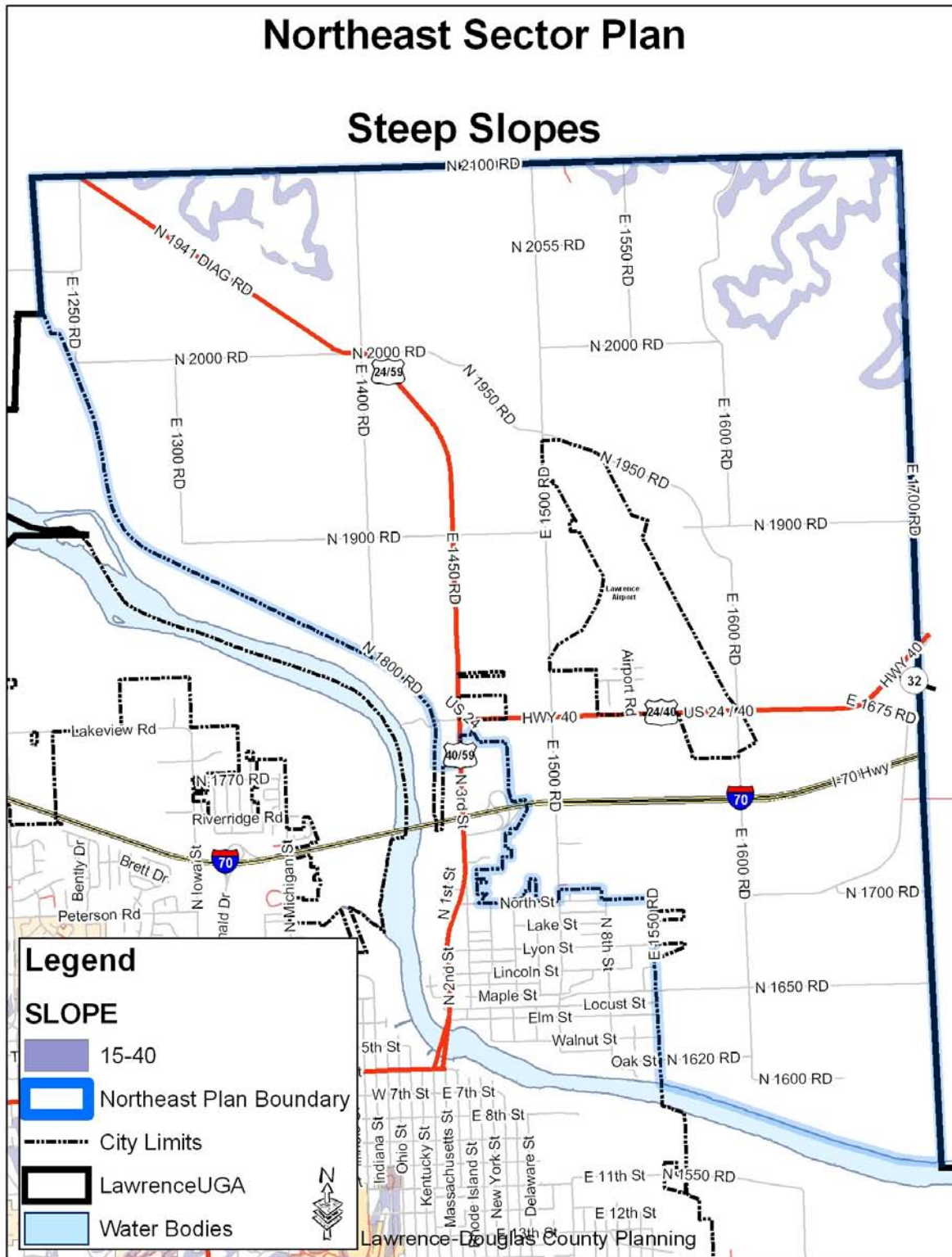
Map 2-10 – Land Cover



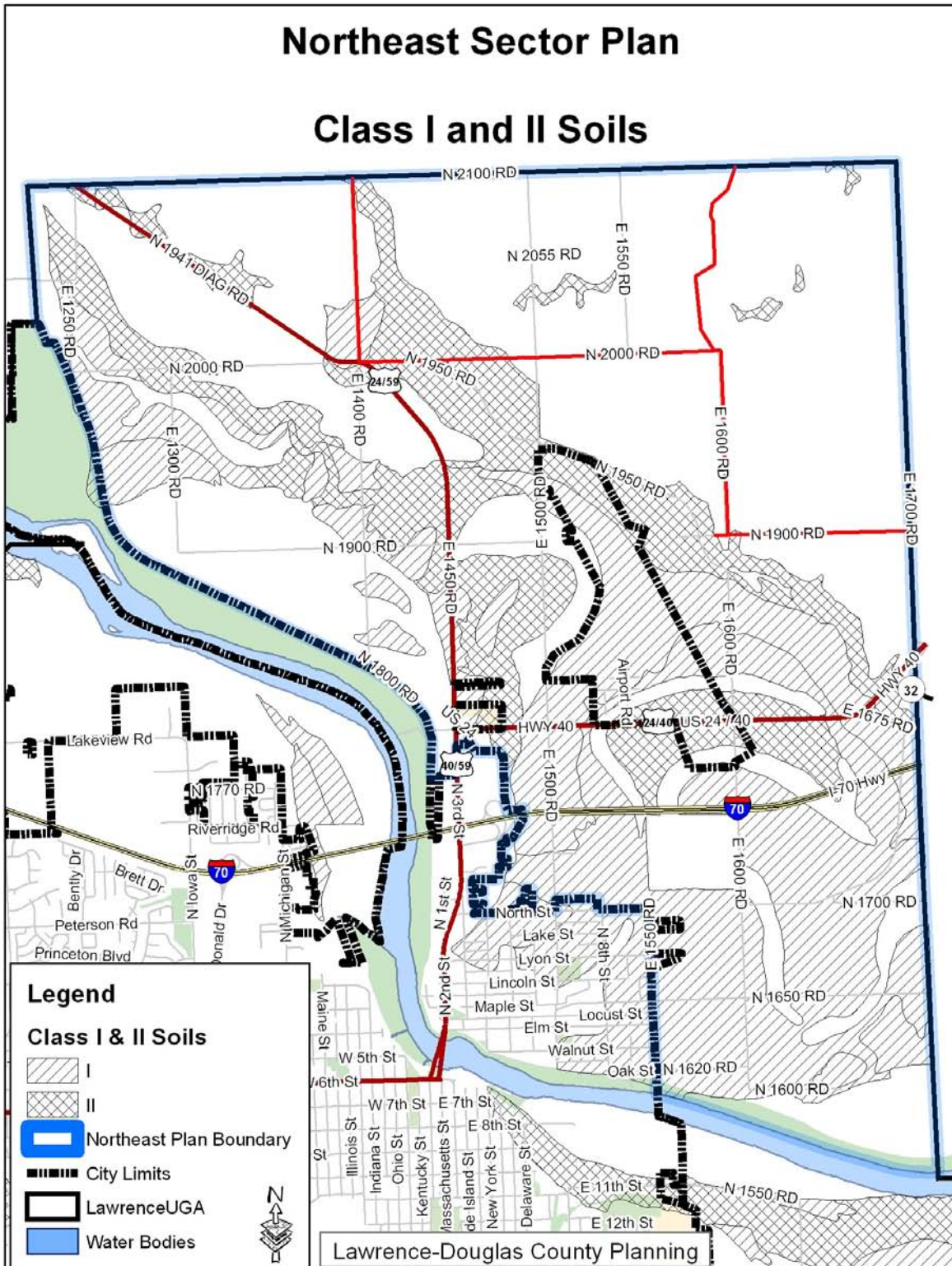
Map 2-11 – Contours



Map 2-12 – Steep Slopes



Map 2-13 – Class I and II Soils



## 2.5 Community Facilities

Community facilities are services provided either by government or non-government agencies for the benefit of, and use by, the community. Within the planning area there are a few community facilities. Grant Township owns and maintains a community building east of the airport on E 1600 Rd. That building is also currently being used by Prairie Moon Waldorf School, a private kindergarten and grade school. The Township also maintains a facility near Midland Junction where it stores and services equipment needed for road maintenance. KDOT also has a maintenance facility in the planning area at the northeast corner of Highway 24/40 and Highway 24/59.

Kansas University maintains the Kansas University Field Station (KUFS) in the northeast corner of the planning area. The KSR was established in 1947 and is the biological field station of Kansas University. Numerous research and teaching activities take place at the KUFS. Much of the KUFS is also located in neighboring Jefferson and Leavenworth counties and is not accessible to the public. However, the KUFS also maintains ecological reserves in the planning area that are accessible to the public. For example, the Fitch Natural History Reservation and McColl Nature Reserve, located in the very northeast corner of the planning area, have 4 miles of self-guided nature trails within Douglas County that allow users to explore forest, grassland, stream, wetland, and pond areas.

The planning area is located within the Lawrence Public School District (USD 497). The students in the planning area attend Woodlawn Elementary for elementary school; Central Junior High for junior high; and Free State High for high school. Students in the area can also attend the aforementioned private Prairie Moon Waldorf School for kindergarten and grade school.

Most of the community facilities including urban public services, schools, fire/medical, law enforcement, developed parks, etc., are located to the south of the planning area within the city of Lawrence. See Map 2-14

The rural portions of the planning area are served by Lawrence-Douglas County Fire & Medical through an agreement with Grant Township. The Lawrence-Douglas County Health Department ~~is~~ also serves the planning area.

Law enforcement is shared between the City of Lawrence Police Department and the Douglas County Sheriff's Department, depending on whether the property is within the city or in the county. Both are located in the Law Enforcement Center in downtown Lawrence.

The city-owned Lawrence Municipal Airport is located in the planning area north of Highway 24/40 and east of E 1500 Road. The city has owned and operated the airport at this site since 1929. The airport is a general aviation facility that is an all weather facility for business and recreation flyers. A portion of the airport is dedicated to aviation-related employment activities and the city is actively marketing the airport for new businesses while recently approving water and sewer extensions to serve the airport.

The Federal Aviation Administration (FAA) regulates certain aspects of the operation of the airport and the activity around the airport. There are restrictions in place that manage structure heights around the airport to help maintain the integrity of runway approaches. See Map 2-15. The FAA also mandates a 10,000 foot Wildlife Mitigation Buffer around the runway and taxiway improvements at the airport. The buffer extends 10,000 feet beyond the runway

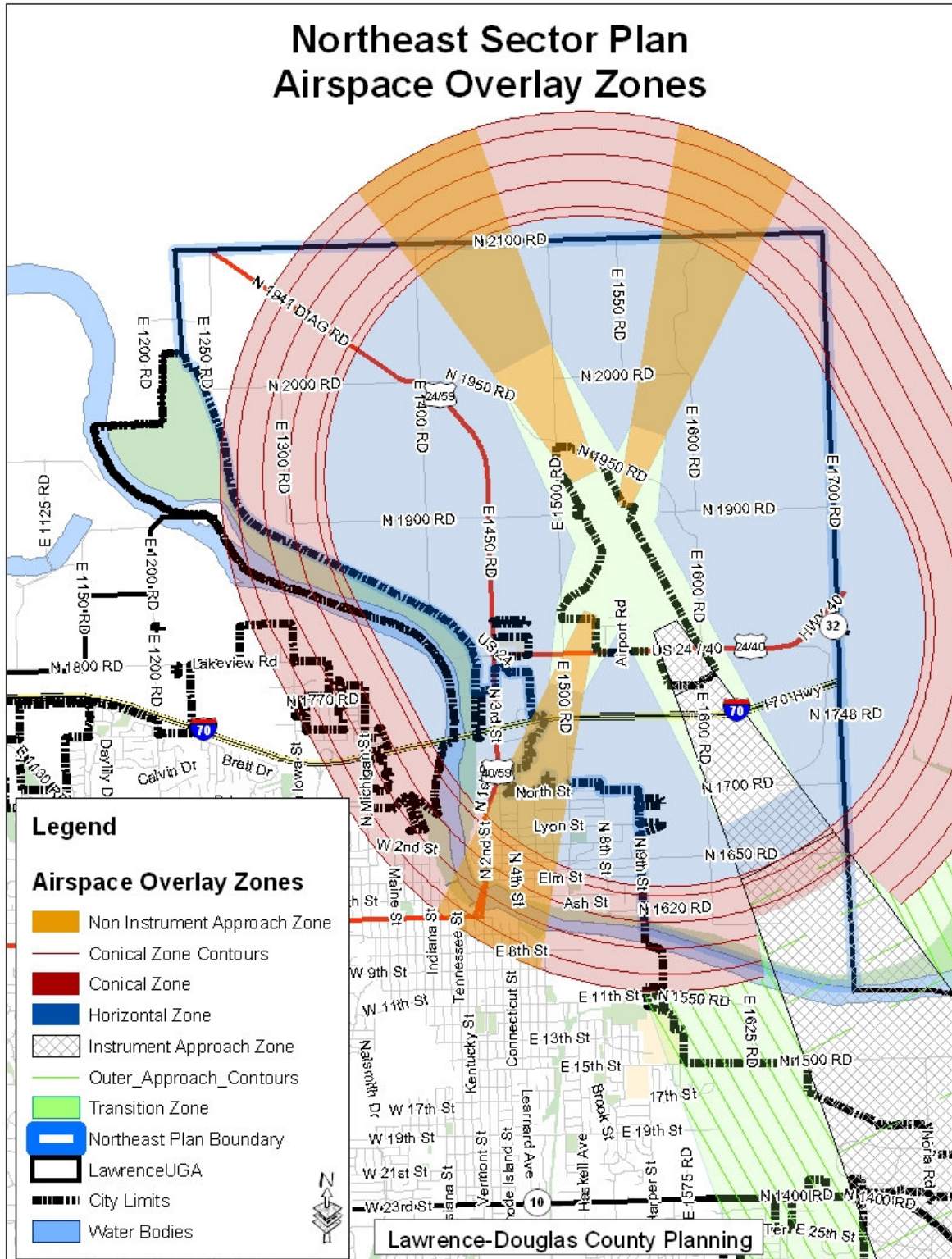
and taxiways. The buffer is meant to keep water bodies and other wildlife attractants to a minimum. Proposed developments within the 10,000 foot buffer require FAA review. See Map 2-16.

Map 2-14 – Community Facilities

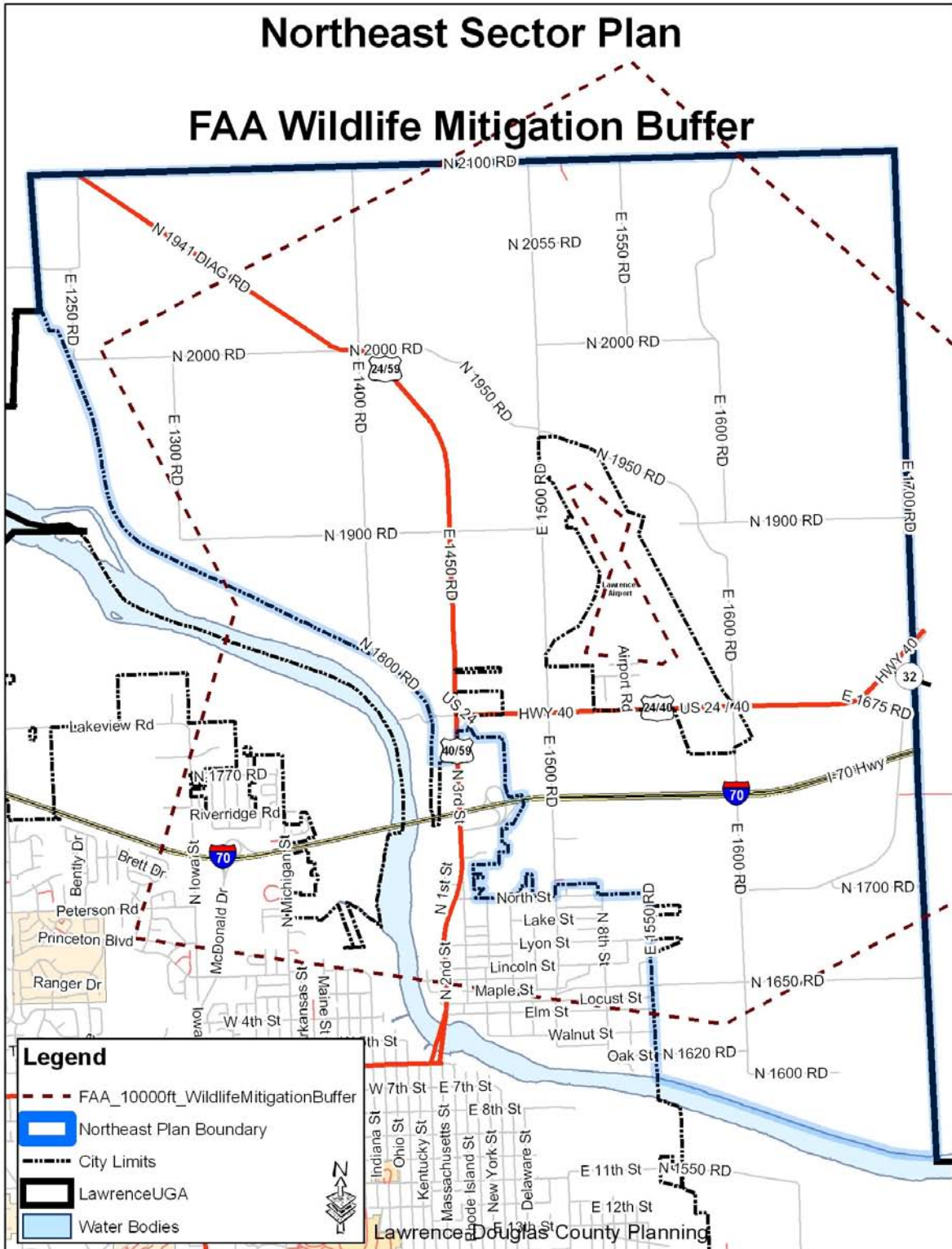




**Map 2-15 – Airspace Overlay Zones**



Map 2-16 – FAA Wildlife Mitigation Buffer



## Section 3 – Recommendations

The Northeast Sector Plan planning area is anticipated to develop with a range of uses and intensities that extend from agriculture to industrial uses. The more intensive industrial and commercial use areas are recommended where they are in close proximity to US 24/40 Highway and the airport. Agriculture uses are located in the majority of the planning area which is not anticipated to urbanize within the foreseeable future.

Compared to other areas of the fringe area of Lawrence, this area is not anticipated to be significantly urbanized.

Due to the area's unique challenges to development, including:

- Costly stormwater infrastructure needs as urbanization occurs
- Significant amounts of regulatory floodplain
- Significant amounts of Class 1 and 2 soils
- FAA Regulations and Lawrence Municipal Airport Protection Zones

Yet the planning area also benefits from the Lawrence Municipal Airport, nearby urban services, and access to I-70.

This plan recognizes the interconnectedness of these unique elements and proposes only limited urban development in the planning area.

### 3.1 Goals and Policies

Goals are broad statements of ideal future conditions that are desired by the community. Policies are guiding principles that provide direction for decisions to be made regarding the planning area in order to meet the goals. These policies are in addition to the policies in *Horizon 2020* and are only applicable to the property within the *Northeast Sector Plan* planning area.

#### 3.1.1 Land Use

**Goal:** Establish future land uses appropriate for the following unique characteristics of the area:

**The interaction of urban and rural lifestyles and development patterns**

**Multi-modal transportation system**

- Airport
- Highway 24/40/59
- Interstate 70
- Railroad

**Predominate agriculture use with existing industrial and commercial uses along the highways**

**Relatively flat terrain**

**Floodplain/stormwater challenges**

**KU Field Station and ecological reserves**

**Kansas River/Levee**

### **3.1.1.1 Policies**

#### **3.1.1.1.a General**

1. Establish an urban growth area boundary that considers the costs of urban development and that recognizes that the majority of the planning area will not develop in an urban manner during the time horizon of this plan.
2. Recognize that infrastructure challenges will limit urban growth in the planning area. Stormwater management costs identified by the North Lawrence Drainage Study are significant for urban development. The lack of slope of part of the planning area presents challenges for urban wastewater infrastructure and management.
3. Consider allowing alternate development standards for urbanized development that promote sustainable development– swales, no curb and gutter, pervious surfaces, etc. – that will limit the downstream impact of development.
4. Annex property in an orderly manner as urbanization of new development occurs. Further, consider annexing existing county industrial developments as utility issues in the area are better understood and as properties redevelop.

#### **3.1.1.1.b Agriculture Use**

1. Encourage continued agriculture use for the majority of the planning area, especially in areas with Class I and II soils and in the regulatory floodplain areas.
2. Encourage incentives/partnerships that assist the ongoing agriculture uses in the area.
3. Recognize that the impacts of farming – truck traffic, noises, etc. – are necessary and are not nuisances in the community.
4. Identify and create programs that promote continued agriculture use by supporting existing and new agriculture ventures.

#### **3.1.1.1.c Industrial/Employment Use**

1. Per Horizon 2020 Chapter 7 – Industrial and Employment-Related Land Use, designate and support the areas southwest of the Airport and north of I-70 as a future industrial area. Soil conserving agri-industry businesses that will protect the quality of existing high-quality agricultural land either through agricultural use or preservation for future agricultural use should be encouraged to locate in these areas.
2. Designate and support industrial/employment uses north of Highway 24/40 and west of the airport.
3. Per Horizon 2020 Chapter 7 – Industrial and Employment-Related Land Use, designate the Midland Junction area as a future industrial/employment area. Soil conserving agri-industry businesses that will protect the quality of existing high-quality agricultural land either through agricultural use or preservation for future agricultural use should be encouraged to locate in these areas. Adoption of Nodal Plan is encouraged prior to urbanizing and/or providing urban services to this site.
4. Support continued development of the Airport property for aviation-related businesses.
5. Require compatible land uses within FAA guidelines related to runway protection zones and wildlife mitigation.

#### **3.1.1.1.d Commercial Use**

1. Per Horizon 2020 Chapter 6 – Commercial Land Use, designate the intersection of E 1500 Rd. and Highway 24/40 as a future Neighborhood Commercial Center.
2. Allow future commercial uses, in addition to industrial/employment uses, at Midland Junction to provide a greater mix of uses to support highway travelers after Nodal Plan is adopted. Consider improvements to Highway 24/59 that address the safety of the curves as part of a future Nodal Plan.

#### **3.1.1.1.e Residential Use**

1. Rural residential (rural estate) uses are permitted in portions of the planning area and are encouraged if supporting agriculture uses.
2. Very low density residential uses are encouraged for the non-regulatory floodplain area between the North Lawrence neighborhood and I-70.

#### **3.1.1.1.f Open Space**

1. Protect the existing and future Kansas University Field Station and protect it from future development projects with tools such as appropriate buffers and land uses that will minimize the impact of neighboring development.
2. Encourage continued use of the Kansas River levee as an open space amenity.

#### **3.1.1.1.g Lawrence Urban Growth Area (UGA)**

1. Consider adjusting Lawrence's Urban Growth Area boundary by limiting it to those areas of Grant Township feasible for urban-type development through the analysis of this Sector Plan and the analysis of future water and wastewater master plans.

### **3.1.2 Environmental Resources**

**Goal:** Consider the unique environmental resources of the area when reviewing development applications. Environmental resources include:

**Class I and II soils**  
**Flat terrain**  
**Floodplain**  
**Groundwater/Wells**  
**KU Field Station and ecological reserves**  
**Kansas River/Levee**  
**Sand, gravel, topsoil, etc.**

#### **3.1.2.1 Policies**

##### **3.1.2.1.a Class I and II Soils**

1. Recognize Class I and II soils as valuable to this portion of Douglas County for its permeability (positive attribute for stormwater and flooding) and crop production capabilities.
2. Encourage the preservation of high quality agriculture land (Class I and II soils) through conservation programs, private/public partnerships, and other funding mechanisms.
3. Encourage private agriculture easements that will preserve high quality agriculture land in perpetuity.

##### **3.1.2.1.b Floodplain**

1. The City and County should consider developing and implementing higher regulatory standards that promote no adverse impact in regulatory flood hazard areas as shown on the Flood Insurance Rate Maps for Douglas County and within the Floodplain Overlay District for the City of Lawrence.
2. Development should not be allowed within the regulatory floodway.
3. Promote the natural and beneficial functions of the floodplain.
4. Encourage natural stormwater management.
5. Crop and animal agriculture uses are appropriate in the regulatory floodplain.

##### **3.1.2.1.c Groundwater**

1. Promote land management choices that limit the potential for negative groundwater impacts.
2. Minimize pollutants percolating into groundwater systems to help ensure the quality of the area's groundwater systems.
3. Provide educational opportunities regarding natural stormwater management features, Best Management Practices (BMPs) for stormwater structures and pollutant discharge, erosion and sediment control, and water quality.

##### **3.1.2.1.d Kansas University Field Station**

1. Encourage future development that is compatible with the Kansas University Field Station. Buffers and other methods may be necessary to mitigate the impacts of the built environment of future development projects in close proximity to the Field Station.
2. Promote the research and educational aspects of the Kansas University Field Station.

### **3.1.2.1.e Recreation**

1. Maximize recreation opportunities by developing trails that connect to focal points in the area and to the larger interconnected Lawrence and Douglas County network, including the Kansas River levee trail.

### **3.1.2.1.f Sand, gravel, topsoil, etc.**

1. Support the extraction of natural resources such as sand, gravel, topsoil, etc. if compatible with existing land uses, especially the Lawrence Municipal Airport and Kansas University Field Station, and if infrastructure can support the process of extraction.

### **3.1.3 Economic Development**

**Goal:** Promote economic development opportunities that take advantage of the unique characteristics of the area, which include:

#### **A multi-modal transportation system**

- Airport
- Highways 24/40/59
- Interstate 70
- Railroad

#### **Class I and II soils**

#### **Relatively flat terrain**

#### **Existing industrial and commercial businesses along the highways**

#### **KU Endowment land**

### **3.1.3.1 Policies**

#### **3.1.3.1.a Airport**

1. Support aviation-based development at the airport, and the necessary road and utility infrastructure, as an economic development generator for Lawrence and Douglas County.

#### **3.1.3.1.b Industrial/Employment**

1. Support goals and policies of Horizon 2020 Chapter 7 – Industrial & Employment Related Land Use and recognize that certain areas identified in Chapter 7 in the planning area are valuable to the goal of creating jobs for Douglas County.

#### **3.1.3.1.c Agriculture Economy**

1. Encourage public/private partnerships and programs to establish and support a sustainable local food program.
2. Establish incentives as part of a local food program that foster farm to table relationships.
3. Support the ag community by creating partnerships and programs that further economic development of an agricultural nature.
4. Per Horizon 2020 Chapter 7 – Industrial and Employment-Related Land Use, designate and support the areas southwest of the Airport and north of I-70 as a future industrial area. Soil conserving agri-industry businesses that will protect the quality of existing high-quality agricultural land either through agricultural use or preservation for future agricultural use should be encouraged to locate in these areas.
5. Designate and support industrial/employment uses north of Highway 24/40 and west of the airport.

#### **3.1.3.1.d KU**

1. Create partnerships with KU that help build the agricultural, research, aviation, and industrial businesses of the area.



### **3.1.4 Infrastructure**

**Goal:** Improve existing services for the area and recognize the infrastructure challenges posed by the unique characteristics of the area when considering development applications. The unique characteristics include:

**Relatively flat terrain**  
**Floodplain/stormwater challenges**  
**Township roads**

#### **3.1.4.1 Policies**

##### **3.1.4.1.a Existing Services**

1. Develop partnerships between Douglas County, Grant Township and the City of Lawrence for appropriate road maintenance programs in the planning area as development occurs.
2. When conditions warrant, the City should consider locating a fire station near the airport to improve emergency service for the airport, the North Lawrence neighborhood, and the remainder of Grant Township.
3. Heavy truck traffic from commercial and industrial development should use highways or improved roads for travel through the area.

##### **3.1.4.1.b Floodplain/Stormwater/Flat terrain**

1. Consider implementing alternate sustainable development standards to help reduce the cost of stormwater improvements needed for existing and future development.
2. The flat terrain in some parts of the planning area hinders storm drainage. Stormwater improvements identified in the North Lawrence Drainage Study should be constructed as development occurs in the area.
3. Implement appropriate stormwater management practices throughout the planning area.
4. Flat terrain poses cost challenges to providing sanitary sewer to the area. Consider alternative sewer solutions when prudent.

### **3.1.5 Transportation**

**Goal: Continue developing a multi-modal transportation system that supports the designated land uses of the area.**

#### **3.1.5.1 Policies**

##### **3.1.5.1.a Safety**

1. Work with KDOT to improve the Midland Junction Highway 24/59 curves to make the route safer for travelers.
2. Consider improvements to Highway 24/40 that facilitate easier turning movements onto and off of the highway – in particular at E 1500 Rd./N 7<sup>th</sup> Street and at the airport entrance.
3. Encourage on-going discussion with the railroad companies regarding rail crossing safety.

##### **3.1.5.1.b Trails/Pathways**

1. Develop a trail/bikeway system for the planning area that considers connecting to open space and recreation areas.
2. Include the planning area in the county-wide bikeway system map.
3. Identify and build pathways throughout the planning area.

## 3.2 Land Use

This section outlines the recommended land uses for the planning area. The future land use maps (Map 3-1) and land use descriptions are explained on the subsequent pages. The map is an illustration to help visually identify the recommended land uses in the Northeast Sector Plan planning area. The land use descriptions are more detailed information regarding the different land use categories. The official definitions and the permitted uses within each zoning district are outlined in the use tables that are located in the Zoning Regulations for the Unincorporated Territory of Douglas County and the *Land Development Code* for the City of Lawrence. The map and text descriptions must be used in conjunction with one another in order to obtain the complete recommendation for each particular area. The map is not intended to provide a scaleable map for determining specific land use/zoning boundaries within this area.

This plan encompasses a large area that for the most part is not intended to urbanize, and as such, a large area is designated Agriculture on the future land use map. There are a number of properties in the planning area that have existing county zoning designations other than Agricultural zoning. Some of those properties are shown on the future land use map to have a different future land use through possible future urbanization. There are also properties that have county industrial and business zoning, and that are currently developed, that are shown on the future land use map as industrial or commercial, reflecting their existing developed use.

There are other properties that have County industrial or business zoning, but that are not presently developed and that are outside the anticipated urbanization area of this plan, that are shown as Agriculture on the future land use map. It is important to note that this plan does not take away those properties' rights to develop under the current county zoning regulations. Properties with zoning other than Agricultural that seek to develop for a permitted use may do so without oversight of the future land use map of this plan as long as they receive the appropriate approvals to do so.

### 3.2.1 Land Use Descriptions

#### 3.2.1.1 Agriculture

The Agriculture classification is intended for those parts of the planning area not anticipated to urbanize over the course of the planning horizon. The primary existing use of this classification is agriculture uses such as row crops, livestock production, and pastureland. Secondary uses include residential and other uses allowed in zoning districts. The intent of the Agriculture classification is to allow for existing and future agriculture activities along with rural residential uses and other uses permitted by the Zoning Regulations of Douglas County. Existing uses that are not agriculture or residential, and that have the appropriate existing zoning for the use, are not affected because this policy classification is not changing the zoning on the property. The Agriculture classification contains regulatory flood hazard areas. Development on properties containing flood hazard area must comply with the flood plain regulations of Douglas County.

Density: Per Douglas County Zoning Regulations

Intensity: Very low

Zoning Districts: Douglas County - A (Agriculture District), "A-1" (Suburban Homes District)

Primary Uses: Agriculture, commercial greenhouse, commercial riding stable, grain storage structures, single-family dwellings, churches, schools, parks and open space and utilities.

#### 3.2.1.2 Very Low-Density Residential

The intent of the Very Low-Density Residential classification is to allow for large lot, single-dwelling type uses. The very low-density classification is expected to urbanize within the city of Lawrence.

Density: 1 or fewer dwelling units per acre

Intensity: Very low

Zoning Districts: Lawrence – RS40 (Single-Dwelling Residential), PD (Planned Development Overlay)

Primary Uses: Detached dwellings, cluster dwellings, manufactured home residential-design, zero lot line dwellings, group home, public and civic uses

#### 3.2.1.3 Neighborhood Commercial Center

A Neighborhood Commercial Center provides for the sale of goods and services at the neighborhood level. This commercial center is intended to serve the surrounding employment center area in addition to the commuters using Highway 24/40. *Horizon 2020*, Chapter 6 – Commercial Land Use offers more specific language regarding Neighborhood Commercial Centers. The Neighborhood Commercial Center classification is intended to urbanize around Highway 24/40 and E 1500 Rd. Other areas designated are rural and are not anticipated to urbanize.

Intensity: Medium-High

Zoning Districts: Douglas County – B-1 (Neighborhood Business District) and B-2 (General Business District); Lawrence – MU (Mixed Use), CN1 (Inner Neighborhood Commercial District), CN2 (Neighborhood Commercial Center District), PD (Planned Development Overlay)

Primary Uses: non-ground floor dwellings, civic and public uses, eating and drinking establishments, general office, retail sales and services, hotels, motels, gas and fuel sales, car wash

#### 3.2.1.4 Industrial

The intent of the Industrial category is to allow for moderate to high-impact uses including large scale or specialized industrial uses that utilize Highway 24/40 and I-70 for materials transportation. This category includes existing industrial developments in the area. This category also includes land at the airport dedicated to aviation related development. Land west of the airport and north of Highway 24/40 and south of Highway 24/40 is also classified as industrial. Soil conserving agri-industry businesses that will protect the quality of existing high quality agricultural land either through agricultural use or preservation for future agricultural use should be encouraged to locate in areas with Class I and II soils. The industrial category is expected to urbanize.

Intensity: Medium-High

Zoning Districts: Lawrence – IBP (Industrial and Business Park District) IL (Limited Industrial District), IG (General Industrial District), PD (Planned Development Overlay)

Primary Uses: Aviation-related uses, utility facilities, building maintenance services, fleet storage, business support services, construction sales and service, industrial facilities, wholesale, distribution, and storage, research services, manufacturing and production limited and technology, soil-conserving agri-businesses

#### 3.2.1.5 Airport

The intent of the Airport category is to designate the existing City-owned Lawrence Municipal Airport land and allow for aviation-related development.

Intensity: Medium-High

Zoning District: Lawrence – IG (General Industrial District)

Primary Uses: Aviation-related uses

#### 3.2.1.6 Public/Institutional

The intent of the Public/Institutional Use is to allow for public, civic, and utility uses.

Intensity: Variable

Zoning Districts: Douglas County – A (Agriculture District); Lawrence – GPI (General Public and Institutional)

Primary Uses: Cultural center/library, school, utilities, recreational facilities, utility services

#### 3.2.1.7 Kansas University Field Station

The intent of the KU Field Station Use is to classify the existing Kansas University property.

Intensity: Low

Zoning Districts: Douglas County – A (Agriculture District)

Primary Uses: crop agricultural, cultural center, teaching, active recreation, passive recreation, nature preserve, research

#### 3.2.1.8 Open Space

The intent of the Open Space classification is to provide future opportunities for public and private recreational facilities and natural area preservation. This category primarily includes regulatory floodway areas as well as regulatory floodplain areas that are not in the Agriculture Land Use classification.

Intensity: Low

Zoning Districts: Douglas County – A (Agriculture District), V-C (Valley Channel District); Lawrence – GPI (General Public and Institutional District), OS (Open Space), UR (Urban Reserve),

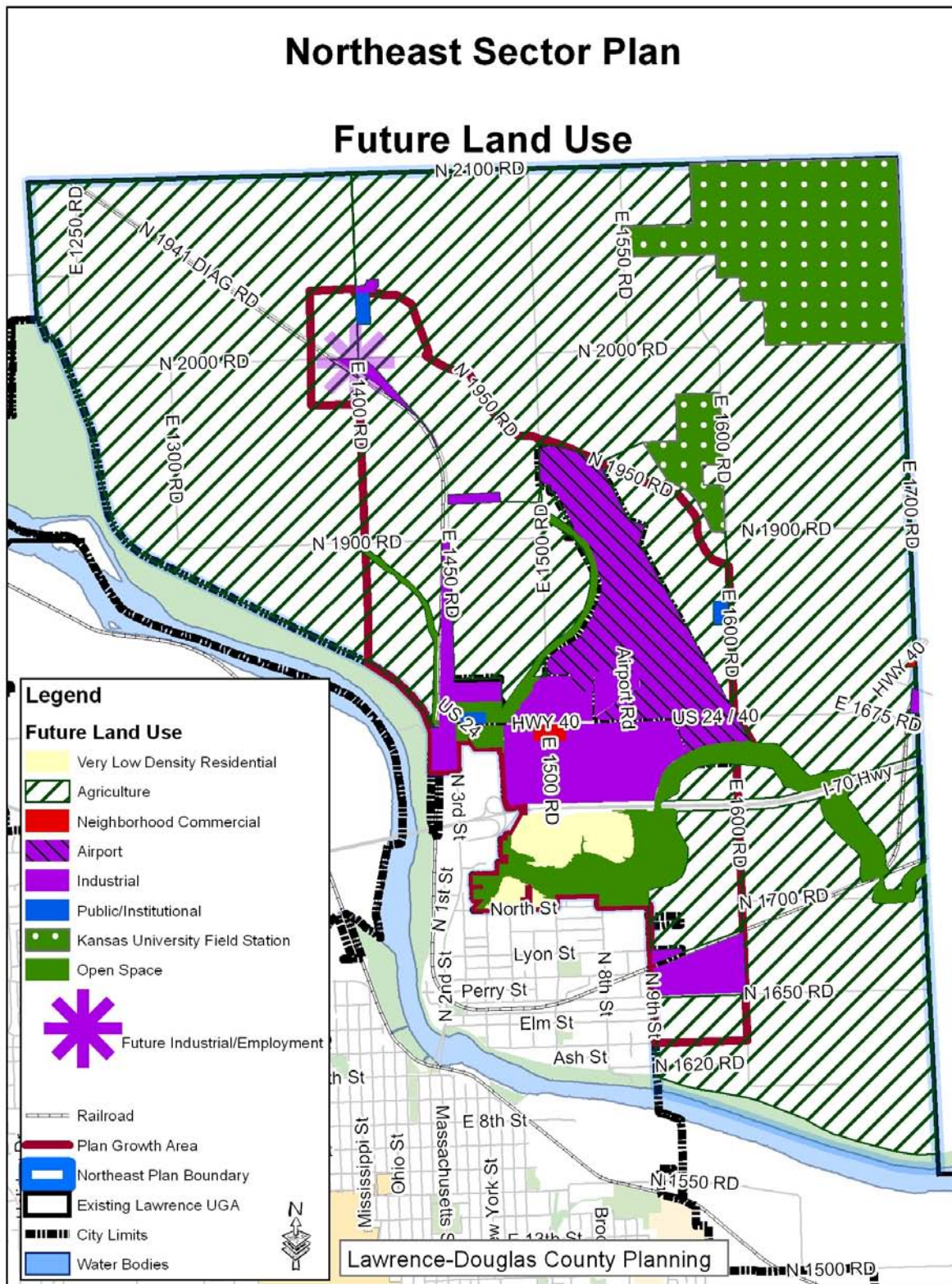
Primary Uses: crop agricultural, cultural center, schools, active recreation, passive recreation, nature preserve, entertainment and spectator sports, participant sports and recreation outdoor, private recreation

#### 3.2.1.9 Future Industrial/Employment

This classification recognizes the Midland Junction area as a future employment center. Although the area may or may not urbanize and support a larger employment base and possibly expanded commercial uses, this likely won't happen for at least 30 years (Per Horizon 2020 Chapter 7 Industrial and Employment Related Land Use).

A Nodal Plan will be required prior to the area substantially developing. A Nodal Plan will provide a detailed land use examination of the Midland Junction intersection. The Nodal Plan should determine future land use, including a consideration for some commercial land use. In addition to future land use, among the other issues the Nodal Plan should examine are: traffic safety issues with Highway 24/59, stormwater, and Class I and II soils.

Map 3-1 – Future Land Use



### **3.3 Implementation**

1. Amend *Horizon 2020* Chapter 6 - Commercial Land Use designate the Neighborhood Commercial Center at the intersection of E 1500 Road and US Highway 24/40 to the southern portion of the intersection of E 1500 Road and US Highway 24/40.
2. Reevaluate and update the Lawrence Urban Growth Area (UGA) in *Horizon 2020*.
3. Include the planning area in the future wastewater and water master plan updates.
4. Include the planning area in future long-range transportation plan updates.
5. Reassess the planning area in a Bikeway Map update to include connecting the open space areas to the greater trail network.
6. Consider implementing regulations that promote no adverse impact for floodplain management.



# Memorandum

## City of Lawrence – Douglas County Planning & Development Services

**To:** Douglas County Board of County Commissioners

**From:** Dan Warner, AICP, Long Range Planner

**Date:** For May 11, 2011 County Commission Meeting

**RE:** CPA-6-5-09: Consider Comprehensive Plan Amendment to Horizon 2020 Chapter 14 to include the Northeast Sector Plan.

The Douglas County Board of County Commissioners and the Lawrence City Commission held a joint study session on the Northeast Sector Plan on March 8, 2011. In the discussion of the plan a few issues were raised. This memo addresses those issues, as well as discusses the key issue for the Northeast Sector Plan.

### **Joint Study Session Issues**

1. Is the Plan Growth Area being used for the City's wastewater master plan update?  
Yes, the Plan Growth Area from Map 3-1 Future Land Use is the boundary being used for the study area in the wastewater master plan update.
2. Why not classify the existing Douglas County industrial zoned property south of I-70 as a future employment area instead of the Plan's Very Low Density Residential classification?  
Horizon 2020 Chapter 7 designates a future employment center for the area at land south of the airport and north of I-70. This plan used that assumption when classifying the area north of I-70 as a future employment center.

The area south of I-70 has not developed in an industrial manner despite the existing county industrial zoning. The development of the area is predominately agriculture, very low density residential and rural residential. City services are expected to be delivered to the area south of I-70 in the future. The Very Low Density Residential classification will direct development in a manner more in character with the existing development of the area (larger lot residential).

### **Main Issue of the Plan**

The most discussed element of the plan is how to classify the future land use of the property south of the airport and north of I-70. The Planning Commission considered this question during their deliberations and discussed three options during their meeting on September 20, 2010. The Commission chose Option 1 which deleted the proposed Soil Conserving Agri-Industry future land use category from the plan and designated the property south of the airport as Industrial, with language added to this category that encourages soil conserving agri-industry businesses to locate in areas with Class I and II soils. The Planning Commission desired the flexibility provided by the language, which also aligns with the language contained in Chapter 7.

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

PC Staff Report  
7/26/10

**ITEM NO. 4: CPA-6-5-09 (DDW)**

**CPA-6-5-09** Amend Horizon 2020, Chapter 14 list of specific plans, to include the Northeast Sector Plan.

**STAFF RECOMMENDATION:** Staff recommends approval of this comprehensive plan amendment to *Horizon 2020* by amending Chapter 14 – list of specific plans to add the Northeast Sector Plan description and also approving the plan for the City of Lawrence and unincorporated Douglas County and recommends forwarding this comprehensive plan amendment to the Lawrence City Commission and the Douglas County Board of County Commissioners with a recommendation for approval.

**STAFF RECOMMENDATION:** If appropriate, approve and sign Planning Commission Resolution 7-5-10.

**SUMMARY**

This comprehensive plan amendment (CPA) to *Horizon 2020*, Chapter 14, list of specific plans, to add the reference to the Northeast Sector Plan was initiated by the Planning Commission on June 24, 2009. This CPA will approve the plan and add to *Horizon 2020*, Chapter 14 the title of the plan, a description of the approximate planning area boundaries, approval dates, and the future review date.

**BACKGROUND**

Grant Township requested that a planning effort be undertaken for the area. The area has seen increased development pressure, most recently with a proposal for an industrial park south of Hwy. 24/40 and north of Interstate 70. The city owned Lawrence Municipal Airport is also within the planning area.

**STAFF REVIEW**

The Northeast Sector Plan is a sector plan for the Grant Township area north of Lawrence to the Douglas County line, containing approximately 10,640 acres. Most of the planning area is part of unincorporated Douglas County, but some of the property is within the corporate boundaries of Lawrence. This plan will help guide the county and city when making future land use decisions within the planning area. The plan will also help the public to visualize how the area may develop in the future.

The Northeast Sector Plan process kicked off with a public meeting on September 17, 2009. Property owners and other stakeholders were invited to attend the meeting. The participants in the kick-off meeting were asked to provide their input on the area's strengths, weaknesses, opportunities and threats. They also participated in a visioning exercise. Approximately 100 people attended the kick-off meeting.

The second public meeting was held on October 8, 2009. Participants were asked to review and prioritize the results of the kick-off meeting. Approximately 80 people attended the second public meeting. The third public meeting for the plan was held on November 5, 2009. Approximately 80 people attended the meeting and were asked to provide feedback on draft goals and policies and also participate in a future land use exercise.

The first draft of the plan was released on March 12, 2010. The first draft was presented in a public meeting on April 7, 2010. Approximately 60 people attended the meeting. A second draft of the plan was released on May 5, 2010.

The second draft was presented to the Lawrence-Douglas County Planning Commission at their mid-month meeting on May 12, 2010. The second draft was also presented to the Planning Commission for review and comment during their regular meeting on May 24, 2010. The Planning Commission took public comment and provided comments to staff.

Staff produced a third draft of the plan based on Planning Commission comments. The third draft is presented for Planning Commission review. Staff also produced a questions and answers document as a result of some of the questions asked at the May 24<sup>th</sup> Planning Commission meeting. The questions and answers are attached at the end of this staff report.

All property owners in the area, along with additional stakeholders, were invited to participate in the planning process. Public meetings were well attended. Written comments were received on early documents and also on the plan drafts.

The draft plan includes three sections; the introduction, existing conditions, and recommendations. The introduction sections states the purpose of the plan, a description of the planning area and a list of the policy framework. The existing conditions section describes the existing land uses, zoning patterns, infrastructure, environmental conditions, and community facilities within the planning area. The recommendations section includes goals and policies that were derived from public meeting input. The recommendations section also includes a future land use map with written descriptions of the future land use classifications. Finally, the recommendations sections includes implementation actions.

Included at the end of this staff report is the proposed amendment to Chapter 14 – list of specific plans. This amendment is intended to add the reference to the *Northeast Sector Plan* to the list of specific plans. Staff reviewed this amendment based upon the comprehensive plan amendment review criteria listed below which are identified in Chapter 17, Implementation, of *Horizon 2020*.

## **COMPREHENSIVE PLAN AMENDMENT REVIEW**

### **A. Does the proposed amendment result from changed circumstances or unforeseen conditions not understood or addressed at the time the Plan was adopted?**

The proposed amendment is a result of the changing circumstances that have occurred since the comprehensive plan was first written. At the time *Horizon 2020* was written, there was no Chapter 14, Specific Plans, or anywhere that approved ancillary land use plans were referenced.

This is a new plan that provides more clarity regarding the recommended future land use designations of the area and policies in the plan, the specific plans are recommended to be adopted as a part of the comprehensive plan. The plan is listed with a description of the approximate planning area boundaries, approval dates, and the future review date.

**B. Does the proposed amendment advance a clear public purpose and is it consistent with the long-range goals and policies of the plan?**

The proposed amendment is an advancement of a clear public purpose and is consistent with the long-range planning goals and policies of the community. The proposed amendment helps further the goals and policies by guiding development in the planning area while staying consistent with the overall intent of *Horizon 2020* and the goals and policies relating to residential land use, commercial land use, transportation, economic development, parks and recreation, and the various other components of the comprehensive plan. The amendment helps to provide a framework for future development and is more specific regarding policies for the planning area.

**C. Is the proposed amendment a result of a clear change in public policy?**

As rural areas around the fringe of Lawrence receive development pressure, there is a need to plan new areas for potential urban development. The planning process needs to occur before growth and redevelopment take place and clear guidance needs to be incorporated into the comprehensive plan which supports the community's goals. Chapter 14, Specific Plans, was a clear change to the comprehensive plan and to keep it up to date, the newly adopted land use plans need to be referenced to establish clear direction for the planning areas.

**PROFESSIONAL STAFF RECOMMENDATION**

Staff recommends approval of this comprehensive plan amendment to *Horizon 2020* by amending Chapter 14 – list of specific plans to add the Northeast Sector Plan description and also approving the plan for the City of Lawrence and unincorporated Douglas County and recommends forwarding this comprehensive plan amendment to the Lawrence City Commission and the Douglas County Board of County Commissioners with a recommendation for approval.

## **Northeast Sector Plan**

### Questions and Answers

#### **What is the purpose of this Sector Plan?**

- This Sector Plan is a document that sets policy for the future development of the planning area. The plan will be one of the tools used by the Board of County Commissioners, City Commission, and Planning Commission when reviewing development proposals. The Plan establishes owner and developer expectations for the future highest and best use of property taking into account the likelihood of City services being provided to the area; the historical growth pattern; the topographical elements (storm drainage); and other natural and manmade opportunities and constraints of the area (transportation, soils, etc.).

#### **Does this plan rezone property or otherwise change the approved existing uses for property within the planning area?**

- No, the plan does not rezone any property, nor does it annex any property. The approved existing uses for property will not change when this plan is adopted. The plan establishes reasonable expectations for appropriate future zoning and annexation of property.

#### **Does this plan remove any current/existing development rights?**

- No, properties will enjoy all of the rights currently available under the existing zoning.

#### **How could incentives work in the preservation of Class 1 & 2 soils?**

- There are programs available, such as Transfer of Development Rights, that have been successful in high growth regions; however, for many reasons such a program may not be successful in Douglas County. Most incentives will likely take the form of private or public/private programs that aim to hold the land in perpetuity. Examples include:
  - Conservation easements – may provide tax advantages to owners.
  - ECO<sup>2</sup> recommendations – if funded, soil preservation could be one of the types of land to preserve as a tradeoff to industrial development.
  - There may be opportunities for public/private programs yet to be established.

#### **Does this plan institute new rules for farming in the area?**

- No. This Sector Plan does not set forth any policy to encourage changes in farming practice.

#### **Does this plan create new rules for farming on Class 1 and 2 soils?**

- No. This Sector Plan does not set forth any policy to encourage changes in farming practice.

#### **What is the status of the Airport Master Plan update?**

- The City has made an application to the Federal Aviation Administration for the plan update, but Congress has not authorized funding. The anticipated start date is September, 2010 with completion in 9-12 months. It is not anticipated that the airport boundaries will significantly change.

**Is a new soil conserving agri-industry zoning district necessary to implement the plan?**

- Staff does not feel a new zoning district is necessary as soil conserving agri-industry businesses can be accommodated by both the County’s Zoning Regulations and also by the City’s Land Development Code. The plan is a guide and this concept is derived from Horizon 2020 – Chapter 7 which says: “Soil conserving agri-industry businesses that will protect the quality of existing high-quality agriculture land either through agriculture use or preservation for future agriculture use should be encouraged to locate” in those areas with high quality agriculture land, but does not mandate such. Determinations of whether a development project complies with the plan will be up to the appropriate governing body.

**What is soil conserving agri-industry?**

- Soil conserving agri-industry is a *future land use category for new development* that is explained in 3.2.1.4 of the Northeast Sector Plan :

**3.2.1.4 Soil Conserving Agri-Industry**

The intent of the Soil Conserving Agri-Industry category is to allow for soil conserving agriculture-related businesses that conserve and use the Class 1 and 2 Soils in the area and that take advantage of Highway 24/40 and I-70 for materials transportation. Soil conserving agri-industry business is a term with its basis found in Horizon 2020 Chapter 7 – Industrial and Employment-Related Land Use. This Plan seeks to better describe the intent of this classification. The distinction between the Soil Conserving Agri-Industry classification and Industrial/Employment classifications is the component of protecting and/or using existing high-quality agricultural land either through agricultural use or preservation for future agricultural use.

Protection of the soils through agriculture use or preservation can be implemented in different ways and the community should be open to creative ways that development projects could utilize this classification. Projects that could meet the value of this classification include, but are not limited to, the following: crop research, local food production, or small amounts of conventional industrial with large percentages of the soil protected or used for agriculture. The Soil Conserving Agri-Industry Use may or may not urbanize. This use is identified south of Highway 24/40 and also should be included at Midland Junction when a nodal plan is developed for that area.

**Intensity:** Medium-High

**Zoning Districts:** Douglas County – I-1 (Limited Industrial District) and I-2 Light Industrial District; Lawrence – IBP (Industrial and Business Park District) IL (Limited Industrial District), IG (General Industrial District), PD (Planned Development Overlay)

**Primary Uses:** Soil-conserving agri-businesses

- All four words of “Soil Conserving Agri-Industry” need to be used together when discussing this land use classification. For example, a meat packing plant is an agriculturally-related industrial use, but it does not conserve soil. A crop research business that has a couple of buildings and is growing crops for research on the majority of the property would be considered a soil conserving agri-business.

**How does stormwater around the airport currently drain?**

- Staff will present a graphic at the July Planning Commission meeting.

## **Insert Northeast Sector Plan (*Horizon 2020* Page 14-3)**

### **Specific Plans**

- **6th and SLT Nodal Plan**  
**Location:** The intersection of 6<sup>th</sup> Street (US Highway 40) and the SLT (South Lawrence Trafficway)  
**Adoption Date:** November 11, 2003 by Lawrence City Commission  
**Review Date:** 2009
  
- **6<sup>th</sup> and Wakarusa Area Plan**  
**Location:** The intersection of 6<sup>th</sup> Street and Wakarusa Drive  
**Adoption Date:** December 2, 2003 by Lawrence City Commission  
**Review Date:** 2009
  
- **HOP District Plan**  
**Location:** Bordered by W. 5<sup>th</sup> St. on the north, California St. on the west, W. 7<sup>th</sup> St. on the south and Alabama St. on the east.  
**Adoption Date:** May 10, 2005 by Lawrence City Commission  
**Review Date:** 2010
  
- **Burroughs Creek Corridor Plan**  
**Location:** Area around the former BNSF railroad corridor between E. 9<sup>th</sup> St. and E 31<sup>st</sup> St.  
**Adoption Date:** February 14, 2006 by Lawrence City Commission  
**Review Date:** 2011
  
- **East Lawrence Neighborhood Revitalization Plan**  
**Location:** Bordered by the Kansas River on the North; Rhode Island Street from the Kansas River to E. 9<sup>th</sup> Street, New Hampshire Street from E. 9<sup>th</sup> Street to approximately E. 11<sup>th</sup> Street, Massachusetts Street from approximately E. 11<sup>th</sup> Street to E. 15<sup>th</sup> Street on the west; E. 15<sup>th</sup> Street on the south; BNSF railroad on the east.  
**Adoption Date:** November 21, 2000 by Lawrence City Commission  
**Review Date:** 2010
  
- **Revised Southern Development Plan**  
**Location:** Bounded roughly to the north by W. 31<sup>st</sup> Street and the properties north of W. 31<sup>st</sup> Street between Ousdahl Road and Louisiana Street; to the west by E. 1150 Road extended( Kasold Drive); to the south by the north side of the Wakarusa River; and to the east by E. 1500 Road (Haskell Avenue).  
**Adoption Date:** December 18, 2007 by Lawrence City Commission  
January 7, 2008 by the Douglas County Board of Commissioners  
**Review Date:** 2017

- **Southeast Area Plan**
  - Location:** Bounded roughly to the north by E. 23<sup>rd</sup> Street/K-10 Highway; to the west by O'Connell Road; to the south by the northern boundary of the FEMA designated floodplain for the Wakarusa River; and to the east by E. 1750 Road (Noria Road).
  - Adoption Date:** January 8, 2008 by Lawrence City Commission  
January 28, 2008 by the Douglas County Board of Commissioners
  - Review Date:** 2018
  
- **Farmland Industries Redevelopment Plan**
  - Location:** The former Farmland Industries property is located east of Lawrence along K-10 Highway and just west of the East Hills Business Park. It is approximately one half mile south of the Kansas River.
  - Adoption Date:** March 11, 2008 by Lawrence City Commission  
March 31, 2008 by Douglas County Board of Commissioners
  - Review Date:** 2013
  
- **K-10 & Farmer's Turnpike Plan**
  - Location:** Generally located around the intersection of I-70 and K-10 and to the east approximately four miles.
  - Adoption Date:** December 9, 2008 by Lawrence City Commission  
January 7, 2009 by Douglas County Board of Commissioners
  - Review Date:** 2019
  
- **Lawrence SmartCode Infill Plan**
  - Location:** General areas are: 19<sup>th</sup> St. and Haskell Ave., 23<sup>rd</sup> St. and Louisiana St.
  - Adoption Date:** January 27, 2009 by Lawrence City Commission  
February 23, 2009 by Douglas County Board of Commissioners
  - Review Date:** 2019
  
- **West of K-10 Plan**
  - Location:** Generally located north and south of Highway 40 and west of K-10 Highway. It does contain some land east of K-10 Highway
  - Adoption Date:** June 9, 2009 by Lawrence City Commission  
May 6, 2009 by Douglas County Board of Commissioners
  - Review Date:** 2019
  
- **Northeast Sector Plan**
  - Location:** Generally located north and east of Lawrence and the Kansas River to the Douglas County line.



# Memorandum

## City of Lawrence – Douglas County Planning & Development Services

**TO: Lawrence-Douglas County Planning Commission**

**FROM: Dan Warner, AICP, Long Range Planner**

**Date: For September 20, 2010 Regular PC Meeting**

**RE: Northeast Sector Plan – Options for the Soil Conserving Agri-Industry Category**

The Planning Commission took public comment and discussed the Northeast Sector Plan at their regular meeting on July 26, 2010. The Commission directed Planning Staff to develop options for the Soil Conserving Agri-Industry future land use category.

The following two options are presented for consideration by the Planning Commission:

### **Option #1**

Delete the Soil Conserving Agri-Industry category and change the area south of Highway 24/40 designated as such to the Industrial category. Add language to the Industrial category encouraging soil conserving agri-industry businesses to locate in areas with Class I and II soils. This reflects more directly the policies of Chapter 7 in *Horizon 2020*.

#### ~~3.2.1.4 Soil Conserving Agri-Industry~~

~~The intent of the Soil Conserving Agri-Industry Use category is to allow for soil conserving agriculture-related industrial uses businesses that conserve and use the Class 1 and 2 Soils in the area and that take advantage of Highway 24/40 and I-70 for materials transportation. Soil-conserving agri-industry business is a term with its basis found in Horizon 2020 Chapter 7 – Industrial and Employment Related Land Use. This Plan seeks to better describe the intent of this classification. The distinction between the Soil Conserving Agri-Industry classification and Industrial/Employment classifications is the component of protecting and/or using existing high-quality agricultural land either through agricultural use or preservation for future agricultural use.~~

~~Protection of the soils through agriculture use or preservation can be implemented in different ways and the community should be open to creative ways that development projects could utilize this classification. Projects that could meet the value of this classification include, but are not limited to, the following: crop research, local food production, or small amounts of conventional industrial with large percentages of the soil protected or used for agriculture. The Agri-Industry Use may or may not urbanize. This use is~~

~~identified south of Highway 24/40 and also should be included at Midland Junction when a nodal plan is developed for that area.~~

~~Intensity: Medium-High~~

~~Zoning Districts: Douglas County – I-1 (Limited Industrial District) and I-2 Light Industrial District; Lawrence – IBP (Industrial and Business Park District) IL (Limited Industrial District), IG (General Industrial District), PD (Planned Development Overlay)~~

~~Primary Uses: Soil conserving agri-businesses~~

### 3.2.1.8~~4~~ Industrial

The intent of the Industrial [Use category](#) is to allow for moderate to high-impact uses including large scale or specialized industrial uses that utilize Highway 24/40 and I-70 for materials transportation. This category includes existing industrial developments in the area. This category also includes land at the airport dedicated to aviation related development. Land west of the airport and north of Highway 24/40 [and south of Highway 24/40](#) is also ~~designated~~ [classified](#) as industrial. [Soil conserving agri-industry businesses that will protect the quality of existing high quality agricultural land either through agricultural use or preservation for future agricultural use should be encouraged to locate in areas with Class I and II soils.](#) The industrial ~~use classification~~ [category](#) is expected to urbanize.

Intensity: Medium-High

Zoning Districts: Lawrence – IBP (Industrial and Business Park District) IL (Limited Industrial District), IG (General Industrial District), PD (Planned Development Overlay)

Primary Uses: Aviation-related uses, utility facilities, building maintenance services, fleet storage, business support services, construction sales and service, industrial facilities, wholesale, distribution, and storage, research services, manufacturing and production limited and technology, [soil-conserving agri-businesses](#)

### **Option #2**

Retain the Soil Conserving Agri-Industry category. Add language to the description that creates a specific ratio to protect Class 1 and 2 soils when developing in that category.

### 3.2.1.4 [Soil Conserving](#) Agri-Industry

The intent of the [Soil Conserving](#) Agri-Industry [Use category](#) is to allow for [soil conserving](#) agriculture-related industrial uses [but permit other, more conventional industrial uses, as long as a high percentage of a development's Class I and II soils land area is protected.](#) ~~businesses that conserve and use the Class 1 and 2 Soils in the area and that take advantage of Highway 24/40 and I-70 for materials transportation.~~

[Soil conserving agri-industry business is a term with its basis found in Horizon 2020 Chapter 7 – Industrial and Employment-Related Land Use. This Plan seeks to better describe the intent of this classification. The distinction](#)

between the Soil Conserving Agri-Industry classification and Industrial/Employment classifications is the component of protecting and/or using existing high-quality agricultural land either through agricultural use or preservation for future agricultural use.

Protection of the soils through agriculture use or preservation can be implemented in different ways and the community should be open to creative ways that development projects could utilize this classification. ~~Projects that could meet the value of this classification include, but are not limited to, the following: crop research, local food production, or small amounts of conventional industrial with large percentages of the soil protected or used for agriculture.~~ Projects must set aside, protect, or use a minimum of 50% of the Class I and II soils on the property being developed for agriculture use. This protection must take the form of a conservation easement or some other legal instrument mandating perpetual protection. The Soil Conserving Agri-Industry Use may or may not urbanize. This use is identified south of Highway 24/40 and also should be included at Midland Junction when a nodal plan is developed for that area.

Intensity: Medium-High

Zoning Districts: Douglas County – I-1 (Limited Industrial District) and I-2 Light Industrial District; Lawrence – IBP (Industrial and Business Park District) IL (Limited Industrial District), IG (General Industrial District), PD (Planned Development Overlay)

Primary Uses: Soil-conserving agri-businesses, aviation-related uses, utility facilities, building maintenance services, fleet storage, business support services, construction sales and service, industrial facilities, wholesale, distribution, and storage, research services, manufacturing and production limited and technology

**ITEM NO. 4 COMPREHENSIVE PLAN AMENDMENT; H2020 CHP 14; NORTHEAST SECTOR PLAN (DDW)**

**CPA-6-5-09:** Consider Comprehensive Plan Amendment to Horizon 2020 – Chapter 14 to include the Northeast Sector Plan. *Deferred by Planning Commission on 7/26/10.*

**STAFF PRESENTATION**

Mr. Dan Warner presented the item.

Commissioner Harris asked if in Option 2 the name of the category would be Agri-Industry but would permit other kinds of industrial uses.

Mr. Warner said that was correct, it clarified that industrial uses were appropriate but mandates setting aside 50% of the soil in perpetual protection.

Commissioner Harris asked Mr. Matt Bond what the area would look like if it was 50% farming and 50% industrial. She asked if the industrial sites would have to be built up to meet other codes.

Mr. Matt Bond, City Stormwater Engineer, said it would be based on where it falls on the FEMA floodplain map. He showed area floodplain maps on the overhead.

Commissioner Harris asked if more conventional industry, not agri-industry, are built in that area and the land next to it is saved would it affect the quality of the land that is trying to be protected.

Mr. Bond said as far as additional runoff, yes. He said impervious surface creates more runoff downstream.

Commissioner Rasmussen inquired about the language in the definition of Industrial that says *'Land west of the airport and north of Highway 24/40 and south of Highway 24/40 is also....'* He wondered if the word 'and' should be 'or' instead.

Mr. Warner said the language describes two areas so he suggested adding a comma: *'Land west of the airport and north of Highway 24/40, and south of Highway 24/40 is also....'*

Commissioner Rasmussen asked if it would be possible to just reference the map instead of having a written description.

Mr. Warner said that was possible.

Mr. McCullough said they have typically tried to include a narrative in the map. Option 1 is depicting a change in land use classification for the area south of 24/40. The narrative talks about the existing industrial developments and also the undeveloped land. He said it was a matter of wordsmithing or referencing a map.

Commissioner Blaser asked that public comments be kept to the options proposed tonight.

**PUBLIC HEARING**

Mr. Hank Booth, Lawrence Chamber of Commerce, said he was amazed at the patience and calm determination of the people who have lived and farmed the area for generations. He said he has attended all the meetings outside of Planning Commission and has left some of those meetings with the sense that farmers can't be trusted or are somehow incompetent when it comes to making sure the land is well cared for. He thanked staff for providing Option 1 and that a large number of people are in favor of proceeding with at this level. He said after a decade of basic zero job growth in Douglas County that every opportunity to move forward in job creation was needed. He did not believe that using Option 1 would jeopardize that opportunity.

He said Option 1 most closely represents what was originally passed in Horizon 2020. He asked that Planning Commission support Option 1.

Mr. Roger Pine, Pine Family Investments, was pleased and felt encouraged after working on this for a year and a half. He said he was in favor of Option 1 and felt it gave land owners options to have choices in how they use the land. He showed a map of land owners who supported Option 1. He said the green areas on the map were equal to 5,000 acres of the 7,000 acres that staff identified as agricultural land.

Commissioner Rasmussen asked Mr. Pine to clarify the green areas on his map.

Mr. Pine said the green areas of the map identify agricultural land that owners are in support of Option 1.

Mr. Matt Eichman, Midwest Concrete Materials, said he was one of the land owners on the map that Mr. Pine showed in favor of Option 1. He said Option 1 still includes language specific to class 1 and 2 soils. He said at the last meeting he went into detail about other resources being important. He requested an amendment to take out specific language of class 1 and 2 soils and add language that protects all natural resources in the area.

Mr. Charles Novogradac, Chestnut Charlie's, owns land on other side of Maple Grove. He said he did not sign the letter Mr. Pine mentioned in favor of Option 1. He was concerned about drainage. He said drainage follows from capability of the soils. He said at an earlier meeting he tried to explain that the soaking up capability of capability 1 lands is much greater than capability 2 lands. He said since 1995 when he started planting his tree crop, all the absorbing capability of the soil in that drainage district was being sucked up by other development. He said when he started his tree crop the FEMA floodplain did not touch his land but the most recent map has the FEMA touching his land. He was concerned the incremental development of the area and felt that industrial development may conflict with his ability to grow crops.

Ms. Barbara Clark, owns 47 acres in Grant Township, said the dynamics of the water issues in the area was changing at a rapid clip. She said Citizens for Responsible Planning was still in favor of the original 3<sup>rd</sup> draft proposal as presented at the July meeting. She said she could not support Option 1 because flooding concerns for the area were high. She said any impervious surface on those soils would exacerbate flooding issues already affecting the North Lawrence community. She showed a map on the overhead of planned growth areas. She said the total acres of capability class 1 and 2 soils in the planned growth area was 93.56%. She said that was a staggering figure of contiguous class 1 and 2 soils. She was not in favor of dropping out language regarding the preservation of class 1 and 2 soils.

Commissioner Singleton asked which language Ms. Clark preferred.

Ms. Clark said she preferred the language in the original 3<sup>rd</sup> draft as presented.

Commissioner Singleton asked what her concerns were with the 2<sup>nd</sup> draft.

Ms. Clark said her greatest concern was clarification of just what that might be. It would come down to this body deciding whether they were compatible uses.

Commissioner Dominguez asked if there was a percentage she was willing to compromise with.

Ms. Clark said that was difficult without having an actual application to look at. She thought the soil conserving agri-industry language was stronger and a much better language rather than trying to look at a percentage.

Commissioner Liese said it seemed that one of the biggest controversies was what an agri-industry was. He asked what Ms. Clark would consider an agri-industry business.

Ms. Clark said it would have to be all four words, soil conserving agri-industry. She said the seed research being done on a lease basis on that land is a soil conserving agri-industry. She said the Endowment has also initiated a native medicinal plant area.

Commissioner Dominguez asked staff to confirm the numbers Ms. Clark came up with for class 1 and 2 soils.

Mr. McCullough said staff has not studied them in that way.

Mr. Ted Boyle, President of North Lawrence Improvement Association, said he was representing approximately 2,500 North Lawrence residents. He expressed concern about class 1 and 2 soils and storm drainage. He felt they went hand in hand. He said as a result of the 1993 flood the City built a big pump on North 2<sup>nd</sup> Street in 1995. He said that pump today is small, overwhelmed, and over capacity. He said the residents of North Lawrence were not worried about the river flooding, but rather a 1-2" rainstorm in a short time creating a lot of storm water runoff. He said North Lawrence has endured stormwater flooding for 15 years and was concerned about more runoff due to development.

Mr. Frank Male said he owns two businesses in North Lawrence as well as three industrial properties and three single-family homes with basements in North Lawrence. He said he was deeply invested in North Lawrence. He said drainage was a prime consideration. He said as part of the City's drainage study in 2005 two pumps will be installed at 5<sup>th</sup> & Maple Street and he felt that would be a tremendous help to North Lawrence. He liked Option 1. He said the area was a good transportation hub.

Commissioner Liese asked Mr. Male if he had seen any basement flooding.

Mr. Male said no.

Commissioner Dominguez inquired about benefit of his property value.

Mr. Male felt Option 1 benefited the entire community. He said his true interest was economic development.

Mr. Bill Woods said he was a professor in the Geography Department and Courtesy Professor in the Anthropology Department at KU. He said his research specialty was human influences on soils through time. He said soils were really a nonrenewable and finite resource and they are the most important resource. He said they were being called upon to produce ever more as populations rise and that they are increasingly under pressures throughout the world and are degrading. He felt that every effort must be made to adversely impact highly productive soils and put them into other uses. Almost always these alternate, less productive sites exist for whatever alternate uses are proposed. He was highly dismayed by what he has seen during his 40 years of working with agricultural soils in this hemisphere and felt the US should lead in efforts to protect productive soils. He said generally, an alternative use has a finite lifetime of a few years or at most decades and then is done. Soils have been destroyed in the meantime and the site from an agricultural standpoint is worthless. He said as stewards for future generations they need to think beyond this time scale and look to the future. Productive soils, with proper treatment, have proved to be resilient for hundreds, if not thousands of years. He urged the Commission to do everything in their power to aid in the effort to protect these fertile soils.

Ms. Sue Pine said the hardest vote she ever made while serving on Planning Commission was to expand the Urban Growth Area. She said Douglas County needed a tax base to support the community and to do that they needed to expand the urban growth area to the Douglas county line. She said she was not sorry for her decision. She said this area was important to the community. She felt they needed to allow the entire area to develop. She said soils were great but that climate and irrigation were contributing factors to the quality of those soils.

Mr. Jim Congrove said he signed the letter in support of Option 1. He provided data compiled by the Sustainable Agriculture Specialist at K-State. The study focused on 51,518 acres of class 1 cropland between

Manhattan and Kansas City that could support local food production. He said climate was the limiting factor, not soil, as far as local food production. He said class 1 was not necessarily the best for some crops like melons.

Mr. Pat Ross said he owns 450 acres within the Northeast Sector Plan. He felt Option 1 gave direction to staff and the Commission that was easy to understand and directly reflects the policies of Chapter 7 and Horizon 2020. He felt it eliminated the controversial grey area of what fits in the soil conserving agri-industry category. He also felt it allowed staff and Commissioners to be proactive not reactive.

Commissioner Harris asked about his comment regarding eliminating confusion about soil conserving.

Mr. Ross felt the way it was presented in Option 1 was easier to understand that it would be encouraged but not demanded.

Ms. Crystal Hammerschmidt said Lawrence has a wonderful community of young growers and she was in favor of soil conservation for food production.

Mr. Ken Holladay said he grew up in North Lawrence. He owns farm land and wants to be able to do with it what he wants and not be confined even though agricultural was the current use.

Mr. Jerry Jost, resident of Grant Township, wondered why the area wasn't already developed since it has all the assets of transportation, airport, railroad, etc. He felt it hadn't already been developed due to flooding. He said there were better places to invest limited public resources for industrial development. He supported the original 3<sup>rd</sup> draft of the plan.

Ms. Debbie Milks, Chestnut Charlie's, said their business was not a hobby, it was 15 years worth of investment. She said if soil was covered by parking or development she would be drown out of business. She supports the original 3<sup>rd</sup> draft.

## **COMMISSION DISCUSSION**

Commissioner Blaser said that Ms. Gwen Klingenberg requested item 6 be deferred.

Motioned by Commissioner Harris, seconded by Commissioner Finkeldei, to defer item 6 to the next Planning Commission meeting.

Motion carried 9-0. Student Commissioner Davis voted in the affirmative.

Commissioner Finkeldei said he didn't hear support for Option 2. He agreed that class 1 and 2 soils were important and should be protected but there were competing concerns. He felt that Option 1 was consistent with what was approved in Chapter 7. He said draft 3 expanded that language greatly and he does not support draft 3. He said he supported Option 1.

Commissioner Liese asked for input on stormwater and flooding.

Mr. Bond said everything (water) off of E 1500 Road goes to the east. He said everything (water) on the west side of E 1500 Road ends up in Maple Grove Drainage the way it is now.

Commissioner Finkeldei asked if a development plan could include improvements to mitigate.

Mr. Bond said some of it could be kicked east by putting in a culvert pipe under 7<sup>th</sup> Street based off of the ridgeline and then upsize the pumps at the 2<sup>nd</sup> Street pump station.

Commissioner Burger asked staff to comment about Ms. Pine's comments about water rights for irrigation.

Mr. McCullough said he did not have any information about water rights on irrigation and said that was the first time they had heard that issue.

Commissioner Harris asked Mr. Bond about the improvements he just mentioned and how much they would cost and if it could be funded by a developer.

Mr. Bond said the cost would be determined by the size of the pump. He said as far as a small drainage culvert it would probably be \$50,000-\$100,000.

Commissioner Rasmussen asked how many acres in the entire Northeast Sector area were class 1 and 2 soils.

Mr. Warner said he did not have that information right at hand.

Commissioner Carter said it was easy to get emotional and think they are overdoing things as far as growth goes but he didn't think it was a choice of drowning or not drowning Chestnut Charlie's or other businesses out there. He said the site planning process would address issues of flooding. He said even if they choose Option 1 they are not committing to send the infrastructure out there to develop it they are just allowing it to be an option for the future.

Commissioner Harris responded to Commissioner Liese's question about stormwater. She said if the area that's agri-business is developed more intensely than talked about before, not only would they be adding more impervious surface but they would be taking away the soil that retains water so well. She said that Mr. Bond mentioned earlier that there would be a problem if a stormwater detention area was built because it would attract water fowl. She said the vision she has for the area would be very limited buildings and a lot of land saved. She did not think Option 1 did that and had way too much leeway for development of the area and that there would be a potential for problems with stormwater because of that. She said she could not support Option 1. She said she would support the original language but did not think it was perfect.

Commissioner Singleton said she would not support Option 1 and preferred draft 3. She felt they needed to look past traditional job growth and encourage preserving the soil to be used for innovative green types of industry. She felt this would be a win-win for future generations as well as for the economy. She said they needed to change the way they look at growth. She did not think the language in Option 1 was the best for future generations.

Commissioner Liese inquired about language under Option 1: *'Add language to the Industrial category encouraging soil conserving agri-industry businesses to locate in areas with class 1 and 2 soils.'* He wondered what the 'encouraging' part meant.

Commissioner Finkeldei said the language in Option 1 was almost word for word from Chapter 7. He said they don't know exactly what 'soil conserving agri-industry' meant except that they want to encourage it.

Commissioner Rasmussen said the Northeast Sector Plan encompasses a very large area of 10,640 acres and considers a number of potential uses in that area. All of the discussions have focused on less than 200 acres out of the 10,000 acres. He said the reality is that the 200 acres is best suited for industrial use. It's bounded by highways, close to airport and railroad. He said Option 1 makes the most sense from a Planning perspective and he would support it.

Commissioner Dominguez agreed with Commissioner Rasmussen's comments. He said he is pro-business. He said Sector Plans change lives. He said he would support the original language.

Commissioner Blaser said they are not asking anyone to change their lives if they don't want to. He said he would support Option 1 because it gives options to the landowner.



Commissioner Finkeldei said just because he would vote against it doesn't mean the land would go away and doesn't mean he don't care about class 1 and 2 soils. He said 200 acres was the total area but once building starts there would be setbacks, stormwater, etc so it would actually only be built on a small fraction of the 200 acres.

**ACTION TAKEN**

Motioned by Commissioner Finkeldei, seconded by Commissioner Carter, to approve the Northeast Sector Plan (CPA-6-5-09) with the addition of Option 1 as set forth in the staff memo for item 4.

Motion carried 5-4, with Commissioners Burger, Dominguez, Harris, and Singleton voting in opposition. Commissioners Blaser, Carter, Finkeldei, Liese, and Rasmussen voted in favor of the motion. Student Commissioner Davis abstained.

Motioned by Commissioner Finkeldei, seconded by Commissioner Carter, to approve and authorize the Planning Commission Chair to sign PC Resolution (PC-7-5-10).

Motion carried 5-4, with Commissioners Burger, Dominguez, Harris, and Singleton voting in opposition. Commissioners Blaser, Carter, Finkeldei, Liese, and Rasmussen voted in favor of the motion. Student Commissioner Davis abstained.

**ITEM NO. 4      COMPREHENSIVE PLAN AMENDMENT; H2020 CHP 14; NORTHEAST SECTOR PLAN (DDW)**

**CPA-6-5-09:** Consider Comprehensive Plan Amendment to Horizon 2020 – Chapter 14 to include the Northeast Sector Plan.

**STAFF PRESENTATION**

Mr. Dan Warner presented the item.

**PUBLIC HEARING**

Mr. Hank Booth, Lawrence Chamber of Commerce, ask that this item be deferred. He said there are two commissioners absent who have been in on these meetings from the beginning and their expertise should be heard. He also stated there are two new commissioners who just joined the Planning Commission. He felt that the Airport Master Plan should be completed first. He said people in the agri-industry have concerns about future use. He said the Douglas County budget is still being worked on and land preservation is important. He said even with 500 acres designated for something in the industrial or business component, set aside for some sort of future compromise, would still leave approximately 95% of type 1 and 2 soils undisturbed.

Mr. Roger Pine, Pine Family Investment, owns 340 acres in Grant Township. About half of that land is being designated as soil conserving agri-industry. He said the staff report states that the definition of soil conserving agri-industry says all four words need to be used together when discussing this land use. He said staff gives the example of a meat packing plant as not being acceptable and a crop research business as being acceptable. He said Grant Township has a research facility, Pioneer International, that does not own the building or property they are on. He said they do not do any research on adjoining land around the facility. They lease research sites annually according to their needs. He felt this was not a good example of a soil conserving agri-industry because it did not meet the criteria. He said he could not think of anything that would work in this area related to agriculture other than traditional farming. He was concerned about having 170 acres designated to something that cannot be used in a way other than what is currently being done. He discussed concerns about drainage issues. He felt that if 65 acres south of Hwy 40 were designated Industrial drainage issues would be addressed. He said he expressed his opinions to Mr. Matt Bond, City Stormwater Engineer. He said farmers eventually have to retire and selling land is their 401K. He said his property is most ideal for development because of access to transportation. He felt this was an opportunity for economic development for the community. He said in preparation for the Airport Master Plan the City is forming a steering committee and a new consultant may mean more changes at the airport. He said there have been talks about acquiring adjacent property.

Commissioner Carter asked Mr. Pine if he spoke with Mr. Bond about the drainage study and that if what Mr. Pine found was not reflected in the study.

Mr. Pine said he discovered that the water would not go to North Lawrence, it would drain to the east.

Commissioner Singleton asked where Mr. Pine thought drainage should be if not to the east.

Mr. Pine felt there should be infrastructure in place to get the water to Mud Creek instead of meandering through private property.

Mr. Lew Phillips said his family owns 250 acres of farmland in the Midland Junction area. He felt the proposed limitations on development would add to the perception of Douglas County being business unfriendly. He felt that Douglas County needs more Industrial tax base. Nowhere else in Douglas County is it possible to offer the transportation advantages that could be developed in the northeast sector. He said he would support having the item deferred for further review.

Mr. Ken Reiling said he owns 60 acres at the east end. He felt that the Airport Master Plan data should be included. He said that soil conserving agri-industry is extremely narrow, vague, and confusing when used to define a land use classification. He asked staff to draft a list of potential agri-industries which may be attracted to the infrastructure of Grant Township. He asked if a tractor supply store or a seed processing plant would be allowed in this designation. He would like to see more long range plans for police and fire protection. He also felt there should be complete separation of bicycles and vehicles for the general public safety.

Ms. Dorothy Congrove said she owns 235 acres in Grant Township. She felt that very little of the property owners opinions have been incorporated into Northeast Sector Plan. She felt the definition of soil conserving agri-industry was too restrictive. She said she was not advocating development without standards. She said the soil conserving agri-industry designated area is closest to the city. She asked that the plan be deferred.

Mr. Bart Hall said he farms Kansas River Bottom land and also a soil scientist by training. He said he does not take any Federal farm program subsidy for which he is eligible. He said he rejects the premise that farming is something that is done with land while waiting for a higher use to come along. He said that 1/10 - 2/10 of 1% of all the soil in the world is the quality that is in the Kansas River Valley. Agriculture is the highest and best use and when that land is removed from agriculture it is removed from agricultural forever, there is no replacement.

Commissioner Dominguez asked what kind of scientist Mr. Hall was.

Mr. Hall said he was a soil chemist by training.

Commissioner Liese asked what kind of farming he did.

Mr. Hall said he has a mixture of wheat, beans, alfalfa, and assorted horticultural crops.

Commissioner Liese asked Mr. Hall to repeat his statistics and his source.

Mr. Hall said the Eudora type soils are probably about 1/10 - 2/10 of 1% of all the soils in the world that are of that caliber and information regarding it can be found in numerous soil rating science text books.

Mr. Ron Schneider said he has lived in Grant Township for 23 years and owns about 40 acres. He said he was speaking for himself, not speaking on behalf of any clients. He said the community has a responsibility to step up to save the unique land for agriculture. He agreed with the previous speaker that the best and highest use of this land that is so rare is agricultural purpose. He said it was similar to the National Park Service. He felt that land owners should be compensated in some way. He questioned the definition of soil conserving agri-industry and felt it needed to be broadened and made more general. He said the future designation of Midland Junction Designation makes no sense. He said it is a dangerous intersection and would require massive infrastructure changes.

Commissioner Singleton said she lives in a residential neighborhood in Old West Lawrence and is clearly limited by what she can do with her land. She said she knows she cannot put a gas station there and it is not her 401K. She inquired about agricultural zoning being different.

Mr. Schneider gave the analogy of someone who has a vacant lot and they are told they cannot build on it but that a lot with a house on it has far more value than a vacant lot. He said he would like every farmer to keep their land as farmland but he does not think that would be fair.

Commissioner Hird asked what changes he would recommend to the sector plan.

Mr. Schneider said Midland Junction is a dangerous intersection and massive infrastructure will need to be addressed. He would like the definition of soil conserving agri-industry needs to be worked on further.

Mr. Ted Boyle, North Lawrence Improvement Association, was concerned about storm drainage. He said everything that happens north of North Lawrence directly affects North Lawrence. He said the pumps are overwhelmed and that it will take extensive infrastructure to make the water go east.

Ms. Barbara Clark, Citizens for Responsible Planning (CRP), said she sent a letter with attachments that had good examples of Best Practices that other communities are using. The Comprehensive Plan, Airport Master Plan, T2030, Wastewater Management, Flood Zoning Mapping are not a static system. They are dynamic and always moving. She said there is already an Airport Plan in existence but is being updated. She did not necessarily think that was a legitimate stop-stick to the approval of the Northeast Sector Plan. She said CRP has discussed the interconnectedness of the deep fertile soils in North Lawrence and floodwater mitigation. Class 1 soils in that area, specifically Rossville silt loam, has 80" before it meets any restrictive layer, which means it has the capacity to absorb water. She said Long Range Planning is comprehensive. Many areas of the county are identified for industrial development. She said there are areas already where there is the need for environmental mitigation and great opportunity for infill development. She felt there were transportation limitations because Grant Township has railroads but not active rail spurs. She hoped they would not put the brakes on this process and suggested an accelerated study session with groups such as American Farmland Trust and other communities.

Commissioner Liese asked Ms. Clark to give a brief description of Citizens for Responsible Planning.

Ms. Clark said Citizens for Responsible Planning came about on June 23, 2007 when a group of residents in the Grant Township area learned about an industrial development plan in the area that the Lawrence Journal World reported was to be a 900 acre industrial park.

Commissioner Liese asked how many people Ms. Clark was representing.

Ms. Clark said the Citizens for Responsible Planning mailing list contains about 400 people.

Mr. Michael Almon, Sustainability Action Network, showed legal information on the overhead projector. He said the landowners in the northeast area are concerned with regulations that this body and the governing body might impose that limit their options on the use of their land. He wanted to point out that it was a red herring because everyone who is a land owner within a zoning category has some limits on how they use their land. He said there is an established Supreme Court precedent that regulatory takings are primarily for the public health and safety and that's where the community needs come in. They determine and establish that reasonable public policy is fully justified for the protection of the population in Lawrence from flooding through floodplain preservation, for assuring the solvency of City and County infrastructure budgets, and justified for securing the communities ability to feed themselves as peak oil increasingly drives up food prices and limits food imports. He said the Commission is on firm legal footing when adopting plans with specific provisions for regulatory takings that protect the common health and safety. He urged them to include these in the Northeast Sector Plan. Land owners can still farm their property. They can use their property viably and economically, it's just that they should not be given value added. He urged the Commission to incorporate the following into the Northeast Sector Plan:

1. Promulgate public policies and codes that recognize numerous U.S. Supreme Court case decisions which say reasonable, uniformly applied land use regulations do not constitute legal takings. Some of the rulings include:
  - No one may claim damages due to police regulation designed to secure the common welfare, especially in the area of health and safety regulations. The distinguishing characteristic between eminent domain and police regulation is that the former involves the taking of property because of its need for the public use, while the latter involves the regulation of such property to prevent the use thereof in a manner that is detrimental to the public interest. (Nichols' The Law of Eminent Domain Sec. 1.42; J. Sackman, 3d rev. ed 1973)
  - Land use controls constitute takings, the Court stated, if they do not "substantially advance legitimate governmental interests", or if they deny a property owner "economically viable use of his land". (Agins v. City of Tiburon)

- When the owner of real property has been called upon to sacrifice all economically beneficial uses in the name of the common good, that is, to leave his property economically idle, he has suffered a taking. (Lucas v. South Carolina Coastal Council, 112 S. Ct 2886, 2895-1992)
  - These and considerably more may be found at:  
<http://caselaw.lp.findlaw.com/data/constitution/amendment05/16.html#f236>
2. Adopt a zoning category of “exclusive agricultural use” for rural properties, with a gradient of development limitations keyed to the USDA soil classification levels. This would not be a requirement, merely a zoning category that a landowner may request for their land.  
[http://www2.co.multnomah.or.us/Community\\_Services/LUT-Planning/urban/zonordin/efu/efu.html](http://www2.co.multnomah.or.us/Community_Services/LUT-Planning/urban/zonordin/efu/efu.html)
  3. Adopt code provisions for the Transfer of Development Rights (TDR) or Capability I and Capability II prime soils specifically. Using such a program, lands containing these soils are so designated, and owners of such farmland can sell the development rights to a publicly managed fund, thus continuing to farm while realizing a financial gain. Land developers who plan to urbanize other second tier farmland would pay to buy the development rights, the proceeds going into the publicly managed fund. [http://www.greenvalleyinstitute.org/landuse\\_innovativezoning.htm](http://www.greenvalleyinstitute.org/landuse_innovativezoning.htm)

Commissioner Liese asked Mr. Almon to give a brief background of the Sustainability Action Network.

Mr. Almon said the Sustainability Action Network is non-profit Kansas group locally based in Lawrence. They have been in existence for approximately two years with a focus on any aspect of local or regional ecologically sustainability. He said he is the Secretary of Board of Directors and that there are 25 active members and a newsletter that goes out to approximately 425 people.

Mr. Matt Eichman, Midwest Concrete Materials, own 420 acres within the Northeast Sector Plan. He said soil was not the only natural resource and that sand is also a natural resource. He felt the plan was narrow sided and only addresses agriculture and does not allow for any other use of natural resources that could be used for the benefit of the county. He said currently many aggregates are trucked in from Topeka. He requested the item be tabled to allow for other sustainable resources can be researched.

Commissioner Carter asked if Midwest Concrete was based in Lawrence and if the recent sand plant they proposed would have been taxed at an industrial rate.

Mr. Eichman said the office is based out of Manhattan and recently expanded in to Lawrence. Taxes would be under the industrial classification.

Commissioner Dominguez inquired about his argument for resources.

Mr. Eichman said there needs to be a balance of resources. He said sand was just as limited as class 1 and 2 soils.

Commissioner Liese said Mr. Eichman mentioned a sand/gravel extraction project that was stopped. He said sand occurs in river bottoms and asked if Mr. Eichman said where the soil is located.

Mr. Eichman said the 420 acres that Midwest Concrete owns is cornered by Midland Junction.

Commissioner Liese asked what soils it is located on.

Mr. Eichman said it has class 1 and 2 soils going through it but not its entirety.

Commissioner Liese asked what percentage of land that he owns is class 1 or class 2.

Mr. Eichman said his best guess would be about 25%.

Commissioner Liese asked Mr. Eichman to explain sand extraction from class 1 soils.

Mr. Eichman he said they are not together and that the soil is over the top. They remove the soil and sell it to farmers and/or developers. He said the soil is not destroyed, it is relocated to other sites. He said the sand is then extracted and a pond is left. It is common for a community to then turn the site into a public use area such as a park or fishing lake.

Commissioner Liese asked if extracting the sand and gravel and selling the soil was in the best interest of the community versus importing the sand from elsewhere.

Mr. Eichman said it is a good thing for a few reasons; he said there is a growing concern of carbon footprint. Once resources are trucked in there is quite a bit of carbon footprint. A community needs materials to build streets, foundations for houses, etc, and sand is as basic as it gets for a construction component. He said he would argue that sand is every bit as needed as feeding people. He said there is an increased tax for industrial over agriculture use.

Commissioner Liese said Mr. Hall claims that 1/10 - 2/10 of 1% of all the soil in the world is the quality that is in the Kansas River Valley. He asked Mr. Eichman how much sand is available in the world.

Mr. Eichman said he had no way of answering that. He said Kansas has 13 distinct geographical areas. He said for different types of soil there is also different types of sand.

Commissioner Harris asked if knew how much sand in the county is located under soils other than high quality soils.

Mr. Eichman said sand generally is not outside of river valleys.

Commissioner Harris asked if there are other areas along the Kansas River that have sand not under top quality soils.

Mr. Eichman said that there probably are but he didn't know how much. He said that the depth of the alluvium is not uniform.

Commissioner Harris said that Planning Commission was told in a study session that when high class soils are moved from their locations the quality of the soil is not the same.

Mr. Eichman said he did not know the answer to that and it was not his area of expertise.

Mr. Rich Bireta, Grant Township Trustee, said the board voted unanimously to approve the plan. He said all of Grant Township is covered by the Northeast Sector Plan. He thanked staff for their work on a complex issue.

Mr. Pat Ross said the notice letter he received was postmarked July 22, 2010. He asked that the item be deferred since he did not have enough time to review it. He wanted to comment on an earlier comment by Barbara Clark who said there were no active rail spurs in North Lawrence. He said he knew of at least 5 active rail spurs in the North Lawrence/Grant Township area. He felt the plan as presented was too restricted. He said the transportation corridors can support development and jobs.

Commissioner Dominguez asked how many acres Mr. Ross owns.

Mr. Ross said he and different family members own 450 acres in Grant Township.

Commissioner Liese asked if a rail spur is a place where a train can stop and make deliveries.

Mr. Ross said yes.

Ms. Beth Johnson, Lawrence Chamber of Commerce, said Union Pacific is always looking for more spurs. Rail, airway, and highway are important to industrial development. Nowhere else in Douglas County are there all three. She asked for a better definition of soil conserving agri-industry.

Commissioner Carter asked if there have been any inquiries for industrial in that area.

Ms. Johnson said the airport has and the fact that the airport now has water/sewer makes it more marketable.

Commissioner Carter asked Ms. Johnson if she saw Commissioner Rasmussen's comments regarding the plan.

Ms. Johnson said no.

Commissioner Liese said he was struck by staff's presentation where Mr. Warner showed the development of Lawrence and North Lawrence in 10 year segments. He asked Ms. Johnson if she could explain why there would be more development now suddenly if they did eliminate agri-industry.

Ms. Johnson said the City has extended sewer and water to the airport so that changes the perception of what can be done in that area. She said the City has indicated by putting those services there that they want to see growth in that area.

Commissioner Liese wondered how much effort has been put in to development along North 2<sup>nd</sup> Street.

Ms. Johnson said most of those are retail and she works with Industrial or Office. She said the City has a Retail Task Force to work on those types of issues.

Commissioner Dominguez asked what kind of business could be at the airport.

Ms. Johnson said she sees it for testing/research or prototyping type businesses that can take advantage of the small airport size.

Mr. Frank Male, Lawrence Landscape, supported deferring the item. He felt that not a lot of changes were made to the plan. He did not feel like public comments were being heard. He said the term highest and best use had to do with maximizing the existing transportation network and there are three state highways, an interstate, a railway, and an airport in that area. It doesn't get anymore intense than that. Also when talking about highest and best use Utilities comes into play; electricity, water, natural gas, and sewer, which are available at the site. Another thing to consider is the population and how far the population center is from the workforce and neighbors. He discussed the constraints of a site such as noise, the airport, I-70, and the railroad. Anything other than farming and industrial development would be severely limited. He said the world would not come to an end if 10% of the area was allowed to be developed for business purposes. It is a prime area for industrial development because there isn't anywhere else for it to go. He asked that this be tabled until the Airport Master Plan was complete. He asked staff to come up with a better description of soil conserving agri-industry.

## **COMMISSION DISCUSSION**

Commissioner Harris asked staff to respond to the questions about drainage related to the soil conserving agri-industry.

Mr. McCullough said the City Stormwater Engineer provided a graphic that was displayed on the overhead. One of the issues is that it is relatively flat out there so it has created its own drainage network at this point. If development is allowed in the area drainage patterns and impacts could be changed. He said the dots on the map represent where all the water in each water shed comes down to. He said the proposed 2007 development plan took the water more directly to the east.

Commissioner Harris asked if that is planned in the North Lawrence Drainage Study.

Mr. McCullough said he would have to review the study more.

Commissioner Finkeldei asked if there have been any discussions with the County Commission about \$5,000 being spent on Heritage.

Mr. McCullough said he has not been part of those conversations.

Commissioner Harris inquired about who was on the stakeholder list.

Mr. Warner said all the property owners in the area and others who have signed up on the list serve.

Commissioner Harris asked if those folks received notification via email.

Mr. Warner said he believed he mailed letters out on or about July 6<sup>th</sup> and then a list serve message on or about July 12<sup>th</sup>. He said notice has gone out several times.

Commissioner Hird said there are type 1 and 2 soils all through the area so he wondered why agri-industry wasn't designated to other areas such as Midland Junction.

Mr. McCullough said in some regard staff is coming at it fresh in designating the area southwest of the airport as industrial uses. This discussion has occurred with the Chapter 7 update several years ago. Staff begins sector planning with adopted policies as assumptions. So staff assumed when working on the Northeast Sector Plan that Midland Junction and this area (pointed to map) would align with Chapter 7. Those policies would be brought forth and become the base maps for the policies of the Northeast Sector Plan. Toward the end of the Chapter 7 update there was a term proposed and ultimately adopted, soil conserving agri-industry. That concept was brought forward to the Northeast Sector Plan. He said from staffs perspective it is not simply the soil classification being looked at. Staff is trying to be realistic in laying out the expectation for the public, development community, Planning Commission, and governing bodies, about where and how staff sees services being put forth in this area of the community, and it's a real challenge. Even if you strip out the soil conserving agri-industry or class 1 or 2 soils it is still left with significant flooding issues and challenges. Even without intervention it is not historically developed because of those reasons. He said in staffs opinion Chapter 7 policies and concepts is how they got to this location.

Commissioner Hird said if the goal is to preserve soils then the protected area could be wherever there is class 1 or 2 soils.

Mr. McCullough said its root is industry. In some ways the soil conserving agri-industry is still industrial designated property. It has been a challenge to define it and ultimately up to the governing bodies to determine what it means. He suggested possibly looking at percentages preserved and look at some more conventional industry. He said for all the other class 1 and 2 soils that are shown as agriculture it is mainly because it is not expected for services to be brought there and developed.

Commissioner Hird asked if staff has developed a list of businesses that would meet the definition.

Mr. McCullough said staff has not but the plan language talks about projects being creative in their seeking to meet the soil conserving agri-industry classification.

Commissioner Harris asked if it was important for those industries to be ag-related regarding the production on their soil or was it really most important for the open space around industries to be conserved for agricultural use.



Mr. McCullough said it was difficult to answer that because it is difficult to say which one gets more weight. Staff's answer is that the term includes four words that all need to work together. He said there was still opportunity to do some conventional industry perhaps with a good ratio preserved.

Commissioner Liese asked if he was suggesting a compromise.

Mr. McCullough said staff started pretty general with Chapter 7 and it contains language that says certain sites in the community contain high quality ag-land and those sites should be encouraged to develop as soil conserving agri-industry businesses. In the Northeast Sector Plan it has been better developed to designating it to a land use category. Staff has proposed one way to get at that value and there may be other ways such as a more objective intent.

Commissioner Finkeldei suggested focusing on language that encourages businesses to locate, rather than regulate. He said the current definition is too narrow and he suggested looking into a more general definition of soil conserving agri-industry to encourage it in the entire area rather than designating a particular area. He liked the idea of a creative approach. He said he liked the language in the plan that says *'Protection of soils through agricultural use or preservation can be implemented in different ways and the community should be open to creative ways that develop projects that can utilize this classification.* He suggested crossing the rest of the paragraph out. He agreed with the earlier speaker, Ron Schneider, who said that there should be compensation or assistance for land owners. He said there should be systems set up to do that.

Mr. McCullough said Chapter 7 does not have a category of soil conserving agri-industry but the Sector Plan does.

Commissioner Carter expressed concern about unintended consequences. He said that it would be helpful at the next meeting for the City Stormwater Engineer, Matt Bond, to be present. He agreed with keeping the language general and incentives for land owners.

Commissioner Dominguez said he did not think it was a good idea to set a precedence of compensating land owners.

Commissioner Finkeldei said his thoughts on incentives was for the entire area to permanently protect a valuable resource. He felt their four possibilities for the area were agriculture (no industrial), which is contradictory to Chapter 7; soil conserving agri-industry; industrial but encourages soil conserving; or flat industrial with or without soil conserving. He did not feel the first and last option were appropriate. He was in favor of industrial but encourages soil conserving.

Commissioner Harris asked Commissioner Finkeldei what if 80 acres were proposed for industrial development and a developer could not think of a way to preserve that land.

Commissioner Finkeldei said the plan says to encourage soil conserving in the area. It would need to comply with Horizon 2020. If soil conserving was in there and a project came in that was 80 acres the plan could be changed. Trying to define what a soil conserving agri-business is will always come up with something creative. He felt they should allow people to be creative unless they want to go all the way to a zoning category type chart.

Commissioner Singleton thanked staff for their work. She said the class 1 and 2 soils map on page 2-24 shows the airport having gotten the portion of class 1 and 2 soils that she would be willing to give up. She felt they needed to protect the land that is left. She said the airport is not completely developed and there is more space out there for more development to occur. She did not feel the item should be deferred because certain Commissioners were absent or new Commissioners were present. She said fresh perspectives represent more closely to the views of the public and are valuable. She said she understands farmers wanting to use their land as their 401k.

Commissioner Harris thanked staff for their hard work and agreed with Commissioner Singleton. She said the things she was thinking about in the plan were soil conservation as primary, stormwater storage, fiscal responsibility for infrastructure development, opportunities for industrial development, and sand along the river in Douglas County. She said the soil conserving agri-area was not come to lightly in developing the plan. It was a compromise that attempts to preserve the existing soil but also allows some low impact/low footprint industry near the airport. She said if she had to lean one way or the other she would lean toward agri use in that area rather than industry. She said she does see some value in allowing some industry in that area if it conserves soil as well. She agreed with providing incentives for preserving soil. She appreciated that the Grant Township Trustees considered the plan and voted unanimously in favor of it.

Commissioner Hird thanked the members of the public who came out to speak this evening. He said he was not sure he was willing to go backwards on Chapter 7 in Horizon 2020. He agreed with Commissioner Finkeldei's earlier statements about providing incentives. He asked how much land at the airport was available for industrial development.

Mr. McCullough said somewhere between 30-60, aviation based industry.

Commissioner Hird expressed concern about Commissioner Rasmussen not being present and felt they would benefit from having his input. He said he would like to know more about whether the Airport Master Plan is essential to considering this sector plan and what the implications are of the Airport Master Plan. He would also like more thought put into incentives to have soil conserving industry in this area.

Mr. McCullough said there was a question at the last meeting about the Airport Master Plan and he said he spoke with staff that support the advisory board and they do not believe there will be any boundary changes. There may be some implications but shouldn't impact the major concepts of the Northeast Sector Plan.

Commissioner Dominguez agreed with Commissioner Singleton's comments about their responsibility to the environment. He felt if they start compromising on that area then where does it stop. He did not feel they should compensate owners. He felt they should move the plan forward.

Commissioner Burger thanked staff for a very detailed packet of information. She said the charts and maps were very helpful. She thanked the community for sharing their viewpoints. She liked the idea of incentives and keeping the door open to creativity. She was in favor of being more conservative in their approach because once the land is gone that's it.

Commissioner Liese said they would put the community at risk by compromising a precious resource that won't come back if it goes away. He was not in favor of development on class 1 and 2 soils. He said he was unsure of how he would vote. He thanked Commissioner Singleton for saying the new Commissioners don't have a deficit and provide a fresh perspective. He said he read Commissioner Rasmussen's letter and did not feel as though his perspective was absent from the meeting tonight.

Commissioner Hird said they are unanimously concerned about the conservation of class 1 and 2 soils. He did not think that tabling this would give that up. Nobody knows what a soil conserving agri-industry means and he would like the ability to better define it.

Commissioner Harris said in the packet on page 69 there is a good definition of what soil conserving agri-industry is.

Commissioner Hird said that is not in the plan, it is staffs interpretation of it. He would prefer there was something in the plan that addressed what that definition was.

Commissioner Liese said he did not find the definition of soil conserving agri-industry to be that confusing.

Commissioner Hird said he did not want their enthusiasm for protecting class 1 and 2 soils to overshadow the realities of it, because trucking in lots of sand from another county would be an environmental disaster. He did not want to be too rigid on this that they lose sight of the fact that there will be circumstances where industrial development, such as a sandpit, makes sense for the community.

Commissioner Liese said one of the greenest ways to move things is by train and there are a number of spurs available in the area so sand could be moved via train. He said the image of digging up class 1 and 2 soils in order to get sand did not excite him.

Commissioner Carter said they did not know how much of class 1 and 2 soils are represented in soil conserving agri-industry. He felt they needed to drive the economy.

Commissioner Harris wanted to clarify why the area is being designated the way it is. She said one reason was to try and preserve the soil. She asked if another reason was stormwater issues and that if they do not develop it too intensely there will be fewer problems with stormwater in the area.

Mr. McCullough said the cumulative effect of development in Grant Township will exasperate already existing stormwater issues.

### **ACTION TAKEN**

Motioned by Commissioner Dominguez, seconded by Commissioner Harris, to approve the Northeast Sector Plan (CPA-6-5-09).

Commissioner Finkeldei said he would vote against the motion for reasons he stated earlier. He said if the motion fails he would like to make a motion to send it back to staff for a more general definition.

Commissioner Carter said he would vote against the motion and did not see a rush to send it through when it could be improved.

Commissioner Harris said she would support the motion because the definition strikes the right balance between being general and providing some specifics to help grasp what is meant by soil conserving agri-industry.

Commissioner Liese said he would also support the motion.

Commissioner Hird said he would vote against the motion because of the same reasons Commissioner Finkeldei stated earlier. He said he was not opposed to protecting class 1 and 2 soils but did not want to create language that would eliminate the opportunity for industrial uses that might be beneficial to the community. He said he would support a deferral to allow staff time to work on the definition and perhaps broaden the language to protect more areas of class 1 and 2 soils.

Motion failed 4-4, with Commissioners Dominguez, Harris, Liese, and Singleton voting in favor.  
Commissioners Burger, Carter, Finkeldei, and Hird voted in opposition.

Motioned by Commissioner Finkeldei, seconded by Commissioner Carter, to defer the Northeast Sector Plan (CPA-6-5-09) and direct staff to generalize the definition of soil conserving agri-business, to be heard at a future Planning Commission meeting.

Commissioner Harris said she would not support the motion because she felt they will see the same arguments as tonight if the description is generalized more.

Motioned failed 4-4, with Commissioners Dominguez, Harris, Liese, and Singleton voting in opposition.  
Commissioners Burger, Carter, Finkeldei, and Hird voted in favor.

Motioned by Commissioner Carter, seconded by Commissioner Finkeldei, to defer the Northeast Sector Plan (CPA-6-5-09) to a future Planning Commission meeting.

Commissioner Singleton said she would change her vote and let it go back to staff.

Commissioner Harris said she would not vote in favor of the motion.

Commissioner Dominguez said he would vote in opposition of the motion.

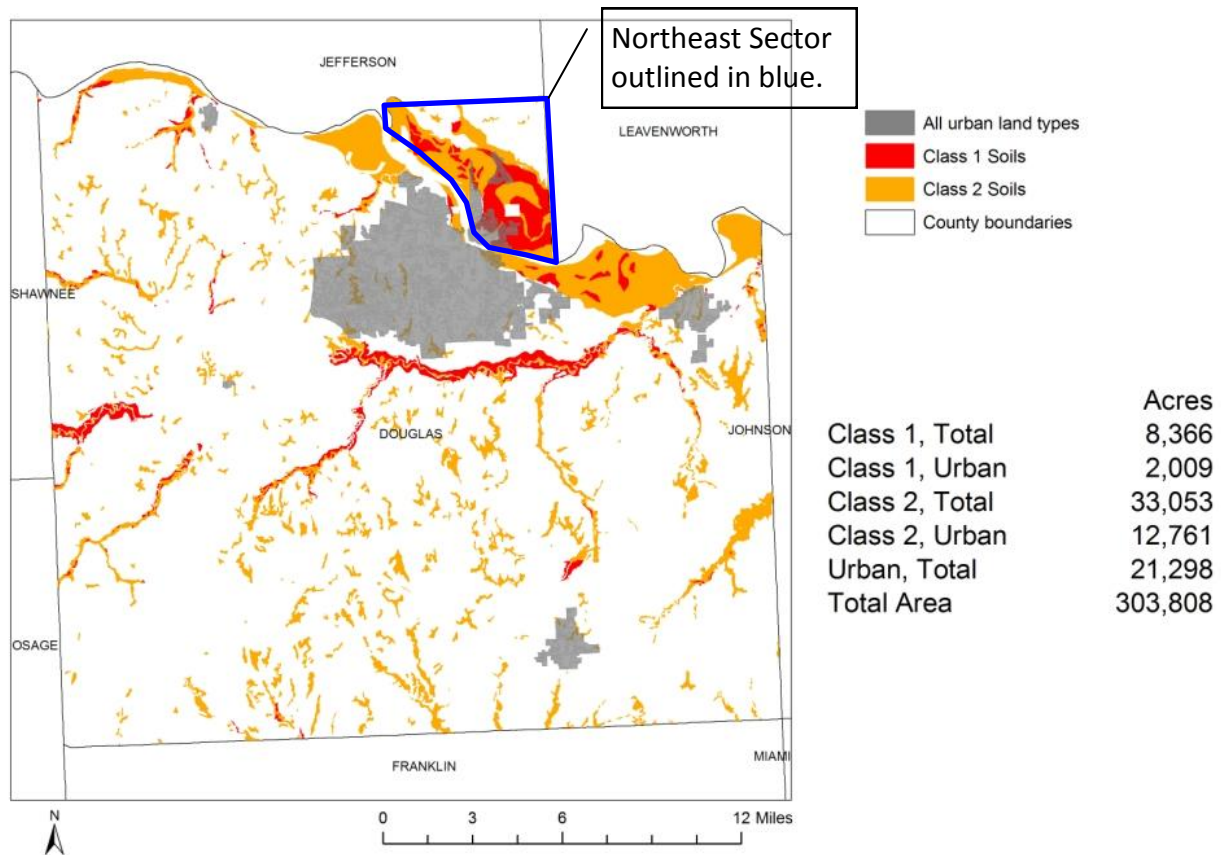
Motion carried 4-3-1, with Commissioner Burger abstaining. Commissioners Dominguez, Harris, Liese, voted in opposition. Commissioners Carter, Finkeldei, Hird, and Singleton voted in favor.

Dear Lawrence City Commission,

Citizens for Responsible Planning has been actively engaged in the planning process for the Northeast Sector Plan. We appreciate the intensive efforts to build community input into this planning process. We believe there are some core strengths to this plan and wish to emphasize these fundamental policy guidelines.

Historically the Northeast Sector has been shaped by the repeated flooding of this river valley. This movement of water has deposited some of the finest soils and created some of the best agricultural land in Kansas and concentrated this rich natural asset in the Northeast Sector. Horizon 2020, Chapter 7 Industrial and Employment Related Land Use states “The preservation of high-quality agricultural land, which has been recognized as a finite resource that is important to the regional economy, is of important value to the community.” This unique feature is illustrated in the following map.

Class 1 and 2 Soils, plus all Urban land types



Situated close to Lawrence, this sector naturally faces development pressure. Surprisingly, and for understandable good reasons, this area has experienced limited development. As the draft Northeast Sector Plan states in Section 3 – Recommendations (page 3-1):

“Compared to other areas of the fringe area of Lawrence, this area is not anticipated to be significantly urbanized.

Due to the unique challenges to development, including:

- Costly stormwater infrastructure needs as urbanization occurs
- Significant amounts of regulatory floodplain
- Significant amounts of Class 1 and 2 soils
- FAA Regulations and Lawrence Municipal Airport Protection Zones”

Critical to future land use planning is flooding and stormwater management in the Northeast Sector. This is of paramount importance to the residents of North Lawrence and Grant Township, area businesses, transportation, and the airport. Wisely, Lawrence commissioned the North Lawrence Drainage Study in 2005. As stated in the draft Northeast Sector Plan (page 2-16):

“Tens of millions of dollars of cost were identified to accomplish the recommendations of the study for dealing with the existing stormwater issues and future ones that will be created with development.”

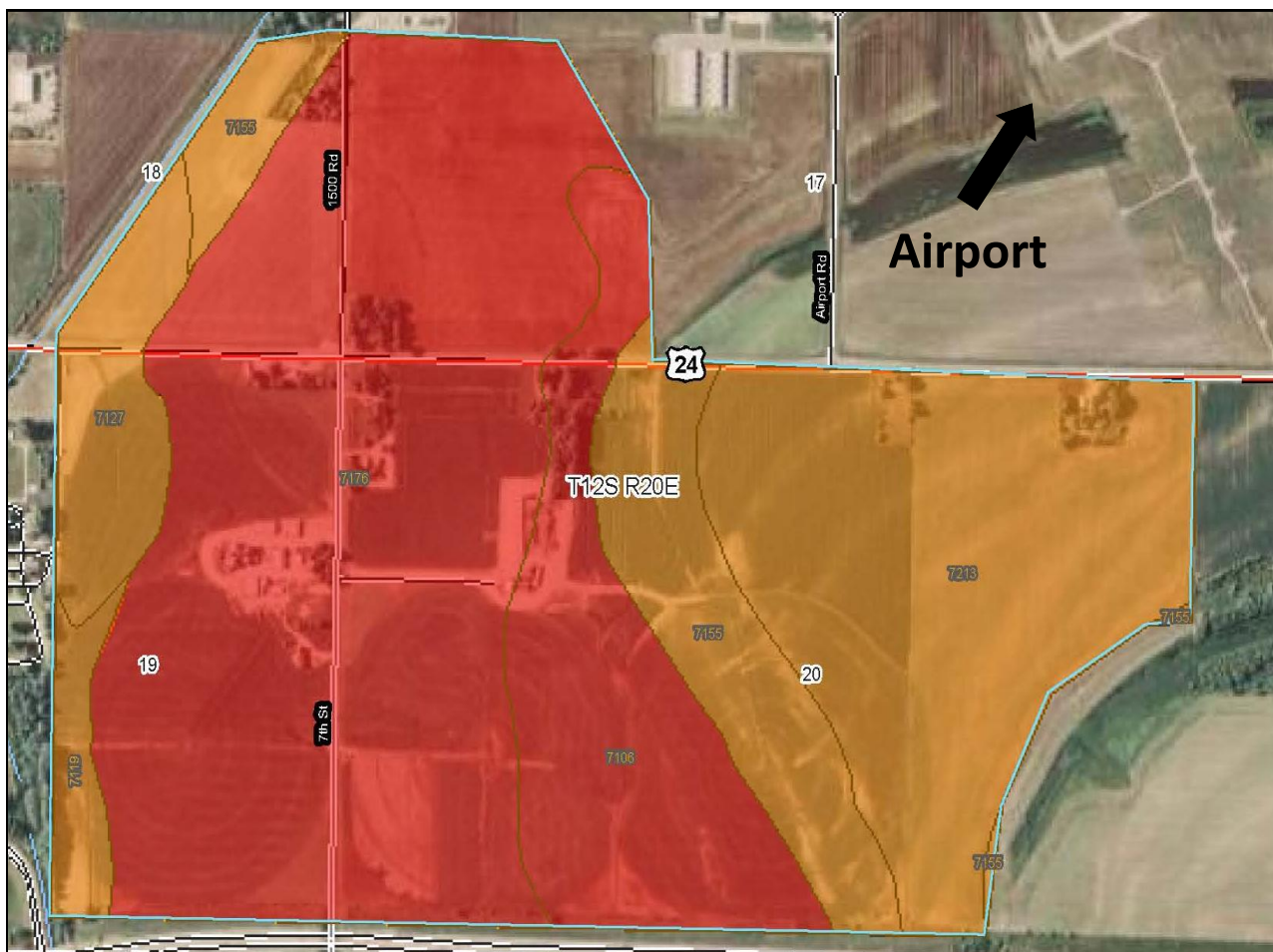
In response to these development limitations, Horizon 2020 states that development shall not be permitted in “regulatory floodplains or other environmentally sensitive areas.”

These flooding and stormwater limitations are intertwined with the unique soils of the Northeast Sector. As the draft Northeast Sector Plan (page 2-17) states “these soils are highly permeable and assist in stormwater management.” These unpaved soils act as a sponge absorbing water, mitigating stormwater damages, and recharging our valuable groundwater aquifers. These soils in their undeveloped state form our community’s greatest and most cost effective stormwater mitigation device.

Citizens for Responsible Planning wishes to emphasize the implementation of the long-view recommendations in Section 3.3 (page 3-14):

- Reduce the Lawrence Urban Growth Area to the area identified in Map 3-1 (page 3-13) to minimize stormwater mitigation costs, conserve prime farm land, preserve area farms, and protect the rural heritage surrounding Lawrence for both local residents and visitors.
- Implement regulations that promote no adverse impact for floodplain management.

The early planning process for the Northeast Sector Plan involved broad and respectful community participation contributing to early drafts of this Sector Plan. The Lawrence Planning Commission approved a recently revised draft (the first of three options presented) Northeast Sector Plan by a contested 5-4 vote. We believe this last draft option does not adequately respond to the earlier community input and creates troubling contradictions between the recommendations to protect Class 1 and 2 soils and the concluding Map 3-1 Future Land Use (page 3-13). Please note the industrial section south and west of the airport and the following USDA/NRCS map of the same area which identifies this area as the heaviest contiguous concentration of Class 1 and 2 soils. The red shaded area is Class 1 soils and the yellow shaded area is Class 2 soils.



We recommend that Industrial Section 3.2.1.4 (pages 3-10, 11) conform to the third draft of this plan and identify the above area as a “soil conserving agri-industry” category of land use. We believe this land use would conform to the stated goals within the plan and best represent the community planning process.

In conclusion, Citizens for Responsible Planning has consistently recognized private property rights as a critical factor in land use determinations. Weighting these rights must be accomplished in an equitable manner. We believe the third draft of this Sector Plan best balances the private property rights of the diverse interests of both farmland owners and homeowners within our community.

Thank you for your consideration of these recommendations.

Sincerely,

Jerry Jost	Hilda Enoch	Lori McMinn
Barbara Clark	Jim Fischer	Dan McMinn
Ted Boyle	Marcia Fisher	Lowen Millspaugh
Chet Fitch	Madeline Finch	Rick Mitchell
Deborah A. Milks	Deanna Fitch	Nancy O'Connor
Charles K. NovoGradac	Bob Gent	Ellen Paulsen
Lane Williams	Margot Gray	Dan Phelps
Scott Allegrucci	Crystal Hammerschmidt	Kevin Prather
Michael Almon	Susan Harper	Wayne Propst
Deborah Altus	Bob Harper	Daniel Poull
David Baird	Kim Heck	Vanessa Sanburn
Bruce Barlow	Lauretta Hendricks-Backus	Carol Schmitt
Kris Barlow	Doug Hitt	Ronald Schneider
Kelly Barth	Shirley Hitt	P. Simran Sethi
Leo Beier	Maryam Hjersted	Margaret Shirk
Sheryl Beier	Lisa Grossman	Frank Shopen
Pat Benabe	Hugh Janney	Jim Smith
Sandy Beverly	Pat Kehde	Jerry Sipe
Marilyn Brune	Joshua Kendall	Mary Ann Stewart
Judy Burch	Kevin Kennedy	Dan Parker-Timms
Jan Butin	David Lambertson	Denise Parker-Timms
Kathryn Compton	Sacie Lambertson	Pat Petrovits
Cole Cottin	Eileen Larson	Julie Trowbridge-Alford
Linda Cottin	Cheryl B. Lester	Sarah Trowbridge-Alford
Courtney Crouch	Jim Lewis	Jordan Wade
Janet Dehnert	Bob Lominska	Maurice R. Woolsoncroft
Joseph M. Douglas, MD	Jake Lowen	Jim Yonally
Victoria B. Douglas	Janet Majure	Nancy Yonally
Donna Eades	Carey Maynard-Moody	Rita York
Jill C. Elmers	Sally McGee	



# NORTH LAWRENCE IMPROVEMENT ASSOCIATION

LAWRENCE, KANSAS

RECEIVED

DEC 09 2010

City County Planning Office  
Lawrence, Kansas

December 9, 2010

Dear City Commissioners:

The North Lawrence Improvement Association has been working with Citizens for Responsible Planning and Grant Township residents on the drafting of the NE Sector Plan. NLIA appreciates the work the Planning Department has devoted to this project in the last year. The NLIA, CRP and the Planning Department were all in consensus until the next to last time the plan came before the Planning Commission. At that meeting the Commission asked for a definition of agricultural related industry as it was never defined in the document. At the end of that meeting Planning Director Scott McCullough made his assessment of why slow development or no development has occurred in North Lawrence and the Grant Township. A copy of his statement is attached. The NLIA agrees with this statement.

When the NE Sector Plan was next on the agenda of the Planning Commission, there were two more options that were not publicly discussed and the option (#3) that all of the stake holders worked on for over a year and supported was not discussed.

The NE Sector Plan is a very important planning project, but the NLIA feels there are enough choices for industrial development in and around Lawrence without allowing that type of development to occur in the area covered by the NE Sector Plan. If industrial development is allowed in this area the storm water flooding problems in North Lawrence and the Grant Township will be exacerbated. I have attached a storm water survey that the City conducted in June 2004. About 100 residents responded to the survey regarding the storm water flooding issues that occurred on their property.

The NLIA also believes that Type 1 & II soils that make up a significant portion of the NE Sector Plan area should be protected from development. These soils are not only an invaluable resource for agriculture, but serve as a natural storm water resource. If this land is allowed to be covered with asphalt, concrete and rooftops, the storm water from this land will be flowing into North Lawrence. The pump on North 2<sup>nd</sup> is at it's maximum and the planned upgrade of the pump at 5<sup>th</sup> & Maple is designed to only take care of the current existing storm water problem in North Lawrence. We have been waiting fifteen plus years for the upgrade of this pump.

North Lawrence did not have storm water problems until residential housing development was allowed and 100 plus new homes were built. Much of the vacant property that existed in North Lawrence that served as a natural runoff turned into concrete and rooftops. These homes were built in a flood plain or flood prone area. The City and the developers assured us that this development would not adversely affect our neighborhood with flooding. The NLIA disagreed with that assessment.

The Grant Township is also a flood plain/flood prone area. The NLIA is in full agreement with Citizens for Responsible Planning and want to see Option 3 restored to the NE Sector Plan.

Sincerely,



Ted Boyle, President  
North Lawrence Improvement Association

CC: David Corliss, Lawrence City Manager  
Scott McCullough, Planning Department

noted. Recurring concerns related specifically to development patterns, current stormwater management practices and future construction impacts, as well as a desire to limit new development. With those comments came concerns about enforcement of stormwater management controls with new development and construction. The concerns were both in terms of fears of too great of restrictions and desires for stringent development controls.

Survey questions and responses:

**How often in the past 10 years have you had a problem with stormwater on your property?**

[ 32 ] – 0 times

<u>Address</u>	<u>Frequency</u>
1567 Hwy 40	Yes
1728 E. 1500 Road	Twice really bad, but every time with a heavy rain
1804 E. 1600 Road	15
1480 N. 1700 Road	Too many to count
1662 N. 1700 Road	3 or 4
792 N. 2 <sup>nd</sup>	Several
645 N. 3 <sup>rd</sup>	Frequently
1001 N. 3 <sup>rd</sup>	1993 & 1997
624 N. 5 <sup>th</sup>	1
725 N. 5 <sup>th</sup>	8
649 N. 6 <sup>th</sup>	Every time it rains
625 N. 7 <sup>th</sup>	Every time it rains
227 N. 8 <sup>th</sup>	1
625 N. 8 <sup>th</sup>	2-3 times over the last two years
769 Ash	5
600 Center	When it rains
310 Elm	20
411 Elm	Every time it rains
761 Grant	When it rains more than 1 day
711 Maple	2
819 Maple	Every time it rains
321 Maiden Lane	2
403 Lincoln	4
624 Lincoln	During heavy rains
641 Lincoln	Continual erosion; habitual standing water
628 Locust	Ongoing
788 Locust	Every time it rains
806 Locust	Continuous
818 Locust	Yearly
836 Locust	10
520 Lyon	2
835 Lyon	20
711 North Street	Often
732 North Street	Every time it rains

501 Perry	Every 1" or more
517 Perry	2
304 Pleasant	Too many to count
786 Walnut	Every time it rains

What types of problems have you had?	Never	Sometimes	Often
Erosion	[ 37 ]	[ 20 ]	[ 5 ]
Home or business flooded	[ 45 ]	[ 10 ]	[ 4 ]
Over flowing ditches/culverts	[ 22 ]	[ 23 ]	[ 26 ]
Standing water outside	[ 22 ]	[ 28 ]	[ 30 ]
Street or driveway access flooded	[ 32 ]	[ 24 ]	[ 21 ]

## Other:

- 1480 N. 1700 Road – pasture flooded/electric fences out of service
- 1567 Hwy 40 – Farm fields due to inadequate landscaping and car accidents in Hwy 24/40 due to flooding
- 1662 N. 1700 Road – Water runs across road into our field
- 1735 E. 1500 Road – Front ditch plugged
- 411 Elm Street – Alley always floods
- 625 Lake Street – Up the street the water stands
- 628 Locust – Curb water does not flow off, drainage easement not graded properly
- 800 Walnut – Water does not pass through culvert under drive
- 818 Locust – Storm runoff from several nearby properties, mainly from the east of our property
- 827 Maple – some ditches do not drain
- Ditches and culvert need to be cleaned
- Fields with standing water
- I have noticed the (train) underpass flooded on 2<sup>nd</sup> Street
- Mainly standing water in culverts
- Mosquitoes
- Mosquitoes due to standing water (health hazard)
- Mosquitoes heavy/standing water
- No curbs on streets
- Problem corrected with cleaning ditches and culverts
- Water backing up in basement
- Water crosses road and erodes ditches that we mow; I've seen 6" – 8" of water pooled at Roanoke and 7<sup>th</sup> Street.

**What do you see as major storm water problems in your area? (Check all that apply)**

- [ 61 ] Poor drainage
- [ 37 ] Excessive run-off from streets
- [ 35 ] Loss of property values
- [ 31 ] Flooding
- [ 13 ] Trash removal/odors
- [ 12 ] Loss of property through erosion
- [ 8 ] Poor water quality
- [ 7 ] Loss of natural habitat
- [ 4 ] Unsafe stream/stream bank conditions

## Other:

- 1662 N. 1700 Road – Road contour to keep water from running into our field
- 1804 E. 1600 Road – Runoff from airport
- 800 Walnut – Redo the ditch created in my yard, which was not done properly anyway; also do something about the property across the street

# NORTH LAWRENCE IMPROVEMENT ASSOCIATION

---

LAWRENCE, KANSAS

Commissioners, I guess there's one thing I'd like to leave you with while we go to work on these comments is -- we've put this in the context of what are the planning efforts city/county wide. The reason we start with our cartoon of annexation is that there's a reason that this area hasn't developed substantially over the decades and those reasons have to do with the costs of development and public infrastructure and the storm drainage and those sorts of things. I think as planners we need to start thinking, or continue to think, about where are we going to put our limited resources in relation to development costs. We have / you all have planned a substantial amount of industrial employment center activity along with other areas of high density residential and commercial nodes and the like -- Farmland Industries is one area, Farmer's Turnpike is another area, 6<sup>th</sup> Street and SLT is an area. There's room for all those things and areas of low growth/low development and so as we talk more about the utilities master plan and come back with this plan for your review and consideration I think we need to think of it in terms of the county as a region and not just -- it's easy to get into Grant Township and say "why aren't we pro-development here"? "Why are we restrictive"? and those kind of things. We're trying to let the history and the land talk to us on this one and say "there are reasons for this today, what do we reasonably anticipate"? We talk about expectations for the residents -- is it fair to put out a plan for pro-growth if we're not as a city going to put any infrastructure in that area. We've got to talk about those things and come to some reasonable conclusions I think. We'll get to work on your comments and come back with those things in mind as well.

---

Transcript of Scott McCullough's closing statement from Planning Commission Meeting of May 24, 2010, concerning Northeast Sector Plan.

## Dan Warner

---

**From:** Bobbie Walthall  
**Sent:** Monday, December 13, 2010 5:06 PM  
**To:** Jonathan Douglass  
**Subject:** FW: Northeast Sector Plan

-----  
**From:** [pssethi@gmail.com](mailto:pssethi@gmail.com) on behalf of P. Simran Sethi [[SMTP:SIMRAN@KU.EDU](mailto:SMTP:SIMRAN@KU.EDU)]  
**Sent:** Monday, December 13, 2010 5:05:28 PM  
**To:** Aron Cromwell; Bobbie Walthall; Lance Johnson; Michael Dever; Mike Amyx; Rob Chestnut  
**Cc:** Lieberman, Alice; Matt Lehrman; Sarah Smarsh; Jordan Tucker; Tom McDonald; Margit Hall; Rick Martin; Lillian Siebert  
**Subject:** Northeast Sector Plan  
**Auto forwarded by a Rule**

Mayor Amyx and esteemed Commissioners,

Last month's Kansas Drought Report (from the Kansas Water Office) indicates, "The range of precipitation and warmer than normal temperatures has expanded the area of abnormally dry and moderate drought conditions in the latest Drought Monitor. The western third of the state is mostly in moderate drought conditions and an area of abnormally dry conditions has developed in the Southeastern division. The percentage of the state in abnormally dry to moderate drought conditions has increased from 31.6 % at the beginning of November to the current 47.3 % on November 30."

We believe that this data further emphasizes the need to protect the Capability Class I and II soils in our region. Cycles of drought and flooding are intensifying. Our fertile, deep alluvial soils have a greater capacity to absorb water and present a unique opportunity to develop a strong agricultural base in Douglas County. Although industrial development offers viable short-term opportunities, impervious surfaces placed over our Class I and II soils intensifies flooding to adjacent properties and will adversely impact both residential and agricultural neighbors.

Development in the area should reflect the most efficient use of resources and reap the greatest benefit to our community. Agriculture can better sustain periods of flooding that heavy industry devastated by floods cannot. We urge you to consider this capacity as you review the Comprehensive Plan Amendment, CPA-6-5-09, to Horizon 2020 (Chapter 14) and seek to adopt an option that supports soil preservation and protection on contiguous tracts of land.

Thank you for your attention,

Simran Sethi  
Matt Lehrman, SmartStar Lawrence Program Analyst, Westar Energy  
Alice Lieberman, Distinguished Professor of Social Welfare, KU  
Tom McDonald, Associate Dean & Professor, School of Social Welfare, KU  
Sarah Smarsh, Assistant Professor of English, Washburn University  
Jordan Tucker, Graduate Student, KU  
Rick Martin, Executive Chef, Free State Brewing Company  
Richard Heckler  
Lily Siebert, Education Outreach Assistant, The Community Mercantile

Courtney Crouch, Produce Buyer, The Community Mercantile  
Margit Hall, Owner and Farmer, Prairie Star Farms

--

Simran Sethi

Associate Professor, Journalism

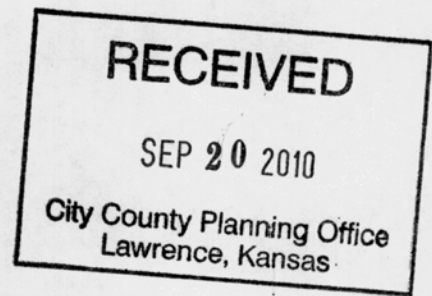
University of Kansas

E-mail: [simran@ku.edu](mailto:simran@ku.edu)

Twitter: @simransethi

Web: [www.simransethi.com](http://www.simransethi.com)

FB: [www.facebook.com/laprofaKU](http://www.facebook.com/laprofaKU)



September 10, 2010

To: Members of the Lawrence Douglas County Planning Commission

As owners of a large percentage of the commercial agriculture acreage represented in the Northeast Sector Plan we strongly support Option #1 as presented in the memorandum from Dan Warner AICP, Long Range Planner, which will be considered at the September 20, 2010 Planning Commission meeting. These are the key reasons for our support.

- This language reflects almost directly the previously approved policies in Chapter 7 of Horizon 2020. All of our long-range plans for our farms and family homes were based on those policies.
- We have worked the land and soils in this area for decades. Understanding the production capabilities, vulnerabilities, climate, erosion, water retention and production limitations has allowed us to maximize yields of tillable acreage for generations. It is how we make our living and is part of our lives.
- With proximity to major highways, rail and air transportation, this area serves the needs of Lawrence and all of northeast Kansas. We should not compromise access to industrial and commercial use in this critical transportation hub by placing severe limits on potential development nearby.
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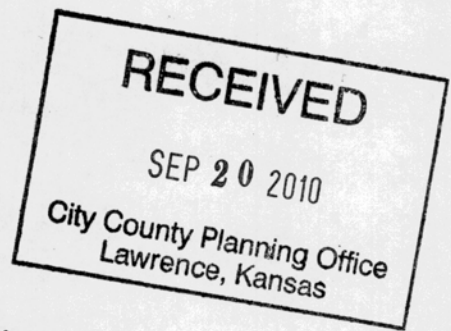
As landowners and citizens directly affected by this decision, we ask that the Lawrence/Douglas County Planning Commission approve option #1 as recommended by its Planning staff.

We will be present for the September 20 meeting and look forward to answering any questions you may have concerning our position on this issue.

Sincerely, *Leary Brothers Farms Inc.*

*39 Acres*

Grant Township Property Owners



September 10, 2010

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We will be present for the September 20 meeting and look forward to answering any questions you may have concerning our position on this issue.

Sincerely,

Grant Township Property Owners

*Emil W. Heck, Jr.*  
*Bette L. Heck*

*150 acres*



FROM : NUNEMAKER-ROSS INC.

PHONE NO. : 842 4360

Sep. 16 2010 01:14PM P2

**RECEIVED**  
 SEP 20 2010  
 City County Planning Office  
 Lawrence, Kansas

September 10, 2010

To: Members of the Lawrence Douglas County Planning Commission

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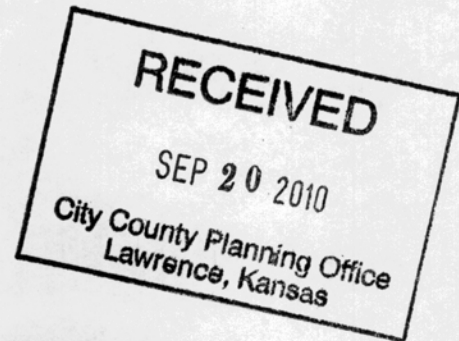
Grant Township Property Owners

*Lawrence Farms LLC*

*David A. Huff*

*324A.*

September 15, 2010



To: Members of the Lawrence Douglas County Planning Commission

We are Grant Township property owners, and we are in favor of the letter dated September 10, 2010, in support of option #1 of the NE Sector plan.

A handwritten signature in cursive script that reads "Gary L. Black".

Gary L. Black

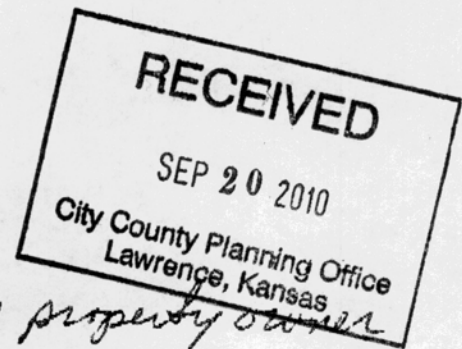
A handwritten signature in cursive script that reads "Larry D. Black".

Larry D. Black

17 acres owned in Grant Township

Sept 15, 2010

TO: Planning Commissions



I am a Grant Township property owner  
and I am in favor of the letter dated Sept.  
10, 2010, in support of option #1 of the  
NE Sector plan.

Respectfully yours,

Jerry Hecke

Owner of approx 40 acres  
in Grant Township

Address: 47 Hickory Ridge  
Cicero, IN.  
46034

Grant township letter

RECEIVED

SEP 20 2010

City County Planning Office  
Lawrence, Kansas

I am a Grant Township property owner, and I am in favor of the letter dated September 10, 2010, in support of option #1 of the NE Sector plan.

Jane McCabe Jane McCabe

Acres owned in Grant Township aprox 35

**RECEIVED**

SEP 20 2010

City County Planning Office  
Lawrence, Kansas

September 10, 2010

To: Members of the Lawrence Douglas County Planning Commission

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As landowners and citizens directly affected by this decision, we ask that the Lawrence/Douglas County Planning Commission approve option #1 as recommended by its Planning staff.

We will be present for the September 20 meeting and look forward to answering any questions you may have concerning our position on this issue.

Sincerely,

Grant Township Property Owners

*Care E. Bauer*  
*Julian V. Bauer*  
owners, 153 acres in Grant Township  
9.16.2010

September 10, 2010

RECEIVED

SEP 20 2010

City County Planning Office  
Lawrence, Kansas

To: **Members of the Lawrence Douglas County Planning Commission**

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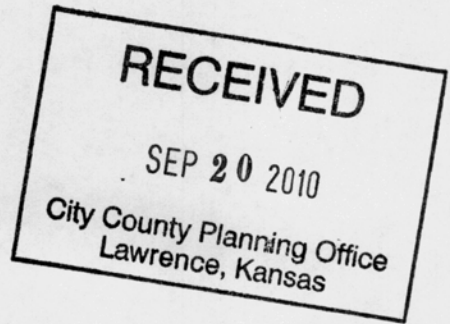
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Sincerely,

Grant Township Property Owners

*Clifford Harding*

51 A



September 10, 2010

To: Members of the Lawrence Douglas County Planning Commission

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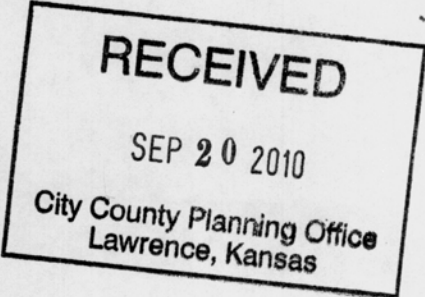
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Sincerely,

Grant Township Property Owners

*How far* 420 A. c. m.

 A handwritten signature that appears to be "How far" is written above a large, hand-drawn oval scribble. To the right of the signature, the text "420 A. c. m." is written.



September 10, 2010

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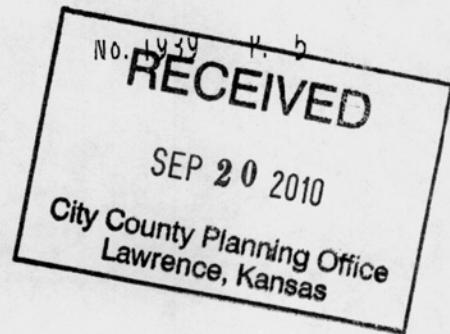
Grant Township Property Owners

*Pine Family Investments*  
*Roger & Sue Pine*  
*Brian & Kathy Pine*

*Roger Pine*  
*Sue Pine*  
*Kepler R. Pine*

349 acres





September 10, 2010

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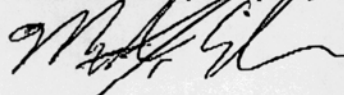
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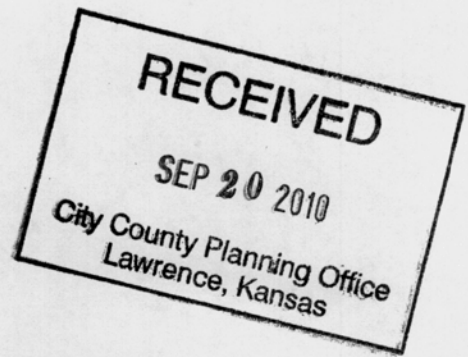
Sincerely,

Grant Township Property Owners



Matthew J. Eichman

420 acres



September 10, 2010

To: Members of the Lawrence Douglas County Planning Commission

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Sincerely,

Grant Township Property Owners

500+ Acres

Roger Kitzmiller - owner  
Ralph Kitzmiller owner

**League of Women Voters of Lawrence-Douglas County**  
P.O. Box 1072, Lawrence, Kansas 66044

September 19, 2010

Mr. Charles Blaser, Chairman  
Members  
Lawrence-Douglas County Planning Commission  
City Hall  
Lawrence, Kansas 66044

RE: ITEM NO. 4: COMPREHENSIVE PLAN AMENDMENT FOR NORTHEAST SECTOR PLAN.

Dear Chairman Blaser and Planning Commissioners:

We would like to present some comments on the new recommendations for inclusion in the Northeast Sector Plan: a choice between the Options #1 and #2.

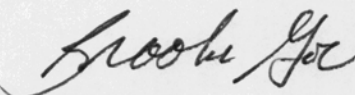
The important question addressed here is how to preserve the Class I and II Soils as a goal, but at the same time accommodate some industrial development. After reviewing these options we believe that the consequences of adopting either of these options at this stage would not achieve the desired outcome.

We have attached our analysis of some of the problems involved in attempting to accommodate both the preservation of these irreplaceable soils and at the same time accommodate industrial development.

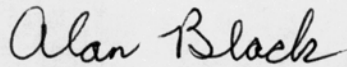
We suggest that before you incorporate either of these options into the Northeast Sector Plan that you review our discussion and consider this particular issue further.

Thank you for your consideration.

Sincerely yours,



Brooke Goc  
President



Alan Black, Chairman  
Land Use Committee

RECEIVED

SEP 20 2010

City County Planning Office  
Lawrence, Kansas

*ATTACHMENT*

PROBLEMS WITH SUGGESTED OPTIONS FOR PRESERVING CLASS I & II SOILS IN INDUSTRIAL AREAS

**Option #1:** The recommendation to incorporate into the *Northeast Sector Plan* suggested by staff for preserving Class I and II Soils in industrially designated areas is to “encourage” Agri-Industrial use in these areas.

**Problem:** With only “encouragement” there is no way to guarantee that Agri-Industrial uses will go into such areas. It seems to us that this would *not* be an effective method for saving these valuable soils. This is not recommended as a requirement nor is there recommended any incentive to do it. To be effective, there should be both a requirement and an incentive incorporated into the Land Development Code.

**Option #2:** The recommended suggestion here is to require a portion of an industrial development on Class I and/or II Soil to be set aside and permanently preserved for agricultural use. The suggested amount is half of the original tract. If this recommendation of Option #2 is incorporated into the Land Development Code and the Douglas County Zoning Regulations, the Agri-Industrial use would be a permitted use within the Industrial category.

**Problems:**

1. **Implementation:** There should be some mechanism for separating out the undesirable industrial permitted uses from the benign ones. Although there is one permitted use added—Agri-Industrial—there is no distinction in terms of the many choices for permitted uses available under the “Industrial” category in Option #2. Not all of these other industrial uses included here are equal in intensity and in possible negative effects on the set-aside farmland. There is a need to be able to select or condition uses, or to be able to do both.

- (a) One method used recently has been to allow conditioning of conventional zoning to eliminate all permitted uses other than agricultural-business uses. It could be applied to Agri-Industrial permitted uses in the Industrial category.
- (b) Another method would be to require a Planned Development.
- (c) A third method would be to establish all industrial uses in Class I and II soils as Special Uses with the ability to establish strict environmental controls through the Conditional or Special Use Permits.
- (d) A fourth method could be to create a new zoning district for Class I and II soils and then control uses individually under the Section 20-501 Use Regulations.

2. The size and configuration of the original tracts and their set-aside parcels is critical in preserving the set-aside land for its agricultural usefulness.

- (a) If half of the land of a single tract is set-aside for preserving Class I and II soils each parcel from the tract should be contiguous so that it is not preserved in separate small pieces. Set-backs and required open spaces between buildings or other normal “open space” requirements would not preserve sufficiently large tracts for usable agricultural land.
- (b) The original acreage of the industrial tract would determine how useful a set-aside parcel would be. For example, the parcels set-aside from small industrial tracts—under one acre—would generally be less agriculturally useful. You need to know what is considered economically and practically feasible to preserve.

3. Protecting the set-aside farmland area from pollution and runoff from the developed industrial parcel would have to be a condition placed on any industrial development adjacent to preserved farmland—an additional development expense and difficult to enforce.

4. An additional problem is that almost the entire Class I and II Soils are also subject to flooding. Added problems and hazards of developing in the floodplain:

- (a) The cost/benefit to the city and county of industrial development in the floodplain is apt to be negative. Why?
  - (1) Both the flat North Lawrence area and the floodplain have a very high water table and minimal slope. This causes major engineering problems with sewerage and added costs of providing and maintaining it. Sewerage would likely need lift stations and because of the high water table, sump pumps would likely be necessary. A major public cost.
  - (2) Floodplain development requires high capital investment. Needed flood protection or raising building levels, generally with added soil, makes development cost higher than average.
  - (3) Raising soil levels adjacent to farmland can change the drainage patterns to the disadvantage of the farmland, marginalizing it and reducing its productivity.
- (b) Hazards are created with floodplain development because of the proximity of the airport. Raising soil levels may create ponds that attract waterfowl and other wildlife if fill dirt comes from the same floodplain area. This effect is due in part to the high water table.

5. Problems of jurisdiction.

- (a) If a development is not annexed and provided public utilities, it will likely be substandard; public benefit will likely be negative.
- (b) If a development is provided utilities and public services but not annexed, costs to the city will not be publicly compensated through taxes, resulting in lack of public benefit to city.
- (c) If development is annexed and provided public services, costs may still exceed public benefits in taxes because of above listed problems.

6. Cost implications: Farming is one of the land uses in the county that costs the county much less than the county regains from it in taxes. When the League made its study on county development, one of our sources was the Farmland Trust. The Trust found that for every dollar returned in taxes from open space and farmland, expenditures to counties averaged about \$0.50. On the other hand, for every dollar returned to the county in taxes from rural residential use, the county expenditures for this use were higher, up to \$1.50 per household. That was in 1999. The disparity now is likely more.

# CITIZENS FOR RESPONSIBLE PLANNING

September 18, 2010

Dear Commissioners Blaser, Harris, Finkeldei, Carter, Burger, Hird, Dominguez, Rasmussen, Singleton, and Liese,

Citizens for Responsible Planning (CRP) remains in support of the 3rd Draft of the Northeast Sector Plan as presented at the Planning Commission meeting on July 21, 2010. This draft document skillfully and fairly represents public input from the beginning of the public document planning sessions that began in the Fall of 2009.

One of our primary concerns remains flooding and stormwater run-off associated with development and urbanization in the Northeast Sector. The "Option #1" alternative being presented clearly states, "The industrial category is expected to urbanize." This statement is in direct conflict with the desires expressed through the public process. It will also increase the probability of catastrophic flooding within the area and the North Lawrence residential community. Urbanization within the Northeast Sector will force implementation of the costly North Lawrence Drainage Study recommendations. CRP would request that should any development proposal come forward it be reviewed through a cost-benefit analysis whenever public dollars are being used for infrastructure extension.

It is impossible to segregate the area's unique challenges to development. As stated on **Pg. 3-1 under Recommendations these unique challenges include:**

- o **Costly stormwater infrastructure needs as urbanization occurs**
- o **Significant amounts of regulatory floodplain**
- o **Significant amounts of Class I and II soils**
- o **FAA Regulations and Lawrence Municipal Airport Protection Zones**

The current draft states on: **Page 3-13 3.3 Implementation , Item 6. "Consider implementing regulations that promote no adverse impact for floodplain management."** CRP supports this statement of an **Implementation recommendation**. It is recognized that flooding is the number one natural disaster in the United States (FEMA). To identify flood hazards, the risks they pose to people and property, and the regulatory boundaries of floodplains, the Federal Emergency Management Agency (FEMA) develops flood hazard maps, officially known as Flood Insurance Rate Maps (FIRMs). **The Flood Hazard Area map shown on page 2-18 should be updated to reflect the new LiDAR - DFIRM County map dated August 5, 2010.**

[http://www.douglas-county.com/depts/zc/docs/pdf/floodplainmap\\_080510.pdf](http://www.douglas-county.com/depts/zc/docs/pdf/floodplainmap_080510.pdf)

The map seen in the above link replaces the flood hazard map that dates back to November 7, 2001. Drainage patterns have changed dramatically due to land use, surface erosion, and other natural forces. As a result, the likelihood of riverine flooding in some areas has increased significantly. Moreover, the technology used to estimate risk has been much improved. Up-to-date maps will much more accurately represent the risk of flooding; they are an important tool in the effort to protect lives and properties in Douglas County. This statement is taken from the National Initiative for Flood Map Modernization.

This August 5, 2010 DFIRM Map indicates areas to be in the 1% chance floodplain or 100 year floodplain that are indicated on the Future Land Use Map Draft Pg. 3-12 for both Industrial and Soil-Conserving Agri-Industry. The new 100 year floodplain designations for these areas should require further detailed study prior to determining future land use possibilities within the Northeast Sector Plan.

Thank you for considering CRP's comments and requests.

As always, with great respect.

***Citizens for Responsible Planning Steering Committee***

September 10, 2010

To: Members of the Lawrence Douglas County Planning Commission

As owners of a large percentage of the commercial agriculture acreage represented in the Northeast Sector Plan we strongly support Option #1 as presented in the memorandum from Dan Warner AICP, Long Range Planner, which will be considered at the September 20, 2010 Planning Commission meeting. These are the key reasons for our support.

- This language reflects almost directly the previously approved policies in Chapter 7 of Horizon 2020. All of our long-range plans for our farms and family homes were based on those policies.
- We have worked the land and soils in this area for decades. Understanding the production capabilities, vulnerabilities, climate, erosion, water retention and production limitations has allowed us to maximize yields of tillable acreage for generations. It is how we make our living and is part of our lives.
- With proximity to major highways, rail and air transportation, this area serves the needs of Lawrence and all of northeast Kansas. We should not compromise access to industrial and commercial use in this critical transportation hub by placing severe limits on potential development nearby.
- The relatively undefined concept of soil conserving agri-industry opens the possibility that current agri-industry uses such as livestock feeding operations, turf and sod production, agricultural field stations and test plots could be jeopardized in the future.
- The proposed commercial use of land in no way conflicts with our ability to grow crops for our community or increase production to support local demands.

As landowners and citizens directly affected by this decision, we ask that the Lawrence/Douglas County Planning Commission approve option #1 as recommended by its Planning staff.

We will be present for the September 20 meeting and look forward to answering any questions you may have concerning our position on this issue.

Sincerely,

Grant Township Property Owners



Attachment to Grant Township Property Owners Letter

Trusted Management  
By Carolyn Phillips 252 acres

Vogelland  
By Nancy Vogel ≈ 170 acres

Kenneth R. Halladay M.D. 40 acres

Kenneth D. Reiling 60+ acres

~~Mul. Farm~~ ≈ 130 acres  
MUNNER HAYES  
Hayes Farms

Dorothy L. Congore Trust 238 acres  
by Dorothy Congore

Gantz Land L.C.  
by Neil Gantz, Mark Gantz 145 acres

Irene Vogel Trust  
DOUGLAS COUNTY BANK TRUSTEE  
By: JIMM DAIN SAVANTO } 510 ACRES

John Vogel Trust  
Douglas County Bank, TRUSTEE  
By: JIMM DAIN SAVANTO

September 10, 2010

To: Members of the Lawrence Douglas County Planning Commission

As owners of a large percentage of the commercial agriculture acreage represented in the Northeast Sector Plan we strongly support Option #1 as presented in the memorandum from Dan Warner AICP, Long Range Planner, which will be considered at the September 20, 2010 Planning Commission meeting. These are the key reasons for our support.

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As landowners and citizens directly affected by this decision, we ask that the Lawrence/Douglas County Planning Commission approve option #1 as recommended by its Planning staff.

We will be present for the September 20 meeting and look forward to answering any questions you may have concerning our position on this issue.

Sincerely,

Grant Township Property Owners

*Mary P. Ross*

*Patrick D. Ross*

*Herb E. Munken*

*Debra A. Newerake*

*Pauline M. Tunemaker*

*457 acres*

10520 Inverness Ct  
Fishers, IN 46037  
September 13, 2010

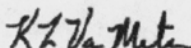
Lawrence-Douglas County Metropolitan Planning Commission  
6 East 6<sup>th</sup> Street  
Lawrence, KS 66044

Dear Planning Commission:

As the owner of 54 acres on the NW corner of the Midland Junction in Grant Township, I support Option #1 as presented in the memorandum from Dan Warner AICP, Long Range Planner, which will be considered at the upcoming September 20, 2010 Planning Commission Meeting.

I appreciate the opportunity to express my opinion. If you have any questions or would like to discuss this issue further, please contact me at 317-450-6242. Additionally, you may speak with my father, Earl Van Meter, who manages my property. He can be reached at 785-749-5956.

Sincerely,



Karen Van Meter

Cc: Earl Van Meter  
621 Country Club Terrace  
Lawrence, KS 66049

September 10, 2010

To: Members of the Lawrence Douglas County Planning Commission

As owners of a large percentage of the commercial agriculture acreage represented in the Northeast Sector Plan we strongly support Option #1 as presented in the memorandum from Dan Warner AICP, Long Range Planner, which will be considered at the September 20, 2010 Planning Commission meeting. These are the key reasons for our support.

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- We have worked the land and soils in this area for decades. Understanding the production capabilities, vulnerabilities, climate, erosion, water retention and production limitations has allowed us to maximize yields of tillable acreage for generations. It is how we make our living and is part of our lives.
- With proximity to major highways, rail and air transportation, this area serves the needs of Lawrence and all of northeast Kansas. We should not compromise access to industrial and commercial use in this critical transportation hub by placing severe limits on potential development nearby.
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- The proposed commercial use of land in no way conflicts with our ability to grow crops for our community or increase production to support local demands.

As landowners and citizens directly affected by this decision, we ask that the Lawrence/Douglas County Planning Commission approve option #1 as recommended by its Planning staff.

We will be present for the September 20 meeting and look forward to answering any questions you may have concerning our position on this issue.

Sincerely,

Grant Township Property Owners

*John S. Arnsby (132 Acres)*

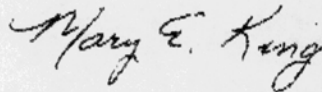
**BILL & MARY KING**  
**2231 GARFIELD**  
**GREAT BEND, KS 67530**

Tel. #620 793 6168  
Fax # 620 793 8473  
Cell # 620 791 7150  
E-mail [bking6@cox.net](mailto:bking6@cox.net)

September 12, 2010

Members of the Lawrence Douglas County Planning Commission:

I am a Grant Township property owner, and I am in favor of the letter dated September 10, 2010, in support of option #1 of the NE Sector plan. I own 170 acres in Grant Township.



Mary E King

September 10, 2010

To: Members of the Lawrence Douglas County Planning Commission

As owners of a large percentage of the commercial agriculture acreage represented in the Northeast Sector Plan we strongly support Option #1 as presented in the memorandum from Dan Warner AICP, Long Range Planner, which will be considered at the September 20, 2010 Planning Commission meeting. These are the key reasons for our support.

- 1 This language reflects almost directly the previously approved policies in Chapter 7 of Horizon 2020. All of our long-range plans for our farms and family homes were based on those policies.
- 2 We have worked the land and soils in this area for decades. Understanding the production capabilities, vulnerabilities, climate, erosion, water retention and production limitations has allowed us to maximize yields of tillable acreage for generations. It is how we make our living and is part of our lives.
- 3 With proximity to major highways, rail and air transportation, this area serves the needs of Lawrence and all of northeast Kansas. We should not compromise access to industrial and commercial use in this critical transportation hub by placing severe limits on potential development nearby.
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- 5 The proposed commercial use of land in no way conflicts with our ability to grow crops for our community or increase production to support local demands.

As landowners and citizens directly affected by this decision, we ask that the Lawrence/Douglas County Planning Commission approve option #1 as recommended by its Planning staff.

We will be present for the September 20 meeting and look forward to answering any questions you may have concerning our position on this issue.

Sincerely,

Grant Township Property Owners

Don & Westheffer  
Wanda L. Westheffer  
306 acres in Grant townships

**From:** Barbara Clark, Maggie's Farm [mailto:maggiesfarm@sbcglobal.net]

**Sent:** Wednesday, July 21, 2010 3:11 PM

**To:** Chuck Blaser; Lisa Harris; Brad Finkeldei; Hugh Carter; Lara Adams Burger; Richard Hird; Charlie Dominguez; Stan Rasmussen; Kenzie Singleton; Bruce Liese

**Cc:** Dan Warner; Scott McCullough; Sheila Stogsdill

**Subject:** Fw: Possible "Best Practices" Examples

Dear Commissioners,

I am forwarding three very recent documents to you that may act as "best practices" guides. I believe at the last meeting on May 24th when the Northeast Sector Plan was discussed there was a statement that there should be communities that are engaged in the same issues we are here in Douglas County. I hope these will assist as we move forward.

Two are from Pennsylvania and one from Washington State.

The first link: [http://www.tpl.org/content\\_documents/OkanoganValley\\_WhitePaper\\_LowRez.pdf](http://www.tpl.org/content_documents/OkanoganValley_WhitePaper_LowRez.pdf)

*Agricultural Land Preservation and Land Conservation in Okanogan County: Challenges, Opportunities, and Recommendations for Moving Forward*, January 2010.

This document addresses the need for "common ground" between divergent interests. From my perspective the process the planning staff undertook and skillfully facilitated for the Northeast Sector Plan fits within the recommendations of this white paper. While there are variances in the players involved in this county in Washington State, the critical natural resource at risk is high quality agricultural land. This document, if for no other value, clearly shows that the discussions and difficulties Douglas County is facing are common to many other communities in our nation.

The second link: <http://www.shrewsburytownship.org/Codorus%20Comprehensive%20Plan%20DRAFT.pdf>

*Codorus Township Comprehensive Plan Update Draft*, March 2010

This very recent Comprehensive Plan Draft has a strong focus on agricultural soils preservation, tools to achieve agricultural preservation, and valuation systems for implementation. On page 11, a lengthy discussion of soils begins and the various land use capabilities appropriate to various soil types. Page 38 begins a discussion of this county's preservation work.

The third link: [http://www.ycpc.org/County\\_Long\\_Range\\_Pages/comp\\_plan.html](http://www.ycpc.org/County_Long_Range_Pages/comp_plan.html)

After opening this link, scroll down the page to the list of documents. Click on the first document: *York County Agricultural Land Protection Plan*

This planning document looks at agricultural land protection tools. One of the most important being good long-range comprehensive planning. There are other zoning and incentive tools referenced in this planning document. Soils play a very significant role in land use planning in this document and other township plans I've looked at from the York County Planning Department.

Thank you all for taking the time to review these documents. I know you are called upon by many groups to read volumes of text. Your time and dedication to our community is greatly appreciated.

Best,

Barbara Clark

Maggie's Farm

[www.maggiesfarm-ks.com](http://www.maggiesfarm-ks.com)

# CITIZENS FOR RESPONSIBLE PLANNING

July 21, 2010

Dear Commissioners Blaser, Harris, Finkeldei, Carter, Burger, Hird, Dominguez, Rasmussen, Singleton, and Liese,

Citizens for Responsible Planning (CRP) would like to express their gratitude for the diligence shown by the Planning Department Staff in their skillful and inclusive facilitation of the Northeast Sector Plan Draft development. From the initial "kick-off" meeting in the Fall of 2009 public attendance and public input has been carefully recorded and used to direct language currently represented in the 3rd draft of this document.

It is also our expressed opinion that the Q and A paper has been invaluable in clarifying and giving further elaboration on questions and concerns that were voiced at the May 24th Planning Commission meeting.

CRP recommends the following new language additions (**identified in black bold type**) to the 3rd draft.

**Pg. 3-1** - Due to the *area's* unique challenges to development, including:

CRP's two overarching concerns for the Northeast Sector Plan have consistently been stormwater mitigation and the preservation of the largest contiguous tract of Capability Class 1 and 2 soils in Douglas County.



**Pg. 3-1** - The plan recognizes *the interconnectedness of* these unique elements and proposes only limited development in the planning area.

The addition of “*the interconnectedness of*” gives recognition of how these deep, fertile soils are the best mitigation source for recurring stormwater issues facing this area. These soil's natural absorptive sponge capabilities offer both from a cost basis and highest and best land use perspective the greatest mitigation option available. These two concerns are best addressed in tandem.

**Pg. 3-2 - 3.1.1.1.g** Lawrence Urban Growth Area (UGA)

1. Consider adjusting Lawrence's Urban Growth Area boundary *by limiting it* to those areas of Grant Township feasible for the urban-type development through the analysis of the Sector Plan and the analysis of future water and wastewater master plans.

CRP supports the Plan Growth Area as defined by the Future Land Use map presented on pg. 3-14 of this draft.

In addition, we would like to use a transcribed reference from the May 24th Planning Commission meeting to further support CRP's thoughts on the limiting of the UGA.

"Commissioners, I guess there's one thing I'd like to leave you with while we go to work on these comments is --we've put this in the context of what are the planning efforts city/county wide. The reason we start with our cartoon of annexation is that there's a reason that this area hasn't developed substantially over the decades and those reasons have to do with the costs of development and public infrastructure and the storm drainage and those sorts of things. I think as planners we need to start thinking, or continue to think, about where are we going to put our limited resources in relation to development costs. We have / you all have planned a substantial amount of industrial employment center activity along with other areas of high density residential and commercial nodes and the like - Farmland Industries is one area, Farmers' Turnpike is another area, 6th Street and SLT is an area. There's room for all those things and areas of low

growth / low development and so as we talk more about the utilities master plan and come back with this plan for your review and consideration I think we need to think of it in terms of the county as a region and not just - It's easy to get into Grant Township and say, 'why aren't we pro-development here?' Why are we restrictive?' ...and those kind of things. We're trying to let the history and the land talk to us on this one and say, "there are reasons for this today; what do we reasonably anticipate?' We talk about expectations for the residents...is it fair to put out a plan for pro-growth if we're not as a city going to put any infrastructure in that area. We've got to talk about those things and come to some reasonable conclusions I think. We'll get to work on your comments and come back with those things in mind as well."

Scott McCullough, Lawrence/Metropolitan Planning Director - May 24, 2010

CRP agrees with Scott McCullough that good long-range, comprehensive land-use planning should consider the most effective allocation of limited public resources for the costly infrastructure necessary for industrial employment centers and high density residential areas. Our community already has identified these public investments for other areas. There are historically validated reasons why Grant Township has experienced limited development in significant part due to flooding and storm water drainage. Sustaining agricultural land uses within Grant Township complements best economic land use with storm water mitigation. We hope that you concur in your thoughts and actions.

CRP has consistently pressed for incentive mechanisms to aid in farmland preservation. Some "Best Practices" documents have been sent to you under separate cover. At this time we would like to suggest some other references that may aid in finding appropriate tools for Douglas County to incorporate into their practices. The first would be a link to the American Farmland Trust toolbox. This link is: [http://www.farmlandinfo.org/documents/27761/fp\\_toolbox\\_02-2008.pdf](http://www.farmlandinfo.org/documents/27761/fp_toolbox_02-2008.pdf)

This fact sheet will give you a brief description of many of the planning and incentive tools available for farmland protection.

A second link is to the American Planning Association's Policy Guide on Agricultural Land Preservation. This link is:

<http://www.planning.org/policy/guides/adopted/agricultural.htm>

This is a frequently cited reference and in CRP's opinion reflects many of the planning guides set forth in the Northeast Sector Plan Draft.

As always, CRP is aware of the many factors that come to bear on your decisions. Our continued efforts have been to present reasonable, authoritative data to assist in your deliberations.

With great respect and appreciation for your tireless efforts on behalf of our community,

Citizens for Responsible Planning Steering Committee

Barbara Clark

Jerry Jost

Lane Williams

Ellen Paulsen

Lori McMinn

Chet and Deanna Fitch

cc: Dan Warner, Scott McCullough, Sheila Stogsdill

**From:** Nuts2sell@aol.com [mailto:Nuts2sell@aol.com]  
**Sent:** Friday, July 23, 2010 12:01 AM  
**To:** Dan Warner  
**Subject:** Comment to Planning Commission, Northeast Sector Plan

July 22, 2010

Re: Draft Northeast Sector Plan

Dear Planning Commissioners:

Although we will be out-of-town for the next meeting on the Northeast Sector Plan, my wife and I wish to encourage your continued work on this and, in particular, your attention to storm drainage challenges and soils. As most of you know, we have a tree farm in the area and have made comments in the past.

In the past few days we have driven North 3rd street and watched as at least 6 feet of clay fill has been trucked in and compacted for the pad and parking lot of the new Dollar Store. It is a impressive, but typical, fill for North Lawrence. We have remarked how each development in the flood plain incrementally degrades the drainage for their neighbors who had previously built at the natural grade.

In the ten years since the last FEMA floodplain map was adopted, degradation of the Maple Grove drainage has now resulted in a new FEMA map with a greatly increased 100-year floodplain area. The new regulatory floodplain covers much more of our neighbors' lands and, for the first time, includes part of our orchard. The map reflects the cumulative effect of development over the past decade. Ironically, floodplain regulations encourage or require building on fill, which is invariably less permeable than the natural soil. New development is built on ever higher fill. Whoever is lower, whoever built before, is burdened with the runoff.

In North Lawrence the better agricultural soils are sponges of storm water. The higher Capability 1 soils are better sponges than the lower Capability 2 soils; loss of Capability 1 soils to development will impact area drainage more severely, although it is the lower soils that will flood more quickly.

We are encouraged by the fact that the Northeast Sector Plan articulates that drainage and agricultural soils are important planning considerations for the City of Lawrence. For us, as interested farmer landowners, drainage and prime soil preservation are paramount considerations for this particular area. We encourage your continued efforts to incorporate a reasonable reference respecting the best agricultural soils into the Northeast Sector Plan.

We appreciate your thoughtful efforts throughout this process.

Charles NovoGradac  
Deborah Milks

*Chestnut Charlie's*  
*Organic Tree Crops*

P.O. Box 1166  
Lawrence, KS 66044  
[www.chestnutcharlie.com](http://www.chestnutcharlie.com)  
[nuts2sell@aol.com](mailto:nuts2sell@aol.com)

## Dan Warner

---

**From:** Scott McCullough  
**Sent:** Wednesday, July 14, 2010 4:17 PM  
**To:** 'Rasmussen, Stanley L NWK'  
**Cc:** Dan Warner; Denny Ewert  
**Subject:** RE: Northeast Sector Plan

Dan – for PC packet and file.

**Scott McCullough**, *Director* - [smccullough@ci.lawrence.ks.us](mailto:smccullough@ci.lawrence.ks.us)  
Planning and Development Services | [www.lawrenceks.org](http://www.lawrenceks.org)  
City Hall, 6 E. 6<sup>th</sup> Street  
P.O. Box 708, Lawrence, KS 66044-0708  
office (785) 832-3154 | fax (785) 832-3160

---

**From:** Rasmussen, Stanley L NWK [mailto:Stanley.L.Rasmussen@usace.army.mil]  
**Sent:** Wednesday, July 14, 2010 4:12 PM  
**To:** Scott McCullough  
**Subject:** Northeast Sector Plan

Scott,

After reviewing the 12 July 2010 draft of the Northeast Sector Plan, I am particularly concerned with the Soil Conserving Agri-Industry boundary designated on the Future Land Use Map 3-1 (see page 3-14). Specifically, the proposed boundary appears to be better suited for industrial development than to soil-preservation activities.

This area is bounded on the north and the east by the airport (as well as on the north by U.S. Highway 24/40), to the south by Interstate-70, and is essentially bounded on the west by US Highway 40/59.

In my opinion, an area such as this, with immediate access to multiple highways, the interstate, the airport, as well as close proximity to rail access, and an area which is essentially devoid of residential property, is naturally suited to industrial development as opposed to soil preservation. By looking at the soil classification map 2-13 (on page 2-24), better areas for soil conserving agri-industry can be readily identified. For example, while the draft designated area contains a mix of soil types, there are areas south of I-70 and north of the Kansas River that contain large swaths of Class I soil types, that are adjacent to existing industrial land, and that appear to be much better suited to soil conserving agri-industry activities.

I suggest that the Soil Conserving Agri-Industry classification be eliminated from the Future Land Use Map 3-1 (on page 3-14) and that this area be designated as Industrial. Second, I suggest that the last sentence in Section 3.2.1.4 be deleted (this is the sentence which reads: This use is identified south of highway 24/40...when a nodal plan is developed for that area). Alternatively, it may be appropriate to discuss the merits of designating the general area in the southeast portion of this Sector Plan as an area where soil-conserving agri-industry may be encouraged.

Please share my comments with my fellow Planning Commissioners, Planning Department staff, and other interested parties.

Stanley L. Rasmussen, Planning Commissioner

## Dan Warner

---

**From:** Kelly Barth [ludditekel@earthlink.net]  
**Sent:** Wednesday, May 26, 2010 3:47 PM  
**To:** Dan Warner  
**Subject:** Northeast Sector Plan

Dear Dan,

I wanted to take a moment to thank you for your lucid and strong articulation of the reasoning behind the Northeast Sector Plan at Monday's meeting.

Though I certainly realize the county can't please everyone with its documents, I want to express my concerns about the following:

- \* Potential flooding of the area and the expense and logistical nightmare created by implementation of the North Lawrence Drainage study recommendations that would be needed to accommodate large-scale develop in the area.

- \* Potential damage to irreplaceable Class 1 and 2 soils that have developed over millennia and represent one of Douglas County's most valuable cultural, environmental, and commercial assets.

I also appreciate the document's recognition that the development of aviation-related industry sited at the airport itself is an entirely appropriate development use for the area given the above two concerns.

Thanks for all your good work!

Best,

Kelly Barth

## Dan Warner

---

**From:** Barbara Clark, Maggie's Farm [maggiesfarm@sbcglobal.net]  
**Sent:** Wednesday, May 26, 2010 8:59 PM  
**To:** Stan Rasmussen; Lisa Harris; Chuck Blaser; Brad Finkeldei; Richard Hird; Jeff Chaney; Kenzie Singleton; Greg Moore; Charlie Dominguez; Hugh Carter  
**Cc:** Scott McCullough; Dan Warner; Sheila Stogsdill  
**Subject:** Fw: Land Capability Classes  
**Attachments:** class 2.pdf; class 1 and 2.jpg; class 1 and 2.pdf; class 1.jpg; class 1.pdf; class 2.jpg

Dear Commissioners Moore, Finkeldei, Harris, Blaser, Rasmussen, Hird, Chaney, Singleton, Carter, and Dominguez,

I'm forwarding information you requested at the Planning Commission meeting on Monday evening.

My intention has always been to submit objective, current data from authoritative sources concerning the soils in Douglas County. The majority of what I am forwarding to you in this document came from Cleveland Watts, State Agronomist with the USDA/NRCS out of the Salina offices. Mr. Watts has always been extremely helpful and generous with his time in assisting me with the generation of maps designating location and acreage of Capability Class 1 and 2 Soils in Douglas County. I am forwarding the actual communication received from Mr. Watts for your review.

On Tuesday of this week I called Mr. Watts to once again ask for his assistance in generating a map that will show Capability Class 1 and 2 Soils within the State of Kansas. I believe this was a question Commissioner Rasmussen posed. Mr. Watts told me he would have this data for me within 30 days. They are currently short staffed because of vacation schedules. So, my hope is that this time frame will be agreeable. I will forward this new information at the earliest possible date.

Under separate email I will forward the maps that show Capability Class 1 and 2 Soils within the county that are urbanized. This map and the corresponding acreage updates were created for me by DeAnn Presley, Associate Professor Environmental Soil Science/Soil and Water Management at Kansas State University - Agronomy Department. Professor Presley utilized a combination of GIS layers with Web Soil Survey data to create these maps and data tables.

Thank you for reviewing these documents. I would be glad to answer any questions, or secure answers from Mr. Watts or Professor Presley for any clarification you may want.

Respectfully,  
Barbara Clark  
Citizens for Responsible Planning

Maggie's Farm  
[www.maggiesfarm-ks.com](http://www.maggiesfarm-ks.com)

----- Forwarded Message -----

**From:** "Watts, Cleveland - Salina, KS" <cleveland.watts@ks.usda.gov>  
**To:** maggiesfarm@sbcglobal.net  
**Cc:** "Sabata, Larry - Topeka, KS" <Larry.Sabata@ks.usda.gov>  
**Sent:** Thu, June 5, 2008 1:26:11 PM  
**Subject:** Land Capability Classes

Mrs Clark

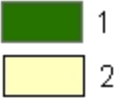
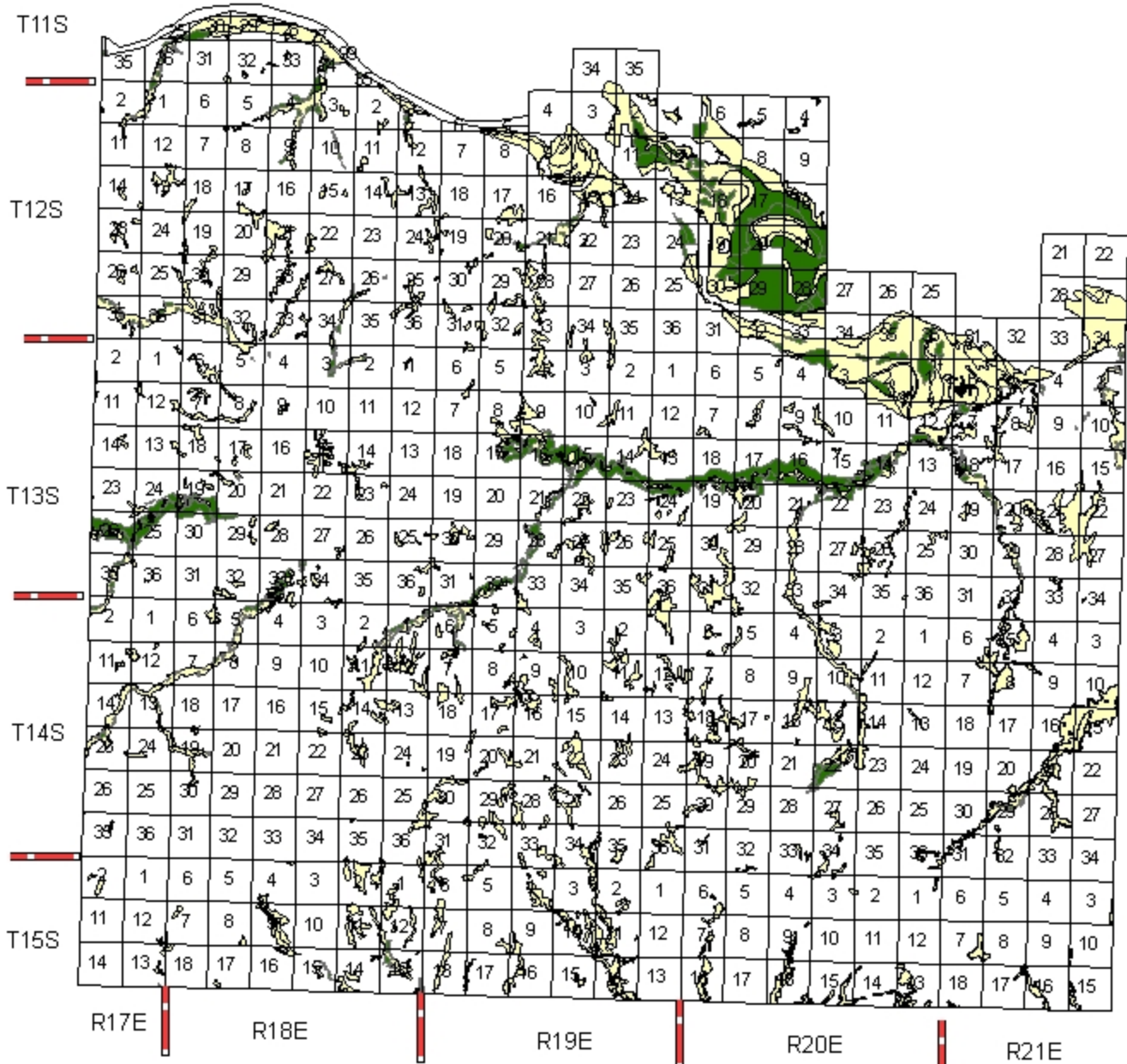
Larry Sabata submitted to me the request that you had made to him in regards to developing land capability interpretation map for Douglas county for class 1 and 2 land.

Attached is 6 maps related to this request. I developed maps for capability class 1 and 2 and also, with capability classes 1 and 2 combined. Each class is in a .jpeg and .pdf format.

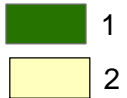
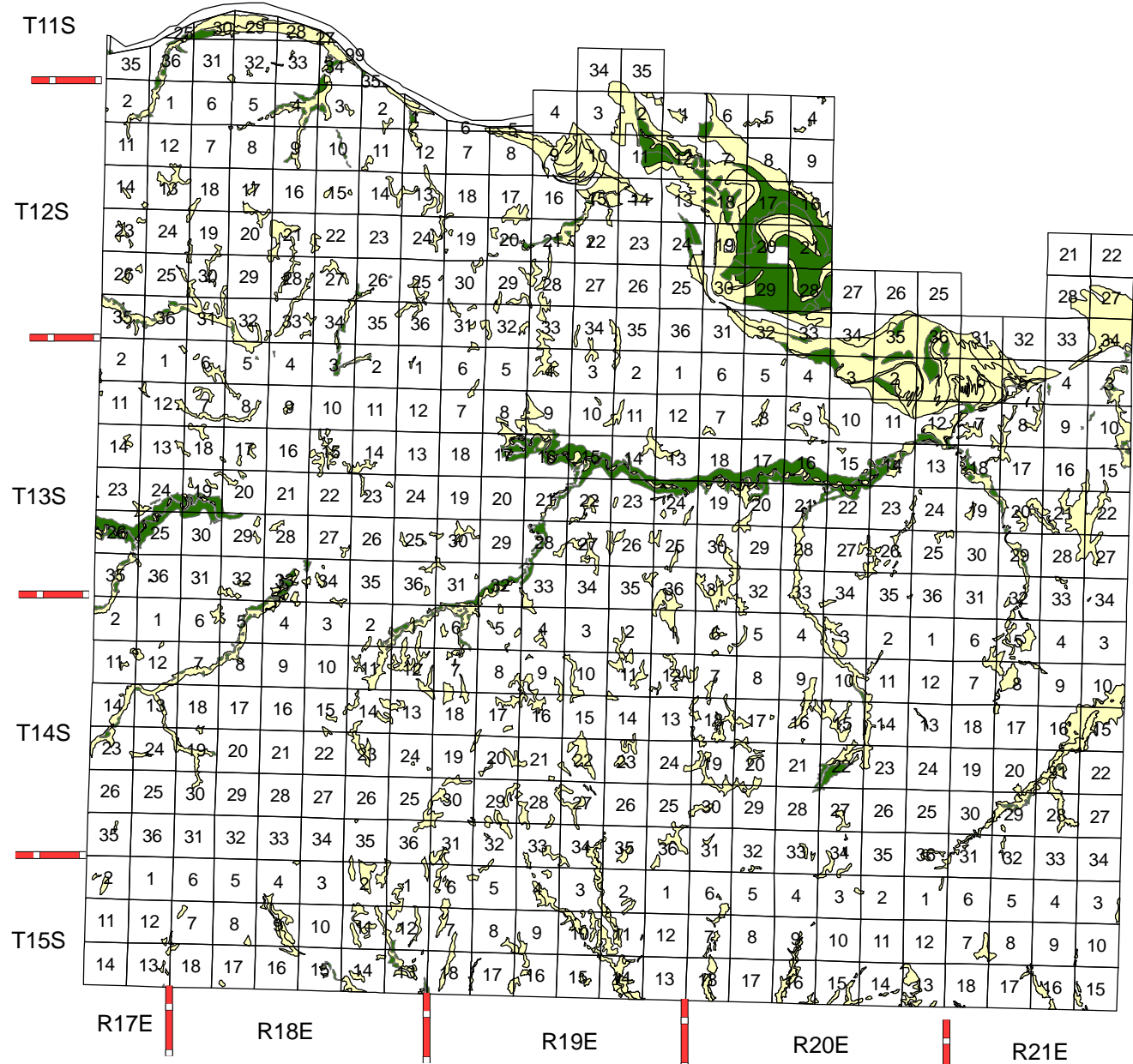
If this information is not what you need, please feel free to give me a call at 785-823-4558.



# Land Capability Class 1 and 2 in Douglas County, Kansas

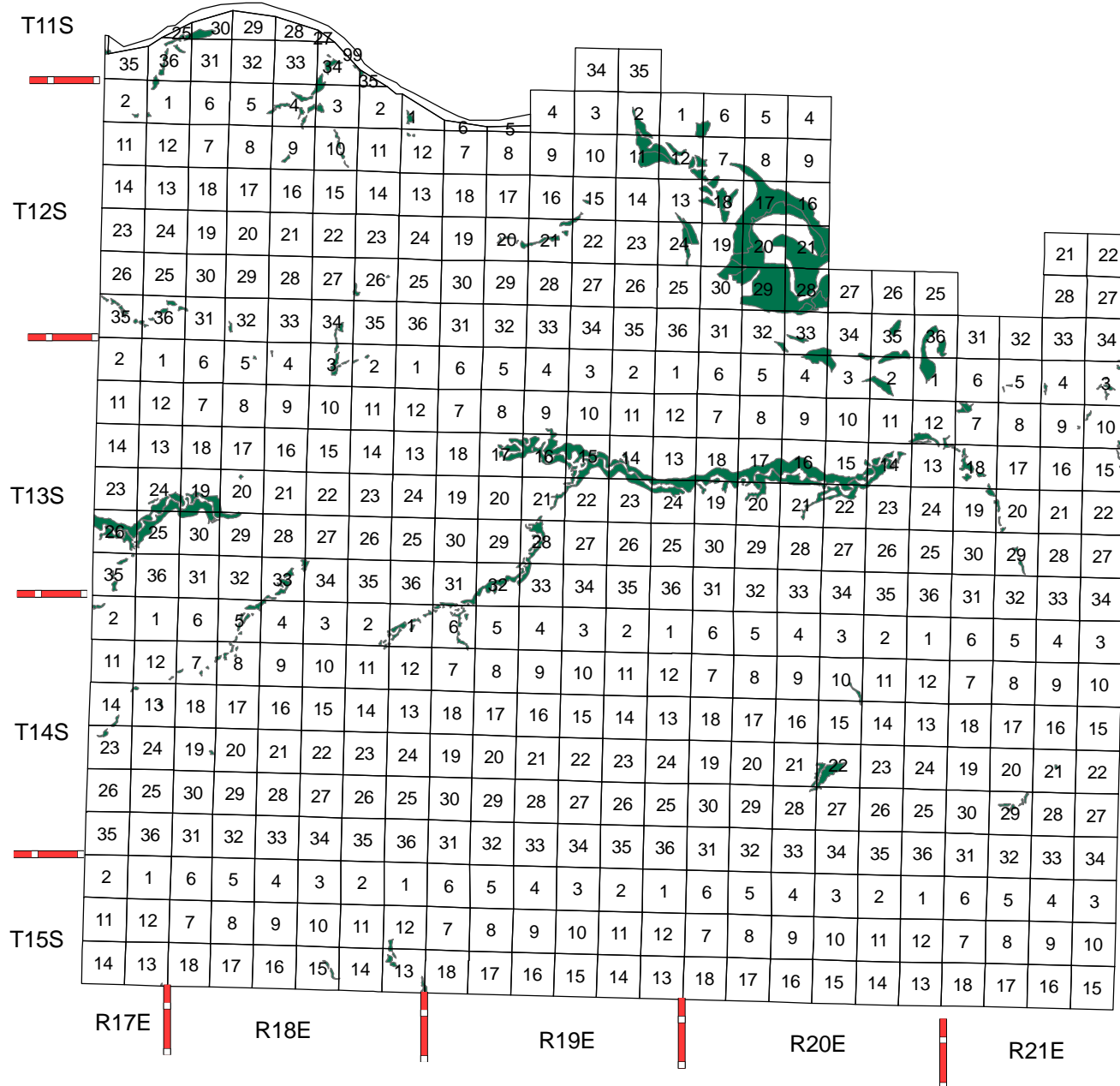


# Land Capability Class 1 and 2 in Douglas County, Kansas



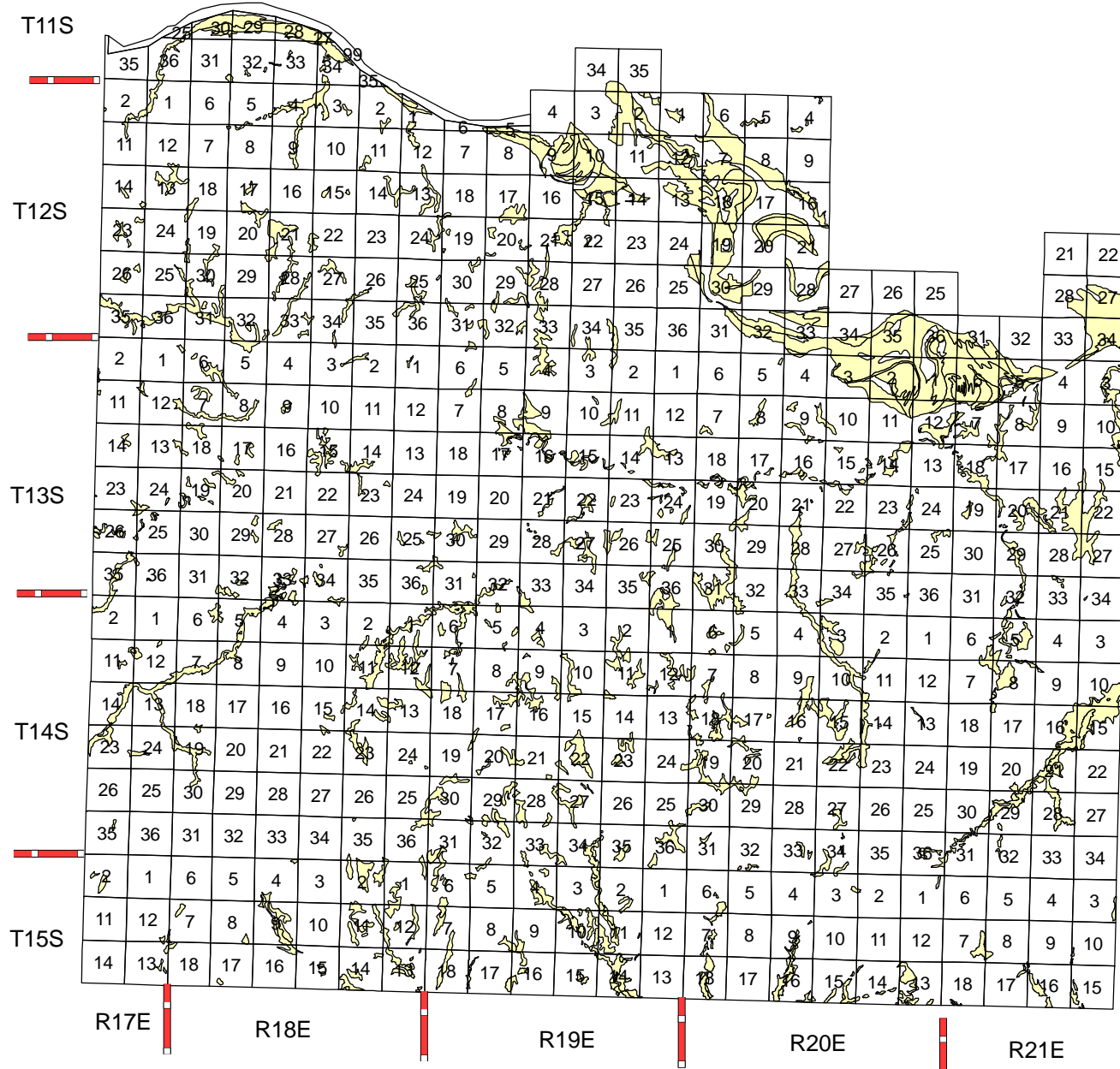


# Land Capability Class 1 in Douglas County, Kansas





# Land Capability Class 2 in Douglas County, Kansas



## Dan Warner

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**From:** Barbara Clark, Maggie's Farm [maggiesfarm@sbcglobal.net]  
**Sent:** Wednesday, May 26, 2010 9:47 PM  
**To:** Stan Rasmussen; Lisa Harris; Chuck Blaser; Hugh Carter; Greg Moore; Charlie Dominguez; Brad Finkeldej; Jeff Chaney; Kenzie Singleton; Richard Hird  
**Cc:** Scott McCullough; Dan Warner; Sheila Stogsdill  
**Subject:** Fw: Urbanized Capability Class 1 and 2 Soils Douglas County  
**Attachments:** class\_1\_and\_2\_acres.xls; class\_1\_2\_urban.jpg

Dear Commissioners,

Attached are the documents created by DeAnn Presley, KSU Agronomy Department. These files show the urbanized percentages and acres of Capability Class 1 and 2 Soils in Douglas County. I also believe these documents are included in early public comments associated with the Northeast Sector Plan. I might add this data is based on a 2005 dataset. So, any urbanization of Capability Class 1 and 2 Soils after that date would not be reflected in these percentages or acres calculations.

As always, I will be happy to answer any questions you may have or obtain further information for you.

With many thanks.  
Barbara Clark

I have included contact information for DeAnn Presley

### DeAnn Presley

Extension Specialist/Assistant Professor

Environmental Soil Science/Soil and Water Management

Kansas State University

Agronomy Department

2014 Throckmorton Hall

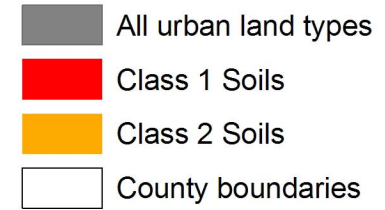
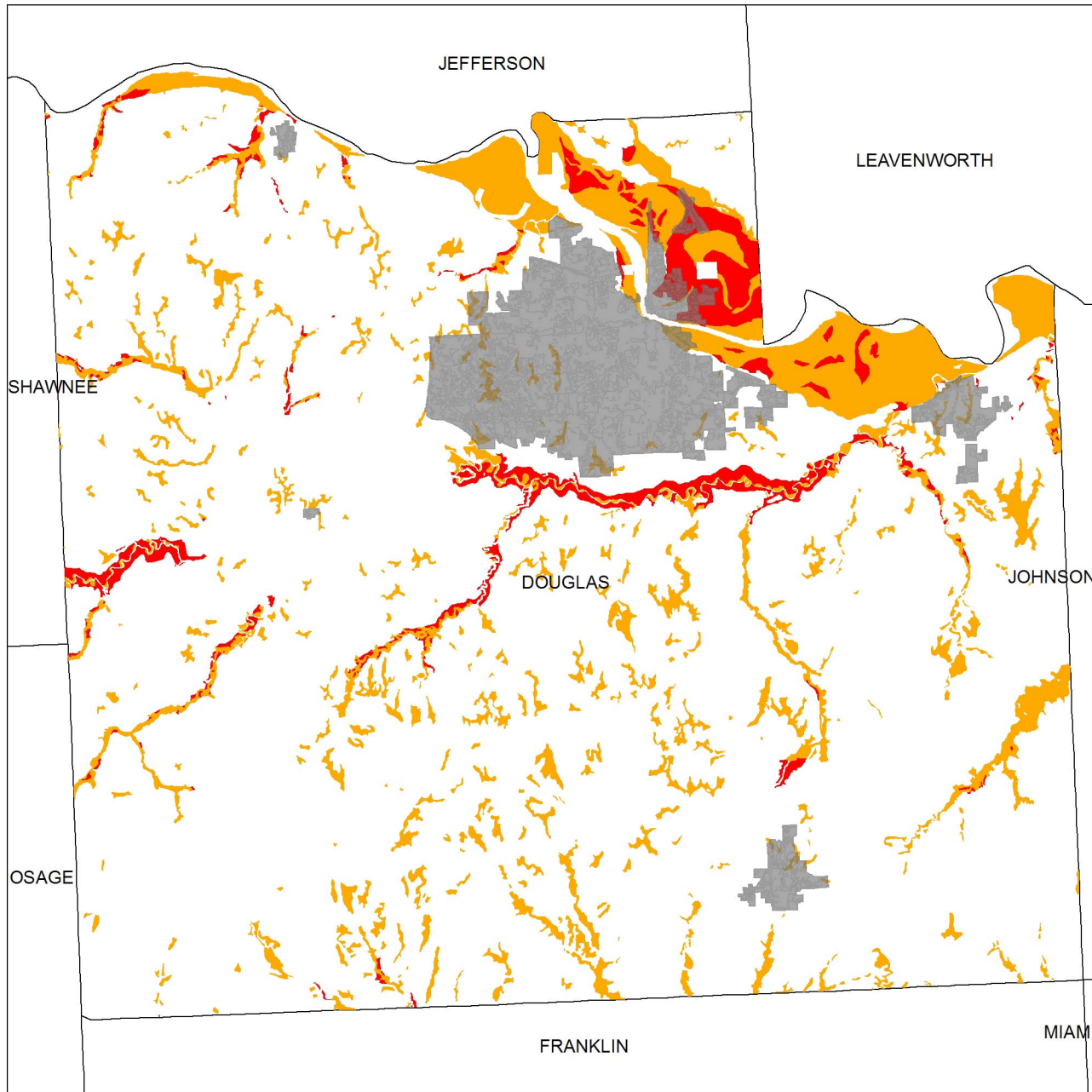
Manhattan , KS 66506

785-532-1218 (office)

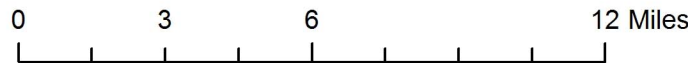
785-313-4193 (cell)

[deann@ksu.edu](mailto:deann@ksu.edu)

# Class 1 and 2 Soils, plus all Urban land types



	Acres
Class 1, Total	8,366
Class 1, Urban	2,009
Class 2, Total	33,053
Class 2, Urban	12,761
Urban, Total	21,298
Total Area	303,808





county	total county size in acres	total urban acres in county	acres of class 1	% class 1	acres of developed class 1	% of class 1 that is developed	acres of class 2	% class 2	acres of developed class 2	% of class 2 that is developed
Wyandotte	99700		1437	1.4			19972	20.0		
Wabaunsee	511827		842	0.2			48457	9.5		
Shawnee	355488		29518	8.3			57063	16.1		
Riley	398400		15878	4.0			66084	16.6		
Pott	551366		18305	3.3			119415	21.7		
Johnson	307066		3148	1.0			41199	13.4		
Jefferson	356429		2806	0.8			49349	13.8		
Leavenworth	300300		3460	1.2			60112	20.0		
Douglas	303808	21298	8370	2.8	2009	24.0	33053	10.9	12761	38.6
Geary	258611		13187	5.1			39329	15.2		
Jackson	420953		2779	0.7			89739	21.3		

Dan and Scott,

I'm forwarding two links to planning documents from communities that are currently addressing some of the same issues we are with the Northeast Sector Plan.

The first link: [http://www.tpl.org/content\\_documents/OkanoganValley\\_WhitePaper\\_LowRez.pdf](http://www.tpl.org/content_documents/OkanoganValley_WhitePaper_LowRez.pdf)

*Agricultural Land Reservation and Land Conservation in Okanogan County: Challenges, Opportunities, and Recommendations for Moving Forward*, January 2010.

This document addresses the need for "common ground" between divergent interests. I think much of what you did through the use of inclusive, public process to begin the formation of concepts and language in the draft of the Northeast Sector Plan fits within the recommendations of this white paper. While there are variances in the players involved in this county in Washington State, the critical natural resource at risk is high quality agricultural land. This document, if for no other value, clearly shows that the discussions and difficulties Douglas County is facing are common to many other communities in our nation.

The second link: [http://www.ycpc.org/County\\_Long\\_Range\\_Pages/comp\\_plan.html](http://www.ycpc.org/County_Long_Range_Pages/comp_plan.html)

After opening this link, scroll down the page to the list of documents. Click on the first document: *York County Agricultural Land Protection Plan*

This planning document looks at agricultural land protection tools. One of the most important being good long-range comprehensive planning. This is exactly what I heard you speak to at the last meeting of the Planning Commission. There are other zoning and incentive tools referenced in this planning document. Soils play a very significant role in land use planning in this document and other township plans I've looked at from the York County Planning Department.

Thank you both for reviewing these two documents. I know you are constantly called upon to read volumes of data. I would appreciate hearing your thoughts on what might be applicable for Douglas County from these two texts.

Best,  
Barbara Clark

-Hello, I am Jim Congrove. Thank you for giving me some time to explain our position on proposed restrictions on use of Class I and II soils in the Northeast Sector plan. My wife and I own three tracts of land within the boundaries of the plan. One tract is located just Southeast of Midland within the plan growth area and is predominately Class II soils, another tract is located southwest of Midland, and is predominately Class I soils and then a tract where we live is just off Highway 24 on the Leavenworth-Douglas County on the hills overlooking the river valley.

In reviewing the draft Northeast Sector plan, a great deal of emphasis is placed on prohibiting or discouraging any industrial development on Class I and II soils. Please refer to map 3-13. The purple shaded area is designated as Soil conserving – Agri-Industry. Based on the definition of this designation on pages 3-10 and 3-11 I believe the result will be no business or industry. Much of this discussion is based on a concern that the potential for local food production could be greatly impaired if any Class I or II soils were allowed to be developed. While we strongly support the efforts to promote more local food that can be marketed at Farmer's Markets , grocery stores, restaurants or any other outlet, I am going to argue that there is sufficient land for local food production and also allow landowner's freedom to exercise their property rights if opportunities arise. If this plan is approved as drafted, we believe that our property rights and land values could be impaired.

Class I and II soils have similar physical properties. They both have potential for high productivity of crops and have less than 1% slope. The main difference in these two soil classes is that Class I has better permeability. Reference is made to map 2-22. The class 1 & 2 soils are cross-hatched. Please note there are some areas not cross-hatched. One area just north of the Kansas River along the eastern side of the plan and another area northwest of teepee junction along the river levee are class 3 because they are too sandy to be considered Class 1 or 2.

While studying at K-State I took several soils courses while obtaining my Bachelor's and Master's degrees in Agronomy. However, most of my remarks will be based on my experience growing various crops on these soils.

I believe too much emphasis has been placed on the Class I and II soils in the sector plan as being the only major soil resource for the production of local foods. First of all, we should be thinking more about regional food policies. For example there are more than 50,000 acres of Class I soils in the Kansas River valley between Manhattan and Kansas City. Back in the 30's and 40's about 6,000 acres of potatoes were grown in the Kansas River Valley and were marketed under a regional brand of Kaw Valley potatoes. Because of weather, storage and marketing problems , acreage gradually decreased and potatoes ceased to be a commercial enterprise in the valley after the 51 flood. We moved to this area in 1973 and had an opportunity to farm in partnership with the Pine family for 18 years. In 1974 we ventured into the potato business by growing about 40 acres. Over the 18 years the acreage had increased to around 300 acres which were marketed to chip companies in Topeka and Kansas City. Our market window was only about 3 weeks in July. As I recall we didn't look at soils maps to see what class of soils we would plant potatoes on. Today as I look at the map to see where the class I and II soils are located, I realize we planted at least half of the acreage on class III sandy soils located in Grant Township and Kansas River Valley land near Linwood in Leavenworth County. During wet years these class III

sandy fields could be harvested when fields of Class I were too wet. Being able to harvest during wet periods was essential to keep the factories supplied. I hope this points out there are other acres in the area that need to be included for potential to produce locally grown food. In fact many of the fruit and vegetable crops that can be grown for a local food program are better adapted to the sandier soils that are not included in Class I and II.

As mentioned earlier our home is located on the hills overlooking the river valley. The hillsides are designated class IV based on a majority of the soils having a slope of more than 4-6%. In addition the soil is sandy. Even on these soils we have areas that are excellent for growing any of the vegetable and fruit crops adapted to this climate. We are growing over 30 fruit and vegetable crops this year. When we purchased this farm in 1984, we learned from some oldtimers in the area that previous owners of the land had produced cantalope and watermelons commercially on this Class IV land. This is another example of land that should be included as potential for local food production. In fact I believe most of the current producers who participate in the local Farmers Market grow their crops on land outside the Kansas River Valley.

Another example of productive soils are the Class III and IV soils in Doniphan County, Kansas which is about 60 miles north. Here again, I believe that should be considered regional. These are soils that have that classification because of slopes greater than 2%. Other than the slope they have similar characteristics as Class I soils. According to information published by Kansas Agricultural Statistics the average corn yield in Doniphan County for the last five years on 82,000 acres was 164 bushels per acre while soybeans averaged 51 bushels per acre on 66,000 acres. The yield information from Kansas Ag Statistics is published on a county basis and therefore I was not able to obtain yields specifically for Class I and II soils in the Kansas River valley. Based on my work in the area as a crop insurance adjuster and from knowledge as a landowner, the yields from 148,000 acres\* of these Class III and IV soils in Doniphan County compare very favorably with the Class I and II soils in the Kansas River Valley. I just want to emphasize there is much potential for all types of food production from soils in the region in addition to Class I and II.

I contend the limiting factor for vegetable and fruit production is climatic conditions not soil resources. Some climatic conditions which are limiting factors when compared to other areas include late spring freezes, early fall frosts, hot dry winds in summer and the possibility of excessive precipitation. Using my garden as an example, we have only harvested a few crops such as lettuce, spinach, asparagus and radishes so far this year.

Another example of potential food production is from areas not suitable for cultivation such as the area on our property where I have a forest improvement project on land classified as Class V. It is Class V as it subject to periodic flooding along a stream. Over the past seven years I have removed undesirable trees and planted over 800 walnut trees. This is an example of potential local food production on soils that cannot be cultivated or developed. There are many acres along streams in Douglas County that could be utilized in this manner.

## Dan Warner

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**From:** Davis, Cynthia [tripoddog@ku.edu]  
**Sent:** Tuesday, May 25, 2010 11:29 AM  
**To:** Dan Warner  
**Subject:** Good morning, RE: 936 N. 3rd Street

Hello,

I am an owner of 936 N. 3<sup>rd</sup> Street. I am deeply concerned with regard to the suggested plan to convert this property into "open space." I strongly fear if such a plan is adopted, this would likely decrease the value of the land, because any buyer would know that to obtain a building permit on the land, they would have to get approval for something contrary to the plan.

Thank you,  
Cynthia Puckett-Davis

## Dan Warner

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**From:** Lisa Grossman [lgrossman@earthlink.net]  
**Sent:** Thursday, May 27, 2010 10:06 AM  
**To:** Dan Warner  
**Subject:** Northeast Sector plan comments

Dear Mr. Warner,

I'm deeply concerned about the future of Douglas County's Northeast Sector. I know you're already well aware of the rich soils present there, so vital for current and future agricultural economy. I know you're aware of the flooding issues, and associated difficulties installing sewer and water infrastructure, as well as the importance of the Lawrence Municipal Airport and the need for open spaces surrounding it.

Please set your sights on long-term planning that values the future of sustainable food production for this county and region. Every day you see agriculture moving toward smaller, healthier, and more profitable production and I believe this land in Douglas County could be the center of such industry. This town is ripe for green industry job development, and we truly don't need more of the same kinds of big box business parks that render the priceless soils useless and benefit a very small segment of society.

Thanks so much for your consideration.

Lisa Grossman,  
Lawrence, KS

## Dan Warner

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**From:** Samantha Snyder [snyder.samantha@rocketmail.com]  
**Sent:** Friday, May 28, 2010 10:28 AM  
**To:** Dan Warner  
**Subject:** Northeast Sector Plan

Dear Mr. Warner,

I am writing today as a member of Citizens for Responsible Planning regarding the Northeast sector plan. I am highly concerned about the preservation of this space for agricultural needs. It is clearly highly valuable agricultural land, and should be put to it's best use for our local food economy.

Please support development of the aviation related industry at the Lawrence Municipal Airport PROPER and not over the incredibly valuable resource of Class 1 and 2 soils.

Thank you,

Samantha Snyder,  
Lawrence

## Dan Warner

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**From:** Steven Stemmerman [sstemmer@usd497.org]  
**Sent:** Thursday, May 27, 2010 12:19 PM  
**To:** Dan Warner  
**Subject:** The Northeast Sector Plan Draft

### **The Northeast Sector Plan Draft**

I feel the concerns put forth by the Citizens for Responsible Planning are quite valid and deserving of much consideration. It's becoming ever more apparent the the loss of prime farm land near a municipality is a loss to that municipality. The owners of such land shouldn't be faced with the paving over of the land in which they've worked in order to provide for their retirement. Personally, I would support tax wise the city buying the land and leasing it out for food production, or other means that would preserve this resource.

Steve Stemmerman  
315 Maiden Lane  
Lawrence, Kansas  
66044



## Dan Warner

---

**From:** Steven Stemmerman [sstemmer@usd497.org]  
**Sent:** Thursday, May 27, 2010 12:19 PM  
**To:** Dan Warner  
**Subject:** The Northeast Sector Plan Draft

### The Northeast Sector Plan Draft

I feel the concerns put forth by the Citizens for Responsible Planning are quite valid and deserving of much consideration. It's becoming ever more apparent the the loss of prime farm land near a municipality is a loss to that municipality. The owners of such land shouldn't be faced with the paving over of the land in which they've worked in order to provide for their retirement. Personally, I would support tax wise the city buying the land and leasing it out for food production, or other means that would preserve this resource.

Steve Stemmerman  
315 Maiden Lane  
Lawrence, Kansas  
66044

The primary concerns put forward by CRP for the past three years since our initial opposition to the Airport Industrial Park are:

- \* Concerns associated with flooding if development takes place without costly implementation of the North Lawrence Drainage Study recommendations.
- \* Preservation of Capability Class 1 and 2 Soils for current and future agricultural needs of our community.
- \* Recognition that development of aviation related industry should be focused at the Lawrence Municipal Airport proper. This should be the primary industry/economic development focus for the Northeast Sector.

## Dan Warner

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**From:** Laurie Ward [ltward@sunflower.com]  
**Sent:** Monday, May 24, 2010 5:33 PM  
**To:** Dan Warner  
**Subject:** NE Sector Plan

Dear Mr. Warner,

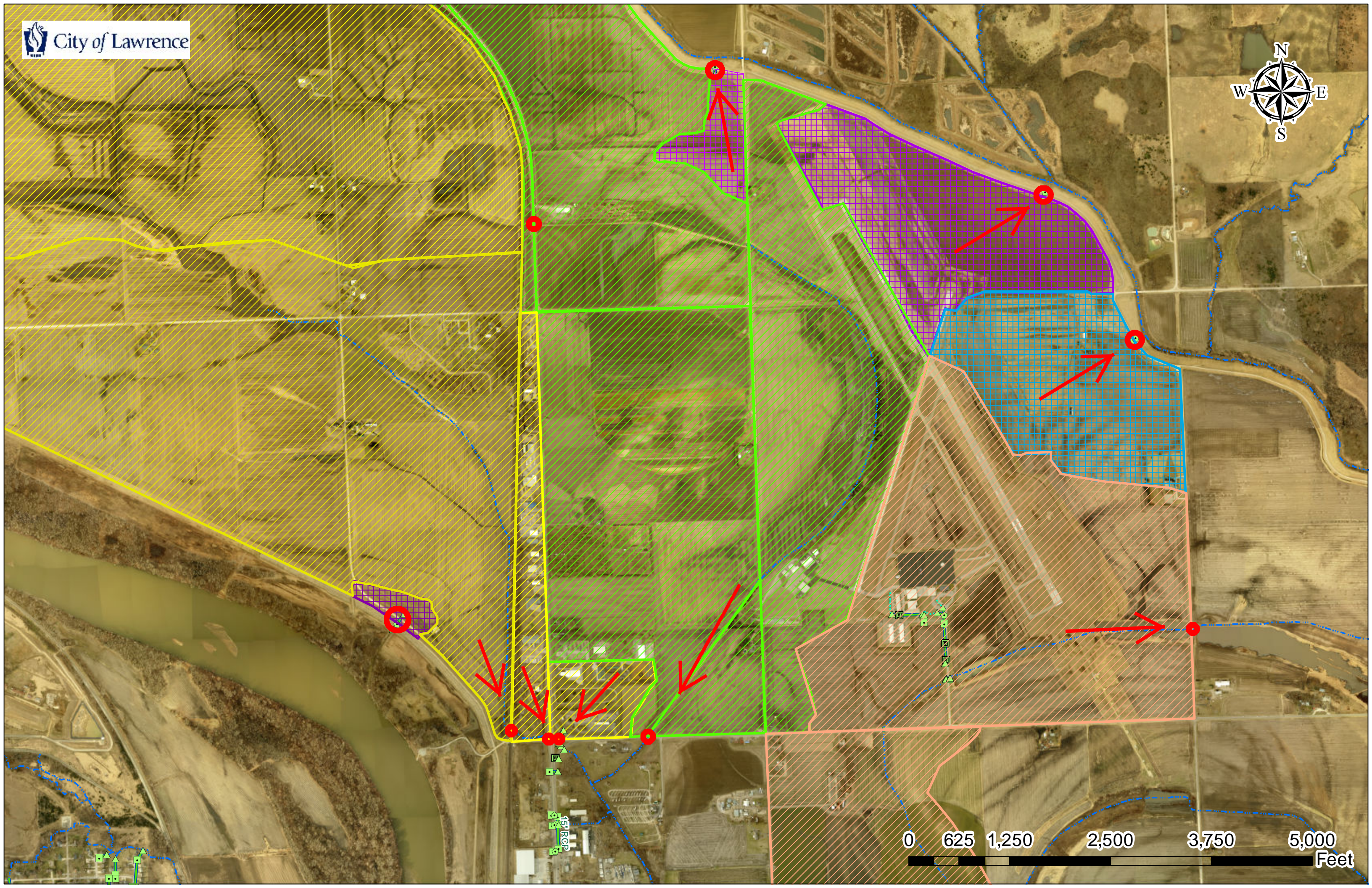
I appreciate the process of involving the Grant Township neighborhood and am supportive of the Northeast Sector Plan currently under consideration by the Planning Commission.

In 2009, I wrote two successful grants to establish the Okanis Garden at the Prairie Moon Waldorf School. Located squarely in Capability Class I soils, this market garden--a part of the local food system for Lawrence and the surrounding areas--selling produce to area grocery stores, restaurants, and through an Okanis Garden Community Supported Agriculture (CSA). The garden's productivity, due to the high quality soils, is tremendous. The grant created an agriculture job in the form of a garden manager. Future plans call for more gardening and gardening/education jobs.

Thank you for your part in helping Lawrence and Douglas County plan for best and land-use, taking into consideration the excellent Class 1 and 2 soils, and guiding towards preserving and expanding agricultural use in this part of the Kansas River Valley.

Prairie Moon enthusiastically welcomes its new neighbor to the north on 1600 Road: the University of Kansas Native Medicinal Plant Research Program--a perfect example of appropriate activity in the area.

Laurie Ward  
38 Winona Ave.  
Lawrence, KS 66046



0 625 1,250 2,500 3,750 5,000 Feet

## EXECUTIVE SUMMARY

### I. Introduction

The City of Lawrence has embarked on a program to develop a stormwater management plan for the North Lawrence watershed. This program is based on a recognized need to upgrade existing facilities to modern design standards and to provide coordinated facilities in developing areas. The economic well being of the City depends on its ability to attract and retain business and industry, as well as residents to live in the City. Part of the City's ability to attract businesses and residents depends on its ability to provide adequate services such as drinking water, sewers, transportation and stormwater management. With the ever expanding urban area and associated increases in impervious surfaces such as parking lots, the frequency with which drainage issues occur appears to be increasing. This has caused the City to focus its attention on the need to provide adequate stormwater management policies and infrastructure in all areas within the watershed. The North Lawrence Drainage Study is one important step in this process.

The North Lawrence Drainage Study was divided into two main focus areas. The Internal System consists of the City operated ditches, pipes, and pumps within the existing City boundaries. The overall watershed analysis modeled the less developed drainage aspects of the North Lawrence Drainage Area. More detailed descriptions of the two focus areas can be found later in the report.

### II. Recommendations

#### A. Overall Watershed

Several alternatives were investigated in the overall North Lawrence Drainage Study watershed to reduce flood elevations, lessen impacts on the "Internal Drainage System" facilities, provide drainage in the event of high flows on the Kansas River, and assess the effects of development in the floodplain. The investigations led to the four major recommendations below. The first bullet item is the key to reducing the burden on the Internal System from areas beyond the existing city limits.

- Drainage from north of 24/40 Highway should be cutoff by the highway embankment and the water should be pumped over the levee at a point just east of the 24/40 intersection to reduce the burden on the 2<sup>nd</sup> Street Pump Station
- Future development in the watershed should maintain the current conveyance levels in the 100-year floodplain – development should not reduce the capacity for floodplain storage
- The City should purchase parcels of land as necessary for use as dedicated ponding areas
- Major roads and hydraulic structures should be improved to meet the current APWA criteria with regard to overtopping during the 100-year event, in order to provide adequate emergency services to the area

A cost summary with regard to these Watershed Analysis recommendations is shown in the table on the next page.

### Watershed Recommendations Cost Summary

Description	Quantity	Unit Cost	Project Costs
Raise road west of 24/40 intersection	370 ft	\$290/ft	\$110,000
Remove 2 existing 24/40 culverts	Lump Sum		\$75,000
Channel Excavation, MG0East to 24/40	3500 cu-yd	\$4.31/cu-yd	\$15,000
KDOT Entrance Culvert	30 ft	\$8/ft/sq-ft	\$27,000
New 24/40 Culvert	475 ft	\$8/ft/sq-ft	\$228,000
Remove Maple Grove East culvert	Lump Sum		\$22,000
Property containing ponding easement	Full Parcels	Total Value	\$942,000
Pump Station; west of airport, north of 24/40	361,000 gpm *	\$30/gpm	\$11,000,000
Main Channel, E. 1675 Rd., 155' Bridge	7750 sq-ft	\$75/sq-ft	\$1,364,000
Main Channel, E. 1675 Rd., Roadway	2700 ft	\$290/ft	
Main Channel, E. 1600 Rd., 160' Bridge	8000 sq-ft	\$75/sq-ft	\$1,108,000
Main Channel, E. 1600 Rd., Roadway	1750 ft	\$290/ft	
Main Channel, E. 1500 Rd., 155' Bridge	7750 sq-ft	\$75/sq-ft	\$929,000
Main Channel, E. 1500 Rd., Roadway	1200 ft	\$290/ft	
Main Channel, E. 1400 Rd., 140' Bridge	7000 sq-ft	\$75/sq-ft	\$786,000
Main Channel, E. 1400 Rd., Roadway	900 ft	\$290/ft	
Main Channel, E. 1900 Rd., 140' Bridge	7000 sq-ft	\$75/sq-ft	\$1,221,000
Main Channel, E. 1900 Rd., Roadway	2400 ft	\$290/ft	
Maple Grove East, E. 1500 Rd., 100' Bridge	5000 sq-ft	\$75/sq-ft	\$1,419,000
Maple Grove East, E. 1500 Rd., Roadway	3600 ft	\$290/ft	
Maple Grove East, E. 1900 Rd., 120' Bridge	6000 sq-ft	\$75/sq-ft	\$1,581,000
Maple Grove East, E. 1900 Rd., Roadway	3900 ft	\$290/ft	
Maple Grove East, E. 1500 Rd., 120' Bridge	6000 sq-ft	\$75/sq-ft	\$711,000
Maple Grove East, E. 1500 Rd., Roadway	900 ft	\$290/ft	
Trib. A, 24/40 Hwy., 2-11'x7' RCB	60 ft	\$8/ft/sq-ft	\$326,000
Trib. A, 24/40 Hwy., Roadway	870 ft	\$290/ft	
Trib. A, E. 1600 Rd., 60' Bridge	3000 sq-ft	\$75/sq-ft	\$477,000
Trib. A, E. 1600 Rd., Roadway	870 ft	\$290/ft	
Trib. B, E. 1700 Rd., 140' Bridge	7000 sq-ft	\$75/sq-ft	\$1,758,000
Trib. B, E. 1700 Rd., Roadway	4250 ft	\$290/ft	
Trib. B, E. 1650 Rd., 100' Bridge	5000 sq-ft	\$75/sq-ft	\$703,000
Trib. B, E. 1650 Rd., Roadway	1130 ft	\$290/ft	
<b>Total</b>			\$24,802,000

Note: All costs are concept level estimates only. Actual costs may vary significantly.

\* Required capacity at ultimate build-out

## B. Internal System

Analyses for the Internal Drainage System provided areas of concern throughout the City operated drainage network. The excess peak flow was used to represent the degree to which a conduit is undersized for the ultimate build-out condition. Each investigated lateral flowing into the main stem of a system and each main stem conduit were ranked by excess peak flow. This led to the following priority listing of recommended improvements.

**Prioritization of Internal Systems**

<b>Link Name</b>	<b>Excess Peak Flow (cfs)</b>	<b>Total Estimated Cost of Improvements (dollars)</b>
<b>S1-1</b>	315	\$9,163,000
<b>S6-1</b>	168	\$3,994,000
<b>S9-1</b>	133	\$1,132,000
<b>S1L1-1</b>	96	\$333,000
<b>S1L5-1</b>	85	\$235,000
<b>S1L7-1</b>	85	\$59,000
<b>S1L3-1</b>	56	\$187,000
<b>S6L3-1</b>	56	\$195,000
<b>S6L3-7D</b>	New pipes	\$181,000
<b>S4-1</b>	43	\$60,000
<b>S6L2-1</b>	37	\$5,000
<b>S4L4-1</b>	35	\$53,000
<b>S4L2-1</b>	27	\$36,000
<b>S9L1-1</b>	21	\$7,000
<b>S1L2-1</b>	20	\$240,000
<b>S8-1</b>	17	\$115,000
<b>S10L2-1</b>	13	\$4,000
<b>S7-1</b>	13	\$38,000
<b>S5-1</b>	10	\$56,000
<b>S10-1</b>	6	\$106,000
<b>S1L4-1</b>	1	\$7,000
<b>S1L6-1</b>	0	\$0
<b>S11-1</b>	0	\$0
<b>S3-1</b>	0	\$0
<b>S2-1</b>	0	\$0
<b>S12-1</b>	0	\$0
<b>Total</b>		\$16,206,000

The flows calculated in the analysis of the internal system assume that the cutoff north of 24/40 Highway, as recommended by the Watershed Analysis, is in place. However, the costs in the table for the Internal System Analysis are independent of the costs for the Watershed Analysis improvement recommendations. By adding the total costs from each of the two summary tables, the estimated cost of all recommendations is approximately \$41 million.

As with the overall watershed, a viable option within the internal system is land purchase. In areas that naturally drain to a low point, it is often advantageous to preserve the ponding area by purchasing the parcel of land. Those costs are included in several of the system costs in the table.

### **III. Background**

#### **A. Watershed Description**

The North Lawrence watershed is estimated to be 9,100 acres generally bordered by the Kansas River levee on the south and the Mud Creek levee on the east. Most of the drainage contributes to the Maple Grove system, which either conveys water south to the City or east eventually to Mud Creek. A few areas near the levee, to the northwest and southeast, drain directly to the Kansas River, while a thin strip of land along part of the northeastern portion of the watershed flows directly to Mud Creek. Refer to the North Lawrence Drainage Study map in Section I of the main report for an overview of the project area.

The Kansas River floodplain completely encompasses North Lawrence. The natural silt loam soils are highly permeable. However, increased development is replacing those soils with nearly impermeable clay material in certain areas. In addition, extremely mild slopes across the landform cause frequent ponding and roadway overtopping. Historically, North Lawrence has been an agricultural community with low density residential development. Pockets of commercial and industrial development now appear in areas of the watershed. While parts of North Lawrence will likely remain agricultural, the projected future land use in other areas will add more and more impervious surfaces.

#### **B. Purpose**

The Lawrence-Douglas County Planning Commission proposed this study to address repeated flooding concerns from residents of the North Lawrence area. Flooding problems occur in a number of areas within the North Lawrence watershed. The major causes are as follows:

- Development that has significantly increased runoff from design storm events
- Undersized drainage system components such as culverts, drainage channels, underground pipe systems and inlets
- Siltation within the storm drainage system
- Past development of flood-prone areas
- A shallow, flat and interrupted watershed drainage network

Public comments relating to current drainage issues, proposed developments, long-range plans, and floodplain regulations are at the root of this study. The purpose of this study is

to identify areas with flooding problems, analyze the major elements of the storm drainage system with respect to long-term land use, and recommend needed improvements to correct or prevent systems from flooding. By doing this, proposed developments and long-range plans will be influenced. At the same time, regulations can be conceptualized to avoid potential pitfalls.

### **C. Scope of Project**

The North Lawrence Drainage Study has several major components which work toward the generation of system requirements for stormwater conveyance and infrastructure in the ultimate buildout scenario. The following major tasks were included in the study:

- Integration of the public involvement program that gathered and used information from residents, business owners and property owners when considering alternatives or upgrades within the watershed
- Estimation of the ultimate land use for the watershed
- Survey and general inspection of the drainage system
- Development of a digital database that shows the existing components of the City's drainage system
- Evaluation of the internal drainage system for the ultimate buildout scenario and recommendation of improvements
- Evaluation of the watershed drainage system for the ultimate buildout scenario and recommendation of improvements
- Completion of an analysis of Kansas River flooding resulting from levee overtopping

Along with the recommended improvements, the magnitude of the costs required to implement them were assessed. It should be noted though, that detailed design of the projects recommended in this report is required to produce proper construction documents and accurate cost estimates for system components.

The main body of the project report is divided up into seven sections. Summaries of the various sections are detailed below. For a detailed description of the methods or results of each section, refer to the main report.

### **IV. Public Involvement**

The North Lawrence Drainage Study public involvement program was designed to establish meaningful and useful dialogue between stakeholders, businesses, residents in the area and the study team. A series of outreach efforts were conducted to catalogue and assess the public's concerns. Members of the project team provided an overview of study activities and public input to the Lawrence Planning Commission.

### **V. Ultimate Land Use for Watershed**

To accomplish the goals of the North Lawrence Drainage Study, the ultimate land use condition had to be determined for the study area. The future land uses within the watershed will help determine where to focus the stormwater system improvements and provide better insight into heading off potential development problems. The project team



conferred with the Public Works Department, the Planning Office, and the Utilities Department of Lawrence. Information was gathered with regard to current zoning, potential developments and long-range plans and was used to produce an ultimate watershed land use guide.

While the information gathered was used to create the Ultimate Build-Out map, it was not intended to dictate specific policies with regard to land use in the North Lawrence Drainage Area. However, certain policies could be inferred from the findings of this study. For instance, lot splits currently require a hydraulic study to determine impacts. Due to the extensive hydraulic studies detailed in this report, it would not be necessary for developers to conduct individual studies, as long as the general recommendations of this study are followed (i.e. conveyance needs to be maintained within the floodplain).

## **VI. Data Collection**

Several field visits were made to the study area to observe drainage patterns, take photographs and verify structure sizes and orientations. A significant portion of the North Lawrence watershed was surveyed for this project. This information was used in the development of computer models of the watershed. Information from the field survey forms was entered into GIS. The basis for the evaluation of the North Lawrence watershed is the digital base maps developed by the City. These maps also show land features with a 2-foot contour interval. The base maps include topographical drainage information such as open channels, bridges, culverts, manholes, inlets, and enclosed drainage systems. They also include houses, transportation and above ground utility locations. Field surveys were completed as part of this study to update and verify any existing information on size, location, and slope of the conveyance structures. Survey data on the conveyance system and watershed characteristics were combined with the City database to create a comprehensive database of the most up-to-date information.

## **VII. Internal Drainage System Analysis**

The system of City operated ditches, pipes, and pumps throughout North Lawrence are collectively referred to as the “internal drainage system” in this report. This system collects the drainage from about 1.8 square miles and largely conveys it through gravity and pressure pipe to the Kansas River. The intent of the internal drainage system analysis portion of the North Lawrence Drainage Study was to investigate necessary improvements to the existing infrastructure system for a 10-year frequency event, assuming the land uses specified by the Buildout Scenario Map. The performance of the Maple Street Pump Station (529 Maple Street) and the 2<sup>nd</sup> Street Pump Station (732 N. 2<sup>nd</sup> Street) were closely considered in the overall evaluation.

Results of the hydrologic and hydraulic analyses for the set of 12 systems representing the existing stormwater infrastructure within North Lawrence identified many surcharge locations for the ultimate buildout condition.

Recommendations were determined for each conduit or channel in a system based on the analysis of the entire system. It should be noted that improvements are to generally be made in a downstream to upstream manner within the system, as there is no advantage trying to deliver more flow to a downstream component that cannot convey the existing flow. Overall costs for each system upgrade were estimated; however, for the purposes

of prioritizing public improvements on a smaller scale, excess peak flow was determined for each main stem and each lateral draining to the main stem of the system.

### **VIII. Watershed Analysis**

There were three main goals for this portion of the study: to reduce the demand on the 2<sup>nd</sup> Street Pump Station, to expel floodwater from the basin during times of high water on the Kansas River, and to investigate the effects of development in the floodplain. It is recommended that the drainage from the area north of 24/40 Highway be cut off and the water pumped over the levee. The recommendation for reducing the burden on the 2<sup>nd</sup> Street Pump Station appraises the 10-year event in conjunction with the design criteria of the internal drainage system, however the 100-year event is investigated as well.

The recommendation for future development in the watershed is to maintain the current conveyance levels in the 100-year floodplain. This will mean allowing no development in these areas that would reduce the capacity for floodplain storage, and may require the purchase of small parcels of land to set aside exclusively for ponding.

As the area develops, it will become necessary to provide emergency services to the homes and businesses that populate the area. This will require the improvement of the major roads in the area and significant improvement of the hydraulic structures which carry flow under the roads. With a more dense urban population, the roads should be raised to meet the current APWA criteria with regard to overtopping during the 100-year event. This will result in some significant increases in required flow capacity over the existing hydraulic structures.

### **IX. Kansas River Floodplain Analysis**

The existing conditions FEMA hydraulic model was revised to assess the amount of flooding that would occur in the North Lawrence area in the event of a breach of the Kansas River levee system. A “most likely” breach location was determined for the purpose of this analysis. For the levee breach condition, a 100-year Kansas River event would result in flood levels 0 to 7 feet deep in the North Lawrence Watershed (refer to the exhibit titled Watershed Analysis – Kansas River Inundation in Section VII).

## EXECUTIVE SUMMARY

### I. Introduction

The City of Lawrence has embarked on a program to develop a stormwater management plan for the North Lawrence watershed. This program is based on a recognized need to upgrade existing facilities to modern design standards and to provide coordinated facilities in developing areas. The economic well being of the City depends on its ability to attract and retain business and industry, as well as residents to live in the City. Part of the City's ability to attract businesses and residents depends on its ability to provide adequate services such as drinking water, sewers, transportation and stormwater management. With the ever expanding urban area and associated increases in impervious surfaces such as parking lots, the frequency with which drainage issues occur appears to be increasing. This has caused the City to focus its attention on the need to provide adequate stormwater management policies and infrastructure in all areas within the watershed. The North Lawrence Drainage Study is one important step in this process.

The North Lawrence Drainage Study was divided into two main focus areas. The Internal System consists of the City operated ditches, pipes, and pumps within the existing City boundaries. The overall watershed analysis modeled the less developed drainage aspects of the North Lawrence Drainage Area. More detailed descriptions of the two focus areas can be found later in the report.

### II. Recommendations

#### A. Overall Watershed

Several alternatives were investigated in the overall North Lawrence Drainage Study watershed to reduce flood elevations, lessen impacts on the "Internal Drainage System" facilities, provide drainage in the event of high flows on the Kansas River, and assess the effects of development in the floodplain. The investigations led to the four major recommendations below. The first bullet item is the key to reducing the burden on the Internal System from areas beyond the existing city limits.

- Drainage from north of 24/40 Highway should be cutoff by the highway embankment and the water should be pumped over the levee at a point just east of the 24/40 intersection to reduce the burden on the 2<sup>nd</sup> Street Pump Station
- Future development in the watershed should maintain the current conveyance levels in the 100-year floodplain – development should not reduce the capacity for floodplain storage
- The City should purchase parcels of land as necessary for use as dedicated ponding areas
- Major roads and hydraulic structures should be improved to meet the current APWA criteria with regard to overtopping during the 100-year event, in order to provide adequate emergency services to the area

A cost summary with regard to these Watershed Analysis recommendations is shown in the table on the next page.

### Watershed Recommendations Cost Summary

Description	Quantity	Unit Cost	Project Costs
Raise road west of 24/40 intersection	370 ft	\$290/ft	\$110,000
Remove 2 existing 24/40 culverts	Lump Sum		\$75,000
Channel Excavation, MG0East to 24/40	3500 cu-yd	\$4.31/cu-yd	\$15,000
KDOT Entrance Culvert	30 ft	\$8/ft/sq-ft	\$27,000
New 24/40 Culvert	475 ft	\$8/ft/sq-ft	\$228,000
Remove Maple Grove East culvert	Lump Sum		\$22,000
Property containing ponding easement	Full Parcels	Total Value	\$942,000
Pump Station; west of airport, north of 24/40	361,000 gpm *	\$30/gpm	\$11,000,000
Main Channel, E. 1675 Rd., 155' Bridge	7750 sq-ft	\$75/sq-ft	\$1,364,000
Main Channel, E. 1675 Rd., Roadway	2700 ft	\$290/ft	
Main Channel, E. 1600 Rd., 160' Bridge	8000 sq-ft	\$75/sq-ft	\$1,108,000
Main Channel, E. 1600 Rd., Roadway	1750 ft	\$290/ft	
Main Channel, E. 1500 Rd., 155' Bridge	7750 sq-ft	\$75/sq-ft	\$929,000
Main Channel, E. 1500 Rd., Roadway	1200 ft	\$290/ft	
Main Channel, E. 1400 Rd., 140' Bridge	7000 sq-ft	\$75/sq-ft	\$786,000
Main Channel, E. 1400 Rd., Roadway	900 ft	\$290/ft	
Main Channel, E. 1900 Rd., 140' Bridge	7000 sq-ft	\$75/sq-ft	\$1,221,000
Main Channel, E. 1900 Rd., Roadway	2400 ft	\$290/ft	
Maple Grove East, E. 1500 Rd., 100' Bridge	5000 sq-ft	\$75/sq-ft	\$1,419,000
Maple Grove East, E. 1500 Rd., Roadway	3600 ft	\$290/ft	
Maple Grove East, E. 1900 Rd., 120' Bridge	6000 sq-ft	\$75/sq-ft	\$1,581,000
Maple Grove East, E. 1900 Rd., Roadway	3900 ft	\$290/ft	
Maple Grove East, E. 1500 Rd., 120' Bridge	6000 sq-ft	\$75/sq-ft	\$711,000
Maple Grove East, E. 1500 Rd., Roadway	900 ft	\$290/ft	
Trib. A, 24/40 Hwy., 2-11'x7' RCB	60 ft	\$8/ft/sq-ft	\$326,000
Trib. A, 24/40 Hwy., Roadway	870 ft	\$290/ft	
Trib. A, E. 1600 Rd., 60' Bridge	3000 sq-ft	\$75/sq-ft	\$477,000
Trib. A, E. 1600 Rd., Roadway	870 ft	\$290/ft	
Trib. B, E. 1700 Rd., 140' Bridge	7000 sq-ft	\$75/sq-ft	\$1,758,000
Trib. B, E. 1700 Rd., Roadway	4250 ft	\$290/ft	
Trib. B, E. 1650 Rd., 100' Bridge	5000 sq-ft	\$75/sq-ft	\$703,000
Trib. B, E. 1650 Rd., Roadway	1130 ft	\$290/ft	
<b>Total</b>			\$24,802,000

Note: All costs are concept level estimates only. Actual costs may vary significantly.

\* Required capacity at ultimate build-out

## B. Internal System

Analyses for the Internal Drainage System provided areas of concern throughout the City operated drainage network. The excess peak flow was used to represent the degree to which a conduit is undersized for the ultimate build-out condition. Each investigated lateral flowing into the main stem of a system and each main stem conduit were ranked by excess peak flow. This led to the following priority listing of recommended improvements.

**Prioritization of Internal Systems**

<b>Link Name</b>	<b>Excess Peak Flow (cfs)</b>	<b>Total Estimated Cost of Improvements (dollars)</b>
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<b>S1L6-1</b>	0	\$0
<b>S11-1</b>	0	\$0
<b>S3-1</b>	0	\$0
<b>S2-1</b>	0	\$0
<b>S12-1</b>	0	\$0
<b>Total</b>		\$16,206,000

The flows calculated in the analysis of the internal system assume that the cutoff north of 24/40 Highway, as recommended by the Watershed Analysis, is in place. However, the costs in the table for the Internal System Analysis are independent of the costs for the Watershed Analysis improvement recommendations. By adding the total costs from each of the two summary tables, the estimated cost of all recommendations is approximately \$41 million.

As with the overall watershed, a viable option within the internal system is land purchase. In areas that naturally drain to a low point, it is often advantageous to preserve the ponding area by purchasing the parcel of land. Those costs are included in several of the system costs in the table.

### **III. Background**

#### **A. Watershed Description**

The North Lawrence watershed is estimated to be 9,100 acres generally bordered by the Kansas River levee on the south and the Mud Creek levee on the east. Most of the drainage contributes to the Maple Grove system, which either conveys water south to the City or east eventually to Mud Creek. A few areas near the levee, to the northwest and southeast, drain directly to the Kansas River, while a thin strip of land along part of the northeastern portion of the watershed flows directly to Mud Creek. Refer to the North Lawrence Drainage Study map in Section I of the main report for an overview of the project area.

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#### **B. Purpose**

The Lawrence-Douglas County Planning Commission proposed this study to address repeated flooding concerns from residents of the North Lawrence area. Flooding problems occur in a number of areas within the North Lawrence watershed. The major causes are as follows:

- Development that has significantly increased runoff from design storm events
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to identify areas with flooding problems, analyze the major elements of the storm drainage system with respect to long-term land use, and recommend needed improvements to correct or prevent systems from flooding. By doing this, proposed developments and long-range plans will be influenced. At the same time, regulations can be conceptualized to avoid potential pitfalls.

### **C. Scope of Project**

The North Lawrence Drainage Study has several major components which work toward the generation of system requirements for stormwater conveyance and infrastructure in the ultimate buildout scenario. The following major tasks were included in the study:

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- Estimation of the ultimate land use for the watershed
- Survey and general inspection of the drainage system
- Development of a digital database that shows the existing components of the City's drainage system
- Evaluation of the internal drainage system for the ultimate buildout scenario and recommendation of improvements
- Evaluation of the watershed drainage system for the ultimate buildout scenario and recommendation of improvements
- Completion of an analysis of Kansas River flooding resulting from levee overtopping

Along with the recommended improvements, the magnitude of the costs required to implement them were assessed. It should be noted though, that detailed design of the projects recommended in this report is required to produce proper construction documents and accurate cost estimates for system components.

The main body of the project report is divided up into seven sections. Summaries of the various sections are detailed below. For a detailed description of the methods or results of each section, refer to the main report.

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### **V. Ultimate Land Use for Watershed**

To accomplish the goals of the North Lawrence Drainage Study, the ultimate land use condition had to be determined for the study area. The future land uses within the watershed will help determine where to focus the stormwater system improvements and provide better insight into heading off potential development problems. The project team

conferred with the Public Works Department, the Planning Office, and the Utilities Department of Lawrence. Information was gathered with regard to current zoning, potential developments and long-range plans and was used to produce an ultimate watershed land use guide.

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## **VI. Data Collection**

Several field visits were made to the study area to observe drainage patterns, take photographs and verify structure sizes and orientations. A significant portion of the North Lawrence watershed was surveyed for this project. This information was used in the development of computer models of the watershed. Information from the field survey forms was entered into GIS. The basis for the evaluation of the North Lawrence watershed is the digital base maps developed by the City. These maps also show land features with a 2-foot contour interval. The base maps include topographical drainage information such as open channels, bridges, culverts, manholes, inlets, and enclosed drainage systems. They also include houses, transportation and above ground utility locations. Field surveys were completed as part of this study to update and verify any existing information on size, location, and slope of the conveyance structures. Survey data on the conveyance system and watershed characteristics were combined with the City database to create a comprehensive database of the most up-to-date information.

## **VII. Internal Drainage System Analysis**

The system of City operated ditches, pipes, and pumps throughout North Lawrence are collectively referred to as the “internal drainage system” in this report. This system collects the drainage from about 1.8 square miles and largely conveys it through gravity and pressure pipe to the Kansas River. The intent of the internal drainage system analysis portion of the North Lawrence Drainage Study was to investigate necessary improvements to the existing infrastructure system for a 10-year frequency event, assuming the land uses specified by the Buildout Scenario Map. The performance of the Maple Street Pump Station (529 Maple Street) and the 2<sup>nd</sup> Street Pump Station (732 N. 2<sup>nd</sup> Street) were closely considered in the overall evaluation.

Results of the hydrologic and hydraulic analyses for the set of 12 systems representing the existing stormwater infrastructure within North Lawrence identified many surcharge locations for the ultimate buildout condition.

Recommendations were determined for each conduit or channel in a system based on the analysis of the entire system. It should be noted that improvements are to generally be made in a downstream to upstream manner within the system, as there is no advantage trying to deliver more flow to a downstream component that cannot convey the existing flow. Overall costs for each system upgrade were estimated; however, for the purposes



of prioritizing public improvements on a smaller scale, excess peak flow was determined for each main stem and each lateral draining to the main stem of the system.

### **VIII. Watershed Analysis**

There were three main goals for this portion of the study: to reduce the demand on the 2<sup>nd</sup> Street Pump Station, to expel floodwater from the basin during times of high water on the Kansas River, and to investigate the effects of development in the floodplain. It is recommended that the drainage from the area north of 24/40 Highway be cut off and the water pumped over the levee. The recommendation for reducing the burden on the 2<sup>nd</sup> Street Pump Station appraises the 10-year event in conjunction with the design criteria of the internal drainage system, however the 100-year event is investigated as well.

The recommendation for future development in the watershed is to maintain the current conveyance levels in the 100-year floodplain. This will mean allowing no development in these areas that would reduce the capacity for floodplain storage, and may require the purchase of small parcels of land to set aside exclusively for ponding.

As the area develops, it will become necessary to provide emergency services to the homes and businesses that populate the area. This will require the improvement of the major roads in the area and significant improvement of the hydraulic structures which carry flow under the roads. With a more dense urban population, the roads should be raised to meet the current APWA criteria with regard to overtopping during the 100-year event. This will result in some significant increases in required flow capacity over the existing hydraulic structures.

### **IX. Kansas River Floodplain Analysis**

The existing conditions FEMA hydraulic model was revised to assess the amount of flooding that would occur in the North Lawrence area in the event of a breach of the Kansas River levee system. A “most likely” breach location was determined for the purpose of this analysis. For the levee breach condition, a 100-year Kansas River event would result in flood levels 0 to 7 feet deep in the North Lawrence Watershed (refer to the exhibit titled Watershed Analysis – Kansas River Inundation in Section VII).

## EXECUTIVE SUMMARY

### I. Introduction

The City of Lawrence has embarked on a program to develop a stormwater management plan for the North Lawrence watershed. This program is based on a recognized need to upgrade existing facilities to modern design standards and to provide coordinated facilities in developing areas. The economic well being of the City depends on its ability to attract and retain business and industry, as well as residents to live in the City. Part of the City's ability to attract businesses and residents depends on its ability to provide adequate services such as drinking water, sewers, transportation and stormwater management. With the ever expanding urban area and associated increases in impervious surfaces such as parking lots, the frequency with which drainage issues occur appears to be increasing. This has caused the City to focus its attention on the need to provide adequate stormwater management policies and infrastructure in all areas within the watershed. The North Lawrence Drainage Study is one important step in this process.

The North Lawrence Drainage Study was divided into two main focus areas. The Internal System consists of the City operated ditches, pipes, and pumps within the existing City boundaries. The overall watershed analysis modeled the less developed drainage aspects of the North Lawrence Drainage Area. More detailed descriptions of the two focus areas can be found later in the report.

### II. Recommendations

#### A. Overall Watershed

Several alternatives were investigated in the overall North Lawrence Drainage Study watershed to reduce flood elevations, lessen impacts on the "Internal Drainage System" facilities, provide drainage in the event of high flows on the Kansas River, and assess the effects of development in the floodplain. The investigations led to the four major recommendations below. The first bullet item is the key to reducing the burden on the Internal System from areas beyond the existing city limits.

- Drainage from north of 24/40 Highway should be cutoff by the highway embankment and the water should be pumped over the levee at a point just east of the 24/40 intersection to reduce the burden on the 2<sup>nd</sup> Street Pump Station
- Future development in the watershed should maintain the current conveyance levels in the 100-year floodplain – development should not reduce the capacity for floodplain storage
- The City should purchase parcels of land as necessary for use as dedicated ponding areas
- Major roads and hydraulic structures should be improved to meet the current APWA criteria with regard to overtopping during the 100-year event, in order to provide adequate emergency services to the area

A cost summary with regard to these Watershed Analysis recommendations is shown in the table on the next page.

### Watershed Recommendations Cost Summary

Description	Quantity	Unit Cost	Project Costs
Raise road west of 24/40 intersection	370 ft	\$290/ft	\$110,000
Remove 2 existing 24/40 culverts	Lump Sum		\$75,000
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KDOT Entrance Culvert	30 ft	\$8/ft/sq-ft	\$27,000
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Remove Maple Grove East culvert	Lump Sum		\$22,000
Property containing ponding easement	Full Parcels	Total Value	\$942,000
Pump Station; west of airport, north of 24/40	361,000 gpm *	\$30/gpm	\$11,000,000
Main Channel, E. 1675 Rd., 155' Bridge	7750 sq-ft	\$75/sq-ft	\$1,364,000
Main Channel, E. 1675 Rd., Roadway	2700 ft	\$290/ft	
Main Channel, E. 1600 Rd., 160' Bridge	8000 sq-ft	\$75/sq-ft	\$1,108,000
Main Channel, E. 1600 Rd., Roadway	1750 ft	\$290/ft	
Main Channel, E. 1500 Rd., 155' Bridge	7750 sq-ft	\$75/sq-ft	\$929,000
Main Channel, E. 1500 Rd., Roadway	1200 ft	\$290/ft	
Main Channel, E. 1400 Rd., 140' Bridge	7000 sq-ft	\$75/sq-ft	\$786,000
Main Channel, E. 1400 Rd., Roadway	900 ft	\$290/ft	
Main Channel, E. 1900 Rd., 140' Bridge	7000 sq-ft	\$75/sq-ft	\$1,221,000
Main Channel, E. 1900 Rd., Roadway	2400 ft	\$290/ft	
Maple Grove East, E. 1500 Rd., 100' Bridge	5000 sq-ft	\$75/sq-ft	\$1,419,000
Maple Grove East, E. 1500 Rd., Roadway	3600 ft	\$290/ft	
Maple Grove East, E. 1900 Rd., 120' Bridge	6000 sq-ft	\$75/sq-ft	\$1,581,000
Maple Grove East, E. 1900 Rd., Roadway	3900 ft	\$290/ft	
Maple Grove East, E. 1500 Rd., 120' Bridge	6000 sq-ft	\$75/sq-ft	\$711,000
Maple Grove East, E. 1500 Rd., Roadway	900 ft	\$290/ft	
Trib. A, 24/40 Hwy., 2-11'x7' RCB	60 ft	\$8/ft/sq-ft	\$326,000
Trib. A, 24/40 Hwy., Roadway	870 ft	\$290/ft	
Trib. A, E. 1600 Rd., 60' Bridge	3000 sq-ft	\$75/sq-ft	\$477,000
Trib. A, E. 1600 Rd., Roadway	870 ft	\$290/ft	
Trib. B, E. 1700 Rd., 140' Bridge	7000 sq-ft	\$75/sq-ft	\$1,758,000
Trib. B, E. 1700 Rd., Roadway	4250 ft	\$290/ft	
Trib. B, E. 1650 Rd., 100' Bridge	5000 sq-ft	\$75/sq-ft	\$703,000
Trib. B, E. 1650 Rd., Roadway	1130 ft	\$290/ft	
<b>Total</b>			\$24,802,000

Note: All costs are concept level estimates only. Actual costs may vary significantly.

\* Required capacity at ultimate build-out

## B. Internal System

Analyses for the Internal Drainage System provided areas of concern throughout the City operated drainage network. The excess peak flow was used to represent the degree to which a conduit is undersized for the ultimate build-out condition. Each investigated lateral flowing into the main stem of a system and each main stem conduit were ranked by excess peak flow. This led to the following priority listing of recommended improvements.

**Prioritization of Internal Systems**

<b>Link Name</b>	<b>Excess Peak Flow (cfs)</b>	<b>Total Estimated Cost of Improvements (dollars)</b>
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<b>S6-1</b>	168	\$3,994,000
<b>S9-1</b>	133	\$1,132,000
<b>S1L1-1</b>	96	\$333,000
<b>S1L5-1</b>	85	\$235,000
<b>S1L7-1</b>	85	\$59,000
<b>S1L3-1</b>	56	\$187,000
<b>S6L3-1</b>	56	\$195,000
<b>S6L3-7D</b>	New pipes	\$181,000
<b>S4-1</b>	43	\$60,000
<b>S6L2-1</b>	37	\$5,000
<b>S4L4-1</b>	35	\$53,000
<b>S4L2-1</b>	27	\$36,000
<b>S9L1-1</b>	21	\$7,000
<b>S1L2-1</b>	20	\$240,000
<b>S8-1</b>	17	\$115,000
<b>S10L2-1</b>	13	\$4,000
<b>S7-1</b>	13	\$38,000
<b>S5-1</b>	10	\$56,000
<b>S10-1</b>	6	\$106,000
<b>S1L4-1</b>	1	\$7,000
<b>S1L6-1</b>	0	\$0
<b>S11-1</b>	0	\$0
<b>S3-1</b>	0	\$0
<b>S2-1</b>	0	\$0
<b>S12-1</b>	0	\$0
<b>Total</b>		\$16,206,000

The flows calculated in the analysis of the internal system assume that the cutoff north of 24/40 Highway, as recommended by the Watershed Analysis, is in place. However, the costs in the table for the Internal System Analysis are independent of the costs for the Watershed Analysis improvement recommendations. By adding the total costs from each of the two summary tables, the estimated cost of all recommendations is approximately \$41 million.

As with the overall watershed, a viable option within the internal system is land purchase. In areas that naturally drain to a low point, it is often advantageous to preserve the ponding area by purchasing the parcel of land. Those costs are included in several of the system costs in the table.

### **III. Background**

#### **A. Watershed Description**

The North Lawrence watershed is estimated to be 9,100 acres generally bordered by the Kansas River levee on the south and the Mud Creek levee on the east. Most of the drainage contributes to the Maple Grove system, which either conveys water south to the City or east eventually to Mud Creek. A few areas near the levee, to the northwest and southeast, drain directly to the Kansas River, while a thin strip of land along part of the northeastern portion of the watershed flows directly to Mud Creek. Refer to the North Lawrence Drainage Study map in Section I of the main report for an overview of the project area.

The Kansas River floodplain completely encompasses North Lawrence. The natural silt loam soils are highly permeable. However, increased development is replacing those soils with nearly impermeable clay material in certain areas. In addition, extremely mild slopes across the landform cause frequent ponding and roadway overtopping. Historically, North Lawrence has been an agricultural community with low density residential development. Pockets of commercial and industrial development now appear in areas of the watershed. While parts of North Lawrence will likely remain agricultural, the projected future land use in other areas will add more and more impervious surfaces.

#### **B. Purpose**

The Lawrence-Douglas County Planning Commission proposed this study to address repeated flooding concerns from residents of the North Lawrence area. Flooding problems occur in a number of areas within the North Lawrence watershed. The major causes are as follows:

- Development that has significantly increased runoff from design storm events
- Undersized drainage system components such as culverts, drainage channels, underground pipe systems and inlets
- Siltation within the storm drainage system
- Past development of flood-prone areas
- A shallow, flat and interrupted watershed drainage network

Public comments relating to current drainage issues, proposed developments, long-range plans, and floodplain regulations are at the root of this study. The purpose of this study is

to identify areas with flooding problems, analyze the major elements of the storm drainage system with respect to long-term land use, and recommend needed improvements to correct or prevent systems from flooding. By doing this, proposed developments and long-range plans will be influenced. At the same time, regulations can be conceptualized to avoid potential pitfalls.

### **C. Scope of Project**

The North Lawrence Drainage Study has several major components which work toward the generation of system requirements for stormwater conveyance and infrastructure in the ultimate buildout scenario. The following major tasks were included in the study:

- Integration of the public involvement program that gathered and used information from residents, business owners and property owners when considering alternatives or upgrades within the watershed
- Estimation of the ultimate land use for the watershed
- Survey and general inspection of the drainage system
- Development of a digital database that shows the existing components of the City's drainage system
- Evaluation of the internal drainage system for the ultimate buildout scenario and recommendation of improvements
- Evaluation of the watershed drainage system for the ultimate buildout scenario and recommendation of improvements
- Completion of an analysis of Kansas River flooding resulting from levee overtopping

Along with the recommended improvements, the magnitude of the costs required to implement them were assessed. It should be noted though, that detailed design of the projects recommended in this report is required to produce proper construction documents and accurate cost estimates for system components.

The main body of the project report is divided up into seven sections. Summaries of the various sections are detailed below. For a detailed description of the methods or results of each section, refer to the main report.

### **IV. Public Involvement**

The North Lawrence Drainage Study public involvement program was designed to establish meaningful and useful dialogue between stakeholders, businesses, residents in the area and the study team. A series of outreach efforts were conducted to catalogue and assess the public's concerns. Members of the project team provided an overview of study activities and public input to the Lawrence Planning Commission.

### **V. Ultimate Land Use for Watershed**

To accomplish the goals of the North Lawrence Drainage Study, the ultimate land use condition had to be determined for the study area. The future land uses within the watershed will help determine where to focus the stormwater system improvements and provide better insight into heading off potential development problems. The project team

conferred with the Public Works Department, the Planning Office, and the Utilities Department of Lawrence. Information was gathered with regard to current zoning, potential developments and long-range plans and was used to produce an ultimate watershed land use guide.

While the information gathered was used to create the Ultimate Build-Out map, it was not intended to dictate specific policies with regard to land use in the North Lawrence Drainage Area. However, certain policies could be inferred from the findings of this study. For instance, lot splits currently require a hydraulic study to determine impacts. Due to the extensive hydraulic studies detailed in this report, it would not be necessary for developers to conduct individual studies, as long as the general recommendations of this study are followed (i.e. conveyance needs to be maintained within the floodplain).

## **VI. Data Collection**

Several field visits were made to the study area to observe drainage patterns, take photographs and verify structure sizes and orientations. A significant portion of the North Lawrence watershed was surveyed for this project. This information was used in the development of computer models of the watershed. Information from the field survey forms was entered into GIS. The basis for the evaluation of the North Lawrence watershed is the digital base maps developed by the City. These maps also show land features with a 2-foot contour interval. The base maps include topographical drainage information such as open channels, bridges, culverts, manholes, inlets, and enclosed drainage systems. They also include houses, transportation and above ground utility locations. Field surveys were completed as part of this study to update and verify any existing information on size, location, and slope of the conveyance structures. Survey data on the conveyance system and watershed characteristics were combined with the City database to create a comprehensive database of the most up-to-date information.

## **VII. Internal Drainage System Analysis**

The system of City operated ditches, pipes, and pumps throughout North Lawrence are collectively referred to as the “internal drainage system” in this report. This system collects the drainage from about 1.8 square miles and largely conveys it through gravity and pressure pipe to the Kansas River. The intent of the internal drainage system analysis portion of the North Lawrence Drainage Study was to investigate necessary improvements to the existing infrastructure system for a 10-year frequency event, assuming the land uses specified by the Buildout Scenario Map. The performance of the Maple Street Pump Station (529 Maple Street) and the 2<sup>nd</sup> Street Pump Station (732 N. 2<sup>nd</sup> Street) were closely considered in the overall evaluation.

Results of the hydrologic and hydraulic analyses for the set of 12 systems representing the existing stormwater infrastructure within North Lawrence identified many surcharge locations for the ultimate buildout condition.

Recommendations were determined for each conduit or channel in a system based on the analysis of the entire system. It should be noted that improvements are to generally be made in a downstream to upstream manner within the system, as there is no advantage trying to deliver more flow to a downstream component that cannot convey the existing flow. Overall costs for each system upgrade were estimated; however, for the purposes

of prioritizing public improvements on a smaller scale, excess peak flow was determined for each main stem and each lateral draining to the main stem of the system.

### **VIII. Watershed Analysis**

There were three main goals for this portion of the study: to reduce the demand on the 2<sup>nd</sup> Street Pump Station, to expel floodwater from the basin during times of high water on the Kansas River, and to investigate the effects of development in the floodplain. It is recommended that the drainage from the area north of 24/40 Highway be cut off and the water pumped over the levee. The recommendation for reducing the burden on the 2<sup>nd</sup> Street Pump Station appraises the 10-year event in conjunction with the design criteria of the internal drainage system, however the 100-year event is investigated as well.

The recommendation for future development in the watershed is to maintain the current conveyance levels in the 100-year floodplain. This will mean allowing no development in these areas that would reduce the capacity for floodplain storage, and may require the purchase of small parcels of land to set aside exclusively for ponding.

As the area develops, it will become necessary to provide emergency services to the homes and businesses that populate the area. This will require the improvement of the major roads in the area and significant improvement of the hydraulic structures which carry flow under the roads. With a more dense urban population, the roads should be raised to meet the current APWA criteria with regard to overtopping during the 100-year event. This will result in some significant increases in required flow capacity over the existing hydraulic structures.

### **IX. Kansas River Floodplain Analysis**

The existing conditions FEMA hydraulic model was revised to assess the amount of flooding that would occur in the North Lawrence area in the event of a breach of the Kansas River levee system. A “most likely” breach location was determined for the purpose of this analysis. For the levee breach condition, a 100-year Kansas River event would result in flood levels 0 to 7 feet deep in the North Lawrence Watershed (refer to the exhibit titled Watershed Analysis – Kansas River Inundation in Section VII).



## EXECUTIVE SUMMARY

### I. Introduction

The City of Lawrence has embarked on a program to develop a stormwater management plan for the North Lawrence watershed. This program is based on a recognized need to upgrade existing facilities to modern design standards and to provide coordinated facilities in developing areas. The economic well being of the City depends on its ability to attract and retain business and industry, as well as residents to live in the City. Part of the City's ability to attract businesses and residents depends on its ability to provide adequate services such as drinking water, sewers, transportation and stormwater management. With the ever expanding urban area and associated increases in impervious surfaces such as parking lots, the frequency with which drainage issues occur appears to be increasing. This has caused the City to focus its attention on the need to provide adequate stormwater management policies and infrastructure in all areas within the watershed. The North Lawrence Drainage Study is one important step in this process.

The North Lawrence Drainage Study was divided into two main focus areas. The Internal System consists of the City operated ditches, pipes, and pumps within the existing City boundaries. The overall watershed analysis modeled the less developed drainage aspects of the North Lawrence Drainage Area. More detailed descriptions of the two focus areas can be found later in the report.

### II. Recommendations

#### A. Overall Watershed

Several alternatives were investigated in the overall North Lawrence Drainage Study watershed to reduce flood elevations, lessen impacts on the "Internal Drainage System" facilities, provide drainage in the event of high flows on the Kansas River, and assess the effects of development in the floodplain. The investigations led to the four major recommendations below. The first bullet item is the key to reducing the burden on the Internal System from areas beyond the existing city limits.

- Drainage from north of 24/40 Highway should be cutoff by the highway embankment and the water should be pumped over the levee at a point just east of the 24/40 intersection to reduce the burden on the 2<sup>nd</sup> Street Pump Station
- Future development in the watershed should maintain the current conveyance levels in the 100-year floodplain – development should not reduce the capacity for floodplain storage
- The City should purchase parcels of land as necessary for use as dedicated ponding areas
- Major roads and hydraulic structures should be improved to meet the current APWA criteria with regard to overtopping during the 100-year event, in order to provide adequate emergency services to the area

A cost summary with regard to these Watershed Analysis recommendations is shown in the table on the next page.

### Watershed Recommendations Cost Summary

Description	Quantity	Unit Cost	Project Costs
Raise road west of 24/40 intersection	370 ft	\$290/ft	\$110,000
Remove 2 existing 24/40 culverts	Lump Sum		\$75,000
Channel Excavation, MG0East to 24/40	3500 cu-yd	\$4.31/cu-yd	\$15,000
KDOT Entrance Culvert	30 ft	\$8/ft/sq-ft	\$27,000
New 24/40 Culvert	475 ft	\$8/ft/sq-ft	\$228,000
Remove Maple Grove East culvert	Lump Sum		\$22,000
Property containing ponding easement	Full Parcels	Total Value	\$942,000
Pump Station; west of airport, north of 24/40	361,000 gpm *	\$30/gpm	\$11,000,000
Main Channel, E. 1675 Rd., 155' Bridge	7750 sq-ft	\$75/sq-ft	\$1,364,000
Main Channel, E. 1675 Rd., Roadway	2700 ft	\$290/ft	
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Note: All costs are concept level estimates only. Actual costs may vary significantly.

\* Required capacity at ultimate build-out

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Analyses for the Internal Drainage System provided areas of concern throughout the City operated drainage network. The excess peak flow was used to represent the degree to which a conduit is undersized for the ultimate build-out condition. Each investigated lateral flowing into the main stem of a system and each main stem conduit were ranked by excess peak flow. This led to the following priority listing of recommended improvements.

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As the area develops, it will become necessary to provide emergency services to the homes and businesses that populate the area. This will require the improvement of the major roads in the area and significant improvement of the hydraulic structures which carry flow under the roads. With a more dense urban population, the roads should be raised to meet the current APWA criteria with regard to overtopping during the 100-year event. This will result in some significant increases in required flow capacity over the existing hydraulic structures.

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### I. Introduction

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The North Lawrence Drainage Study was divided into two main focus areas. The Internal System consists of the City operated ditches, pipes, and pumps within the existing City boundaries. The overall watershed analysis modeled the less developed drainage aspects of the North Lawrence Drainage Area. More detailed descriptions of the two focus areas can be found later in the report.

### II. Recommendations

#### A. Overall Watershed

Several alternatives were investigated in the overall North Lawrence Drainage Study watershed to reduce flood elevations, lessen impacts on the "Internal Drainage System" facilities, provide drainage in the event of high flows on the Kansas River, and assess the effects of development in the floodplain. The investigations led to the four major recommendations below. The first bullet item is the key to reducing the burden on the Internal System from areas beyond the existing city limits.

- Drainage from north of 24/40 Highway should be cutoff by the highway embankment and the water should be pumped over the levee at a point just east of the 24/40 intersection to reduce the burden on the 2<sup>nd</sup> Street Pump Station
- Future development in the watershed should maintain the current conveyance levels in the 100-year floodplain – development should not reduce the capacity for floodplain storage
- The City should purchase parcels of land as necessary for use as dedicated ponding areas
- Major roads and hydraulic structures should be improved to meet the current APWA criteria with regard to overtopping during the 100-year event, in order to provide adequate emergency services to the area

A cost summary with regard to these Watershed Analysis recommendations is shown in the table on the next page.



### Watershed Recommendations Cost Summary

Description	Quantity	Unit Cost	Project Costs
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Remove Maple Grove East culvert	Lump Sum		\$22,000
Property containing ponding easement	Full Parcels	Total Value	\$942,000
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Main Channel, E. 1675 Rd., Roadway	2700 ft	\$290/ft	
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Main Channel, E. 1900 Rd., 140' Bridge	7000 sq-ft	\$75/sq-ft	\$1,221,000
Main Channel, E. 1900 Rd., Roadway	2400 ft	\$290/ft	
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Maple Grove East, E. 1500 Rd., Roadway	3600 ft	\$290/ft	
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Trib. B, E. 1650 Rd., 100' Bridge	5000 sq-ft	\$75/sq-ft	\$703,000
Trib. B, E. 1650 Rd., Roadway	1130 ft	\$290/ft	
<b>Total</b>			\$24,802,000

Note: All costs are concept level estimates only. Actual costs may vary significantly.

\* Required capacity at ultimate build-out

## B. Internal System

Analyses for the Internal Drainage System provided areas of concern throughout the City operated drainage network. The excess peak flow was used to represent the degree to which a conduit is undersized for the ultimate build-out condition. Each investigated lateral flowing into the main stem of a system and each main stem conduit were ranked by excess peak flow. This led to the following priority listing of recommended improvements.

**Prioritization of Internal Systems**

<b>Link Name</b>	<b>Excess Peak Flow (cfs)</b>	<b>Total Estimated Cost of Improvements (dollars)</b>
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<b>S6-1</b>	168	\$3,994,000
<b>S9-1</b>	133	\$1,132,000
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<b>S1L5-1</b>	85	\$235,000
<b>S1L7-1</b>	85	\$59,000
<b>S1L3-1</b>	56	\$187,000
<b>S6L3-1</b>	56	\$195,000
<b>S6L3-7D</b>	New pipes	\$181,000
<b>S4-1</b>	43	\$60,000
<b>S6L2-1</b>	37	\$5,000
<b>S4L4-1</b>	35	\$53,000
<b>S4L2-1</b>	27	\$36,000
<b>S9L1-1</b>	21	\$7,000
<b>S1L2-1</b>	20	\$240,000
<b>S8-1</b>	17	\$115,000
<b>S10L2-1</b>	13	\$4,000
<b>S7-1</b>	13	\$38,000
<b>S5-1</b>	10	\$56,000
<b>S10-1</b>	6	\$106,000
<b>S1L4-1</b>	1	\$7,000
<b>S1L6-1</b>	0	\$0
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<b>S12-1</b>	0	\$0
<b>Total</b>		\$16,206,000

The flows calculated in the analysis of the internal system assume that the cutoff north of 24/40 Highway, as recommended by the Watershed Analysis, is in place. However, the costs in the table for the Internal System Analysis are independent of the costs for the Watershed Analysis improvement recommendations. By adding the total costs from each of the two summary tables, the estimated cost of all recommendations is approximately \$41 million.

As with the overall watershed, a viable option within the internal system is land purchase. In areas that naturally drain to a low point, it is often advantageous to preserve the ponding area by purchasing the parcel of land. Those costs are included in several of the system costs in the table.

### **III. Background**

#### **A. Watershed Description**

The North Lawrence watershed is estimated to be 9,100 acres generally bordered by the Kansas River levee on the south and the Mud Creek levee on the east. Most of the drainage contributes to the Maple Grove system, which either conveys water south to the City or east eventually to Mud Creek. A few areas near the levee, to the northwest and southeast, drain directly to the Kansas River, while a thin strip of land along part of the northeastern portion of the watershed flows directly to Mud Creek. Refer to the North Lawrence Drainage Study map in Section I of the main report for an overview of the project area.

The Kansas River floodplain completely encompasses North Lawrence. The natural silt loam soils are highly permeable. However, increased development is replacing those soils with nearly impermeable clay material in certain areas. In addition, extremely mild slopes across the landform cause frequent ponding and roadway overtopping. Historically, North Lawrence has been an agricultural community with low density residential development. Pockets of commercial and industrial development now appear in areas of the watershed. While parts of North Lawrence will likely remain agricultural, the projected future land use in other areas will add more and more impervious surfaces.

#### **B. Purpose**

The Lawrence-Douglas County Planning Commission proposed this study to address repeated flooding concerns from residents of the North Lawrence area. Flooding problems occur in a number of areas within the North Lawrence watershed. The major causes are as follows:

- Development that has significantly increased runoff from design storm events
- Undersized drainage system components such as culverts, drainage channels, underground pipe systems and inlets
- Siltation within the storm drainage system
- Past development of flood-prone areas
- A shallow, flat and interrupted watershed drainage network

Public comments relating to current drainage issues, proposed developments, long-range plans, and floodplain regulations are at the root of this study. The purpose of this study is

to identify areas with flooding problems, analyze the major elements of the storm drainage system with respect to long-term land use, and recommend needed improvements to correct or prevent systems from flooding. By doing this, proposed developments and long-range plans will be influenced. At the same time, regulations can be conceptualized to avoid potential pitfalls.

### **C. Scope of Project**

The North Lawrence Drainage Study has several major components which work toward the generation of system requirements for stormwater conveyance and infrastructure in the ultimate buildout scenario. The following major tasks were included in the study:

- Integration of the public involvement program that gathered and used information from residents, business owners and property owners when considering alternatives or upgrades within the watershed
- Estimation of the ultimate land use for the watershed
- Survey and general inspection of the drainage system
- Development of a digital database that shows the existing components of the City's drainage system
- Evaluation of the internal drainage system for the ultimate buildout scenario and recommendation of improvements
- Evaluation of the watershed drainage system for the ultimate buildout scenario and recommendation of improvements
- Completion of an analysis of Kansas River flooding resulting from levee overtopping

Along with the recommended improvements, the magnitude of the costs required to implement them were assessed. It should be noted though, that detailed design of the projects recommended in this report is required to produce proper construction documents and accurate cost estimates for system components.

The main body of the project report is divided up into seven sections. Summaries of the various sections are detailed below. For a detailed description of the methods or results of each section, refer to the main report.

### **IV. Public Involvement**

The North Lawrence Drainage Study public involvement program was designed to establish meaningful and useful dialogue between stakeholders, businesses, residents in the area and the study team. A series of outreach efforts were conducted to catalogue and assess the public's concerns. Members of the project team provided an overview of study activities and public input to the Lawrence Planning Commission.

### **V. Ultimate Land Use for Watershed**

To accomplish the goals of the North Lawrence Drainage Study, the ultimate land use condition had to be determined for the study area. The future land uses within the watershed will help determine where to focus the stormwater system improvements and provide better insight into heading off potential development problems. The project team

conferred with the Public Works Department, the Planning Office, and the Utilities Department of Lawrence. Information was gathered with regard to current zoning, potential developments and long-range plans and was used to produce an ultimate watershed land use guide.

While the information gathered was used to create the Ultimate Build-Out map, it was not intended to dictate specific policies with regard to land use in the North Lawrence Drainage Area. However, certain policies could be inferred from the findings of this study. For instance, lot splits currently require a hydraulic study to determine impacts. Due to the extensive hydraulic studies detailed in this report, it would not be necessary for developers to conduct individual studies, as long as the general recommendations of this study are followed (i.e. conveyance needs to be maintained within the floodplain).

## **VI. Data Collection**

Several field visits were made to the study area to observe drainage patterns, take photographs and verify structure sizes and orientations. A significant portion of the North Lawrence watershed was surveyed for this project. This information was used in the development of computer models of the watershed. Information from the field survey forms was entered into GIS. The basis for the evaluation of the North Lawrence watershed is the digital base maps developed by the City. These maps also show land features with a 2-foot contour interval. The base maps include topographical drainage information such as open channels, bridges, culverts, manholes, inlets, and enclosed drainage systems. They also include houses, transportation and above ground utility locations. Field surveys were completed as part of this study to update and verify any existing information on size, location, and slope of the conveyance structures. Survey data on the conveyance system and watershed characteristics were combined with the City database to create a comprehensive database of the most up-to-date information.

## **VII. Internal Drainage System Analysis**

The system of City operated ditches, pipes, and pumps throughout North Lawrence are collectively referred to as the “internal drainage system” in this report. This system collects the drainage from about 1.8 square miles and largely conveys it through gravity and pressure pipe to the Kansas River. The intent of the internal drainage system analysis portion of the North Lawrence Drainage Study was to investigate necessary improvements to the existing infrastructure system for a 10-year frequency event, assuming the land uses specified by the Buildout Scenario Map. The performance of the Maple Street Pump Station (529 Maple Street) and the 2<sup>nd</sup> Street Pump Station (732 N. 2<sup>nd</sup> Street) were closely considered in the overall evaluation.

Results of the hydrologic and hydraulic analyses for the set of 12 systems representing the existing stormwater infrastructure within North Lawrence identified many surcharge locations for the ultimate buildout condition.

Recommendations were determined for each conduit or channel in a system based on the analysis of the entire system. It should be noted that improvements are to generally be made in a downstream to upstream manner within the system, as there is no advantage trying to deliver more flow to a downstream component that cannot convey the existing flow. Overall costs for each system upgrade were estimated; however, for the purposes

of prioritizing public improvements on a smaller scale, excess peak flow was determined for each main stem and each lateral draining to the main stem of the system.

### **VIII. Watershed Analysis**

There were three main goals for this portion of the study: to reduce the demand on the 2<sup>nd</sup> Street Pump Station, to expel floodwater from the basin during times of high water on the Kansas River, and to investigate the effects of development in the floodplain. It is recommended that the drainage from the area north of 24/40 Highway be cut off and the water pumped over the levee. The recommendation for reducing the burden on the 2<sup>nd</sup> Street Pump Station appraises the 10-year event in conjunction with the design criteria of the internal drainage system, however the 100-year event is investigated as well.

The recommendation for future development in the watershed is to maintain the current conveyance levels in the 100-year floodplain. This will mean allowing no development in these areas that would reduce the capacity for floodplain storage, and may require the purchase of small parcels of land to set aside exclusively for ponding.

As the area develops, it will become necessary to provide emergency services to the homes and businesses that populate the area. This will require the improvement of the major roads in the area and significant improvement of the hydraulic structures which carry flow under the roads. With a more dense urban population, the roads should be raised to meet the current APWA criteria with regard to overtopping during the 100-year event. This will result in some significant increases in required flow capacity over the existing hydraulic structures.

### **IX. Kansas River Floodplain Analysis**

The existing conditions FEMA hydraulic model was revised to assess the amount of flooding that would occur in the North Lawrence area in the event of a breach of the Kansas River levee system. A “most likely” breach location was determined for the purpose of this analysis. For the levee breach condition, a 100-year Kansas River event would result in flood levels 0 to 7 feet deep in the North Lawrence Watershed (refer to the exhibit titled Watershed Analysis – Kansas River Inundation in Section VII).

## EXECUTIVE SUMMARY

### I. Introduction

The City of Lawrence has embarked on a program to develop a stormwater management plan for the North Lawrence watershed. This program is based on a recognized need to upgrade existing facilities to modern design standards and to provide coordinated facilities in developing areas. The economic well being of the City depends on its ability to attract and retain business and industry, as well as residents to live in the City. Part of the City's ability to attract businesses and residents depends on its ability to provide adequate services such as drinking water, sewers, transportation and stormwater management. With the ever expanding urban area and associated increases in impervious surfaces such as parking lots, the frequency with which drainage issues occur appears to be increasing. This has caused the City to focus its attention on the need to provide adequate stormwater management policies and infrastructure in all areas within the watershed. The North Lawrence Drainage Study is one important step in this process.

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### **V. Ultimate Land Use for Watershed**

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## **VII. Internal Drainage System Analysis**

The system of City operated ditches, pipes, and pumps throughout North Lawrence are collectively referred to as the “internal drainage system” in this report. This system collects the drainage from about 1.8 square miles and largely conveys it through gravity and pressure pipe to the Kansas River. The intent of the internal drainage system analysis portion of the North Lawrence Drainage Study was to investigate necessary improvements to the existing infrastructure system for a 10-year frequency event, assuming the land uses specified by the Buildout Scenario Map. The performance of the Maple Street Pump Station (529 Maple Street) and the 2<sup>nd</sup> Street Pump Station (732 N. 2<sup>nd</sup> Street) were closely considered in the overall evaluation.

Results of the hydrologic and hydraulic analyses for the set of 12 systems representing the existing stormwater infrastructure within North Lawrence identified many surcharge locations for the ultimate buildout condition.

Recommendations were determined for each conduit or channel in a system based on the analysis of the entire system. It should be noted that improvements are to generally be made in a downstream to upstream manner within the system, as there is no advantage trying to deliver more flow to a downstream component that cannot convey the existing flow. Overall costs for each system upgrade were estimated; however, for the purposes

of prioritizing public improvements on a smaller scale, excess peak flow was determined for each main stem and each lateral draining to the main stem of the system.

### **VIII. Watershed Analysis**

There were three main goals for this portion of the study: to reduce the demand on the 2<sup>nd</sup> Street Pump Station, to expel floodwater from the basin during times of high water on the Kansas River, and to investigate the effects of development in the floodplain. It is recommended that the drainage from the area north of 24/40 Highway be cut off and the water pumped over the levee. The recommendation for reducing the burden on the 2<sup>nd</sup> Street Pump Station appraises the 10-year event in conjunction with the design criteria of the internal drainage system, however the 100-year event is investigated as well.

The recommendation for future development in the watershed is to maintain the current conveyance levels in the 100-year floodplain. This will mean allowing no development in these areas that would reduce the capacity for floodplain storage, and may require the purchase of small parcels of land to set aside exclusively for ponding.

As the area develops, it will become necessary to provide emergency services to the homes and businesses that populate the area. This will require the improvement of the major roads in the area and significant improvement of the hydraulic structures which carry flow under the roads. With a more dense urban population, the roads should be raised to meet the current APWA criteria with regard to overtopping during the 100-year event. This will result in some significant increases in required flow capacity over the existing hydraulic structures.

### **IX. Kansas River Floodplain Analysis**

The existing conditions FEMA hydraulic model was revised to assess the amount of flooding that would occur in the North Lawrence area in the event of a breach of the Kansas River levee system. A “most likely” breach location was determined for the purpose of this analysis. For the levee breach condition, a 100-year Kansas River event would result in flood levels 0 to 7 feet deep in the North Lawrence Watershed (refer to the exhibit titled Watershed Analysis – Kansas River Inundation in Section VII).

## EXECUTIVE SUMMARY

### I. Introduction

The City of Lawrence has embarked on a program to develop a stormwater management plan for the North Lawrence watershed. This program is based on a recognized need to upgrade existing facilities to modern design standards and to provide coordinated facilities in developing areas. The economic well being of the City depends on its ability to attract and retain business and industry, as well as residents to live in the City. Part of the City's ability to attract businesses and residents depends on its ability to provide adequate services such as drinking water, sewers, transportation and stormwater management. With the ever expanding urban area and associated increases in impervious surfaces such as parking lots, the frequency with which drainage issues occur appears to be increasing. This has caused the City to focus its attention on the need to provide adequate stormwater management policies and infrastructure in all areas within the watershed. The North Lawrence Drainage Study is one important step in this process.

The North Lawrence Drainage Study was divided into two main focus areas. The Internal System consists of the City operated ditches, pipes, and pumps within the existing City boundaries. The overall watershed analysis modeled the less developed drainage aspects of the North Lawrence Drainage Area. More detailed descriptions of the two focus areas can be found later in the report.

### II. Recommendations

#### A. Overall Watershed

Several alternatives were investigated in the overall North Lawrence Drainage Study watershed to reduce flood elevations, lessen impacts on the "Internal Drainage System" facilities, provide drainage in the event of high flows on the Kansas River, and assess the effects of development in the floodplain. The investigations led to the four major recommendations below. The first bullet item is the key to reducing the burden on the Internal System from areas beyond the existing city limits.

- Drainage from north of 24/40 Highway should be cutoff by the highway embankment and the water should be pumped over the levee at a point just east of the 24/40 intersection to reduce the burden on the 2<sup>nd</sup> Street Pump Station
- Future development in the watershed should maintain the current conveyance levels in the 100-year floodplain – development should not reduce the capacity for floodplain storage
- The City should purchase parcels of land as necessary for use as dedicated ponding areas
- Major roads and hydraulic structures should be improved to meet the current APWA criteria with regard to overtopping during the 100-year event, in order to provide adequate emergency services to the area

A cost summary with regard to these Watershed Analysis recommendations is shown in the table on the next page.

### Watershed Recommendations Cost Summary

Description	Quantity	Unit Cost	Project Costs
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Property containing ponding easement	Full Parcels	Total Value	\$942,000
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Main Channel, E. 1900 Rd., 140' Bridge	7000 sq-ft	\$75/sq-ft	\$1,221,000
Main Channel, E. 1900 Rd., Roadway	2400 ft	\$290/ft	
Maple Grove East, E. 1500 Rd., 100' Bridge	5000 sq-ft	\$75/sq-ft	\$1,419,000
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Trib. B, E. 1650 Rd., Roadway	1130 ft	\$290/ft	
<b>Total</b>			\$24,802,000

Note: All costs are concept level estimates only. Actual costs may vary significantly.

\* Required capacity at ultimate build-out

## B. Internal System

Analyses for the Internal Drainage System provided areas of concern throughout the City operated drainage network. The excess peak flow was used to represent the degree to which a conduit is undersized for the ultimate build-out condition. Each investigated lateral flowing into the main stem of a system and each main stem conduit were ranked by excess peak flow. This led to the following priority listing of recommended improvements.

**Prioritization of Internal Systems**

<b>Link Name</b>	<b>Excess Peak Flow (cfs)</b>	<b>Total Estimated Cost of Improvements (dollars)</b>
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<b>S6-1</b>	168	\$3,994,000
<b>S9-1</b>	133	\$1,132,000
<b>S1L1-1</b>	96	\$333,000
<b>S1L5-1</b>	85	\$235,000
<b>S1L7-1</b>	85	\$59,000
<b>S1L3-1</b>	56	\$187,000
<b>S6L3-1</b>	56	\$195,000
<b>S6L3-7D</b>	New pipes	\$181,000
<b>S4-1</b>	43	\$60,000
<b>S6L2-1</b>	37	\$5,000
<b>S4L4-1</b>	35	\$53,000
<b>S4L2-1</b>	27	\$36,000
<b>S9L1-1</b>	21	\$7,000
<b>S1L2-1</b>	20	\$240,000
<b>S8-1</b>	17	\$115,000
<b>S10L2-1</b>	13	\$4,000
<b>S7-1</b>	13	\$38,000
<b>S5-1</b>	10	\$56,000
<b>S10-1</b>	6	\$106,000
<b>S1L4-1</b>	1	\$7,000
<b>S1L6-1</b>	0	\$0
<b>S11-1</b>	0	\$0
<b>S3-1</b>	0	\$0
<b>S2-1</b>	0	\$0
<b>S12-1</b>	0	\$0
<b>Total</b>		\$16,206,000



The flows calculated in the analysis of the internal system assume that the cutoff north of 24/40 Highway, as recommended by the Watershed Analysis, is in place. However, the costs in the table for the Internal System Analysis are independent of the costs for the Watershed Analysis improvement recommendations. By adding the total costs from each of the two summary tables, the estimated cost of all recommendations is approximately \$41 million.

As with the overall watershed, a viable option within the internal system is land purchase. In areas that naturally drain to a low point, it is often advantageous to preserve the ponding area by purchasing the parcel of land. Those costs are included in several of the system costs in the table.

### **III. Background**

#### **A. Watershed Description**

The North Lawrence watershed is estimated to be 9,100 acres generally bordered by the Kansas River levee on the south and the Mud Creek levee on the east. Most of the drainage contributes to the Maple Grove system, which either conveys water south to the City or east eventually to Mud Creek. A few areas near the levee, to the northwest and southeast, drain directly to the Kansas River, while a thin strip of land along part of the northeastern portion of the watershed flows directly to Mud Creek. Refer to the North Lawrence Drainage Study map in Section I of the main report for an overview of the project area.

The Kansas River floodplain completely encompasses North Lawrence. The natural silt loam soils are highly permeable. However, increased development is replacing those soils with nearly impermeable clay material in certain areas. In addition, extremely mild slopes across the landform cause frequent ponding and roadway overtopping. Historically, North Lawrence has been an agricultural community with low density residential development. Pockets of commercial and industrial development now appear in areas of the watershed. While parts of North Lawrence will likely remain agricultural, the projected future land use in other areas will add more and more impervious surfaces.

#### **B. Purpose**

The Lawrence-Douglas County Planning Commission proposed this study to address repeated flooding concerns from residents of the North Lawrence area. Flooding problems occur in a number of areas within the North Lawrence watershed. The major causes are as follows:

- Development that has significantly increased runoff from design storm events
- Undersized drainage system components such as culverts, drainage channels, underground pipe systems and inlets
- Siltation within the storm drainage system
- Past development of flood-prone areas
- A shallow, flat and interrupted watershed drainage network

Public comments relating to current drainage issues, proposed developments, long-range plans, and floodplain regulations are at the root of this study. The purpose of this study is

to identify areas with flooding problems, analyze the major elements of the storm drainage system with respect to long-term land use, and recommend needed improvements to correct or prevent systems from flooding. By doing this, proposed developments and long-range plans will be influenced. At the same time, regulations can be conceptualized to avoid potential pitfalls.

### **C. Scope of Project**

The North Lawrence Drainage Study has several major components which work toward the generation of system requirements for stormwater conveyance and infrastructure in the ultimate buildout scenario. The following major tasks were included in the study:

- Integration of the public involvement program that gathered and used information from residents, business owners and property owners when considering alternatives or upgrades within the watershed
- Estimation of the ultimate land use for the watershed
- Survey and general inspection of the drainage system
- Development of a digital database that shows the existing components of the City's drainage system
- Evaluation of the internal drainage system for the ultimate buildout scenario and recommendation of improvements
- Evaluation of the watershed drainage system for the ultimate buildout scenario and recommendation of improvements
- Completion of an analysis of Kansas River flooding resulting from levee overtopping

Along with the recommended improvements, the magnitude of the costs required to implement them were assessed. It should be noted though, that detailed design of the projects recommended in this report is required to produce proper construction documents and accurate cost estimates for system components.

The main body of the project report is divided up into seven sections. Summaries of the various sections are detailed below. For a detailed description of the methods or results of each section, refer to the main report.

### **IV. Public Involvement**

The North Lawrence Drainage Study public involvement program was designed to establish meaningful and useful dialogue between stakeholders, businesses, residents in the area and the study team. A series of outreach efforts were conducted to catalogue and assess the public's concerns. Members of the project team provided an overview of study activities and public input to the Lawrence Planning Commission.

### **V. Ultimate Land Use for Watershed**

To accomplish the goals of the North Lawrence Drainage Study, the ultimate land use condition had to be determined for the study area. The future land uses within the watershed will help determine where to focus the stormwater system improvements and provide better insight into heading off potential development problems. The project team

conferred with the Public Works Department, the Planning Office, and the Utilities Department of Lawrence. Information was gathered with regard to current zoning, potential developments and long-range plans and was used to produce an ultimate watershed land use guide.

While the information gathered was used to create the Ultimate Build-Out map, it was not intended to dictate specific policies with regard to land use in the North Lawrence Drainage Area. However, certain policies could be inferred from the findings of this study. For instance, lot splits currently require a hydraulic study to determine impacts. Due to the extensive hydraulic studies detailed in this report, it would not be necessary for developers to conduct individual studies, as long as the general recommendations of this study are followed (i.e. conveyance needs to be maintained within the floodplain).

## **VI. Data Collection**

Several field visits were made to the study area to observe drainage patterns, take photographs and verify structure sizes and orientations. A significant portion of the North Lawrence watershed was surveyed for this project. This information was used in the development of computer models of the watershed. Information from the field survey forms was entered into GIS. The basis for the evaluation of the North Lawrence watershed is the digital base maps developed by the City. These maps also show land features with a 2-foot contour interval. The base maps include topographical drainage information such as open channels, bridges, culverts, manholes, inlets, and enclosed drainage systems. They also include houses, transportation and above ground utility locations. Field surveys were completed as part of this study to update and verify any existing information on size, location, and slope of the conveyance structures. Survey data on the conveyance system and watershed characteristics were combined with the City database to create a comprehensive database of the most up-to-date information.

## **VII. Internal Drainage System Analysis**

The system of City operated ditches, pipes, and pumps throughout North Lawrence are collectively referred to as the “internal drainage system” in this report. This system collects the drainage from about 1.8 square miles and largely conveys it through gravity and pressure pipe to the Kansas River. The intent of the internal drainage system analysis portion of the North Lawrence Drainage Study was to investigate necessary improvements to the existing infrastructure system for a 10-year frequency event, assuming the land uses specified by the Buildout Scenario Map. The performance of the Maple Street Pump Station (529 Maple Street) and the 2<sup>nd</sup> Street Pump Station (732 N. 2<sup>nd</sup> Street) were closely considered in the overall evaluation.

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### **IX. Kansas River Floodplain Analysis**

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- Development of a digital database that shows the existing components of the City's drainage system
- Evaluation of the internal drainage system for the ultimate buildout scenario and recommendation of improvements
- Evaluation of the watershed drainage system for the ultimate buildout scenario and recommendation of improvements
- Completion of an analysis of Kansas River flooding resulting from levee overtopping

Along with the recommended improvements, the magnitude of the costs required to implement them were assessed. It should be noted though, that detailed design of the projects recommended in this report is required to produce proper construction documents and accurate cost estimates for system components.

The main body of the project report is divided up into seven sections. Summaries of the various sections are detailed below. For a detailed description of the methods or results of each section, refer to the main report.

### **IV. Public Involvement**

The North Lawrence Drainage Study public involvement program was designed to establish meaningful and useful dialogue between stakeholders, businesses, residents in the area and the study team. A series of outreach efforts were conducted to catalogue and assess the public's concerns. Members of the project team provided an overview of study activities and public input to the Lawrence Planning Commission.

### **V. Ultimate Land Use for Watershed**

To accomplish the goals of the North Lawrence Drainage Study, the ultimate land use condition had to be determined for the study area. The future land uses within the watershed will help determine where to focus the stormwater system improvements and provide better insight into heading off potential development problems. The project team

conferred with the Public Works Department, the Planning Office, and the Utilities Department of Lawrence. Information was gathered with regard to current zoning, potential developments and long-range plans and was used to produce an ultimate watershed land use guide.

While the information gathered was used to create the Ultimate Build-Out map, it was not intended to dictate specific policies with regard to land use in the North Lawrence Drainage Area. However, certain policies could be inferred from the findings of this study. For instance, lot splits currently require a hydraulic study to determine impacts. Due to the extensive hydraulic studies detailed in this report, it would not be necessary for developers to conduct individual studies, as long as the general recommendations of this study are followed (i.e. conveyance needs to be maintained within the floodplain).

## **VI. Data Collection**

Several field visits were made to the study area to observe drainage patterns, take photographs and verify structure sizes and orientations. A significant portion of the North Lawrence watershed was surveyed for this project. This information was used in the development of computer models of the watershed. Information from the field survey forms was entered into GIS. The basis for the evaluation of the North Lawrence watershed is the digital base maps developed by the City. These maps also show land features with a 2-foot contour interval. The base maps include topographical drainage information such as open channels, bridges, culverts, manholes, inlets, and enclosed drainage systems. They also include houses, transportation and above ground utility locations. Field surveys were completed as part of this study to update and verify any existing information on size, location, and slope of the conveyance structures. Survey data on the conveyance system and watershed characteristics were combined with the City database to create a comprehensive database of the most up-to-date information.

## **VII. Internal Drainage System Analysis**

The system of City operated ditches, pipes, and pumps throughout North Lawrence are collectively referred to as the “internal drainage system” in this report. This system collects the drainage from about 1.8 square miles and largely conveys it through gravity and pressure pipe to the Kansas River. The intent of the internal drainage system analysis portion of the North Lawrence Drainage Study was to investigate necessary improvements to the existing infrastructure system for a 10-year frequency event, assuming the land uses specified by the Buildout Scenario Map. The performance of the Maple Street Pump Station (529 Maple Street) and the 2<sup>nd</sup> Street Pump Station (732 N. 2<sup>nd</sup> Street) were closely considered in the overall evaluation.

Results of the hydrologic and hydraulic analyses for the set of 12 systems representing the existing stormwater infrastructure within North Lawrence identified many surcharge locations for the ultimate buildout condition.

Recommendations were determined for each conduit or channel in a system based on the analysis of the entire system. It should be noted that improvements are to generally be made in a downstream to upstream manner within the system, as there is no advantage trying to deliver more flow to a downstream component that cannot convey the existing flow. Overall costs for each system upgrade were estimated; however, for the purposes

of prioritizing public improvements on a smaller scale, excess peak flow was determined for each main stem and each lateral draining to the main stem of the system.

### **VIII. Watershed Analysis**

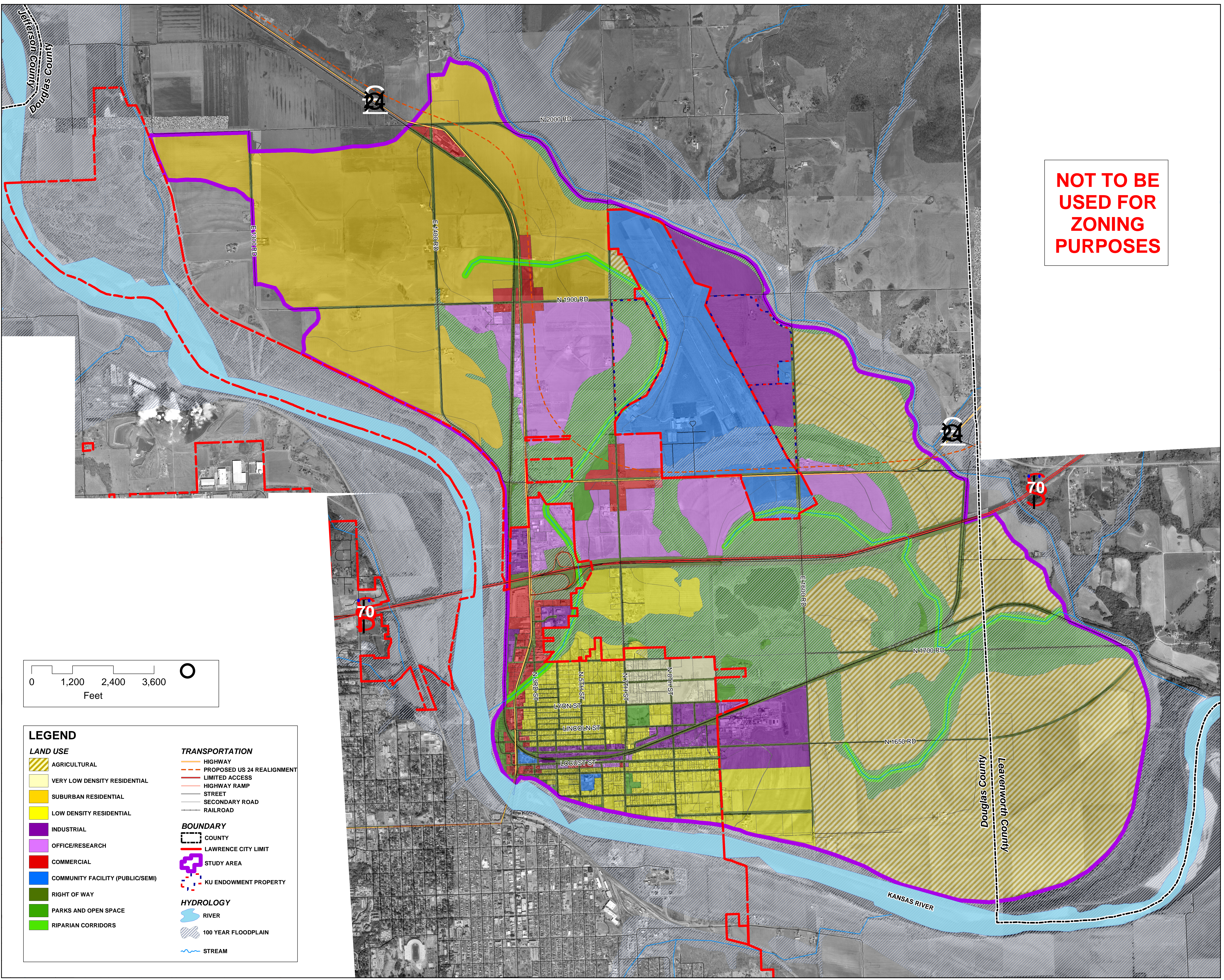
There were three main goals for this portion of the study: to reduce the demand on the 2<sup>nd</sup> Street Pump Station, to expel floodwater from the basin during times of high water on the Kansas River, and to investigate the effects of development in the floodplain. It is recommended that the drainage from the area north of 24/40 Highway be cut off and the water pumped over the levee. The recommendation for reducing the burden on the 2<sup>nd</sup> Street Pump Station appraises the 10-year event in conjunction with the design criteria of the internal drainage system, however the 100-year event is investigated as well.

The recommendation for future development in the watershed is to maintain the current conveyance levels in the 100-year floodplain. This will mean allowing no development in these areas that would reduce the capacity for floodplain storage, and may require the purchase of small parcels of land to set aside exclusively for ponding.

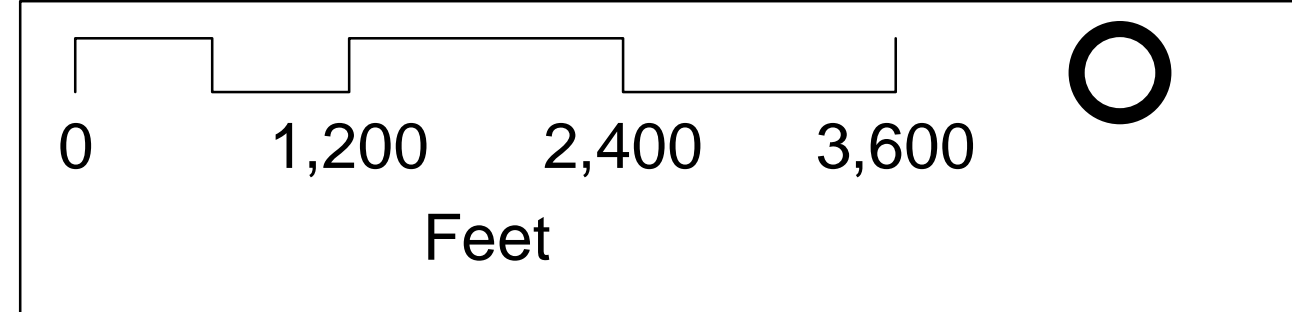
As the area develops, it will become necessary to provide emergency services to the homes and businesses that populate the area. This will require the improvement of the major roads in the area and significant improvement of the hydraulic structures which carry flow under the roads. With a more dense urban population, the roads should be raised to meet the current APWA criteria with regard to overtopping during the 100-year event. This will result in some significant increases in required flow capacity over the existing hydraulic structures.

### **IX. Kansas River Floodplain Analysis**

The existing conditions FEMA hydraulic model was revised to assess the amount of flooding that would occur in the North Lawrence area in the event of a breach of the Kansas River levee system. A “most likely” breach location was determined for the purpose of this analysis. For the levee breach condition, a 100-year Kansas River event would result in flood levels 0 to 7 feet deep in the North Lawrence Watershed (refer to the exhibit titled Watershed Analysis – Kansas River Inundation in Section VII).

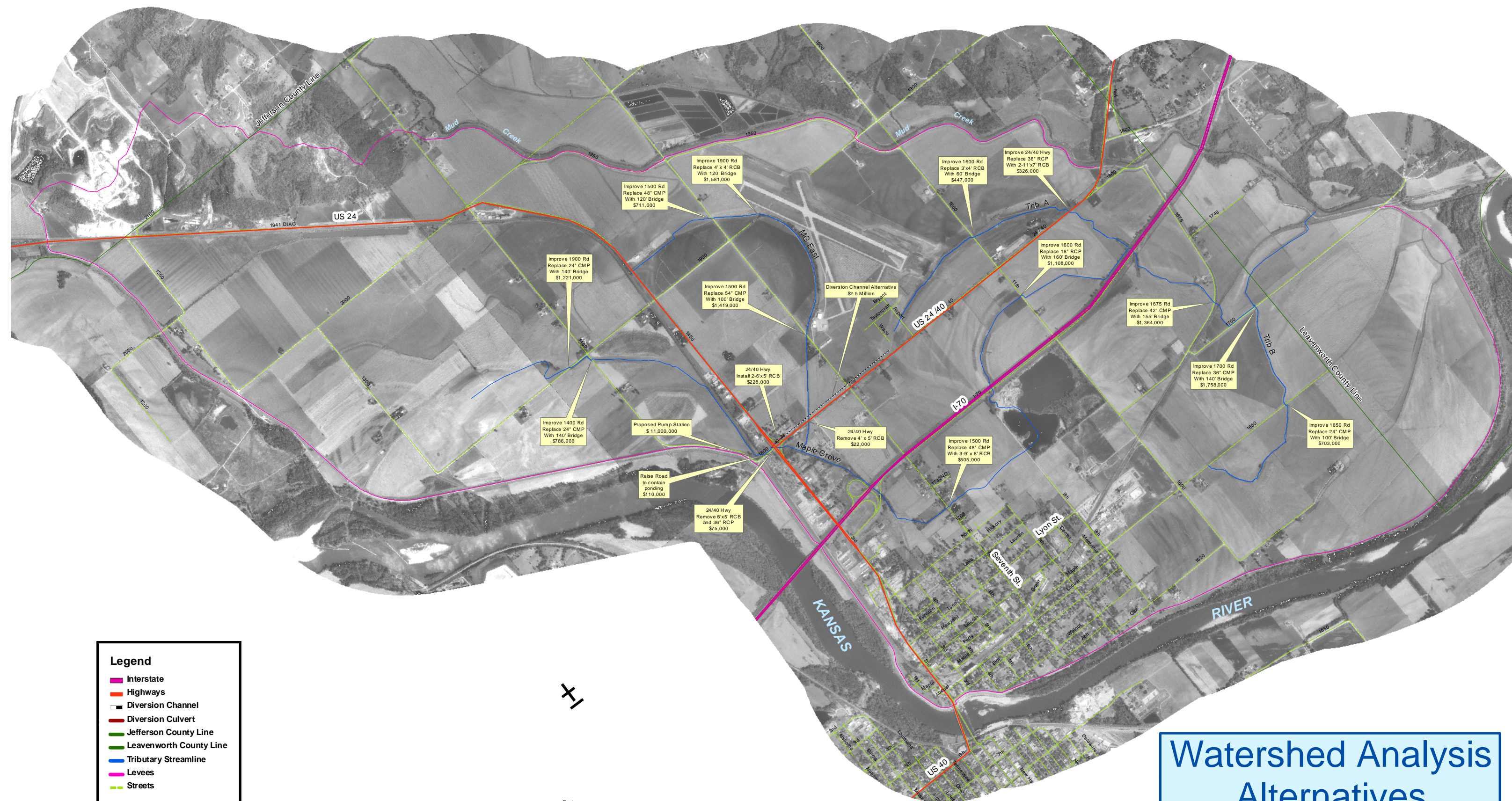


**NOT TO BE  
USED FOR  
ZONING  
PURPOSES**



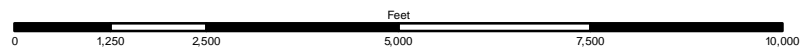
LEGEND	
<b>LAND USE</b>	
	AGRICULTURAL
	VERY LOW DENSITY RESIDENTIAL
	SUBURBAN RESIDENTIAL
	LOW DENSITY RESIDENTIAL
	INDUSTRIAL
	OFFICE/RESEARCH
	COMMERCIAL
	COMMUNITY FACILITY (PUBLIC/SEMI)
	RIGHT OF WAY
	PARKS AND OPEN SPACE
	RIPARIAN CORRIDORS
<b>TRANSPORTATION</b>	
	HIGHWAY
	PROPOSED US 24 REALIGNMENT
	LIMITED ACCESS
	HIGHWAY RAMP
	STREET
	SECONDARY ROAD
	RAILROAD
<b>BOUNDARY</b>	
	COUNTY
	LAWRENCE CITY LIMIT
	STUDY AREA
	KU ENDOWMENT PROPERTY
<b>HYDROLOGY</b>	
	RIVER
	100 YEAR FLOODPLAIN
	STREAM

# North Lawrence Drainage Study Build-Out Scenario Map



**Legend**

- Interstate
- Highways
- Diversion Channel
- Diversion Culvert
- Jefferson County Line
- Leavenworth County Line
- Tributary Streamline
- Levees
- Streets



# Watershed Analysis Alternatives