

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 –**

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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.

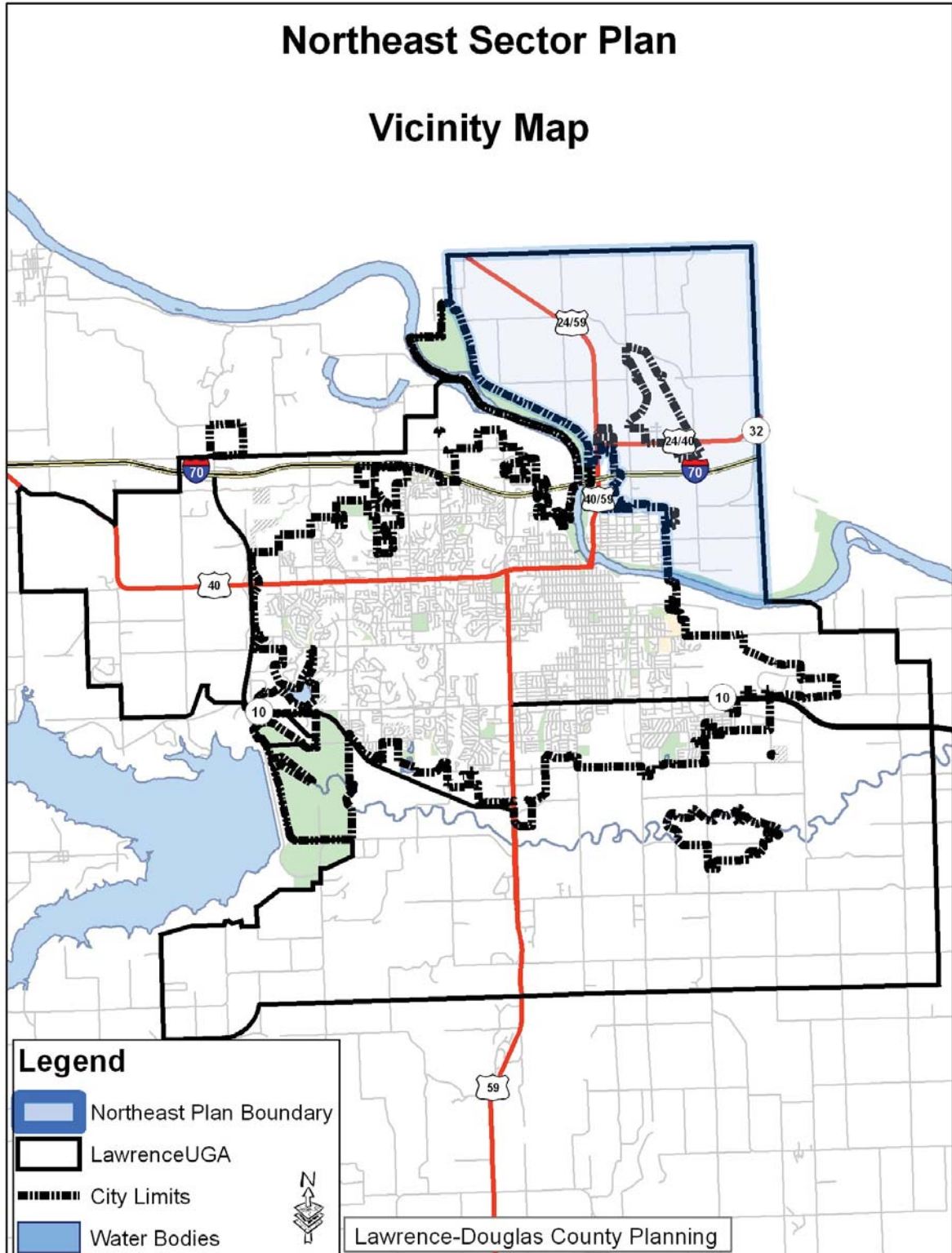
The dominant character of the area is rural in nature although there are a variety of uses within the planning area. The main rural uses in the flat, lower parts of the planning area are agriculture row crop, livestock production, and pastureland uses.

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.

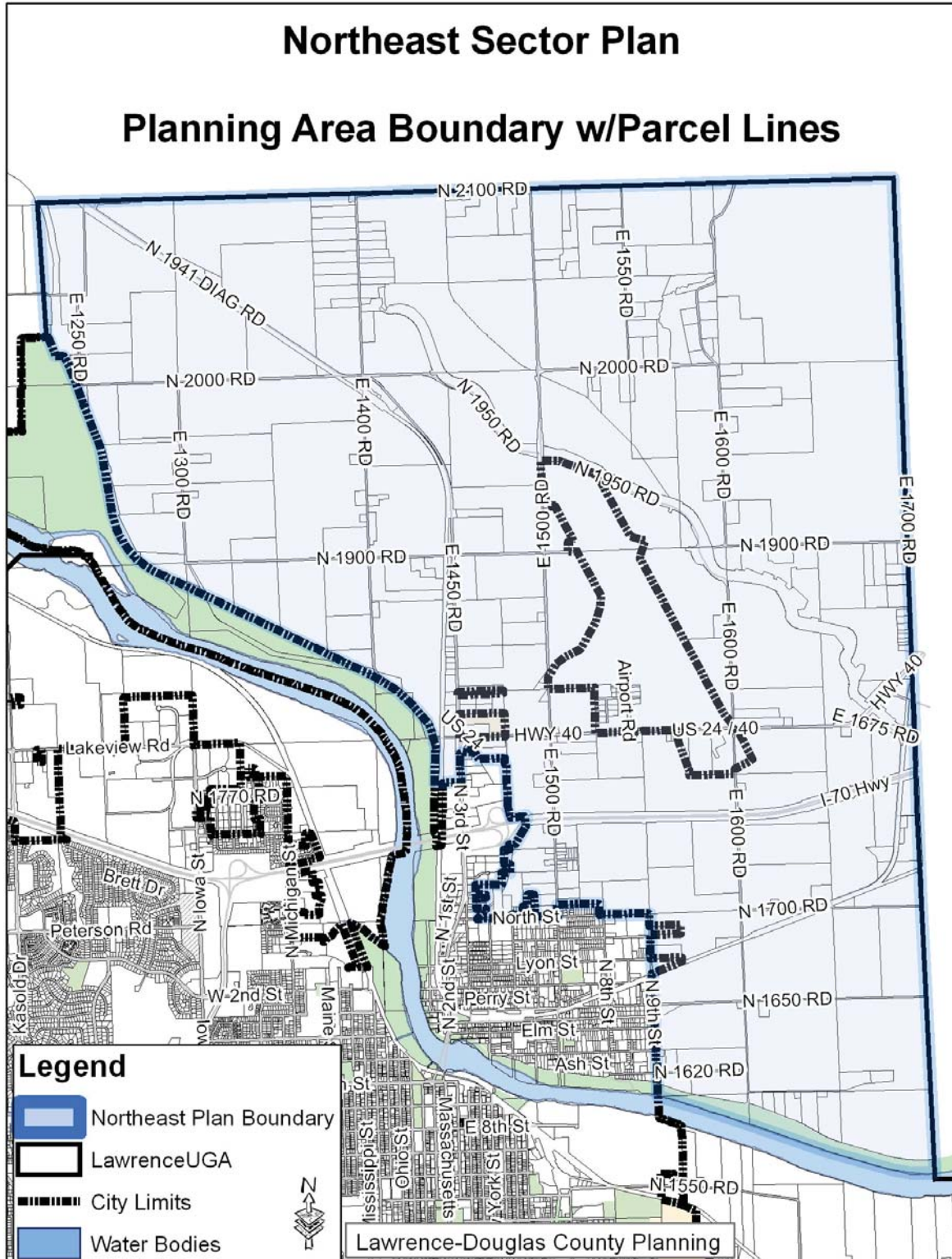
I-70 and a toll plaza, along with Highways 24/40/59 are major elements within the area. Industrial and commercial uses are located along Highway 24/59 and Highway 24/40. The Lawrence Municipal Airport is another major element within the planning area. The airport is annexed into the city, but is an island 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.

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.

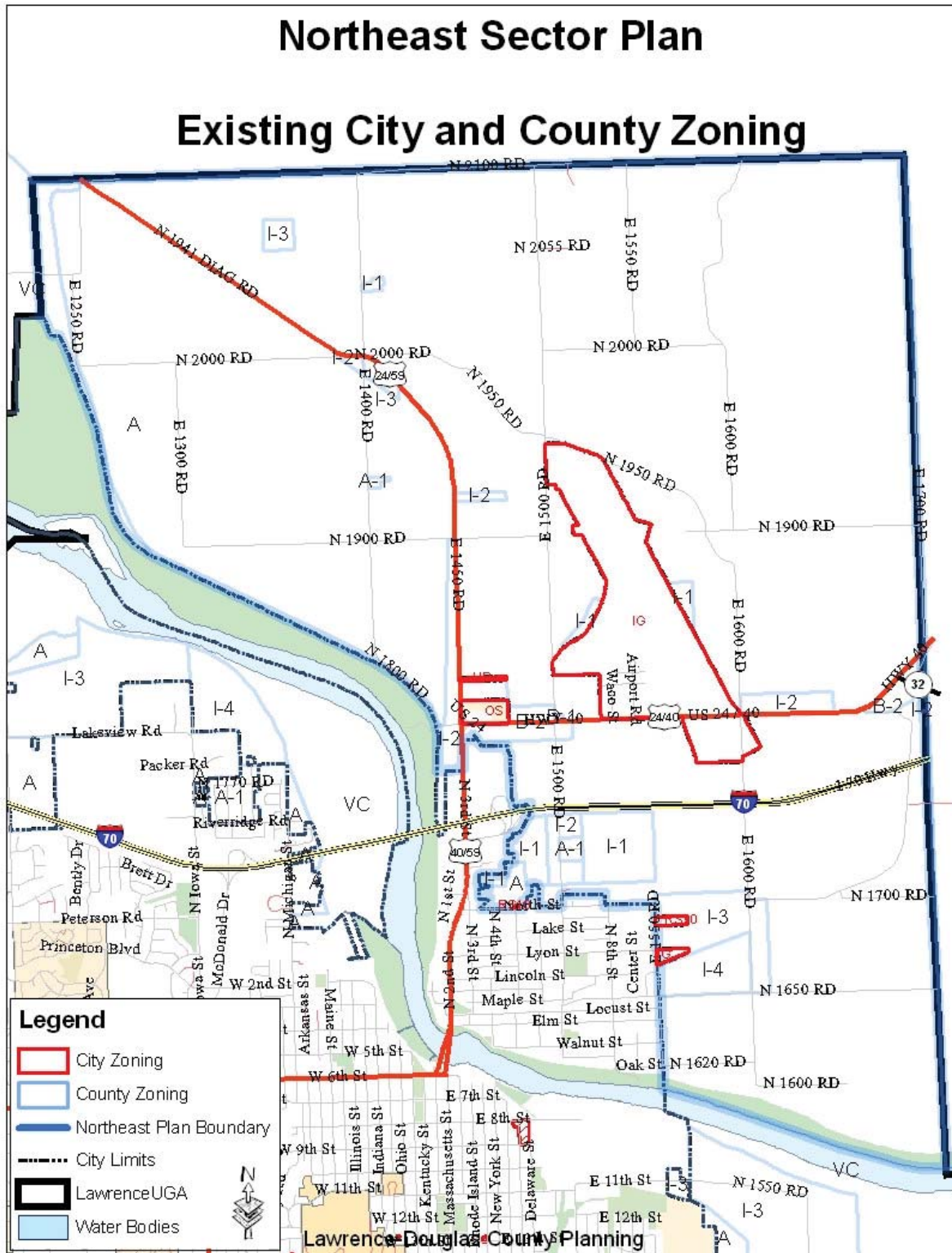
Table 2-2 County Zoning Classifications

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.

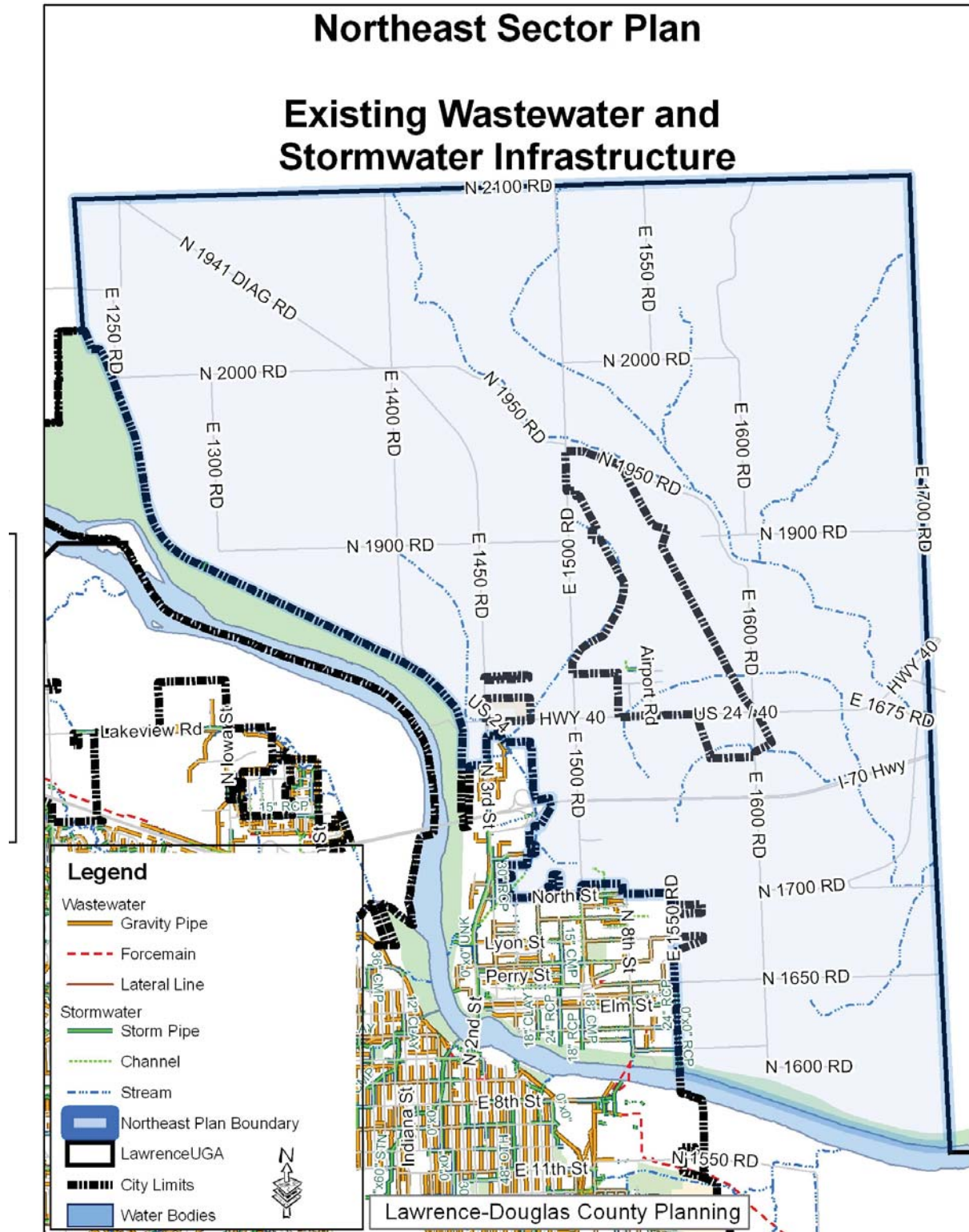
2.3.4 Electric Infrastructure

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

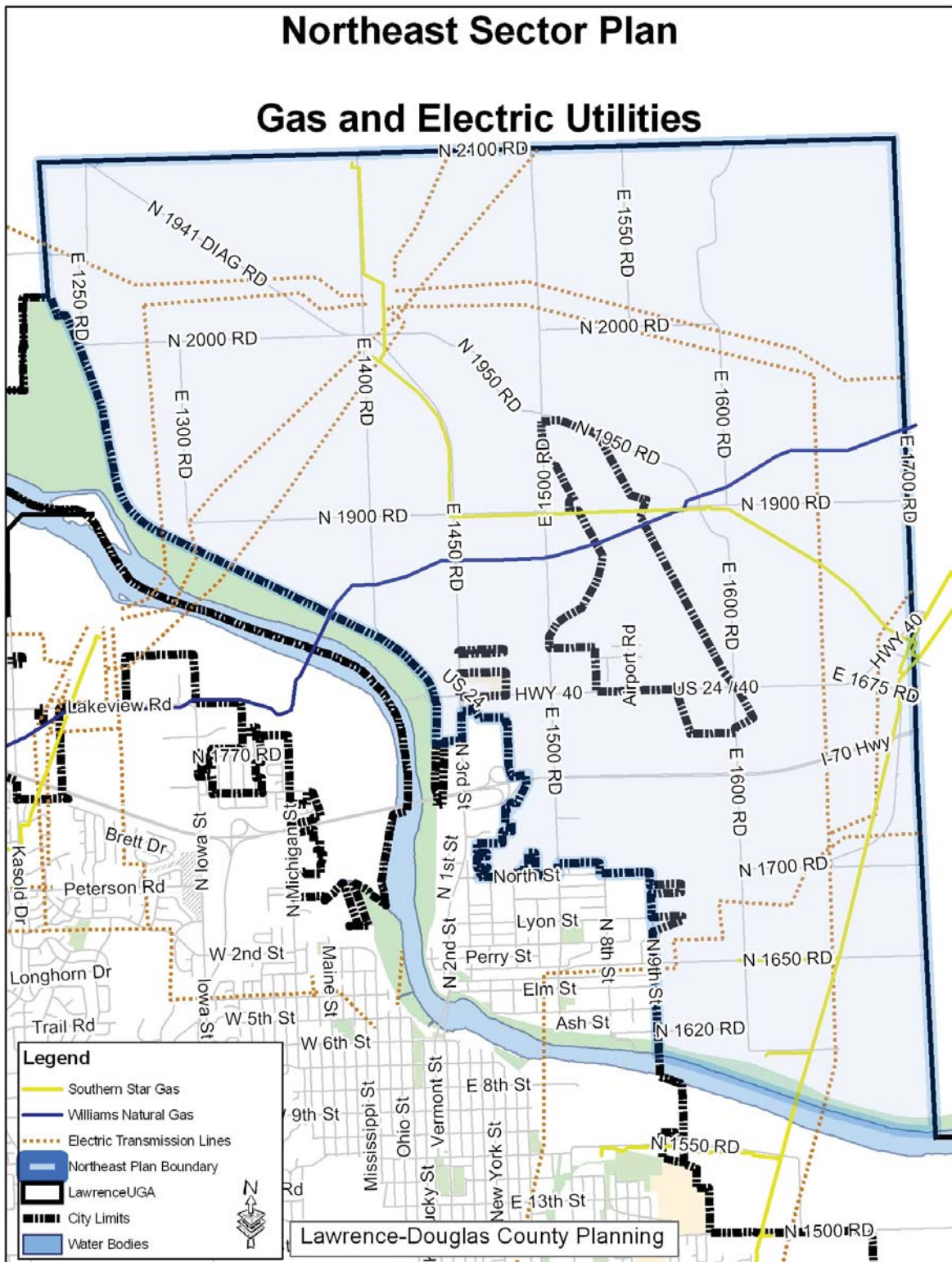
2.3.5 Drainage Districts

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 2-4 – Wastewater and Stormwater Infrastructure



Map 2-5 – Gas and Electric Utilities



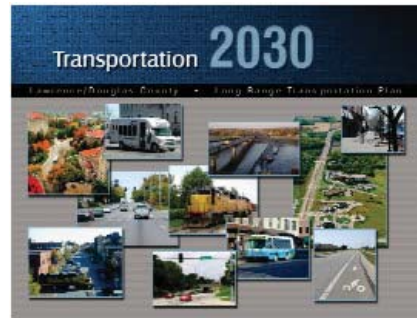
2.3.5 Transportation

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.



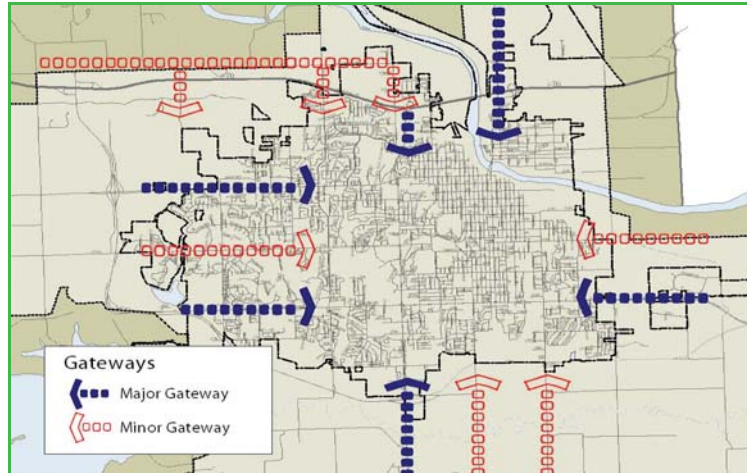
T2030 was adopted in 2008 and is updated at least every 5 years. This area should be fully studied during the next update to address the future street network.

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.

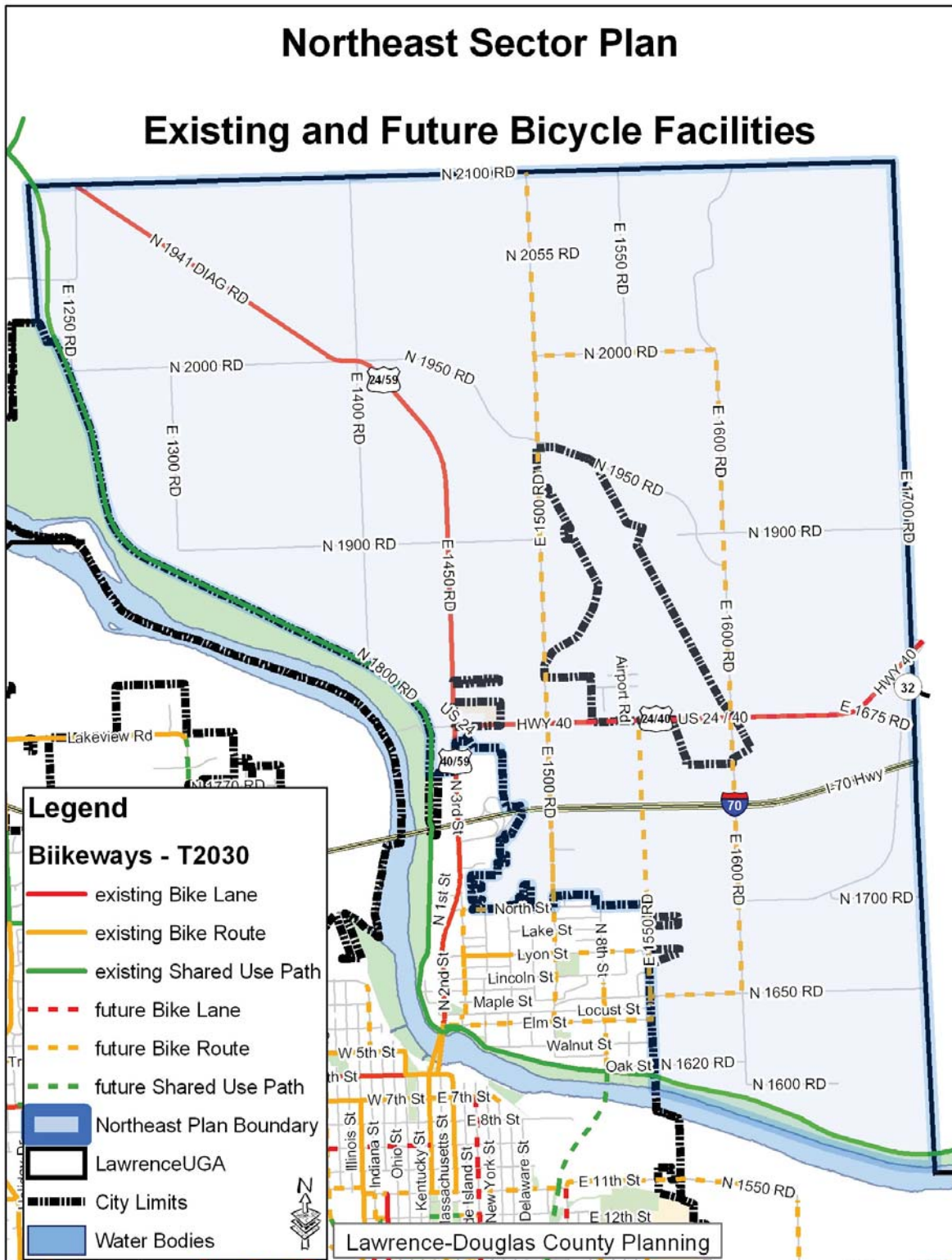


Map 2-8 identifies existing and future bicycle facilities that include:

- 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 2nd 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.

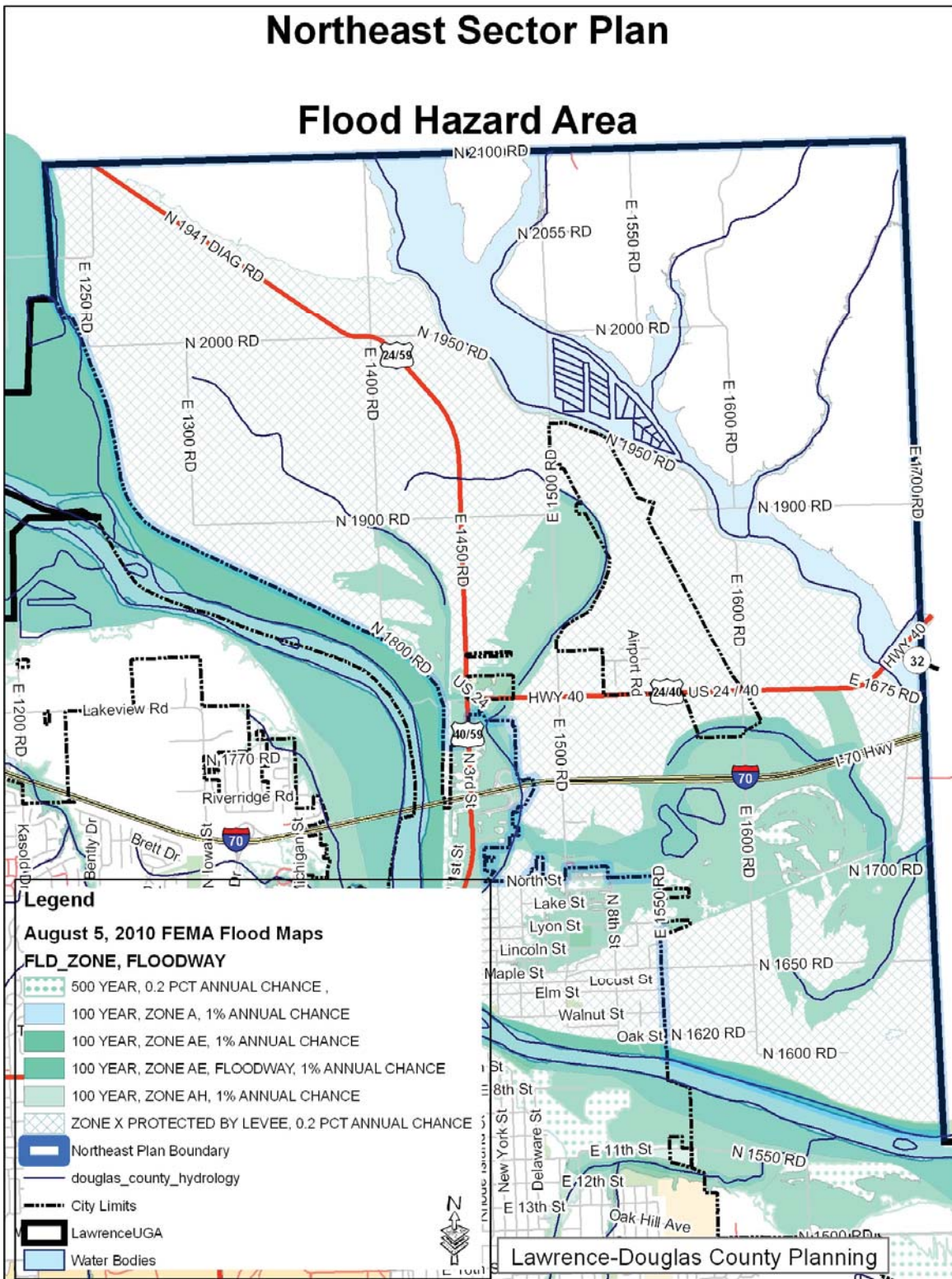
The majority of the land coverage within the planning area is agricultural land used for crop and animal production. The planning area also contains areas of prairie, grazing land and reserved areas of land that are a part of the KU Field Station. There are some water bodies and woodlands are also present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

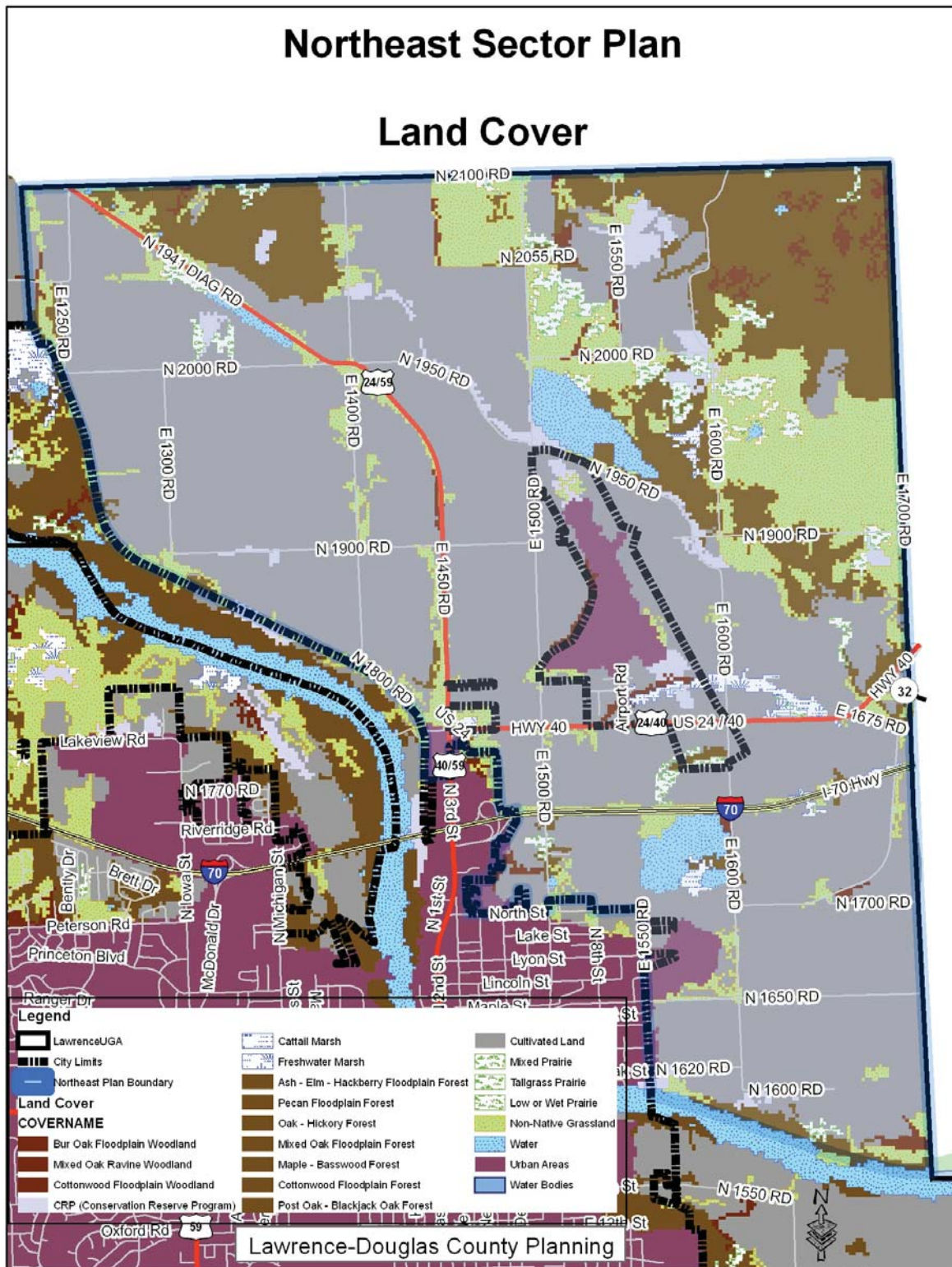
There is a range of topography within the planning area. The high points are along the northern and northeastern portions of the planning area north of the airport and Highway 24/59. The low points are essentially the rest of the planning area. This area is notable for the fact that it is so flat. As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

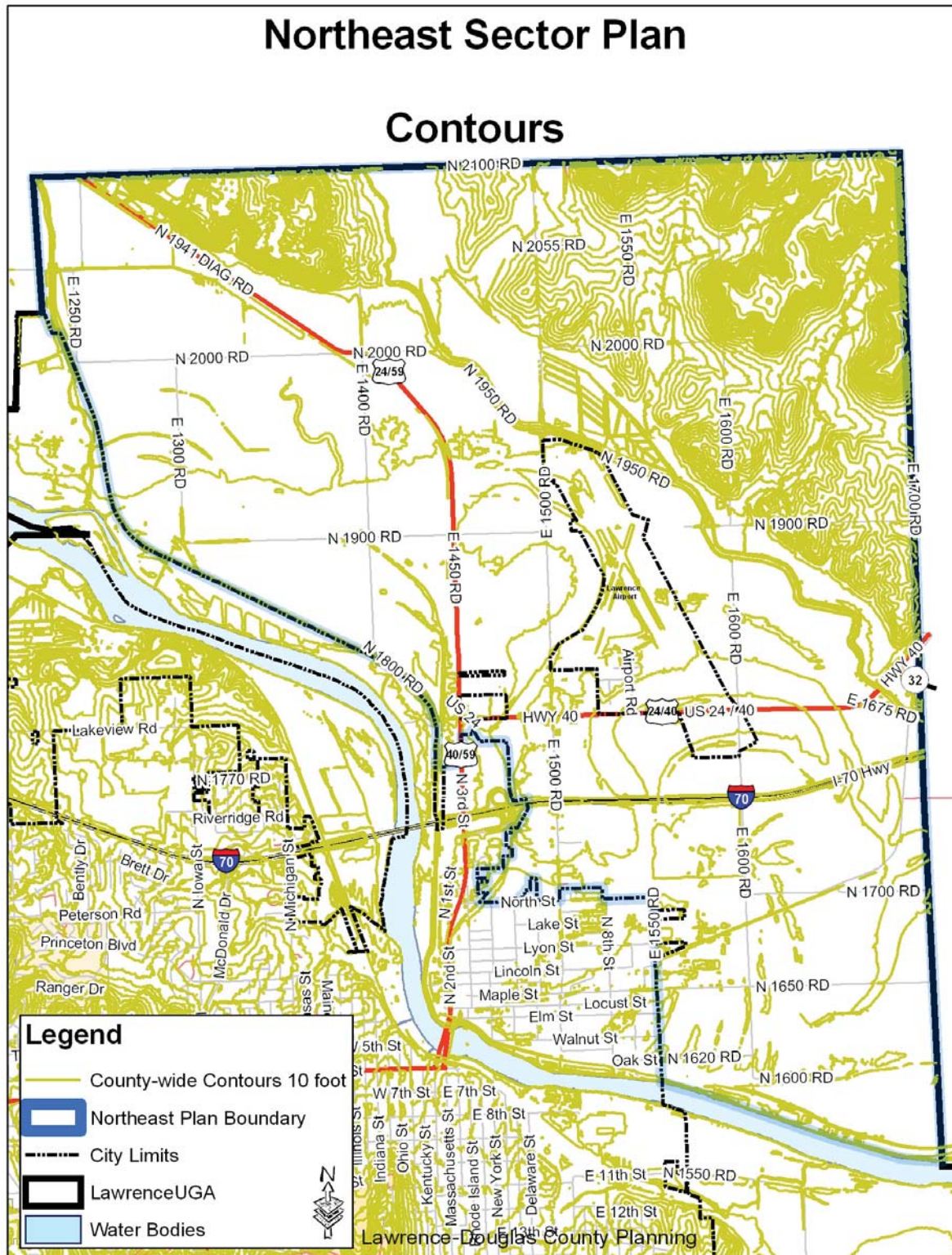
The planning area also contains Class I and II soils as determined by the Natural Resources Conservation Service, a division of the United States Department of Agriculture. These soils are considered to be high quality agricultural land. Horizon 2020, Chapter 7 Industrial and Employment Related Land 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

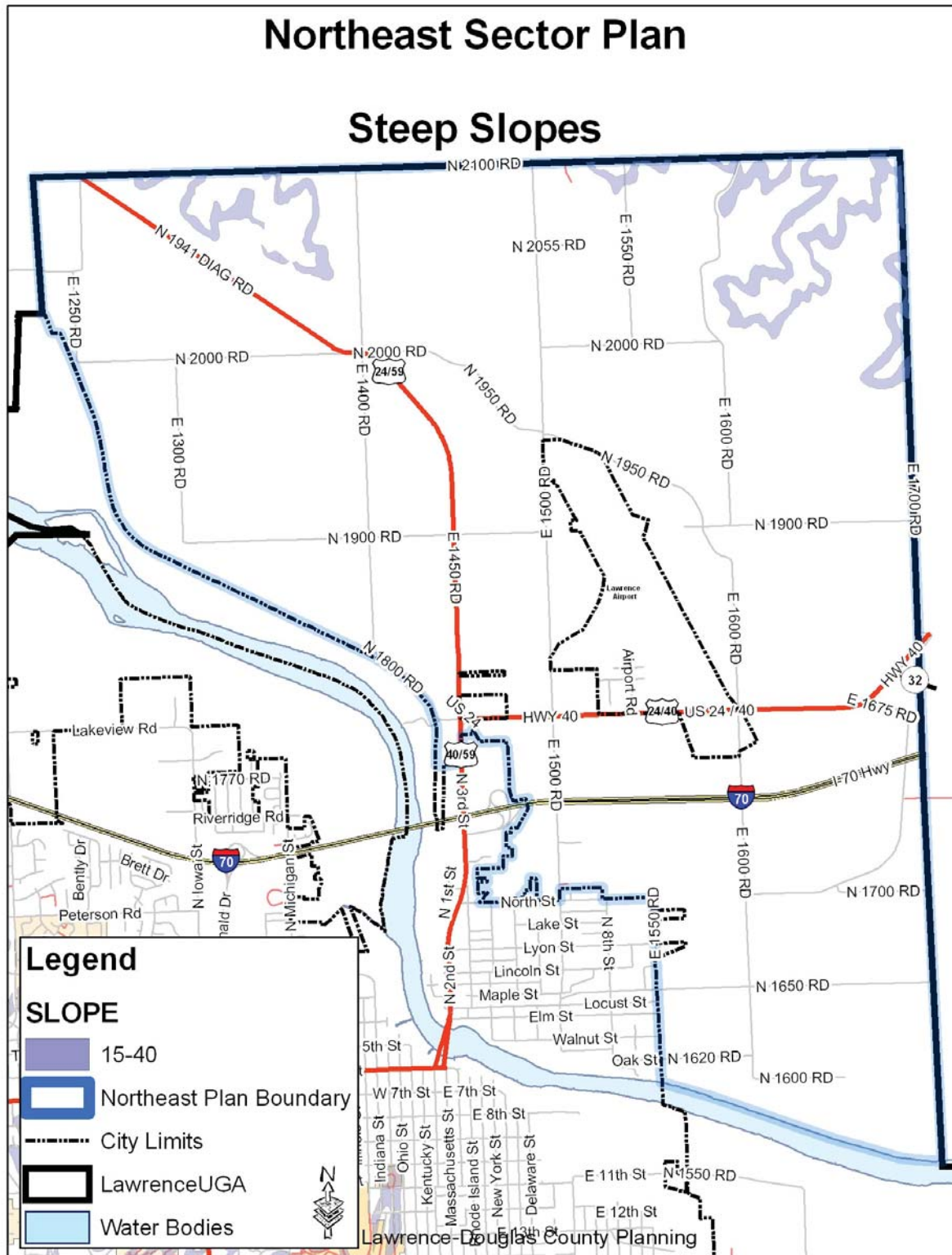




Map 2-11 – Contours



Map 2-12 – Steep Slopes



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.

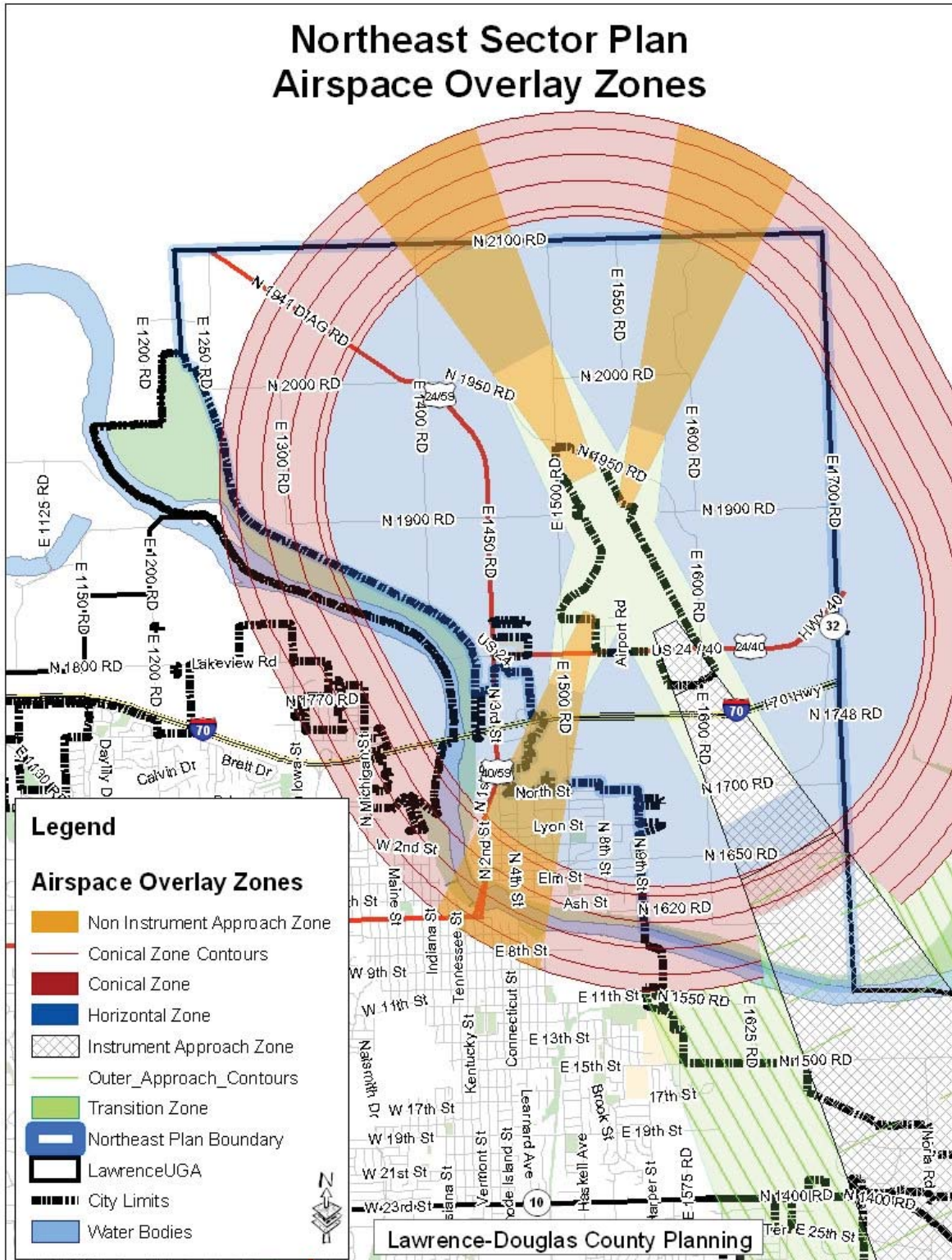
The Federal Aviation Administration (FAA) regulates certain aspects of the operation of the airport and the activity around the airport. There are restrictions in place that manage structure heights around the airport to help maintain the integrity of runway approaches. See Map 2-15. The FAA also mandates 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.

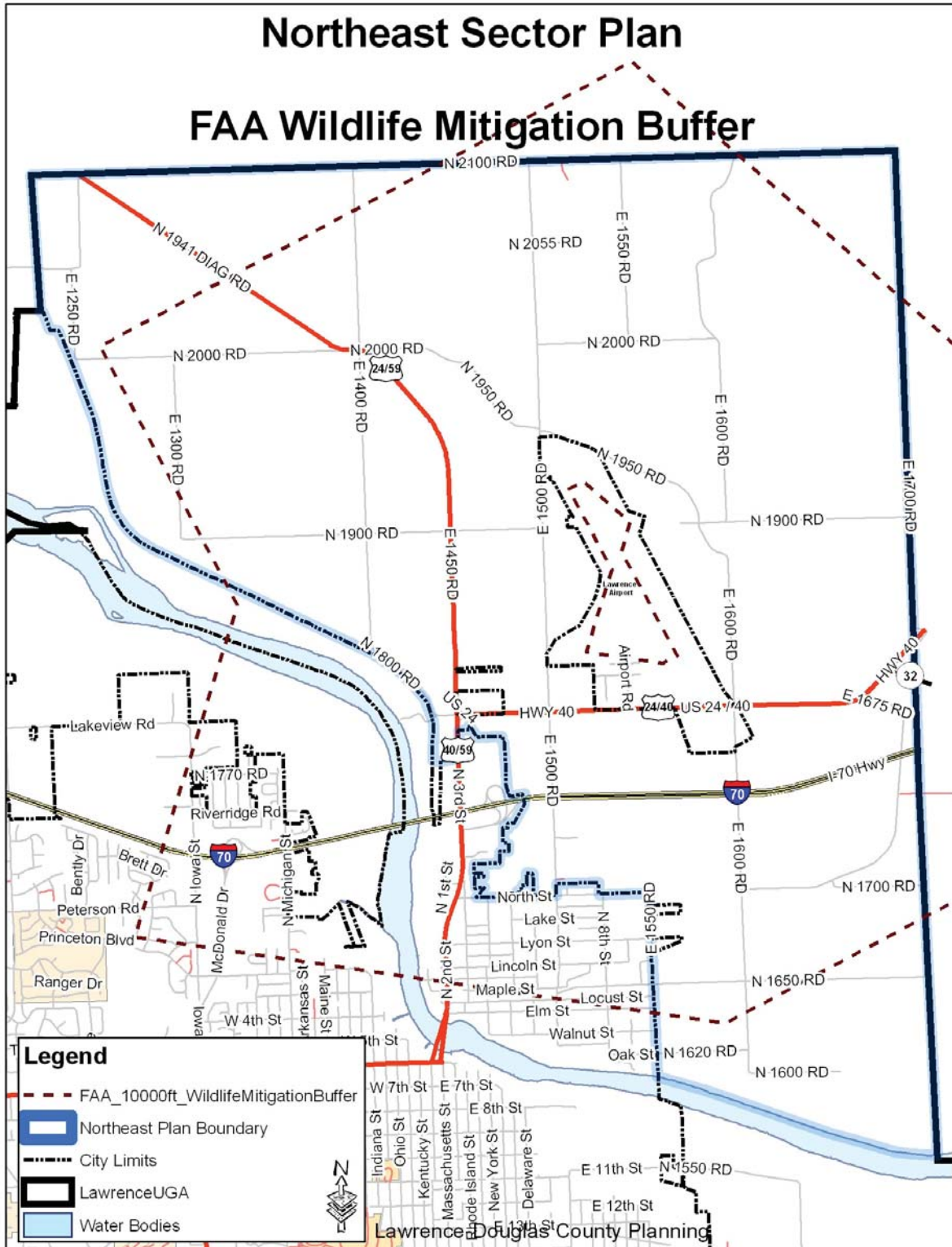
Map 2-14 – Community Facilities



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 7th 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),

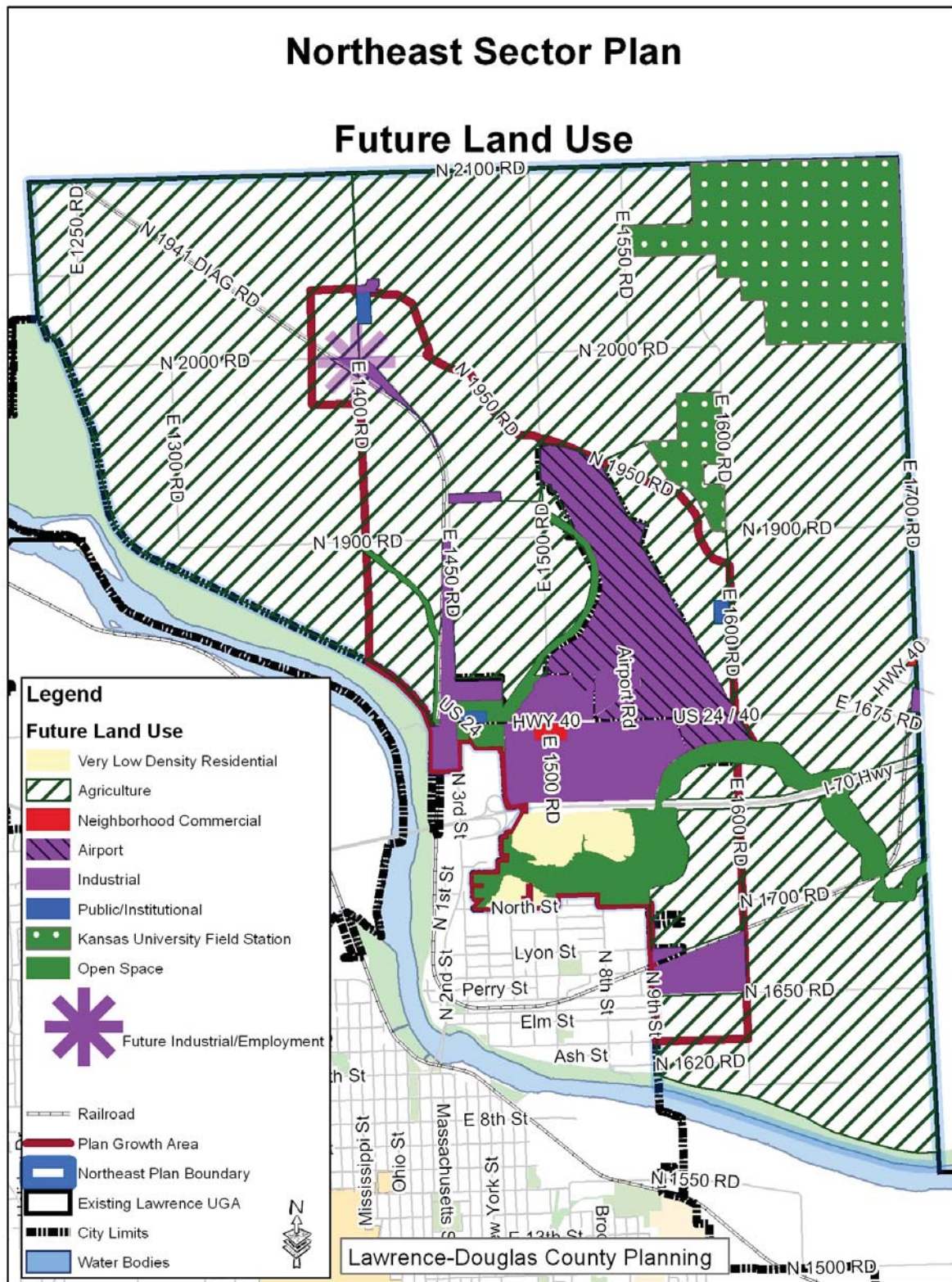
Primary Uses: crop agricultural, cultural center, schools, active recreation, passive recreation, nature preserve, entertainment and spectator sports, participant sports and recreation outdoor, private recreation

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.