3. Affected Environment

This chapter describes the environment of the area that could be affected by the alternatives considered in this SEIS. Where applicable, changes in the environmental conditions that occurred since the 1990 EIS are also discussed. These descriptions establish the baseline against which changes to the environment are measured. As directed by the Council on Environmental Quality's implementing regulations for NEPA (40 C.F.R. Part 1502.15), this chapter provides a succinct description of the environment of the area to be affected. References are provided if supplementary technical reports are available.

Baseline descriptions are provided for the following categories:

- Land Use
- Community Resources
- Environmental Justice
- Economic
- Parks and Recreation
- Transportation
- Utilities
- Hazardous Waste
- Cultural Resources
- Farmland
- Air Quality
- Traffic Noise
- Visual Environment
- Water Quality
- Floodplains
- Wetlands
- Natural Resources and Biological Communities
- Threatened and Endangered Species

3.1. Land Use

This section describes the existing land use and zoning within the SEIS study area and discusses differences from the original 1990 EIS. The land use and zoning designations were gathered from existing zoning and land use maps within the comprehensive plan for unincorporated Douglas County and the City of Lawrence

3.1.1. Existing Conditions

Exhibit 3-1 identifies the existing land use in the SEIS study area. Land uses consists primarily of agricultural, residential, parks/open space, commercial, and industrial. There are multiple approved land use planning documents with boundaries within the study area. These planning documents are discussed in more detail in **Section 3.1.3**.

3.1.2. Existing Zoning

The Lawrence City Corporate Limits and UGA are depicted on **Exhibit 3-1**. This project occurs along the western and southern edges of the Lawrence city limits, with much of the study area

within the Lawrence UGA. Zoning within the study area consists primarily of agricultural and transitional agricultural with areas of residential, open space, commercial, and industrial (**Exhibit 3-2**). Agricultural zoning occurs predominantly along the I-70 corridor and on the west/south side of SLT. Transitional Agricultural zoning is scattered along the SLT corridor with the majority located north of Bob Billings Parkway. Residential zoning is predominantly located south of US-40/W 6th Street, along the east/north side of the SLT corridor. Open Space zoned areas are predominantly in the vicinity of Clinton Lake, Kasold Drive, and Rock Chalk Park. Commercial and industrial zoned areas are predominantly in the vicinity of U.S. 40 and U.S. 59.

3.1.3. Land Use Planning Documents and Decisions

PLAN 2040: A Comprehensive Plan for Unincorporated Douglas County & the City of Lawrence (P2040) is the current comprehensive land use plan for the City of Lawrence and the unincorporated areas of Douglas County. P2040 was adopted by the Lawrence-Douglas County Metropolitan Planning Commission (MPC) on June 24, 2019 and finalized on November 29, 2019.

Specific "area plans" have also been developed through a comprehensive plan process, and as such, these plans are considered Comprehensive Plan policy and are an element of *P2040*. These area plans provide detailed policy guidance for decision making regarding the future land use of a specific area.

Transportation 2040 (T2040) is the current Long-Range Transportation Plan for the City of Lawrence and areas within the Lawrence-Douglas County Metropolitan Planning Area. T2040 was prepared to serve the urbanized region that includes the City of Lawrence and all of Douglas County into the future. It was approved March 21, 2013 and was updated and adopted on March 15, 2018. Since the 2018 adoption there have been several amendments to address the changing needs of the community. The plan was last updated in October of 2018. According to the MPO, "the plan identifies future transportation needs, investments, and system improvement recommendations for all forms of transportation (automobile, public transit, bicycle, pedestrian, etc.) necessary to meet the transportation needs of the region through 2040." T2040 includes the widening of the West Section of the SLT and classifies the SLT corridor as a "freeway" in the transportation system.

T2040 also addresses the bicycle and pedestrian transportation system in Chapter 6 of the document. A Bikeway System Map (approved by the MPO in 2017) included in the document shows existing and future bicycling facilities, which are explained further in the discussion on the MPO's Countywide Bikeway System Plan in **Section 3.5**.

K-10 & Farmer's Turnpike Plan (2008/2009)

This plan was amended in 2016 and covers the area approximately 1.5 miles north and south of the SLT/I-70 interchange, and approximately 3.5 miles east of the interchange on each side of I-70 (see **Exhibit 3-1**).

- ***Existing Land Use*** – The existing land use in the project study area at the time of the 1990 EIS was predominantly agricultural, except for one single-family residential area southwest of the interchange. The current existing land use of the area is mostly agricultural, with some smaller areas of single-family residential and vacant residential.
- ***Future Land Use*** – The Land Use Guide in the 1990 EIS showed future land uses in this area as only agricultural/open space, except for the residential area southwest of the interchange. Within most of the project study area, future land use shown in the *K-10 &*

Farmer's Turnpike Plan (see **Exhibit 3-3**) include residential, residential/office, auto-related commercial, office/research, industrial, and open space/floodplain.

West of K-10 Plan (2015)

This plan covers a 4-mile wide area encompassing the project study area, from ½-mile north of US-40 to Clinton Parkway Interchange (see **Exhibit 3-1**).

- ***Existing Land Use*** – The dominant existing land use within the project study area at the time of the 1990 EIS was agricultural on the west side of the SLT alignment, with a small commercial use northwest of the Clinton Parkway/SLT intersection area, and agricultural and residential on the east side of the SLT alignment. The current existing land use within the study area on the west side of the SLT is still mostly agricultural. The land use on the east side of the SLT within the study area is mostly single family residential and agricultural.
- ***Future Land Use*** – The Land Use Guide in the 1990 EIS showed this area as future agricultural/open space on the west side of the SLT, and future residential on the east side of the SLT. Within the project study area, the main future land use designations shown in the Area Plan (see **Exhibit 3-3**) include commercial center (at the US-40 interchange), office/industrial/warehouse (southwest of the US-40 interchange), and mostly residential with a few areas of commercial and public/institutional in the remainder of the area.

Revised Southern Development Plan (2013)

In relation to the West Section of the SLT, this plan covers the area on the north and south side of the SLT, between E 1150 Road and U.S. 59/Iowa Street, and between W 31st Street and the Wakarusa River (see **Exhibit 3-1**).

- ***Existing Land Use*** – The existing land use within the project study area at the time of the 1990 EIS was agricultural on the south side of the SLT alignment, and agricultural and a small residential use on the north side. The current existing land use within the project study area on the south side of the SLT is mostly agricultural, with a single-family residential area on the south side of N 1250 Road. The current existing land use within the project study area on the north side of the SLT is mostly agricultural. However, there is a Utility use (electrical substation) on the west side of E 1200 Road, a residential use (mobile home park) west of U.S. 59/Iowa Street, and a commercial area at the northwest quadrant of the U.S. 59/SLT interchange.
- ***Future Land Use*** – The Land Use Guide in the 1990 EIS showed the project study area on the south side of the SLT alignment as future agricultural/open space and public/quasi-public; the north side of the SLT alignment was shown as future agricultural/open space and residential. Within the project study area, the future land use shown in the Area Plan (See **Exhibit 3-3**) on the south side of the SLT is open space (Wakarusa floodplain), Auto-Related Commercial, and Medium-Density Residential. On the north side of the SLT, the future land use designations include Open Space, Medium-Density Residential, Low-Density Residential, and Commercial.

Master Plan for Clinton Lake Outlet Park

An additional area that has undergone planning by the City is the Clinton Lake Outlet Park. In 2003, the City prepared a Master Plan for the Leased Area at Clinton Lake, which is the 1,515-acre area owned by the USACE and leased to the City for recreational needs. The City jointly

leases part of the property with Youth Sports, Inc. (YSI). The northeast corner of the park lies adjacent to the SLT ROW southwest and northwest of the existing 27th Street/Wakarusa Drive/SLT intersection.

The Master Plan, updated in 2008, was reviewed to determine consistency with existing conditions and to determine if planned facilities not yet constructed would be adjacent to the SLT. Youth baseball diamonds and the Rotary Arboretum currently exist adjacent to the 27th Street/Wakarusa Drive/SLT intersection. The parking area of the adult softball complex and the future softball diamonds (planned southeast of the parking area) are located on the west side of the interior road that is adjacent to the SLT ROW.

3.2. Community Resources

The schools, universities, churches, community centers, libraries, hospitals, and emergency response services within and adjacent to the study area are displayed in **Exhibit 3-4** and discussed below.

Several neighborhood associations are also located within the study area. The Scenic Riverway Neighborhood Association is located on the north end of the study area along the I-70 corridor. The Gateway Neighborhood Association is located along the east side of the SLT with W. 6th Street forming the south border and E. 1000 Road forming the east border. The West Lawrence Neighborhood Association surrounds the Gateway Neighborhood Association to the east and south with Wakarusa Drive forming the east border and Clinton Parkway forming the south border. The Stoneback Ridge Neighborhood Association is located on the northeast side of the SLT with Clinton Parkway forming the north boundary and Wakarusa Drive forming the east boundary. The Sunflower Neighborhood Association is directly east of the Stoneback Ridge Neighborhood Association with Wakarusa Drive forming the west boundary Scottsdale Street forming the east boundary.

3.2.1. Schools and Universities

The only school or university located within the study area is Corpus Christi Catholic School located on the southwest side of Bob Billings Parkway and east of the Bob Billings Parkway/SLT interchange. Several other schools are located outside the study area, but in proximity.

3.2.2. Churches

There are four churches located within the study area, Heritage Baptist Church, Morning Star Church, Community Bible Church, and Connect Church; the Corpus Christi Church is located immediately adjacent to the study area. The Heritage Baptist Church and Morning Star Church are located along the I-70 corridor. The Community Bible Church is located on N. 1464 Road on the east side of the SLT. The Connect Church is located southeast of the W. 31st Street and E. 1200 Road intersection.

3.2.3. Community Centers and Libraries

There are no community centers or libraries located within the study area. There is one community center, the Sports Pavilion Lawrence, located within Rock Chalk Park adjacent to the east side of the SLT.

3.2.4. Hospitals

There are no hospitals located within or adjacent to the study area. However, at the time this document was written, there was one hospital/medical facility under construction at the end of

Rock Chalk Drive, west of George Williams Way, within the study area. The land the hospital/medical facility is being constructed upon is owned by Lawrence Memorial Hospital. The closest fully operational hospital is Lawrence Memorial Hospital (LMH Health) which is approximately 3.3 miles southeast of the I-70 corridor portion of the study area.

3.2.5. Emergency Responder Services

There are no police departments located within the study area. The Lawrence Police Department is located along Bob Billings Parkway approximately one mile east of the study area. There is one fire station located within the study area and two located within a quarter mile of the study area. The Lecompton Fire Station No. 3 is located within the study area at 847 N 1800 Road in the vicinity of the toll plaza. The Lawrence Fire Station No. 4 is located approximately 0.1 mile north of the SLT/27th Street intersection. The Wakarusa Township Fire Department is located approximately 0.15 mile east of the 31st Street/Louisiana Street intersection and approximately 0.2 mile north of the study area.

3.3. Environmental Justice

All federal agencies must comply with Title VI of the 1964 Civil Rights Act (Title VI) and Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. Under Title VI and related statutes, each federal agency is required to ensure that no person is excluded from participation in, denied the benefit of, or subjected to discrimination under any program or activity receiving federal financial assistance on the basis of race, color, national origin, age, sex, disability, or religion. Executive Order 12898 states that "…each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations…"

Pursuant to the Executive Order, FHWA issued Order 6640.23A, FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. The Secretary of Transportation, along with heads of other federal agencies, signed a Memorandum of Understanding on Environmental Justice (EJ MOU) and Executive Order 12898 confirming the continued importance of identifying and addressing these considerations in agency programs, policies and activities as required by Executive Order 12898.

As part of the EJ MOU, each agency agreed to review and update their Environmental Justice (EJ) strategy as appropriate. The updated strategy relies upon existing authorities for achieving EJ as described by the Executive Order 12898, such as the National Environmental Policy Act of 1969 (NEPA), Title VI and related statutes, as well as the commitments and focus areas in the EJ MOU.

FHWA issued Order 6640.23A, FHWA Actions to Address EJ in Minority Populations and Low-Income Populations, on June 14, 2012. On December 16, 2011, FHWA issued a memorandum titled "Guidance on Environmental Justice and NEPA." The memorandum describes the process involved in addressing Environmental Justice during NEPA review, including documentation requirements. This guidance helps FHWA staff and NEPA practitioners ensure compliance with EJ requirements.

FHWA administers its governing statutes to identify and avoid discrimination and disproportionately high and adverse effects on minority populations and/or low-income populations by:

1. Identifying and evaluating environmental, public health, and interrelated social and economic effects of FHWA programs, policies, and activities;

2. Proposing measures to avoid, minimize, and/or mitigate disproportionately high and adverse environmental and public health effects and interrelated social and economic effects and provide offsetting benefits and opportunities to enhance communities, neighborhoods, and individuals affected by FHWA programs, policies, and activities, where permitted by law and consistent with Executive Order 12898;

3. Considering alternatives to proposed programs, policies, and activities where such alternatives would result in avoiding and/or minimizing disproportionately high and adverse human health or environmental impacts, where permitted by law and consistent with Executive Order 12898; and

4. Providing public involvement opportunities and considering the results thereof, including providing meaningful access to public information concerning the human health or environmental impacts and soliciting input from affected minority populations and/or low-income populations in considering alternatives during the planning and development of alternatives and decisions.

Exhibits 3-5 and **3-6** show minority populations and low-income populations within and adjacent to the study area.

3.3.1. Determination of Minority and Low-Income Populations

For this SEIS reevaluation, demographic data from the most recent five-years (2014-2018) from the American Community Survey (ACS) was compiled at the most refined level practical and used to determine if any minority or low-income populations are located within or adjacent to the project study area. For the purposes of this analysis, the most practical level of Census data used for a refined analysis was the Block Group (BG) level for minority populations and for low-income populations (**Exhibits 3-5 and 3-6**). **Table 3-1** displays the population by race for the project area and communities of comparison (COC).

Table 3-1: Racial Make-Up of Persons in the Project Area

Census Area	Total Population	White Alone	Black/ African American Alone	American Indian and Alaska Native Alone	Asian Alone	Native Hawaiian and Other Pacific Islander Alone	Some Other Race Alone	Percent Minority
CT 2.00; BG 6*	1,424	1,015	200	31	104	0	0	28.7%
CT 6.03; BG 1	4,684	4,369	57	17	129	0	13	6.7%
CT 7.97; BG 3	2,406	2,162	64	51	42	0	18	10.1%
CT 8.01; BG 1	1,105	928	59	6	65	0	47	16.0%
CT 8.01; BG 2*	5,057	3,572	147	316	584	0	16	29.4%
CT 8.02; BG 2	1,002	831	0	0	72	0	7	17.1%
CT 9.02; BG 1	1,879	1,665	63	40	24	0	44	11.4%
CT 10.01; BG 2*	1,392	739	62	471	7	0	0	46.9%
CT 10.02; BG 2*	1,697	1,204	229	8	174	0	0	29.1%
CT 12.01; BG 1	1,664	1,631	0	0	4	0	7	2.0%
CT 14.00; BG 1	1,816	1,710	67	35	1	0	0	5.8%
CT 14.00; BG 2	1,698	1,592	0	10	0	0	13	6.2%
CT 15.00; BG 1	1,605	1,328	36	55	50	0	59	17.3%
CT 15.00; BG 2	1,121	1,036	0	17	0	0	0	7.6%
CT 16.00; BG 2	6,339	5,000	116	72	823	0	231	21.1%
Communities of Comparison								
Douglas County	119,319	98,478	5,047	2,935	6,229	27	1,337	17.5%
City of Lawrence	95,294	76,348	4,451	2,598	6,033	22	1,282	19.9%
125 Percent Douglas County:								21.8%
125 Percent Lawrence, Kansas:								24.9%

Source: 2014-2018 American Community Survey 5-Year Estimates – Race (Table B02001)
* BG with EJ minority population

Minority Populations

Minority populations may include all races other than non-Hispanic White persons, including Black or African Americans, American Indians/Alaskan Natives, Asians, Native Hawaiians and other Pacific Islanders, and Hispanics. No minority populations within or in proximity to the project study area identified themselves as such during public outreach activities. Block Group Census data from the 2018 ACS were then utilized to identify potential minority populations within the project study area. A block group was considered to have a potential EJ to include minority populations if its minority percentage was $\geq$ 25 percent or was $\geq$ 125 percent of the minority percentage for Douglas County or the City of Lawrence. This threshold was considered appropriate for use in low population and low-density applications such as the SLT corridor and is consistent with or more broadly inclusive than many peer midwestern states' EJ population thresholds. Similarly,

the US EPA utilizes thresholds of minority percentages 50 percent or greater of the total population or a minority percentage of 125 percent of communities of comparison.

Based on a review of minority population percentages from the ACS, it was determined that the following block groups (shown on **Exhibit 3-5**) have the potential for EJ impacts to minority populations:

- CT 8.01, BG 2 (29.4 percent);
- CT 10.01, BG 2 (46.9 percent);
- CT 10.02, BG 2 (29.1 percent); and,
- CT 2.00, BG 6 (28.7 percent).

Low-Income Populations

Low-income is defined as a person whose household income is at or below the U.S. Department of Health and Human Services poverty guidelines. The 2018 ACS 5-year income estimates for the census tracts within the study area were compared to the estimates for Douglas County and the city of Lawrence. A census tract block group was considered to have a potential low income population if it's percent poverty was $\geq$ 25 percent or was $\geq$ 125 percent of the poverty percentage for Douglas County or the city of Lawrence. Similar to minority population identification thresholds, this threshold for identifying low income populations is considered appropriate for use in low population and low-density applications such as the SLT corridor.

Table 3-2: ACS 5-Year Estimates of Income for Project Area Census Tracts

Census Area	Total (Estimate)	5-yr Estimate of Income Below Poverty Level (Estimate)	Percent Poverty (Estimate)	125% of COC	Low-Income EJ Population
CT 2.00, BG 6	1405	312	22.2%	-	No
CT 6.03, BG 1	4,684,684	476	10.1%	-	No
CT 7.97, BG 3	2,295	71	3.1%	-	No
CT 8.01, BG 1	1,105	33	2.9%		No
CT 8.01, BG 2*	5,027	1,227	24.4%	Yes	Yes
CT 8.02, BG 2	991	666	67.2%	Yes	Yes
CT 9.02, BG 1	1,878	486	25.9%	Yes	Yes
CT 10.01, BG 2	788	121	15.4%	-	No
CT 10.02, BG 2	1,529	247	16.2%	-	No
CT 12.01, BG 1	1,664	50	3.0%	-	No
CT 14.00, BG 1	1,804	83	4.6%	-	No
CT 14.00, BG 2	1,698	29	1.7%		No
CT 15.00, BG 2	1,118	190	17.0%	-	No
CT 15.00, BG 1	1,596	41	2.6%		No
CT 16.00, BG 2	6,339	318	5.0%	-	No
Communities of Comparison					
Douglas County	110,955	20,749	18.7%	23.4%	-
City of Lawrence	87,726	19,163	21.8%	27.3%	-

Source: 2014-2018 American Community Survey 5-Year Estimates of Income (Table B17001)
*CT with Low-income EJ population

Based on the ACS data, CT 2.00 (29.4 percent), CT 8.02 (31.6 percent) and CT 9.02 (25.9 percent) have low-income EJ populations (shown on **Exhibit 3-6**).

3.4. Population and Economic Environment

The existing K-10 Highway/SLT corridor connects three of the state's largest population centers which contain large business, government, education, and cultural resources. Travel demand in the corridor is primarily related to commercial and business enterprises. Commuters and the delivery of goods have a significant effect on travel within the corridor. The corridor has experienced long-term growth trends in both economic activity and population density. It is anticipated that economic activity will continue to increase in the area placing increasing demands on the existing transportation system.

3.4.1. Population

Population trends in Douglas County show a steady growth rate from 2010 to 2018, as shown in **Table 3-3**. The average population growth rate in Douglas County of 1.1 percent has consistently exceeded the statewide average annual growth rate of 0.4 percent during this period.

Table 3-3: Douglas County Population Trends

Year	Population	Growth
2010	109,052	
2011	110,075	0.9%
2012	111,073	0.9%
2013	112,210	1.0%
2014	113,703	1.3%
2015	114,967	1.1%
2016	116,352	1.2%
2017	117,806	1.2%
2018	119,319	1.3%

Source: American Community Survey 5-Year Estimate (Table S0101)

3.4.2. Economy

For purposes of this study, economic activity has been measured using employment statistics and retail sales records. The number of individuals employed provides a direct measure of economic activity, while retail trade represents a substantial portion of the local economy. The strength of retail sales has a direct impact on tax revenues for local governments.

Employment

As employment increases so does economic activity. The employment trend for Douglas County during the period 2000 to 2018 was positive, as shown in **Table 3-4**. The average annual growth during that period is 0.63 percent approximately double the 0.31 percent statewide average annual employment growth rate for Kansas during the same period. The greatest increase in employment occurred between 2000 and 2005 with 7.89 percent. After 2005, the employment growth in Douglas County started to slow.

Table 3-4: Douglas County Employment Trends

Year	Average Annual Employment	Growth	Average Annual Growth
2000	58,565		
2005	63,186	7.89%	1.58%
2010	64,379	1.89%	0.38%
2015	64,800	0.65%	0.13%
2018	65,199	0.62%	0.12%

Source: Local Area Unemployment Statistics, Bureau of Labor Statistics Web Site. (https://www.bls.gov/lau/home.htm)

The unemployment rate in a community is a measure of the community's economic vitality. The unemployment rate is also a measure for employment opportunities available to residents within an area. The unemployment rate in Douglas County remained low from 2000 to 2018, as shown in **Table 3-5**. The average unemployment rate for Douglas County between 2000 and 2018 was 4.1 percent which was lower than the 4.9 percent statewide average during the same period. It is important to note that data for 2020 differs from what is presented in Table 3-5 due to the worldwide Covid-19 pandemic. The unemployment rate in Douglas county ranged between 5 to 11 percent from April to November 2020.

Table 3-5: Douglas County Unemployment Trend

Year	Unemployment Rate
2000	2.7%
2005	4.0%
2010	5.9%
2015	3.7%
2018	3.1%

Source: Local Area Unemployment Statistics, Bureau of Labor Statistics Web Site. (https://www.bls.gov/lau/home.htm)

Retail Sales

A final measure of economic activity is the volume of retail sales in an area. The volume of retail sales has a direct impact on tax revenues for local governments. Taxable retail sales in Douglas County have been increasing, as shown in **Table 3-6**. The highest growth rate was between 2014 and 2015; after 2015, the growth rate has steadily declined, and a downward trend has been sustained through the 2020-2021 worldwide Covid-19 pandemic.

Table 3-6: Douglas County Taxable Retail Sales Trend

Year	Nominal Sales (Millions)	Growth Rate
2014	$1,474.77	
2015	$1,548.77	5.0%
2016	$1,618.89	4.5%
2017	$1,653.62	2.1%
2018	$1,663.76	0.6%

Source: Kansas Economy: The Center for Economic Development and Business Research (https://www.kansaseconomy.org/economic-indicators/retail-sales)

Douglas County is located between two of the largest metropolitan areas in the state of Kansas, Johnson County and Shawnee County. Johnson County is located to the east and includes many of the fastest growing suburbs in the Kansas City Metropolitan Area. Shawnee County is located west of Douglas County and contains the state capital, Topeka. Both Johnson and Shawnee counties are within reasonable commuting distance of Douglas County. Data from the Bureau of Labor Statistics (BLS) indicates the average number of individuals employed in Johnson and Shawnee counties in 2018 was 326,954 and 87,941, respectively. The size of the employment

base and available business opportunities in these counties impacts the economy of Douglas County. Data from the 2017 ACS 5-year estimates indicated that 26 percent of Douglas County residents commute to jobs outside of the county.

3.5. Parks and Recreation

There are seven parks and recreational areas within and adjacent to the Project study area. The seven parks and recreational areas are the Sports Pavilion Lawrence, KU Athletic Sports Complex, Clinton State Park, Clinton Lake Outlet Park, USACE property, the Kanza Southwind Nature Preserve, and the Pat Dawson-Billings Nature Area. They are shown on **Exhibit 3-7** and described in more detail below.

3.5.1. Rock Chalk Park

Rock Chalk Park is located on the east side of the SLT corridor. The park is comprised of two main sections, the Sports Pavilion Lawrence and the KU Athletic Sports Complex.

- ***Sports Pavilion Lawrence***
  The Sports Pavilion Lawrence is located in the north half of Rock Chalk Park, northeast of the KU Sports Complex, and listed as a facility of the City of Lawrence Parks and Recreation Department. The facility is the City's new recreation and wellness center and contains an indoor recreation facility, outdoor tennis courts, a natural area with outdoor walking/jogging trails (along Baldwin Creek and currently under construction), and parking. The facilities are free to all Douglas County residents, but non-residents can use the facilities by paying a fee.

- ***KU Athletic Sports Complex***
  The KU Athletic Sports Complex is located within the south half of Rock Chalk Park. The sports complex contains a collegiate track and field stadium and facilities (locker rooms, strength and conditioning rooms, and offices under the stadium), a soccer field, a softball field, the Jayhawk Tennis Center, and parking. The KU Athletic Sports Complex is on property leased by KU as part of a public-private partnership. The only facility within the sports complex open to the public is the Jayhawk Tennis Center.

3.5.2. Clinton State Park

Clinton State Park is a 1,500-acre public recreation area located on the north shore of Clinton Lake, west of the Clinton Parkway/SLT interchange. The park land is owned by the USACE and managed by the Kansas Department of Wildlife, Parks and Tourism. Clinton State Park has modern facilities, an extensive hiking/biking trail system, nearly 500 campsites, picnic shelter areas, playgrounds, and other amenities.

3.5.3. Clinton Lake Outlet Park

Clinton Lake Outlet Park is located southeast of the Clinton Parkway/SLT interchange. This land is owned by the USACE, who leases the property to the City of Lawrence (and YSI) for long-term recreational needs. The USACE began leasing the property to YSI in 1984. The City of Lawrence became a joint lessee in 1995 after the City leased the 1,515 acres from the USACE which includes the YSI leased property. The facilities on the property adjacent to the SLT include:

- ***Youth Sports Complex***
  This 55-acre facility is located on the southwest side of the 27th Street/Wakarusa Drive/SLT intersection. This sports complex is on the City of Lawrence Parks and Recreation Department's list of facilities and contains baseball diamonds, soccer fields,

football fields, restrooms, a concession building, trails, and parking. The baseball diamonds are located adjacent to the SLT ROW. The City operates the facility and jointly (with YSI) leases the property from the USACE.

- ***Rotary Arboretum***
  The Rotary Arboretum is located just west of the 27th Street/Wakarusa Drive/SLT intersection. The arboretum area contains two ponds, tables and benches, a pergola, a gazebo, walking trails, and parking. The facility was created as a Rotary centennial project when three local rotary clubs came together with a donation for a waterfront gazebo. The arboretum is managed by the City of Lawrence Parks and Recreation Department.

- ***Clinton Lake Softball Complex***
  This facility is located northwest of the Rotary Arboretum. It is under the jurisdiction of the City of Lawrence Parks and Recreation Department and contains four softball fields, batting cages, and parking.

3.5.4. USACE Property

Additional USACE property is located on both sides of the SLT. There are two small triangular sections located within the southwest quadrant of the Clinton Parkway/Wakarusa Drive intersection on the northeast side of the SLT. There is a larger section of USACE property that directly abuts the west and north portions of Clinton Lake Outlet Park. This land is owned by the USACE and is zoned as Open Space and Agricultural. There are currently no developments or amenities on the property.

3.5.5. Kanza Southwind Nature Preserve

The Kanza Southwind Nature Preserve (KSNP) is located southeast of the 27th Street/Wakarusa Drive/ SLT intersection, on the northeast side of the SLT. The KSNP is 18 acres in size. Its amenities include a pond stocked with fish, areas with native grasses, and mowed walking trails. It is open to the public and used by Sunflower Elementary and Southwest Junior High Schools as an outdoor education and nature area. It is owned by the City of Lawrence and maintained by the Parks and Recreation Department.

3.5.6. Pat Dawson-Billings Nature Area

This nature preserve is located southwest of 27th Street and Crossgate Drive. The Pat Dawson-Billings Nature Area is approximately 42 acres in size and its amenities include three fishing ponds, native grasses, and wildflowers. With an assortment of visiting wildlife species, including waterfowl and eagles, it provides a location for outdoor education. It is connected to Sunflower Elementary and Southwest Junior High schools by a 15-acre greenbelt area.

3.5.7. Baker University Wetlands Research and Natural Area

The Baker University Wetlands Research and Natural Area abuts the south border of the SLT ROW, between E 1400 Road and E 1600 Road, and encompasses 927 acres. It is located in the Wakarusa River floodplain on the south side of Lawrence. The area contains 45 acres of native prairie wetlands and many acres of restored meadows, marshes, shrubby and secondary growth, mature riparian woodlands, and open water. Amenities include a discovery center and trails.

3.5.8. Bicycle and Pedestrian Considerations

The 1990 EIS did not specifically address bicycle and pedestrian facilities outside of the Land Use Planning section, as the project study area was outside of the City limits in a rural setting and no facilities existed or were affected by the West Section alignment at the time. However, the park and open space policy of the 1987 County and City Joint Resolution adopted a building and

parking setback of 150 feet from the edge of right-of-way along both sides of the SLT for new development. This area was to be maintained as open space, and a bicycle/pedestrian path along the SLT was to be considered for this open space.

With 80 percent funding from the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991, a bicycle-pedestrian (shared use) path was constructed in 1997 from N 1750 Road to Iowa Street/U.S. 59. Portions of this path were located within the right-of-way of the SLT West Section, from N 1750 Road to the Clinton Parkway interchange and from Yankee Tank Creek to Iowa Street/U.S. 59.

In 2013, the MPO completed Multimodal Planning Studies to identify transportation needs for commuters, pedestrians, cyclists and transit riders for the next five to ten years, and to prioritize improvements to support a more multimodal region. These studies, which were approved March 20, 2014, consisted of a *Countywide Bikeway System Plan,* a *Commuter Park & Ride Study*, and a *Fixed-Route Transit & Pedestrian Accessibility Study*.

Other studies that were performed to improve non-motorized conditions include the Lawrence Pedestrian Bike Issues Task Force, The Lawrence Loop Alignment Study, The Lawrence Bike Parking and Amenities Policy Review with Citywide and Downtown Recommendations, annual bicycle and pedestrian counts, and Bicycle Friendly Community feedback. The results of these studies were wrapped into the Lawrence Bikes Plan, completed in October 2019.

In October 2019 the Lawrence City Commission approved the Lawrence Bikes Plan which was set out to reconcile the various bicycle related plans into one vision for the future of bikeway infrastructure in Lawrence.

3.5.9. Countywide Bikeway System Plan

The *Countywide Bikeway System Plan* approved by the MPO Policy Board on August 15, 2019, replaced the previous bike plan titled *2004 Bicycle Work Program*. The new plan contains an updated Bikeway System Map (approved by the MPO in 2017) which replaced the previous 2009 map. The updated map is also included in *T2040* (Chapter 6 – Multimodal Projects and Strategies) and shows existing and future/proposed bicycling facilities separated into the categories of Bike Routes (shared roadways), Bike Lanes (on-street), and Shared Use Paths.

3.5.10. Lawrence Bikes Plan

The Lawrence Bikes Plan was approved by the MPO Policy Board on August 15, 2019, and the Lawrence City Commission on October 15, 2019, via Resolution No 7299. The Lawrence Bikes Plan was developed to be a guide for the City of Lawrence to achieve the vision of making Lawrence a safer, more comfortable bicycle network and Silver level bike-friendly city within six years. The following five goals support this vision: improve safety, increase ridership, increase access, create a network of low-stress bikeways, and bicycle friendly community Silver level recognition. The Lawrence Bikes Plan includes an updated map that displays future bikeways and existing bicycling facilities as Bike Lanes, Buffered Bike Lanes, Marked Shared Use Path, Shared Use Path, and Unpaved Trail. The existing and future bicycle facilities are discussed below and displayed on **Exhibit 3-8**.

Existing and Future Bicycle Facilities

A review of the Bikeway System Map in the Lawrence Bikes Plan, and a windshield survey of the project study area indicated that bicycle facilities exist at several locations along the project study area and that bicycle facilities are planned/proposed for future development.

The existing bicycle facilities within the project study area are located at the following locations:

- SLT Path – Shared Use Path from N 1750 Road park & ride lot to the Clinton Parkway interchange;
- Rock Chalk Drive–Shared Use Path from Renaissance Drive to George Williams Way;
- Baldwin Creek Path – Existing Shared Use Path from Rock Chalk Drive to E 1000 Road;
- 6th Street –Shared Use Path from George Williams Way to SLT;
- Bob Billings Parkway (east side of SLT) –Bike Lanes from US-40 through the SLT interchange and east to Wakarusa Drive;
- Clinton Parkway –Shared Use Path (from the SLT interchange, east to Iowa Street;
- SLT Path –Shared Use Path from W 27th Street to E 1200 Road;
- SLT Path – North side –Shared Use Path from Kasold Drive to Michigan Street; and,
- SLT Path – South Side – Shared Use Path from Michigan Street to Haskell Avenue.

The future bicycle facilities within the project study area are planned for the following locations:

- Farmers Turnpike – Future Bikeway from E 800 Road to E 1150 Road;
- E 1000 Road – Future Bikeway from N 1750 Road to N 1800 Road;
- E 800 Road – Future Bikeway from N 1800 Road to US-40;
- N 1750 Road – Future Bikeway from existing SLT Shared Use Path to E 1029 Road;
- SLT West Side – Future Bikeway (from N 1750 Road south to E 1415 Road);
- E 902 Road – Future Bikeway from new Rock Chalk Drive to future N 1700 Road;
- US-40 – Future Bikeway from SLT to E 700 Road;
- Bob Billings Parkway/SLT Interchange – Future Bikeway from SLT to E 700 Road;
- Lake Estates Drive – Future Bikeway from E 902 Road to Bob Billings Parkway;
- George Williams Way/Clinton Parkway – Future Bikeway from Clinton Parkway to Lake Estes Drive;
- Clinton Parkway Interchange (west side) – Future Bikeway to the north along E 900 Road (to State Park entrance road / N 1415 Road), and south along the east side of E 900 Road (to the Existing Shared Use Path along the spillway);
- West Yankee Tank Path – Future Bikeway from Clinton Parkway to Bob Billings Parkway;
- Youth Sports Complex – Future Bikeway from W 27th Street along the east boundary line, south crossing the Wakarusa River, connecting to N 1200 Road;
- Wakarusa Drive – East Side – Future Bikeway from E 902 Road to Clinton Parkway;
- Wakarusa Drive – West Side – Future Bikeway from Clinton Parkway to W 18th Street;
- E 902 Road – Future Bikeway extending east along the north bank of Wakarusa River, connecting to the Future Bikeway extending south along east side of the Youth Sports Complex;
- E 1200 Road/N 1250 Road – Future Bikeway on both sides of SLT from N 1250 Road to Kasold Drive;
- Iowa Street Sidepath – Future Bikeway extending from the existing Shared Use Path north of SLT to W 23rd Street;

- N 1250 Road – Future Bikeway from SLT to E 1350 Road;
- E 1500 Road – Future Bikeway from SLT to N 1175 Road;
- E 1600 Road – Future Bikeway from N 1250 Road to N 1300 Road;
- E 1750 Road – Future Bikeway from N 1300 Road to Old K-10; and,
- N 1300 Road – Future Bikeway from E 1600 Road to E 1750 Road.

3.5.11. Sidewalks

T2040 addresses "sidewalks", which are defined as "a portion of a street or highway right-of-way, beyond the curb or edge of the roadway pavement which is intended for use by pedestrians…", although bicyclists may also use them (except in Downtown Lawrence). Sidewalks that exist in the project study area, excluding those that are designated as Shared Use Paths, include the following:

- W 6th Street – North side of the street, to the east side of the US-40/SLT interchange;
- Bob Billings Parkway – Both sides of the street, to the east side of the planned interchange; and,
- Wakarusa Drive – East side of the street, from the intersection with 27th Street to Clinton Parkway.

3.6. Transportation

The primary roadways within the study area are I-70, SLT, W. 6th Street, U.S. 40, Bob Billings Parkway, Clinton Parkway, Wakarusa Drive, and Iowa Street/U.S. 59. I-70 consists of a six-lane interstate facility west of SLT interchange, transitioning to four-lanes east of the interchange. The SLT is a two-lane expressway with a mix of grade-separated interchanges and at-grade intersections between I-70 and U.S. 59 and transitions to a four-lane access-controlled freeway east of U.S.59.

According to T2040, the functional classifications of the primary roadways include;

- Interstates (I-70) - Interstates are defined as roadways designated as interstate highways by the US Department of Transportation and KDOT.
- Other Freeways and Expressways (SLT and U.S. 59) - Other Freeways and Expressways are defined as limited access roads not designated as interstates that have a primary mobility function. Other Freeways and Expressways may have interchanges and some at-grade intersections.
- Other Principal Arterials (Iowa Street) - Other Principal Arterials are defined as major roads with a primary mobility function that are designed to move traffic across town, connect neighborhoods, and provide access to major activity centers in the region.
- Minor Arterials (W. 6th Street, US-40, Bob Billings Parkway, Clinton Parkway, and Wakarusa Drive) - Minor Arterials are defined as roads having a primary mobility function that are designed to connect to and supplement the principal arterials while providing connections between neighborhoods and connections to some major activity centers.

Bus transit service in the vicinity of the study area is provided by Lawrence Transit (LT) and KUOW. Two bus routes serve the study area, LT Route 9 and KUOW Route 29 (**Exhibit 3-9**). LT Route 9 travels from 31st and Iowa Street to 6th Street and Wakarusa Drive and has two bus stops (78 and 79) within the study area. KUOW Route 29 travels from 27th Street and Wakarusa Drive to the University of Kansas and has no bus stops within the study area.

There are no railroads located within or adjacent to the study area. The only railroad in the Lawrence vicinity travels along the east side of the City of Lawrence, south of the Kansas River (**Exhibit 3-9**).

There are no airports within a mile of the study area. The closest regional airport is the Lawrence Municipal Airport located approximately 4.9 miles east of the study area. The closest airport is a private airport, Bland Airport, located approximately 3.0 miles southeast of the study area (**Exhibit 3-9**).

3.7. Utilities

Electrical services within the study area are provided by two providers (**Exhibit 3-10**). Electrical service within the study area, particularly east of the SLT/Clinton Parkway interchange is provided by Evergy Kansas Central, Inc. Electrical service within portions of the study area west of the SLT/Clinton Parkway interchange is provided by Freestate Electric Cooperative, Inc. The study area contains one 230-volt electric transmission line, three 115-volt electric transmission lines, and two 69-volt electric transmission lines (**Exhibit 3-10**).

The City of Lawrence provides water and sewer lines within the project vicinity. In addition, there are six cell towers within or adjacent to the study area. Other utilities within the study area include resources from the following providers:

- Gas: Black Hills Energy, Atmos Energy, and Southern Star;
- Telephone: AT&T and Midco
- Television: DIRECTV, Dish, and Midco
- High-Speed Internet: Midco, Wicked Broadband, Exede and WildBlue Internet Service, HughesNet, CenturyLink, ViaSat Satellite Internet Service, and Allconnect.com

3.8. Hazardous Waste

This section describes existing hazardous waste sites that have been reported within the SEIS study area. **Section 3.8.1** identifies the sources used to locate the hazardous waste sites and the following sections discuss the identified sites.

3.8.1. Survey Methodology

The identification of potential hazardous waste site locations within the study area was completed through a review of regulatory environmental program records, aerial photography, and a visual survey from publicly accessible rights-of-way. Regulatory program records searched included the Environmental Protection Agency (EPA) Envirofacts Database and the Kansas Department of Health and Environment (KDHE) databases.

3.8.2. Potential Hazardous Waste Sites

Seven potential hazardous waste sites (sites which could potentially be affected by the proposed work) were identified within the study area (**Exhibit 3-11**). These sites were rated low risk to public health even if they were impacted by the proposed work and are described in further detail in **Section 3.8.3**.

3.8.3. Assessment of Sites with Low to Moderate Risk Potential

Sites located within the study area that have been identified as having low to moderate risk potential to public health include the following:

Underground Storage Tanks (USTs)

A search of the EPA and KDHE databases identified the following USTs within the project study area.

- *UST 1* – located at the Miller Mart, a convenience store with gas pumps and USTs, at the southwest corner of the Clinton Parkway/Wakarusa Drive intersection (also listed by EPA as a Conditionally Exempt Small Quantity Generator [CESQG]).

Leaking Underground Storage Tanks

According to the KDHE Bureau of Remediation Storage Tank Section there are two Leaking Underground Storage Tank (LUST) sites within the study area:

- *Clinton Cove/ Clinton State Park* (LUST 1) – Kansas Facility #:08713 & #42550 – KDHE Project Codes: U4-023-01565 – 1423 E. 900 Road, Lawrence, KS 66049 – Latitude: 38.94572, Longitude: -95.33834. The incident was discovered on January 24, 1994 and consisted of gasoline leaking from the UST. The cleanup consisted of the removal of one UST and the contaminated soil was removed and transported to an area of the lake to be land farmed. The LUST incident is considered closed by KDHE; however, any soil excavated during the project should be incorporated back into the direct area or tested and properly remediated.

Landfills

A search of the KDHE Landfills database indicated there is one known landfill within the study area:

- *Ernest & Rosie Aldrich/W.A. Dunbar & Son Closed Construction/Demolition Landfill* (LF 1) – located along the west side of Kasold Drive at West 31st Street. The landfill was operated from 1992-1995. The landfill is no longer active and has been developed over on portions of the property.

Wastewater Treatment (WWT) Facilities

A search of the EPA Facility Registry Service and the Kansas Environmental Interest Finder Database identified one wastewater treatment facility within the study area:

- *Heritage Baptist Church Wastewater Treatment Facility* (WWT 1) – KDHE Facility ID # C-KS31-NO07-WWT-FED. This is an active WWT facility located north of I-70 to the southwest of the church.

Reported Spills

A review of KDHE's Bureau of Remediation – Reported Spills website indicate there are three sites where soil or water contamination may be of a concern:

- *Unknown Discharger Spill Site* (Spill 1) – KDHE-12932 - located at Latitude: 38.99698, Longitude: -95.33029. This was a 200-gallon diesel fuel spill which occurred in April 1998. The spill affected surface water and soil within a ditch. The stained soil was removed and

landfarmed at the maintenance yard at mile marker 206. Sphagnum moss was spread over the ditch to absorb the diesel and a vacuum truck and sorbent pads were used to recover the product just below the culvert. This spill incident is considered closed by KDHE; however, any soil excavated during the project should be incorporated back into the direct area or tested and properly remediated.

- *Walthers Oil Spill Site* (Spill 2) – KDHE-20459 - located at Latitude: 38.94551, Longitude: -95.3383. This was a 30-gallon diesel fuel spill which occurred in August 2001. Cleanup was performed by placing absorbent clay on affected asphalt. Due to rain, some of the diesel ran into a small ditch along the north side of the building and the impacted soil was removed and disposed of properly. This spill incident is considered closed by KDHE; however, any soil excavated during the project should be incorporated back into the direct area or tested and properly remediated.
- *Westar Energy Spill Site* (Spill 3) – KDHE-29094 - located at Latitude: 38.92585, Longitude: -95.2794. This was a 750-gallon electrical insulating oil spill which occurred in November 2005. Cleanup was performed by the removal of all soil and gravel that could be feasibly removed, Sphag Sorb was then used to wick up as much remaining oil as possible. Micro Blaze was then used to help degrade any residual oil. This spill incident is considered closed by KDHE; however, any soil excavated during the project should be incorporated back into the direct area or tested and properly remediated.

3.9. Cultural Resources

The Advisory Council on Historic Preservation's (ACHP's) implementing regulations for Section 106 of the National Historic Preservation Act (36 C.F.R. Part 800) requires Federal agencies consider the effects of their undertakings on historic properties and to provide the ACHP a reasonable opportunity to comment on the undertakings.

3.9.1. Identification and Evaluation Methods

The initial step in satisfying Section 106 regulations regarding historic properties is to determine if there are any properties listed or eligible for listing on the National Register of Historic Places (NRHP) that may be affected by the proposed project. A historic property is a property that has historic significance to any person or group that satisfies the requirements to be listed on the National Register.

KDOT identified a study area for the proposed project and consulted with the State Historic Preservation Office (SHPO), local governments, Native American Tribes, and other interested parties. Archeological and Historic surveys have been conducted multiple times between 2014 and 2018 as studies related to the SEIS have been undertaken. During this time, multiple study areas have been analyzed, ultimately the entire SEIS study area was considered for archeological and historic resources.

3.9.2. Archeological Studies

Archeological studies have been completed throughout the project corridor since 2014 in several phases. The initial review was submitted to the Kansas State Historical Society (KSHS) for a Phase I review in the fall of 2014. The KSHS recommended a Phase II investigation be completed based on the desktop review. The Phase II investigation found no historic properties affected.

An expansion of the study area in 2015 to encompass the Lecompton Interchange initiated another Phase I archeological office review on February 11, 2015. The KSHS recommended a

Phase II investigation be completed. One site was identified during the Phase II investigation that was significant however it was outside of the study area. A finding of no affect was rendered and SHPO concurred with the findings.

Again, in July 2015, additional study area within the corridor underwent a Phase I review. A Phase II investigation for the additional study area was recommended on July 8, 2015. It was completed late 2015 with no significant sites discovered. SHPO concurred with the finding of no affect on November 5, 2015.

The study area underwent another expansion upon the initiation of the SEIS process in the fall of 2018. The SHPO recommends a Phase II assessment be completed for the expanded study area prior to the beginning of construction.

3.9.3. Historic Studies

As with the archeological studies, historic studies have occurred four times during the preceding six years as various studies have been undertaken related to this project. **Exhibit 3-12** shows the properties identified as Existing Historic Resources within the SEIS study area.

An Activity I Historic Resources field survey was completed by KDOT Environmental Services Section staff and submitted to SHPO on December 1, 2014. The SHPO identified the Gorrill Farmstead at 984 N 1800 Rd as being listed on the National Register of Historic Kansas Places and as eligible for listing on the National Register of Historic Places for archeology and historic structures.

Two additional properties were identified as potentially eligible. The Pontius Barn at 885 N 1800 Road and the Topping Farmstead at 894 N 1549 Road were identified for further study. At the time, it was determined that the Topping Farmstead would be avoided, and no determination of eligibility was completed. If current alternatives impact the property a determination of listing eligibility will be required. An Activity III eligibility determination was completed for the Pontius Barn, and determined that it was not eligible for listing on the NRHP. The SHPO concurred with these finding on March 13, 2015.

Additional study area was considered in 2015 at a proposed site for a new Lecompton Road Interchange. An Activity I Historic Resources survey for the additional study area was completed by KDOT Environmental Services Section staff and submitted to the SHPO on February 27, 2015. The SHPO determined that one property at 568 N 1800 Road (George and Emma Miller House) was potentially eligible for the NRHP. An Activity III eligibility determination was completed and found the house to be eligible for the NRHP. The SHPO concurred with this determination on May 20, 2015. This property should be avoided.

An additional Activity I Historic Resources field survey was completed within the study area on July 7, 2015. No structures were determined to be potentially eligible for the NRHP within that additional screening area.

The SHPO found two structures as eligible for listing on the NRHP within the areas added for 2018 study area expansion. The Winter School (KHRI# 045-5637) located at 746 N 1800 Road and the J.H. Holke House (KHRI# 045-4589) at 761 US-40 Hwy are both eligible for listing.

3.10. Farmland

Inside the study area boundary much of the previously designated prime farmland was converted to roadway use (and ROW) when the initial two lanes of the SLT were constructed. However, farmland soils still exist within the study area. Farmland soils that are within the existing right-of-way, that are currently developed, or are within the City limits are not considered under the Farmland Protection Policy Act of 1981 (FPPA).

Agricultural land can be described in terms of soil types since agricultural productivity is greatly influenced by the land's soil. The majority of the soils within the study area are classified as either Prime Farmland or Farmland of Statewide Importance by the United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). Farmland soil map units within the study area are shown on **Exhibit 3-13** and include the following:

Prime farmland soil map units:

- 7050 – Kennebec silt loam, occasionally flooded
- 7170 – Reading silt loam, rarely flooded
- 7260 – Gymer silt loam, 1 to 3 percent slopes
- 7261 – Gymer silt loam, 3 to 7 percent slopes
- 7301 – Martin silty clay loam, 1 to 3 percent slopes
- 7302 – Martin silty clay loam, 3 to 7 percent slopes
- 7423 – Morrill clay loam, 3 to 7 percent slopes
- 7500 – Pawnee clay loam, 1 to 4 percent slopes
- 7530 – Sharpsburg silt loam, 1 to 4 percent slopes
- 8961 – Woodson silt loam, 0 to 1 percent slopes
- 8962 – Woodson silt loam, 1 to 3 percent slopes

Prime farmland if drained soil map units:

- 7090 – Wabash silty clay loam, occasionally flooded
- 7091 – Wabash silty clay, occasionally flooded

Farmland of statewide importance soil map units:

- 7307 – Martin soils, 3 to 7 percent slopes, eroded;
- 7325 – Martin-Oska silty clay loams, 3 to 6 percent slopes;
- 7460 – Oska silty clay loam, 3 to 6 percent slopes;
- 7501 – Pawnee clay loam, 4 to 8 percent slopes, eroded;
- 7535 – Sharpsburg silt loam, 4 to 8 percent slopes; and,
- 7603 – Sibleyville complex, 7 to 12 percent slopes.

3.11. Air Quality

The EPA uses the term "attainment area" to describe those areas where air quality meets health standards for particular air borne pollutants. Douglas County is currently classified by the EPA as an attainment area for all six criteria pollutants comprising the National Ambient Air Quality

Standards (NAAQS). The NAAQS were established by the EPA as required by the Federal Clean Air Act (CAA).

The CAA, as amended by the Clean Air Act Amendments of 1990, and other rules and regulations, such as the Control of Hazardous Air Pollutants from Mobile Sources rule promulgated by the EPA, specifies environmental policies and regulations to promote and ensure acceptable air quality. These policies and regulations were adopted in the Final Conformity Rule (40 CFR Parts 51 and 93). The EPA delegates authority to the KDHE for monitoring and enforcing air quality regulations in Kansas.

The CAA defines conformity as the following:
"*Conformity to an implementation plan's purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of such standards; and that such activities will not:*

- *Cause or contribute to any new violation of any NAAQS in any area;*
- *Increase the frequency or severity of any existing violation of any standard in any area; or*
- *Delay timely attainment of any standard or any required interim emission reductions or other milestones in any area."*

The Federal Clean Air Act Amendments of 1990 require states to adopt the NAAQS. These standards were established to limit the amount of sulfur dioxide (SO_2), particulates (PM_{10} and $PM_{2.5}$), carbon monoxide (CO), ozone (0_3), nitrogen dioxide (NO_2), and lead (Pb) in the air. The standards are summarized in **Table 3-7**.

Table 3-7: EPA National Ambient Air Quality Standards

Pollutant		Primary/ Secondary	Averaging Time	Level	Form
Carbon Monoxide (CO)		Primary	8 hours	9 ppm	Not to be exceeded more than once per year
			1 hour	35 ppm	
Lead (Pb)		Primary and Secondary	Rolling 3-month average	0.15 µg/m^3 (1)	Not to be exceeded
Nitrogen Dioxide (NO_2)		Primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		Primary and Secondary	1 year	53 ppb (2)	Annual Mean
Ozone (O_3)		Primary and Secondary	8 hours	0.070 ppm (3)	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particle Pollution (PM)	$PM_{2.5}$	Primary	1 year	12.0 µg/m^3	Annual mean, averaged over 3 years
		Secondary	1 year	15.0 µg/m^3	Annual mean, averaged over 3 years
		Primary and Secondary	24 hours	35.0 µg/m^3	98th percentile, averaged over 3 years
	PM_{10}	Primary and Secondary	24 hours	150 µg/m^3	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide (SO_2)		Primary	1 hour	75 ppb(4)	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		Secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

(1) In areas designated nonattainment for the Pb standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 µg/m^3 as a calendar quarter average) also remain in effect.

(2) The level of the annual NO_2 standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the 1-hour standard level.

(3) Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) O_3 standards additionally remain in effect in some areas. Revocation of the previous (2008) O_3 standards and transitioning to the current (2015) standards will be addressed in the implementation rule for the current standards.

(4) The previous SO_2 standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2) any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated nonattainment under the previous SO_2 standards or is not meeting the requirements of a SIP call under the previous SO_2 standards (40 CFR 50.4(3)). An SIP call is an EPA action requiring a state to resubmit all or part of its State Implementation Plan to demonstrate attainment of the required NAAQS.

3.12. Traffic Noise

A traffic noise analysis is being performed in accordance with FHWA standards and regulations (23 CFR Part 772) and KDOT's *Highway Traffic Noise Analysis and Abatement Policy and Procedures*.

3.12.1. Traffic Noise Methodology

Traffic noise is most commonly measured in "A-weighted" decibels (dBA). An A-weighted decibel corresponds to the manner in which the human ear perceives noise at different frequencies. Since traffic noise is generated by passing vehicles and traffic volumes generally fluctuate, an hourly equivalent sound level, or Leq(h), is used to measure traffic noise. The Leq(h) is the constant, average sound level that contains the same amount of sound energy over the time period as does the varying levels of actual traffic noise.

3.12.2. Existing Conditions

FHWA's Traffic Noise Model (TNM) Version 2.5 was used to develop computer models of the project study area. Existing ambient noise levels were measured in the field during April and August 2019 at nine locations considered to be noise sensitive. The field measurements were used for model validation.

The project study area was divided into 15 separate Noise Sensitive Areas (NSAs) which contain approximately 560 noise sensitive receptors. The majority of the noise sensitive receptors are residential, which fall under Activity Category B in FHWA's Noise Abatement Criteria (NAC). Other noise sensitive receptors being analyzed for impacts include trails, tennis courts, softball fields, a church, and other Activity Category C receptors. A new medical facility, Activity Category D, is being analyzed for interior noise impacts using a noise reduction factor.

FHWA and KDOT define a noise impact as occurring when either noise levels approach (within 1 dB) or exceed NAC or future noise levels substantially exceed (more than 10 dB) existing noise levels. NAC for Activity Categories B and C correlates to an Leq(h) of 67 dBA. Activity Category D correlates to an interior Leq(h) of 52 dBA. In the existing condition, the worst hourly noise levels approach or exceed the NAC at 52 receptors, including 27 residences, 24 trail locations, and one church (**Exhibit 3-14**).

Peak hourly noise levels will be analyzed at all noise sensitive receptors for the No-Action and Identified Preferred Alternative. Wherever noise impacts are identified in the Identified Preferred Alternative, abatement will be considered and analyzed using the Feasibility and Reasonableness Criteria set forth in KDOT's *Highway Traffic Noise Analysis and Abatement Policy and Procedures*.

3.13. Visual Environment

The study area is located within the Osage Cuestas division of the Osage Plains geographic region of Kansas. The Osage Cuestas division consists of various landscapes including relatively flat plains, rolling hills, and cuestas, which are characterized by a series of east-facing ridges up to 200 feet high with cliff-like faces on one side and gentle slopes on the other.

The visual environment within the study area can be divided between the I-70 (Kansas Turnpike) corridor, north/east side of the SLT, and the south/west side of the SLT. The visual environment along I-70 consists of a six-lane interstate facility west of the K-10/Lecompton interchange,

switching to four-lanes east of the interchange, and includes the existing I-70 toll plaza at K-10 and an overpass at the location of the proposed Lecompton interchange. The view on either side of I-70 is mostly agricultural grassland interspersed with ponds and wooded areas.

The SLT corridor is currently two-lanes west of U.S. 59 and four-lanes east of U.S. 59. The visual environment to the north/east of the SLT consists mostly of residential areas, scattered woodland and riparian zones, and agricultural grassland. The visual environment to the south/west side of the SLT consists of cultivated cropland, gently rolling fields used as agricultural grassland, and scattered woodland and riparian zones. There are wetlands and recreational areas located on both sides of the SLT.

3.13.1. Visual Quality Rating

The study area can be divided into discrete units each having consistent visual characteristics and providing a uniform visual experience. These units can be thought of as "outdoor rooms," each having a unique, internally consistent character and use. The boundaries of these visual environments occur where the visual character changes. The strongest manifestations of visual boundaries are *topography* (landforms) and *landscape components* (trees, water, open areas, developed land, etc.).

In order to assign a visual quality rating, the visually distinct areas within the study area were separated into "visual assessment units." Visual assessment units were determined by analyzing the topography of the area and studying the major landscape components by use of onsite observations and aerial photography. The quality of the visual environment can be collectively defined using the attributes of *vividness*, *intactness,* and *unity*. *Vividness* is the relative strength of the image, *intactness* is the visual integrity of the natural or man-made landscape and its freedom from encroaching elements, and *unity* is the overall visual harmony of a composition and the degree to which the various elements combine in a coherent manner.

The study area was divided into the following visual assessment units:

1. I-70 Corridor
2. North/East of the existing SLT
3. South/West of the existing SLT.

The relative quality of the visual assessment units was rated on a scale of low, moderately low, moderate, moderately high, or high and is presented in **Table 3-8**. A low visual quality rating represents a less attractive view from the road as compared to a high visual quality rating.

Table 3-8: Visual Quality Rating

Visual Assessment Unit	Visual Quality Rating
I-70 Corridor	Moderate to Moderately High
North/East of SLT	Moderate to Moderately High
South/West of SLT	Moderate to Moderately High

3.13.2. Notable Visual Resources

The most notable visual resources within the study area are the woodland areas, Yankee Tank Creek, roadside wetlands within the Yankee Tank Creek floodplain, and the rural landscape

(**Exhibit 3-15**). Each of these areas possesses a moderate or moderately high degree of visual quality.

Woodland Areas – These areas possess a moderately high degree of visual quality and are located throughout the study area, with the majority being along the I-70 corridor and the north/east side of SLT. Although these areas are scattered within the study area, they provide vertical visual elements in a predominantly flat landscape.

Yankee Tank Creek – Possesses a moderately high degree of visual quality and is characterized by a relatively narrow meandering stream with a wooded riparian fringe. The stream is crossed by SLT and flows into the Wakarusa River.

Yankee Tank Creek Floodplain Wetlands – These areas are located within the floodplain of Yankee Tank Creek on both sides of the SLT corridor. They possess a moderately high degree of visual quality. Although these wetlands occur on both sides of the corridor, the wetlands on the south/west side would have higher degree of visual quality as they are backed by rural landscapes or recreation areas whereas the wetlands on the north/east side of SLT are partially backed by residential housing.

Cultivated Cropland – This area is mostly located along the south/west side of SLT. The area is composed of cultivated cropland and farmsteads with occasional intermittent streams, ponds, and scattered wood lots. All these elements combine to give the area a moderate visual quality rating.

The Rural Landscape – This area is along the I-70 corridor, west side of SLT between I-70 and Bob Billings Parkway, and on the north side of SLT east of E 1600 Road and consists of rolling grasslands, scattered ponds and wood lots, and drainage swales with sporadic wetland areas. These elements combine to give this area a moderately high visual quality rating.

Baker Wetlands – This area is located east of E 1400 Road on the south side of SLT. The Baker Wetlands possess a moderately high visual quality rating and consist of a diverse complex of wetland types. Although Baker Wetlands is an important visual resource it contains several encroaching elements that are visually intrusive. Those elements include bisecting gravel roads and a double-poled overhead power line corridor.

3.13.3. Viewers

Visual impacts can vary substantially through a project area since landscape elements can vary in their degree of visual quality and in viewer concern. There are two distinct categories of views: 1) a *view of the road*, which represents individuals (visual receptors) that can observe the roadway from an adjacent vantage point or who would have desirable views interrupted by the road, and 2) a *view from the road* which represents viewers who are users of the proposed facility.

For purposes of this project assessment, viewers of the road (visual receptors) are the individuals who are on the receiving end of adverse visual impacts. The residential subdivisions, Baker Wetlands, and the rural setting contain the most sensitive visual receptors.

3.14. Water Quality

Section 303(d) of the Clean Water Act (CWA) requires states to identify all water bodies where state water quality standards are not being met. Kansas water quality is governed by the Kansas Surface Water Quality Standards administered by the KDHE. The KDHE maintains a Kansas Section 303(d) Impaired Waters list which was reviewed to determine if any surface waters within the study area contained impairments that require a Total Maximum Daily Load (TMDL). In their *Methodology for the Evaluation and Development of the 2020 Section 303(d) List of Impaired Waterbodies for Kansas* (Methodology 2020), KDHE states: a TMDL refers to the "total maximum daily load" of a pollutant that achieves compliance with a water quality standard, therefore a TMDL is essentially a regulatory tool which caps the allowable pollutant load to a water body and a planning tool which directs and guides practices that will bring a water body into compliance with the applicable water quality standard.

The below sections discuss those surface waters within the study area that were listed on the Impaired Waters list and provides a description of the groundwater in the vicinity of the study area.

3.14.1. Surface Water

The study area lies within the Middle Kansas and Lower Kansas 8-digit hydrologic unit code (HUC 8) subbasins and is drained by the Lower Kansas Subbasin of the Kansas/Lower Republican River Basin. Surface waters within the study area include Oakley Creek, Baldwin Creek, Yankee Tank Creek, the Wakarusa River and its tributaries, and variably sized farm ponds (**Exhibit 3-16)**. The water quality of these resources varies depending upon such factors as water permanence, presence or absence of in-flowing streams, surrounding vegetation, and surrounding land use.

Two waters within the study area, the Wakarusa River and Baker Wetlands, are identified on the KDHE 2020 approved 303(d) Impaired Waters list. The Wakarusa River is listed for two impaired uses, aquatic life and recreation, with a total of four impairments. The aquatic life use is listed as being impaired by total phosphorus, total suspended solids, and biology, with a TMDL developed for the total phosphorus impairment. The recreation use of the Wakarusa River has a TMDL developed for the E. coli impairment.

The Baker Wetlands are listed for one impaired use, aquatic life, with a total of four impairments. The Aquatic life use is listed as being impaired by eutrophication, lead, pH, and dissolved oxygen. A TMDL has been developed for the dissolved oxygen impairment.

KDHE maintains the Kansas Surface Water Register. The department rates streams in the state relative to eight designated beneficial uses which include aquatic life, contact recreation, domestic water supply, food procurement, ground water recharge, industrial water supply, irrigation, and livestock watering. The current Kansas Surface Water Register, dated December 12, 2013, subdivides the Wakarusa River into several segments and indicated the segments of the river in (Segment 25) and adjacent (Segment 24) to the study area is a source for the eight designated beneficial uses cited above. Baker Wetlands and Yankee Tank Creek are also listed as sources for the eight designated uses; however, Baldwin Creek and Oakley Creek are listed as sources for all the designated uses except for food procurement and contact recreation.

None of the waterways in the study area are listed as an Outstanding National Resource Water (ONRW) or an Exceptional State Water (ESW). Waters with the ONRW and ESW designation are

afforded the highest level of water quality protection under the antidegradation provisions and the mixing zone provisions of the Kansas Water Quality Standards.

3.14.2. Ground Water

A review of the Kansas Geological Survey's (KGS) Water Well Completion (WWC5) database indicates that wells within and adjacent to the study area are generally 60 to 160 feet in depth and are low volume domestic units with yields from one to ten gallons per minute. These wells are generally located in one of the underlying Pennsylvanian sandstone aquifers. The groundwater flow most likely follows the bedrock slope from the southeast to the northwest.

Facilities within the study area are served by a reliable municipal water supply system which obtains water directly from the Kansas River, Clinton Reservoir, and from wells in the Kansas Alluvium. All sources are located outside of the study area, although the Clinton Reservoir is located approximately 1,500 feet from the study area.

3.15. Floodplains

The study area encompasses portions of the Wakarusa River, Yankee Tank Creek, and Baldwin Creek floodplains. All alternative alignments under consideration would occur within the floodplain of all three streams. Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) and National Flood Hazard Layer (NFHL) showing mapped 100-year floodplains were available for Douglas County (see **Exhibit 3-17**). According to the FIRM and NFHL data, the project will occur within mapped 500-year floodplain, 100-year floodplain, and regulated floodway.

3.16. Wetlands

The USACE and EPA define wetlands as "areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

Field and desktop data were acquired by KDOT on two separate occasions over a 4-year period, first in 2015 and again in 2018 after the full SEIS study area was established.

In 2015, a desktop survey was performed by KDOT for the initial study area to identify locations of potential aquatic resources. References used to identify streams, potential wetland sites, and other waterways included U.S. Geological Survey (USGS) maps and the USGS National Hydrography Dataset (NHD), U.S. Fish and Wildlife Service National Wetlands Inventory (NWI) maps, and color aerial photography. A meeting with the USACE was conducted onsite on June 2nd, 2015, to identify jurisdictional wetlands (noted as Field Verified Wetlands). The onsite meeting included a visual observation for wetlands; however, no delineations were performed.

At the initiation of the SEIS in 2018, additional Study Area was identified and KDOT screened this additional area using a desktop survey with current versions of USGS maps, NHD, NWI maps, and color aerial photography. There was no site investigation or delineations performed to verify the presence/absence of the NWI wetland data. **Exhibit 3-16** shows the location of the probable wetlands within the study area.

3.17. Natural Resources and Biological Communities

The study area is located in the Osage Cuestas and Glaciated Region physiographic regions of Kansas. The Osage Cuestas is a hill-plain, broad-terraced panorama. With a large supply of limestone rock. The Glaciated Region is characterized by rounded hills and broad valleys with glacial deposits of quartzite. The study area is also located in the Osage Cuestas subregion of the Central Irregular Plains ecoregion. The Osage Cuestas subregion is mostly comprised of a combination of tallgrass prairie and oak-hickory woodlands in eastern Kansas. The watershed in the study area is designated as the Lower Kansas.

3.17.1. Terrestrial Resources and Communities

The dominant vegetation within the study area is primarily grasses and agricultural crops in the level to gently sloping areas, with wooded vegetation along the stream corridors. The vegetation in the areas where development has occurred since the 1990 EIS consists of maintained cool-season grasses. There has also been a change in the land formerly known as Elkins Prairie, which is discussed in the Threatened and Endangered Species section (**3.18**) below.

Woodlands - Woodlands are the main natural vegetative community, outside of the maintained right-of-way, within the study area. Woodlands create habitat diversity and provide food and cover for wildlife. The woodlands in the study area consist of upland and riparian woodlands and are primarily scattered remnants from previous clearing and alteration activities.

3.17.2. Aquatic Communities

Streams - The primary stream within the study area is Yankee Tank Creek which is a tributary to the Wakarusa River and flows eastward through the study area. The Wakarusa River is encroached upon by the study area for approximately 350 feet; however, six of its unnamed tributaries cross through the study area. Other streams in the study area include Baldwin Creek, Oakley Creek, and three unnamed tributaries.

Lakes - There are no lakes within the study area. The two closest lakes are Lake Alvamar and Clinton Lake which are approximately 185 feet and 1,400 feet from the study area, respectively.

Ponds - There are over thirty ponds scattered throughout the study area. Most of the ponds are approximately 1.5 acres or less in size and are either excavated to form a depressional area or are impounded with a small dam/berm. Many of the ponds contain a wetland fringe.

3.18. Threatened and Endangered Species

3.18.1. Background Information

The 1990 EIS identified two threatened or endangered species potentially present in the West Section of the SLT study area; the federally threatened Mead's Milkweed (*Asclepias meadii*) and the federally proposed threatened Western Prairie Fringed Orchid (*Platanthera praeclara*). These were of concern in the Draft EIS (DEIS) for this project since the preferred alignment passed adjacent to the Elkins Prairie, a site where both plants had been known to occur. The location of the Mead's Milkweed in the Elkins Prairie, and the possibility of the Western Prairie Fringed Orchid, was the prime purpose of a series of meetings held with the Kansas Biological Survey (KBS), Natural Heritage Program, and the US Fish and Wildlife Service (USFWS), as well as other resource agencies. Mead's Milkweed also existed at another area northwest of Elkins Prairie, on the west side of the SLT alignment, although it was outside of the project footprint.

In response to the original DEIS for this project, much concern was expressed about the potential impacts to Elkins Prairie and the two species of plants that had historically been found there: Mead's Milkweed and the Western Prairie Fringed Orchid. To completely avoid any of these potential impacts, the preferred alignment was moved to the west so it no longer required any acquisition of land from Elkins Prairie, which was located at the northeast corner of US-40 and County Road 13. The east right-of-way line of the SLT was placed coincident with the west right-of-way line of the County Road, which was a northerly extension of the County Route 13 alignment. A folded diamond interchange (located on the south side of US-40) was shown as the future interchange type.

As a result of the re-alignment, the USFWS concurred with a finding that the preferred alignment of the SLT west of Elkins Prairie would not adversely affect the Mead's Milkweed or the Western Prairie Fringed Orchid, although botanists had been unable to locate the Western Prairie Fringed Orchid in recent years, despite repeated surveys.

In November 1990 (about 11 months after the EIS was approved), the owner of the Elkin's Prairie property plowed the land under, eliminating the Mead's Milkweed population on the property. Since the sensitive species and most of the prairie plants no longer existed on the land during final design, the West Section alignment was moved back to its original location and a diamond interchange was developed in final design, and subsequently constructed at that location.

3.18.2. Listed Threatened and Endangered Species

Both the Kansas Department of Wildlife, Parks and Tourism (KDWPT) and the USFWS utilize the KBS Natural Heritage Database and their special studies to evaluate the presence or absence of species of concern in a given area. The database includes Federal and State threatened and endangered species, species in need of conservation, and rare species. Federally-listed threatened and endangered species are subject to the protection afforded under Section 7 of the Endangered Species Act which is enforced by the USFWS. The federally listed species that are known or likely to occur in Douglas County are listed in **Table 3-9.**

The State of Kansas also maintains a state listing of threatened and endangered species, which are protected by the Kansas Nongame and Endangered Species Conservation Act of 1975. The KDWPT web site was visited on August 21, 2019, to obtain a list of the state protected species that are known or likely to occur in Douglas County. The list is shown in **Table 3-9**. The table also identifies those state-listed species for which critical habitat has been designated. Kansas Administrative Regulations define critical habitat as either of the following:

"*Specific geographic areas supporting a population of a listed species and including physical or biological features that are essential to the conservation of the species and require special management or protection; or specific geographic areas not documented as currently supporting a population of a listed species but deemed essential for the conservation of the listed species by the secretary*."

Table 3-9: Douglas County Federal & State Listed Threatened & Endangered Species

Common Name	Scientific Name	Federal Status1	State Status2	Critical Habitat w/in Study Area
Mead's Milkweed	*Asclepias meadii*	Threatened	Not Listed	None
Western Prairie Fringed Orchid	*Platanthera praeclara*	Threatened	Not Listed	None
American Burying Beetle	*Nicrophorus americanus*	Not Listed	Endangered	None
Mucket Mussel	*Actinonaias ligamentina*	Not Listed	Endangered	Wakarusa River
Flathead Chub	*Platygobio gracilis*	Not Listed	Threatened	None
Hornyhead Chub	*Nocomis biguttatus*	Not Listed	Threatened	None
Pallid Sturgeon	*Scaphirhynchus albus*	Endangered	Endangered	None
Plains Minnow	*Hybognathus placitus*	Not Listed	Threatened	None
Shoal Chub	*Macrhybopsis hyostoma*	Not Listed	Threatened	None
Sicklefin Chub	*Macrhybopsis meeki*	Not Listed	Endangered	None
Silver Chub	*Macrhybopsis storeriana*	Not Listed	Endangered	None
Sturgeon Chub	*Macrhybopsis gelida*	Not Listed	Threatened	None
Topeka Shiner	*Notropis topeka*	Not Listed	Threatened	None
Western Silvery Minnow	*Hybognathus argyritis*	Not Listed	Threatened	None
Least Tern	*Sterna antillarum*	Not Listed	Endangered	None
Piping Plover	*Charadrius melodus*	Not Listed	Threatened	None
Snowy Plover	*Charadrius alexandrinus*	Not Listed	Threatened	None
Whooping Crane	*Grus americana*	Not Listed	Endangered	None
Eastern Spotted Skunk	*Spilogale putorius*	Not Listed	Threatened	None
Northern Long-eared Bat	*Myotis septentrionalis*	Threatened	Not Listed	None

1: Source - https://ecos.fws.gov/ipac/location/IZRWUG7OXFAMNNXOUUDHTXV5PY/resources
2: Source - https://ksoutdoors.com/Services/Threatened-and-Endangered-Wildlife

The USFWS and the KDWPT list 20 threatened or endangered species, with one species (Mucket Mussel) having designated critical habitat (DCH) defined within the study area. Two additional species (Mead's Milkweed and Northern Long-eared Bat) have either been recorded in the study area or have potentially suitable habitat within the study area. The three species that have DCH or potentially suitable habitat within the study area, or have been recorded within the study area, are discussed below.

Mead's Milkweed

In the spring of 2015, the KBS conducted habitat surveys, confirming that Mead's Milkweed (*Asclepias meadii*) is present, or known to be present in six areas of native tallgrass prairie that are suitable habitat for the species, within or near the study area. However, habitat for the Western Prairie Fringed Orchid was not found and no records of the species are known within the study area. A search of the 2018 KBS habitat records also confirmed that Mead's Milkweed is

present, or known to be present, on native prairie areas within the study area. No DCH for Mead's Milkweed is located within or adjacent to the study area.

Mucket Mussel

Douglas County is within the probable range of the Mucket Mussel (*Actinonaias ligamentina*); however, according to the online KDWPT species profile, the Mucket Mussel is currently known to occur only in two locales along the Marais des Cygnes River in Miami and Franklin counties. Even though the species has not been found in Douglas County, the Wakarusa River is listed by KDWPT as DCH for the Mucket Mussel.

Northern Long-eared Bat

The Northern Long-eared Bat (NLEB) (*Myotis septentrionalis*) is listed as threatened by the USFWS. The study area is located within the NLEB range and also within the NLEB White Nose Syndrome Buffer Zone. The USFWS describes the habitat requirements of the NLEB as follows:

NLEBs spend the winter hibernating in caves and mines, called hibernacula. They use areas in various sized caves or mines with constant temperatures, high humidity, and no air currents. During summer, NLEBs roost singly or in colonies in forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥3 inches diameter at breast height (dbh) that have exfoliating bark, cracks, crevices, and/or cavities), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit characteristics of suitable roost trees and are within 1,000 feet of other forested/wooded habitat. NLEB has also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses. Males and non-reproductive females may also roost in cooler places, like caves and mines.

Wooded areas and scattered trees exist within the study area, as well as bridges that have the potential for acting as roosting structures for NLEBs. No DCH for the NLEB is located within or adjacent to the study area.

Other Regulations Affording Protection

Bald Eagles were removed from the threatened or endangered species listing in 2007; however, they are still afforded protection by the federal government under the Bald and Golden Eagle Protection Act (BGEPA) and the Migratory Bird Treaty Act (MBTA).

The BGEPA (1940 and amendments) provides for the protection of bald and golden eagles by prohibiting the taking, possession, and commerce of such birds, except under certain specified conditions. There is no nesting habitat for bald or golden eagles within the study area. The closest area with the potential for nesting trees is Clinton Lake, which is approximately 1,500 feet away from the study area at its closest point. Trees along the Wakarusa River could provide roosting and resting perches for bald eagles. Due to the lack of nesting trees within or adjacent to the study area, the project would not result in the take of bald or golden eagles.

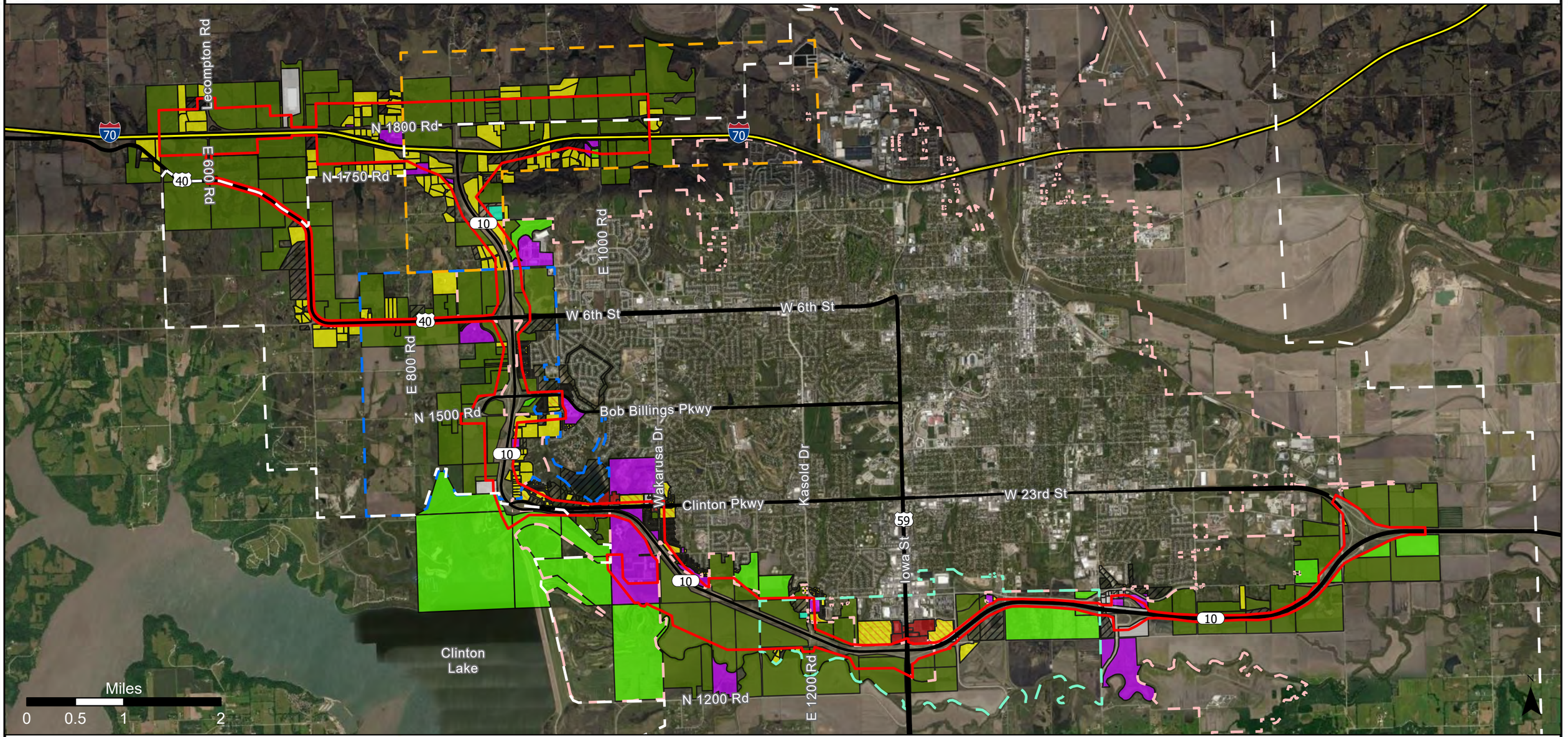
The MBTA (1918 and amendments) makes it unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg

or product, manufactured or not. Provisions are in place for the protection of migratory birds, parts, nests, eggs, or products. Under the MBTA, “migratory birds” essentially includes all birds native to the U.S. and the regulations pertain to any time of the year, not just during migration. Since the proposed project would require some tree removal, KDOT would implement conservation measures to minimize the potential impacts to migratory birds, including tree clearing outside of the nesting season (generally March 1st to September 15th) or conducting nest surveys prior to clearing to avoid injuries to eggs or nestlings. Prior to construction, bridges would also be checked for potential nests. Based on the above conservation measures, impacts to migratory birds would be minimal and would not be significant.

SLT South Lawrence Trafficway

Existing Land Use

Exhibit 3-1



- SEIS Study Area
- Lawrence City Limits
- Urban Growth Area
- K-10 West Plan Boundary
- K-10 and Farmers Plan Boundary
- Southern Development Plan Boundary
- Agricultural
- Commercial
- Duplex
- Industrial
- Institutional
- Multiple Family Residential
- Parks/Open Space
- Single Family Residential
- Utility
- Vacant

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Kansas Department of Transportation

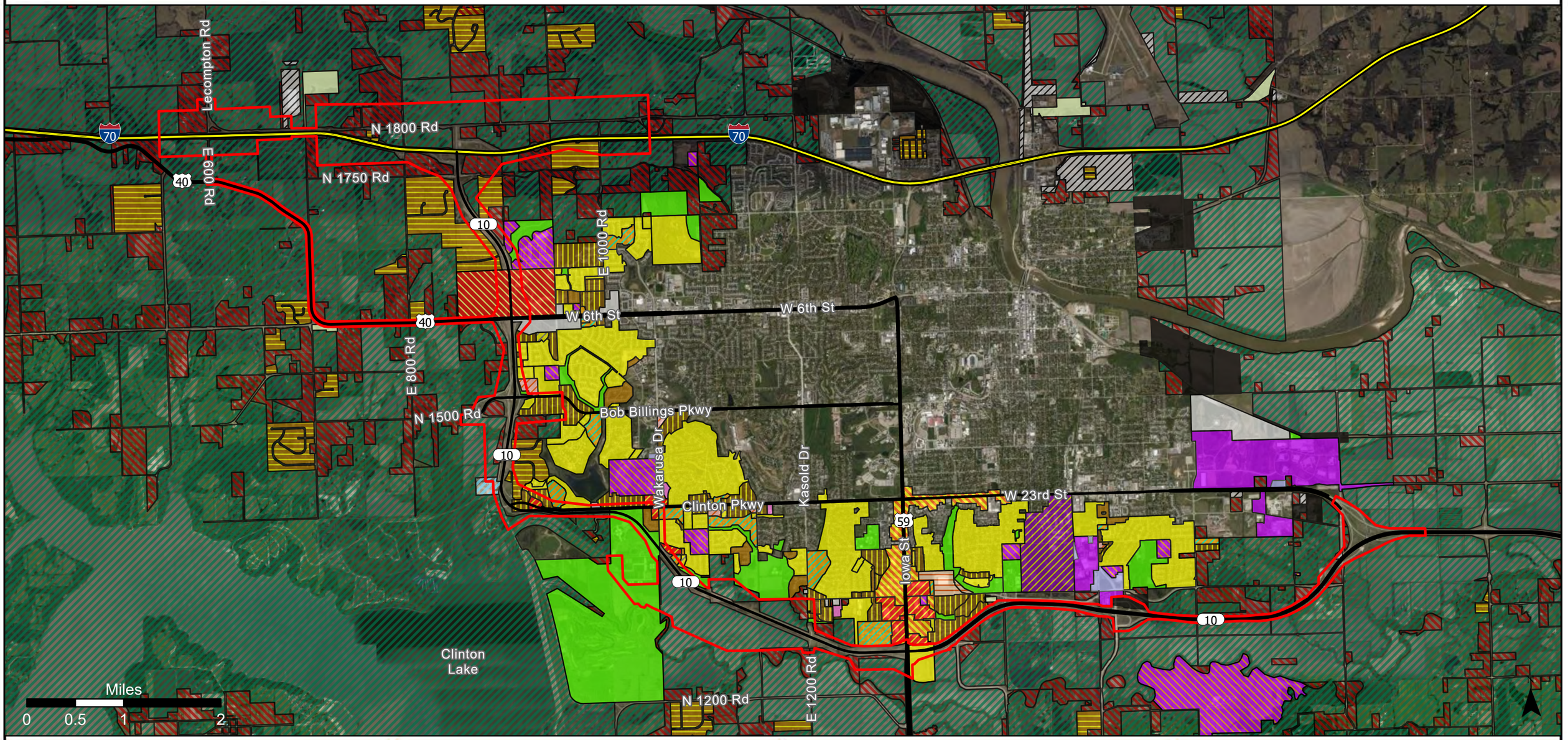
U.S. Department of Transportation Federal Highway Administration

Kansas Turnpike Authority

SLT South Lawrence Trafficway

Existing Zoning

Exhibit 3-2



- SEIS Study Area
- Single-Dwelling Residential
- Single-Dwelling Residential Office
- Duplex Multi-Dwelling Residential
- Multi-Dwelling Residential
- M-D Residential Office
- Open Space
- Commercial Strip
- Community Commercial Center
- Neighborhood Commercial Center
- Office Commercial
- Planned Commercial
- Planned Residential
- Regional Commercial
- University-Haskell Indian Nations
- General Industrial
- Limited Industrial
- General Public & Institutional
- Urban Reserve
- Agricultural
- Transitional Agricultural
- Clustered Preservation
- General Business
- Lake Oriented Business
- Light Industrial
- General Industrial

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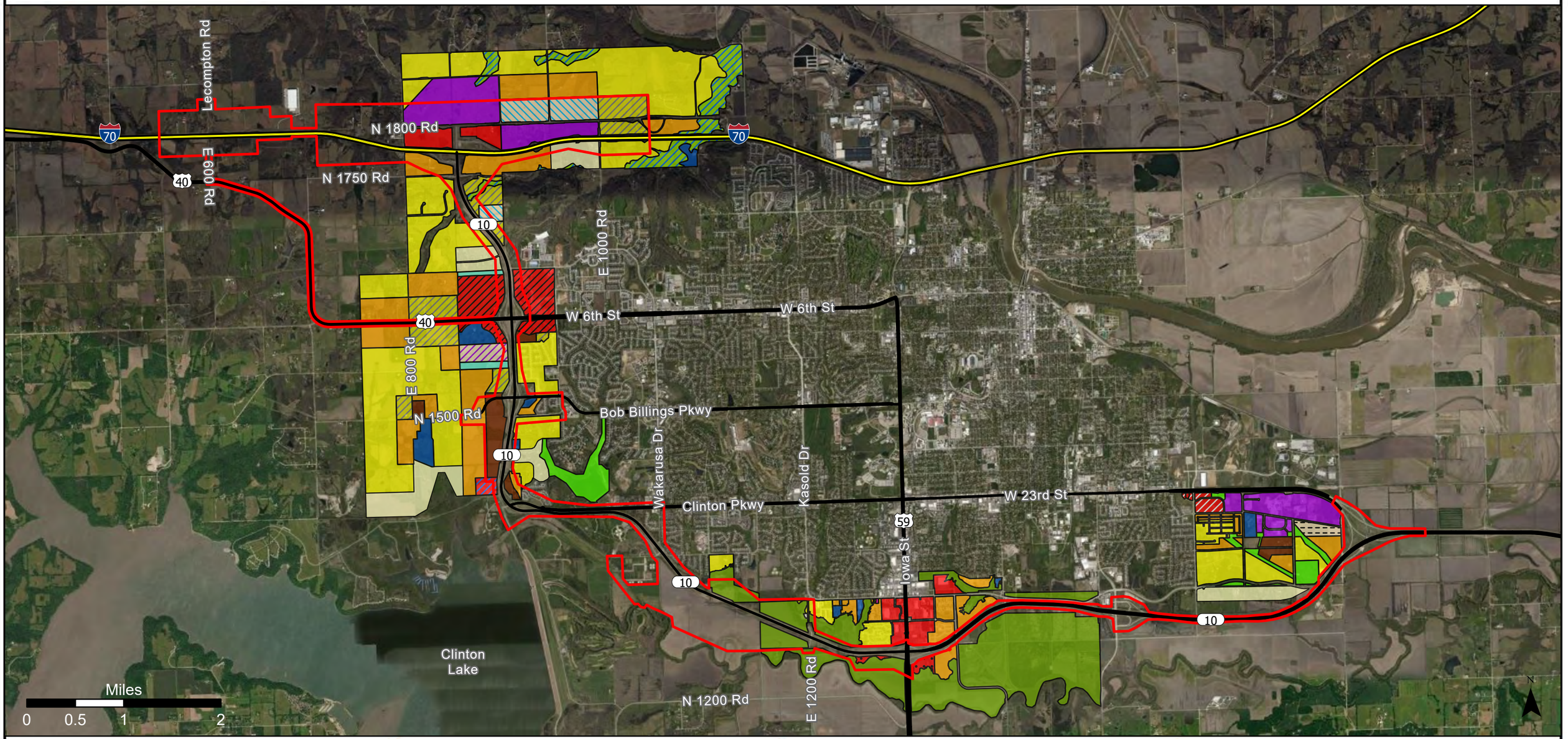
Future Land Use

Exhibit 3-3



- SEIS Study Area
- Very Low-Density Residential
- Low-Density Residential
- Medium-Density Residential
- High-Density Residential
- Residential/Office
- Office
- Office/Research
- Office/Warehouse
- Office/Industrial/Warehouse
- Green Space Buffer
- Open Space
- Open Space/Floodplain
- Park/Open Space
- Public/Institutional
- Commercial
- Commercial Center - CC600
- Community Commercial
- Commercial - Lake Oriented
- Auto-Related Commercial
- Transport/Communication/Utility
- Industrial

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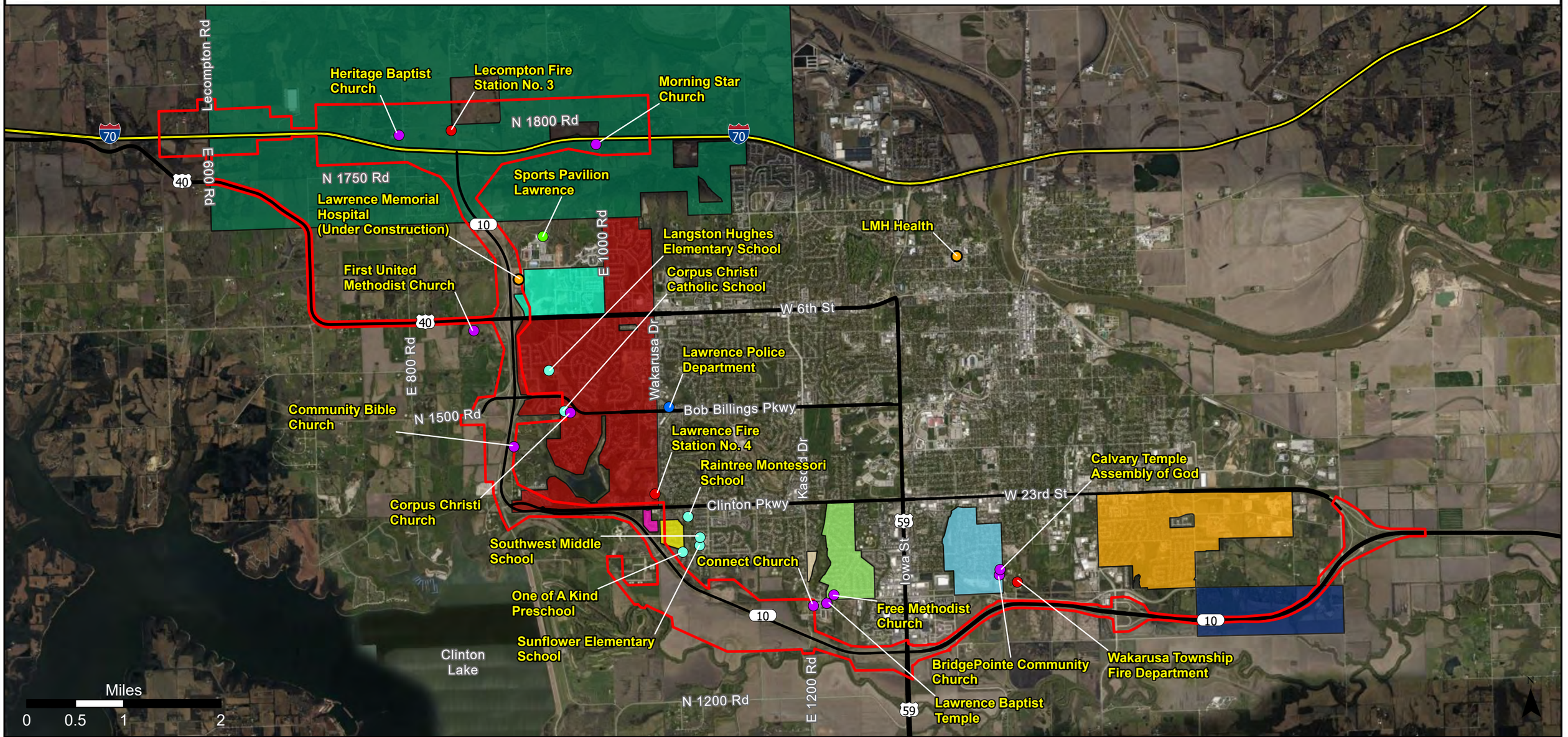
SLT South Lawrence Trafficway

Community Resources

Exhibit 3-4



SEIS Study Area

Neighborhood Associations
- Gateway
- Indian Hills
- Meadows Place
- Prairie Meadows
- Prairie Park
- Scenic Riverway
- South Siders
- Stoneback Ridge
- Sunflower
- West Lawrence

- Fire Station
- Police Station
- Hospital
- School
- Church
- Community Center

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Kansas Department of Transportation
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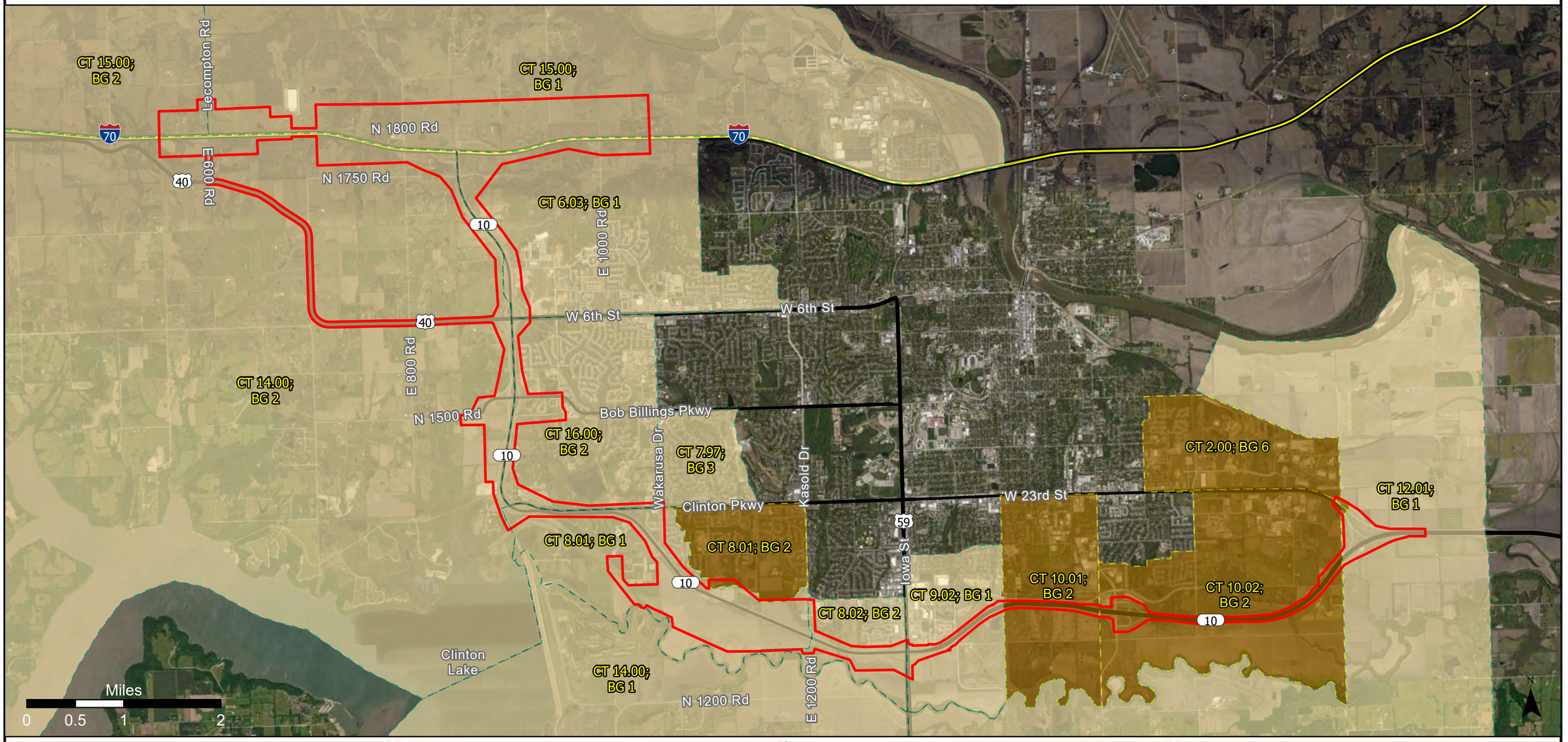
SLT South Lawrence Trafficway

Minority Populations

Exhibit 3-5



SEIS Study Area

Block Groups with EJ Minority Populations

Block Groups without EJ Minority Populations

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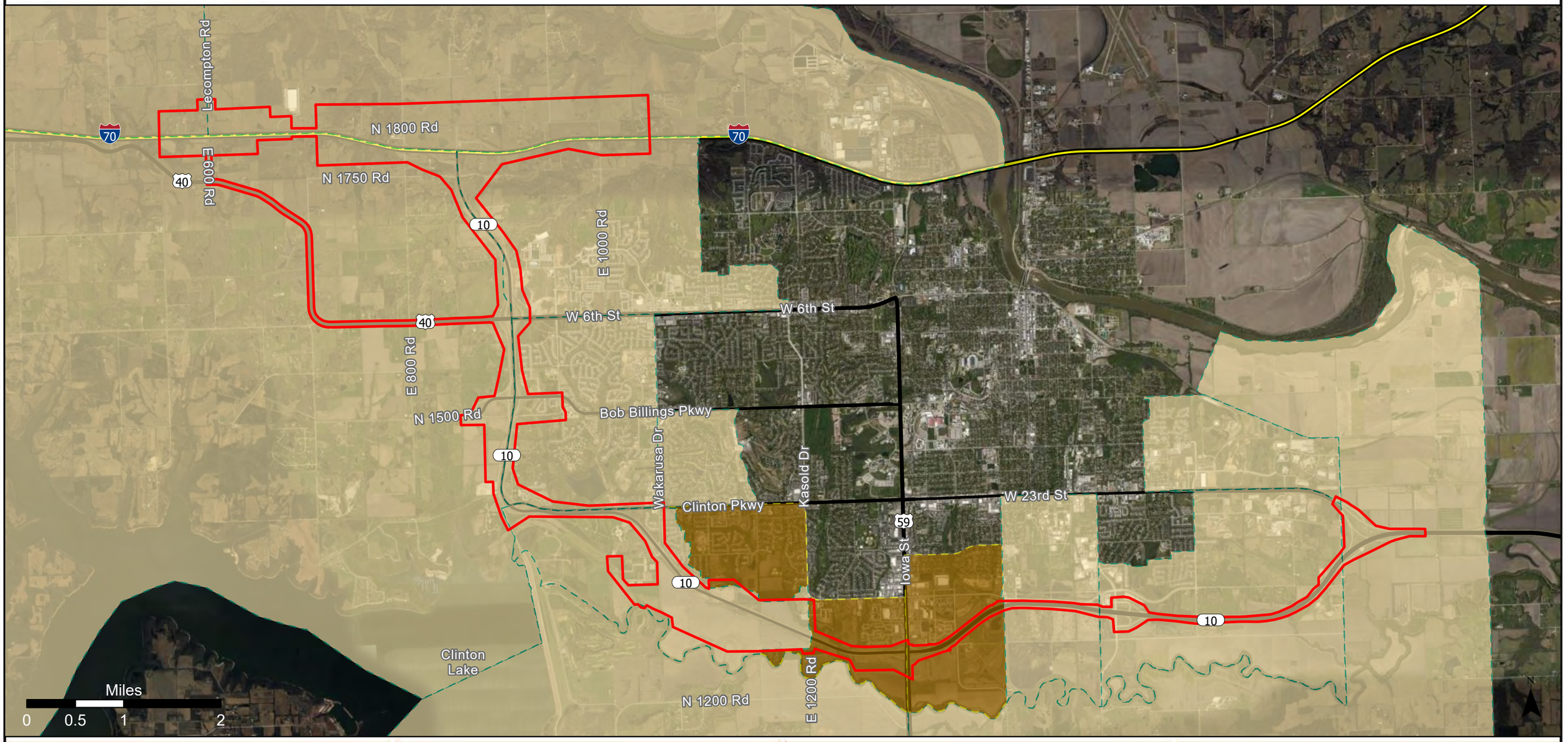
SLT South Lawrence Trafficway

Low-income Populations

Exhibit 3-6



SEIS Study Area

Block Groups with EJ Low=income Populations

Block Groups without EJ Low=income Populations

South Lawrence Trafficway Supplemental Environmental Impact Statement KDOT # 10-23 KA-3634-01

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U.S. Department of Transportation Federal Highway Administration

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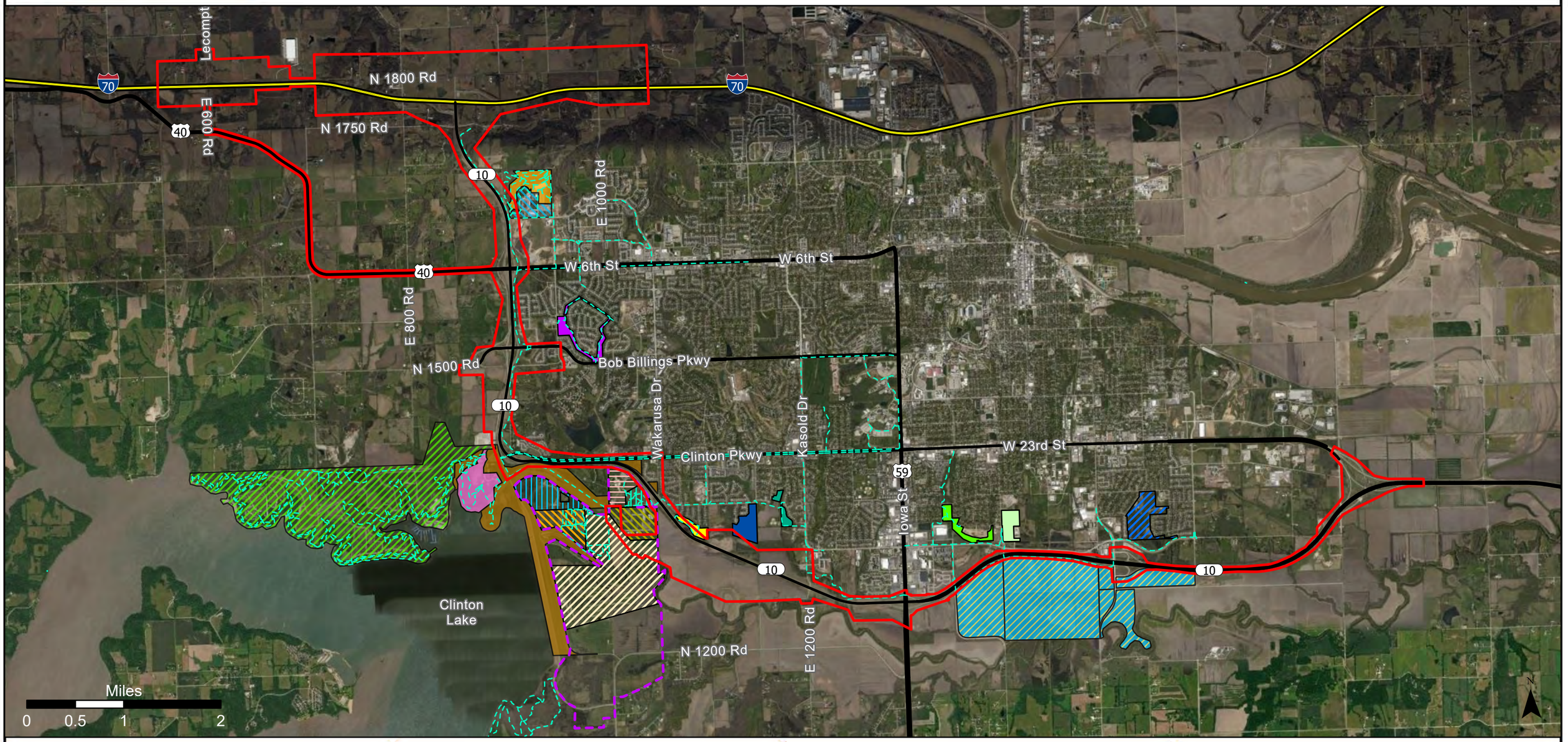
SLT South Lawrence Trafficway

Parks and Recreation

Exhibit 3-7



- SEIS Study Area
- USACE Property
- Overlook Park
- Rock Chalk Park - City of Lawrence
- Clinton Lake State Park
- Rock Chalk Park - University of Kansas
- Broken Arrow Park
- Clinton Lake Softball Complex
- DeVictor Park
- Eagle Bend Golf Course
- Green Meadows Park
- Kanza Southwind Nature Preserve
- Mutt Run
- Naismith Valley Park
- Pat Dawson Billings Nature Area
- Prairie Park
- Rotary Arboretum
- Sesquicentennial Point
- Youth Sports Complex
- Clinton Lake Outlet Park
- Baker Wetlands
- Trails

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Kansas Department of Transportation

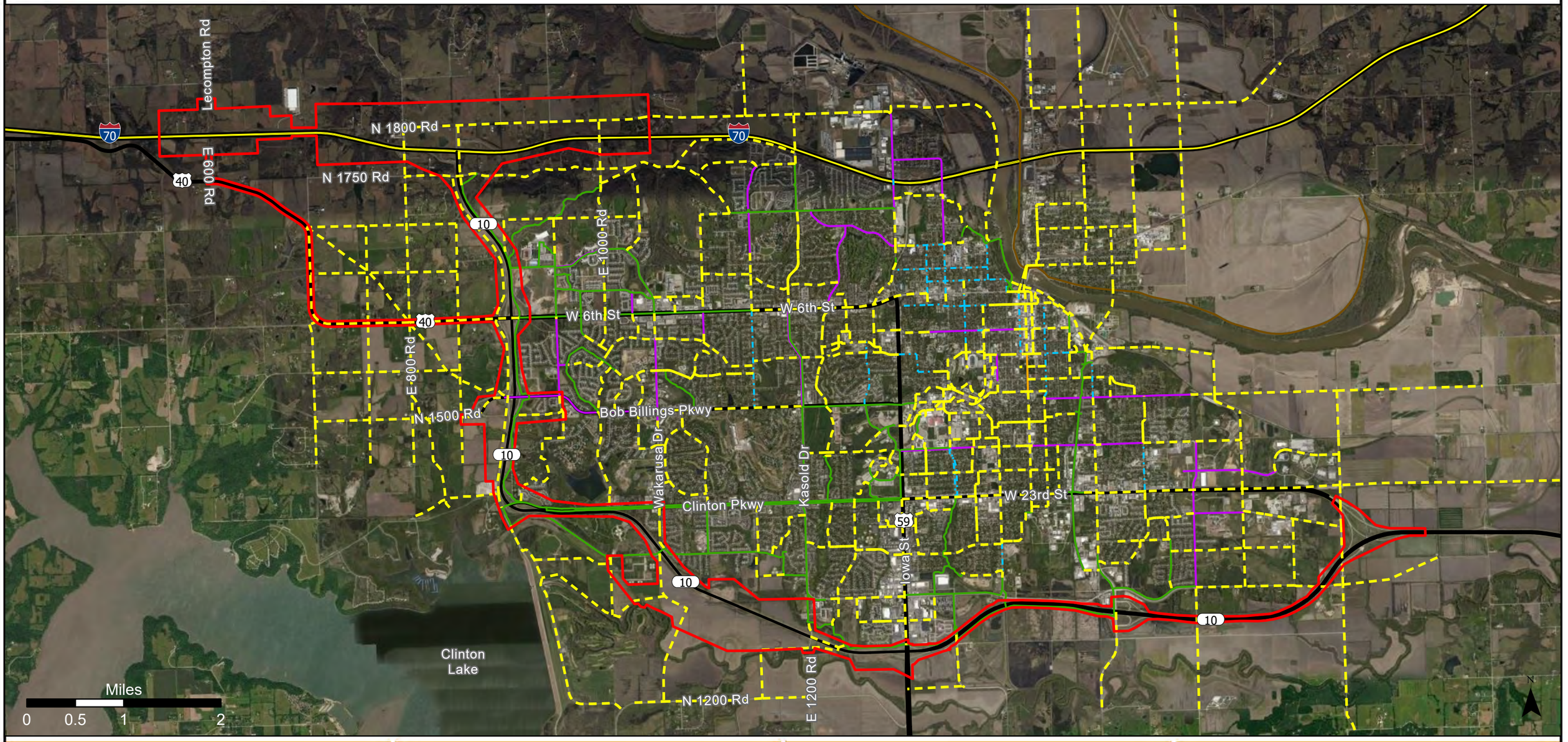
U.S. Department of Transportation Federal Highway Administration

Kansas Turnpike Authority

SLT South Lawrence Trafficway

Lawrence Bikes Plan Bikeway Map

Exhibit 3-8



SEIS Study Area

Future Bikeway

Existing Bike Lane

Existing Buffered Bike Lane

Existing Marked Shared Lane

Existing Shared Use Path

Existing Unpaved Trail

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Kansas Department of Transportation

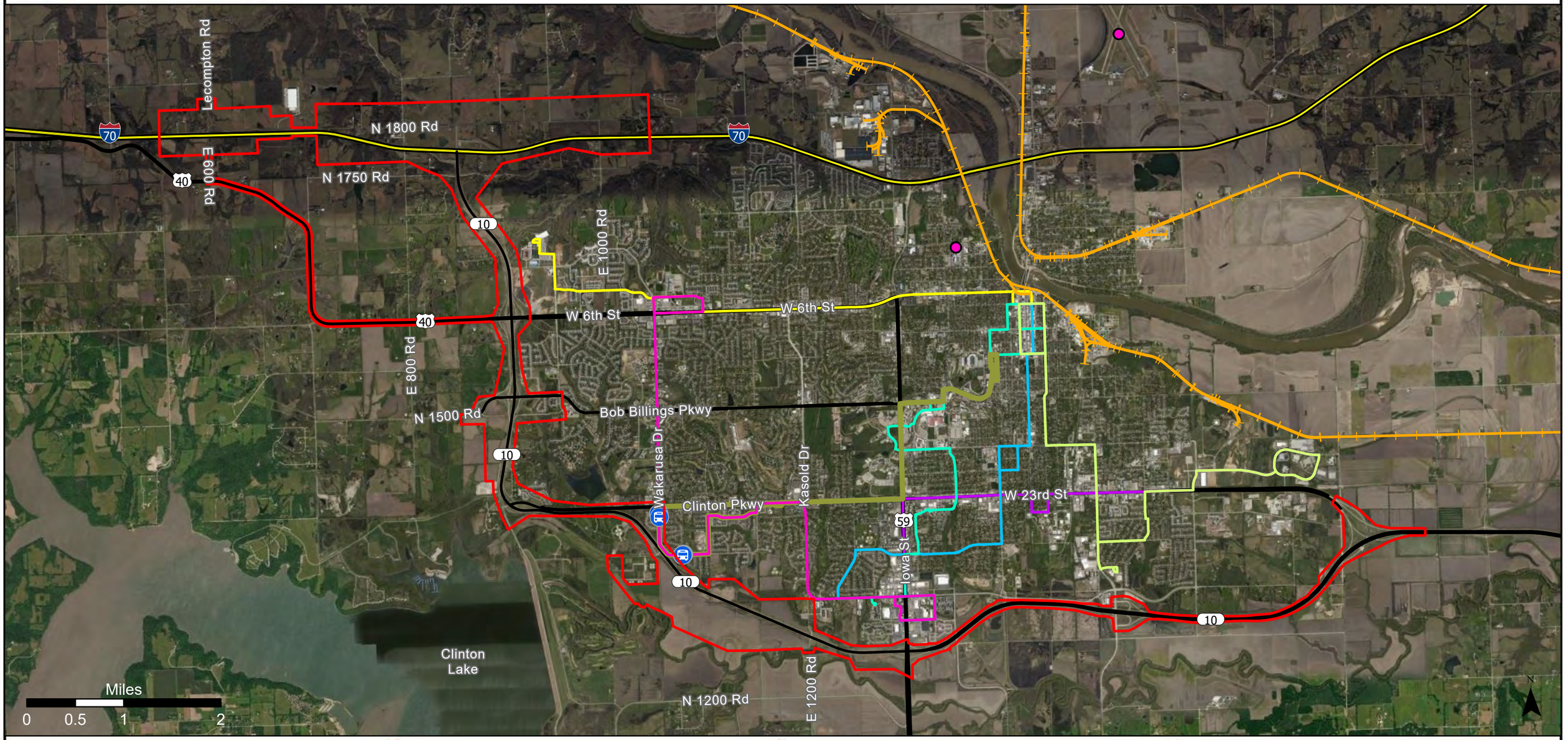
U.S. Department of Transportation Federal Highway Administration

Kansas Turnpike Authority

SLT South Lawrence Trafficway

Transportation and Transit

Exhibit 3-9



SEIS Study Area
Railroad
Bus Route 5
Bus Route 6
Bus Route 7
Bus Route 9
Bus Route 11
Bus Route 15
Bus Route 29
Bus Stop
Airports

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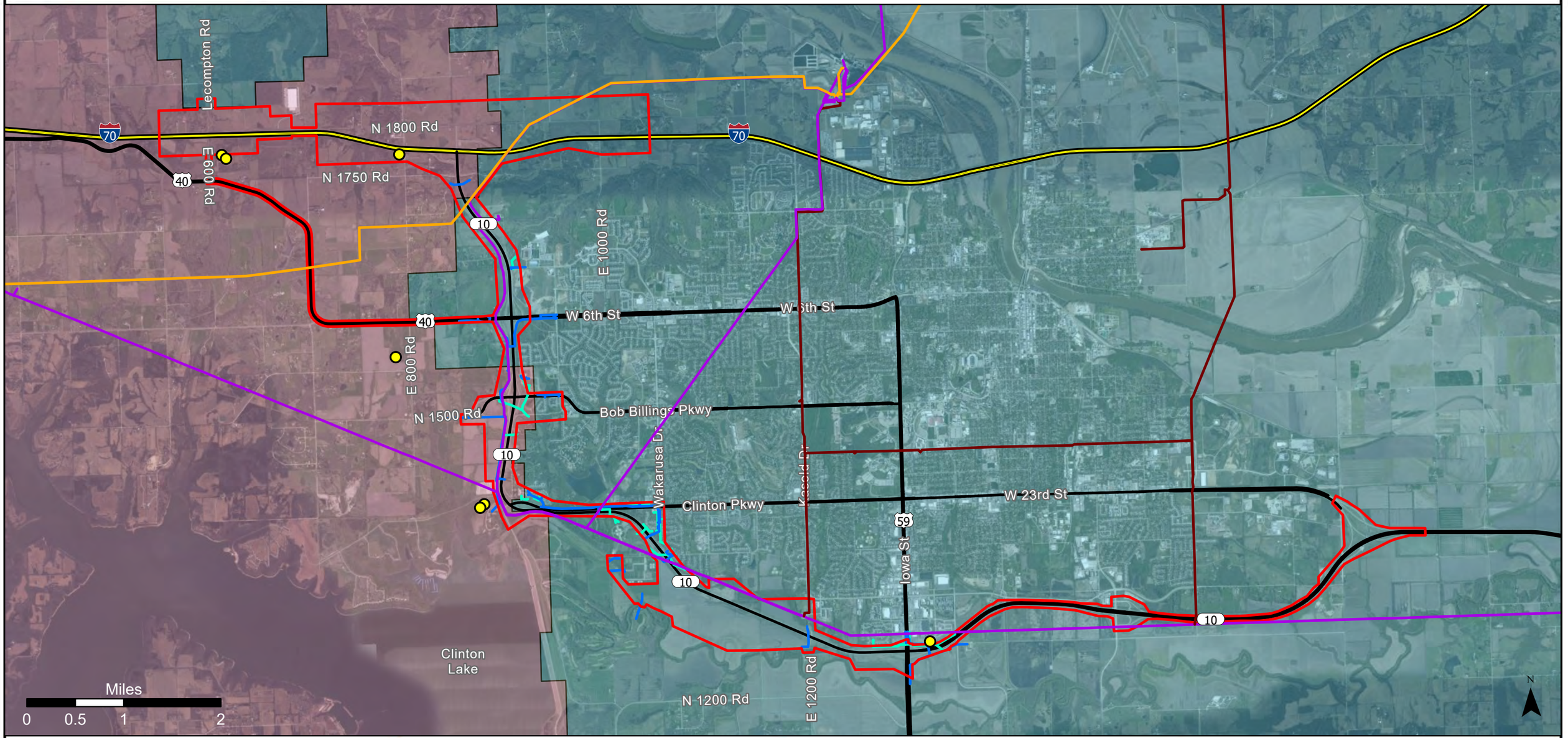
Utilities

Exhibit 3-10



SEIS Study Area

Freestate Electric Cooperative, INC.

Evergy Kansas Central, INC.

69 Volt Electric Transmission Line

115 Volt Electric Transmission Line

230 Volt Electric Transmission Line

Water Line

Sanitary Sewer

KS Cellular Towers

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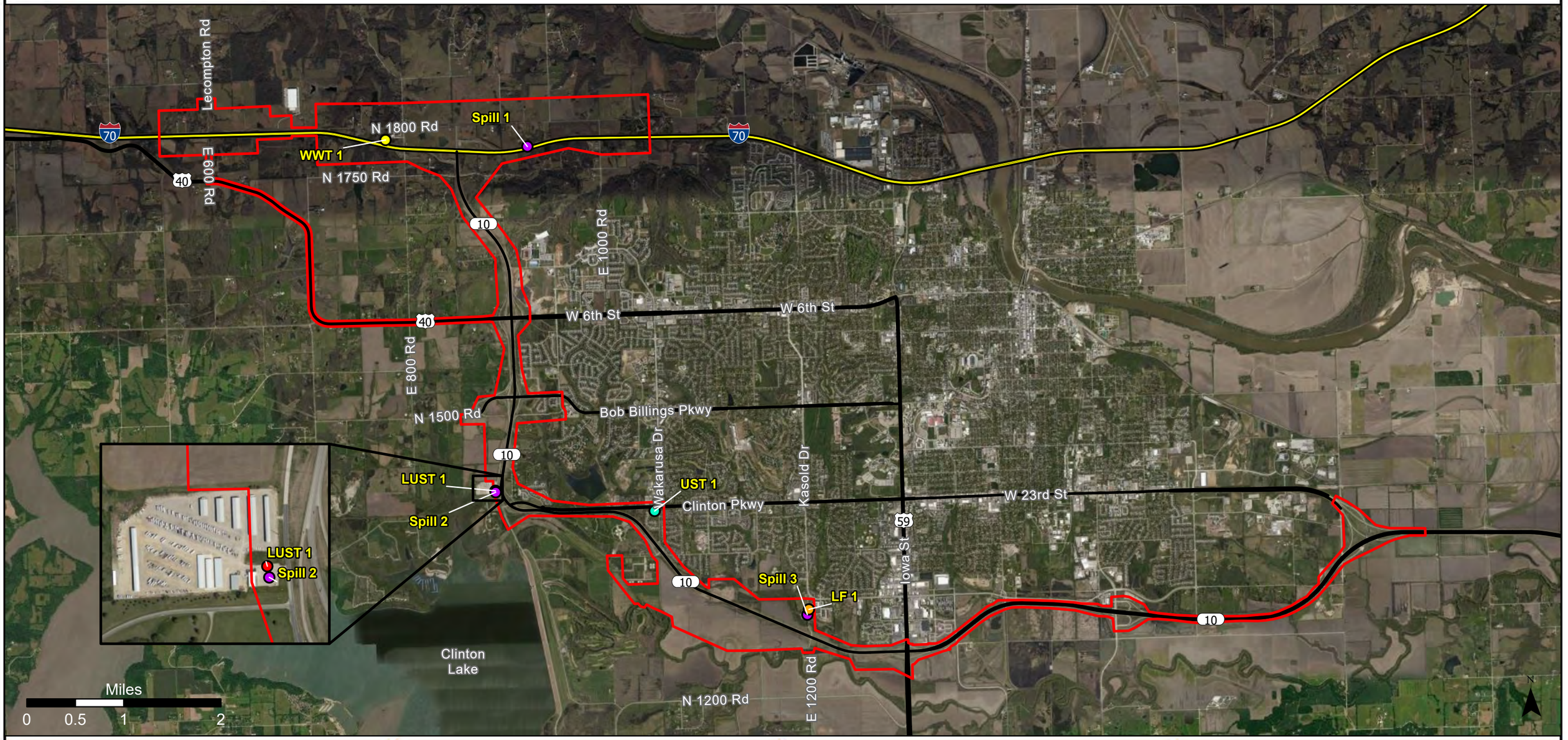
Hazardous Waste Sites

Exhibit 3-11



- SEIS Study Area
- LUST
- Landfill
- Spill
- UST
- WWT Facility

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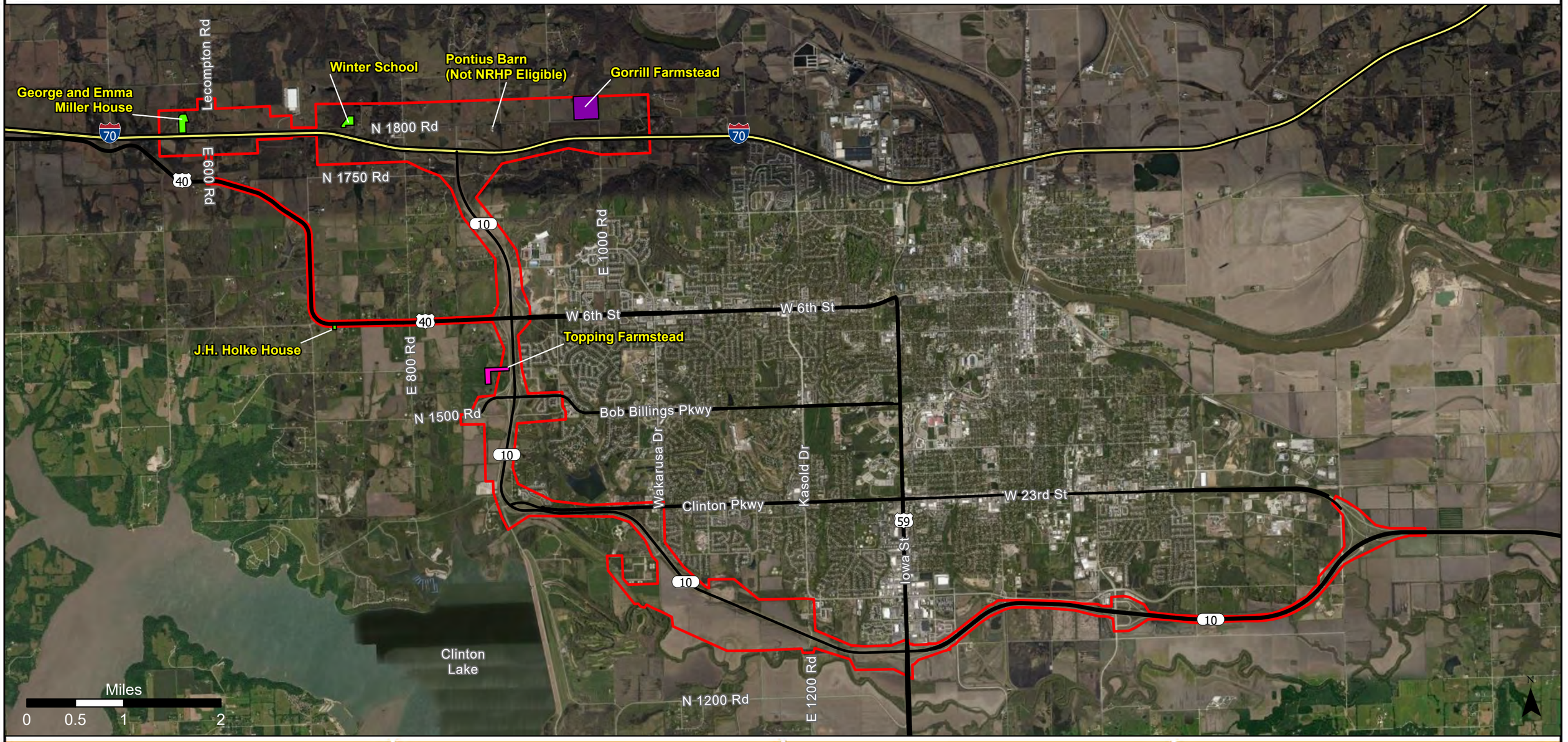
Historic Resources Map

Exhibit 3-12



SEIS Study Area
Eligible for NRHP
Listed on NRHP
Potentially Eligible for NRHP

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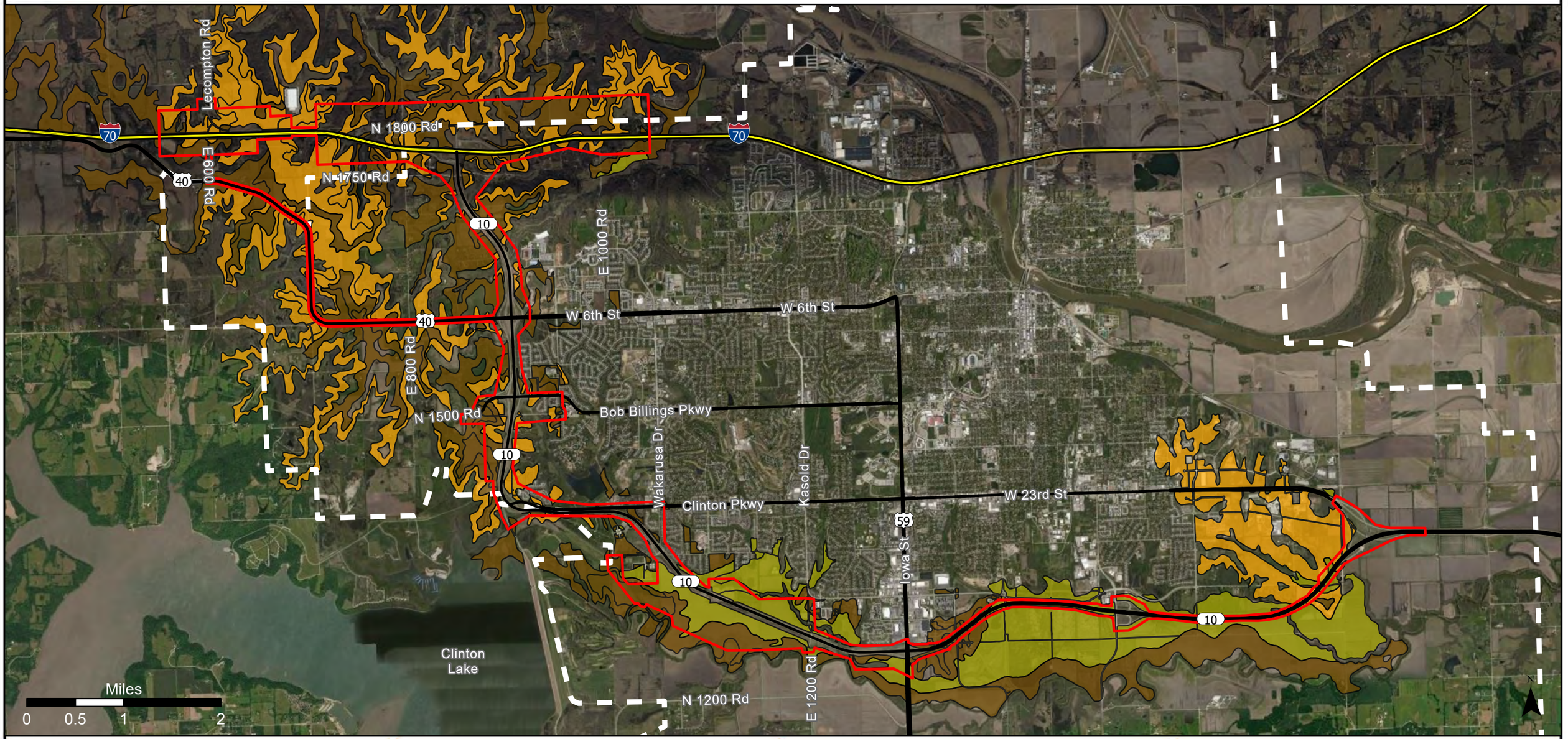
Farmland

Exhibit 3-13



SEIS Study Area
Urban Growth Area
Prime Farmland
Prime Farmland If Drained
Farmland Of Statewide Importance

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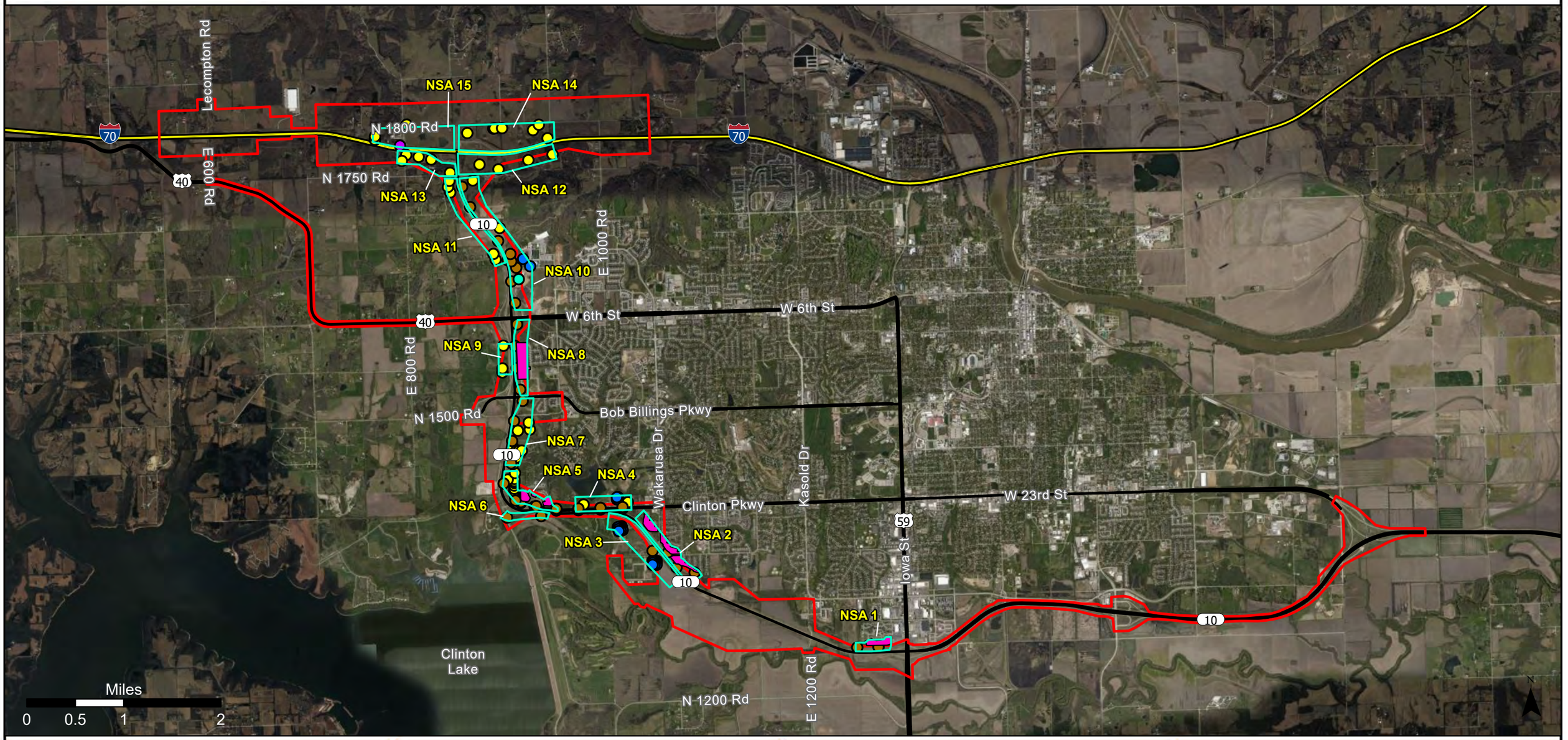
Noise Receptors

Exhibit 3-14



SEIS Study Area

Noise Sensitive Areas

Residential Neighborhood

Noise Receptors

- Church
- Hospital
- Residential
- Sports
- Trail

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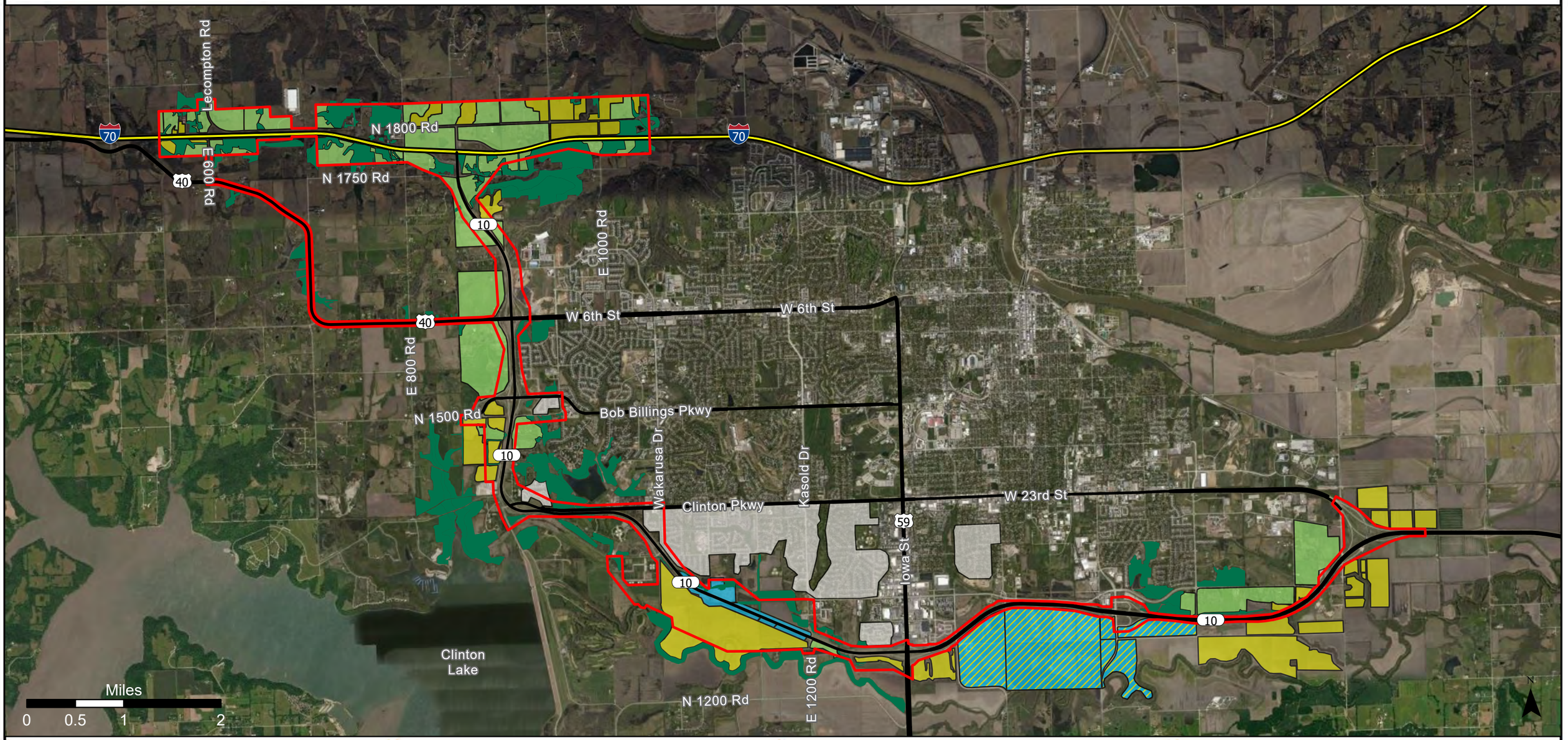
Notable Visual Resources

Exhibit 3-15



SEIS Study Area
Cultivated Cropland
Floodplain Wetland
Residential Area
Rural Landscape/Rolling Grassland
Baker Wetlands
Woodland Areas

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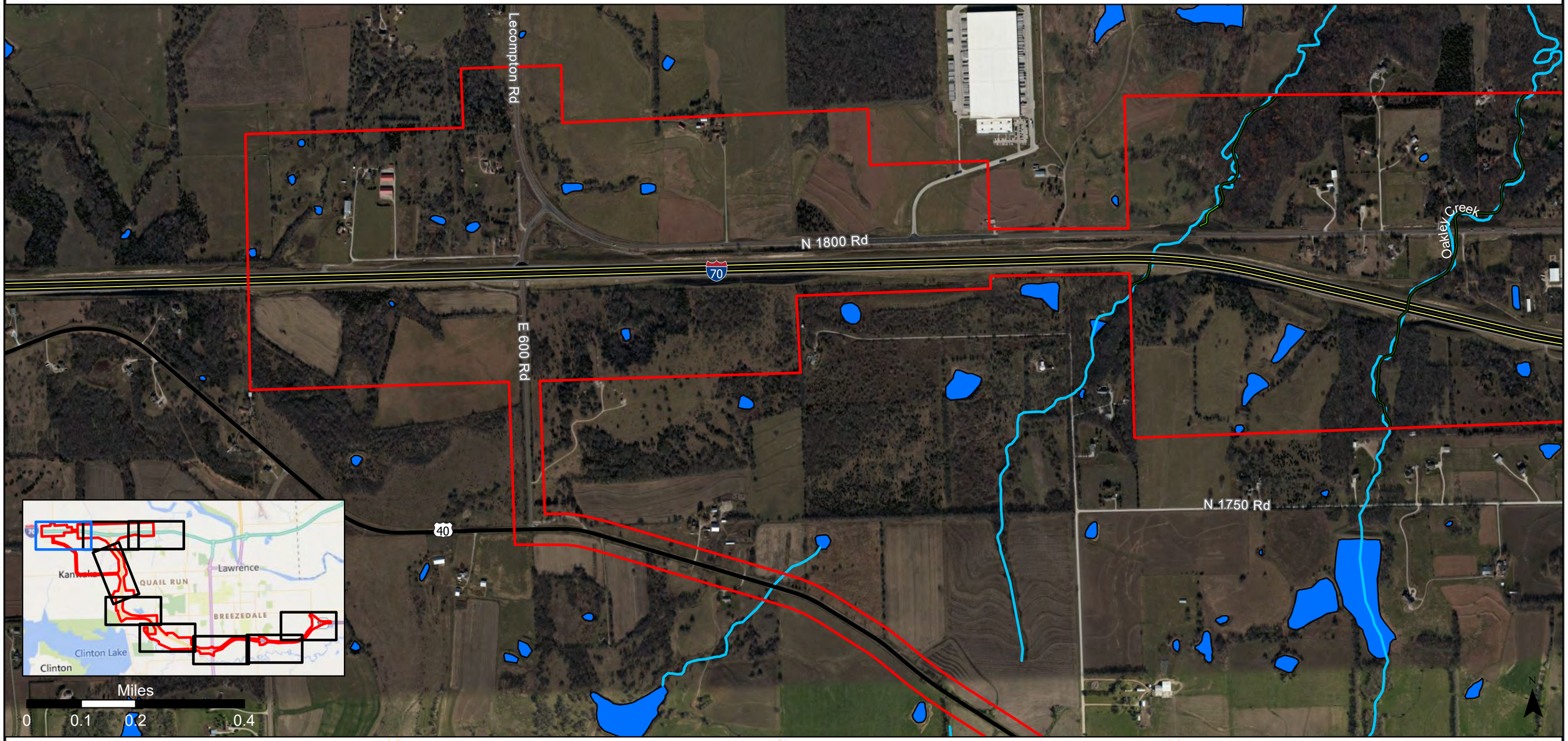
Water Resources

Exhibit 3-16



- SEIS Study Area
- 2015 Field Verified 40-50% Emergent Wetland
- 2015 Field Verified Emergent Wetland
- NWI Emergent Wetland
- NWI Forested/Shrub Wetland
- Baker Wetlands
- Lake
- Pond
- Streams

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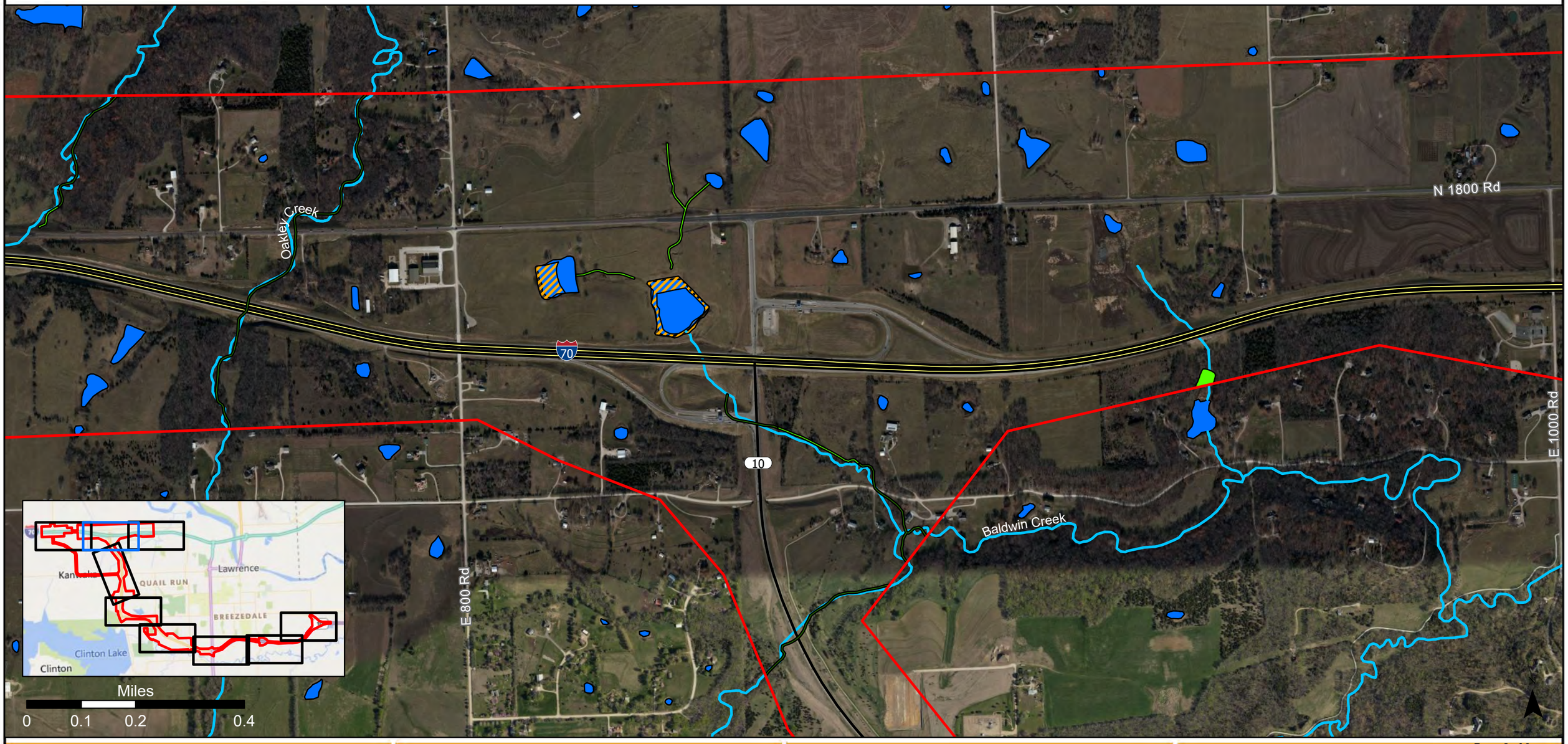

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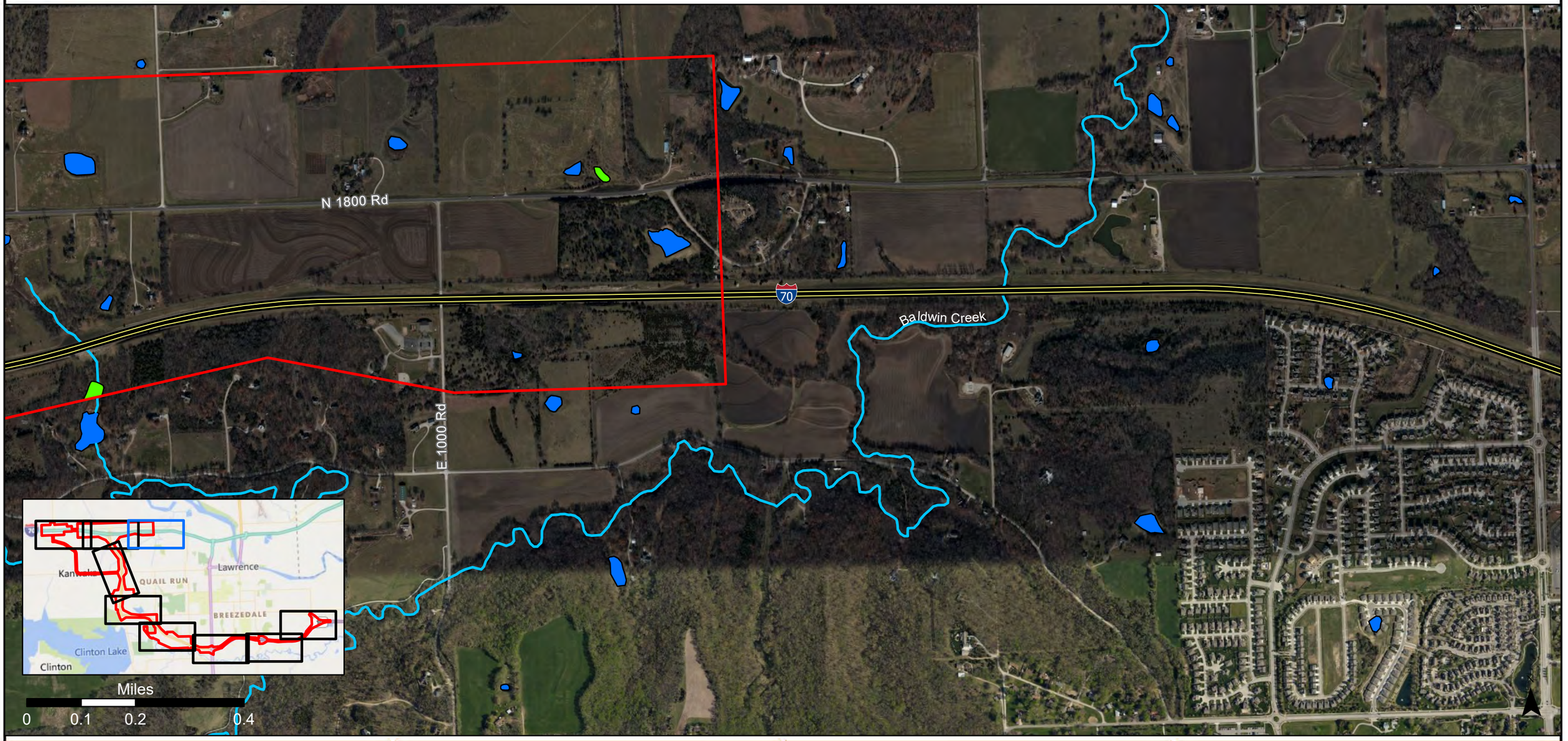

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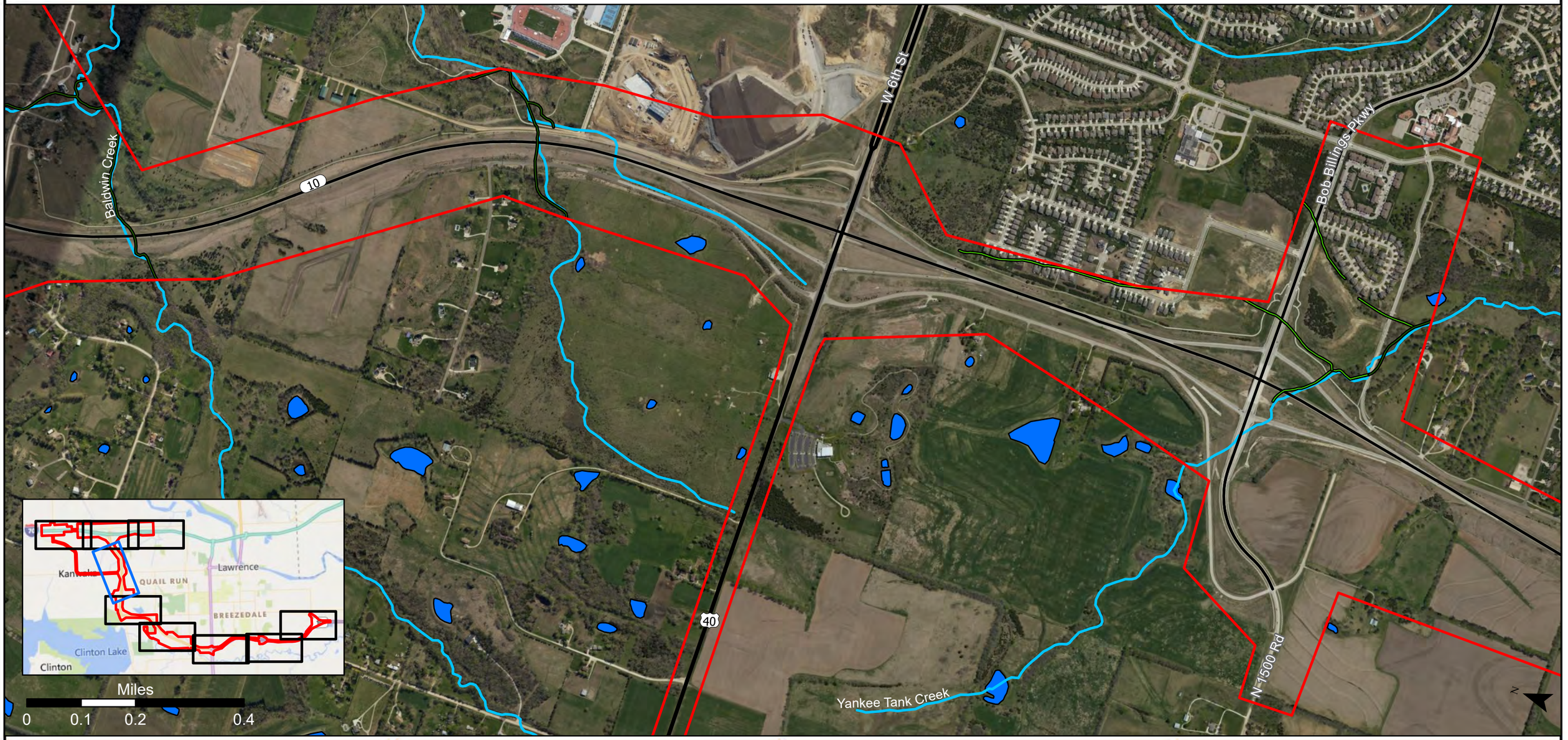

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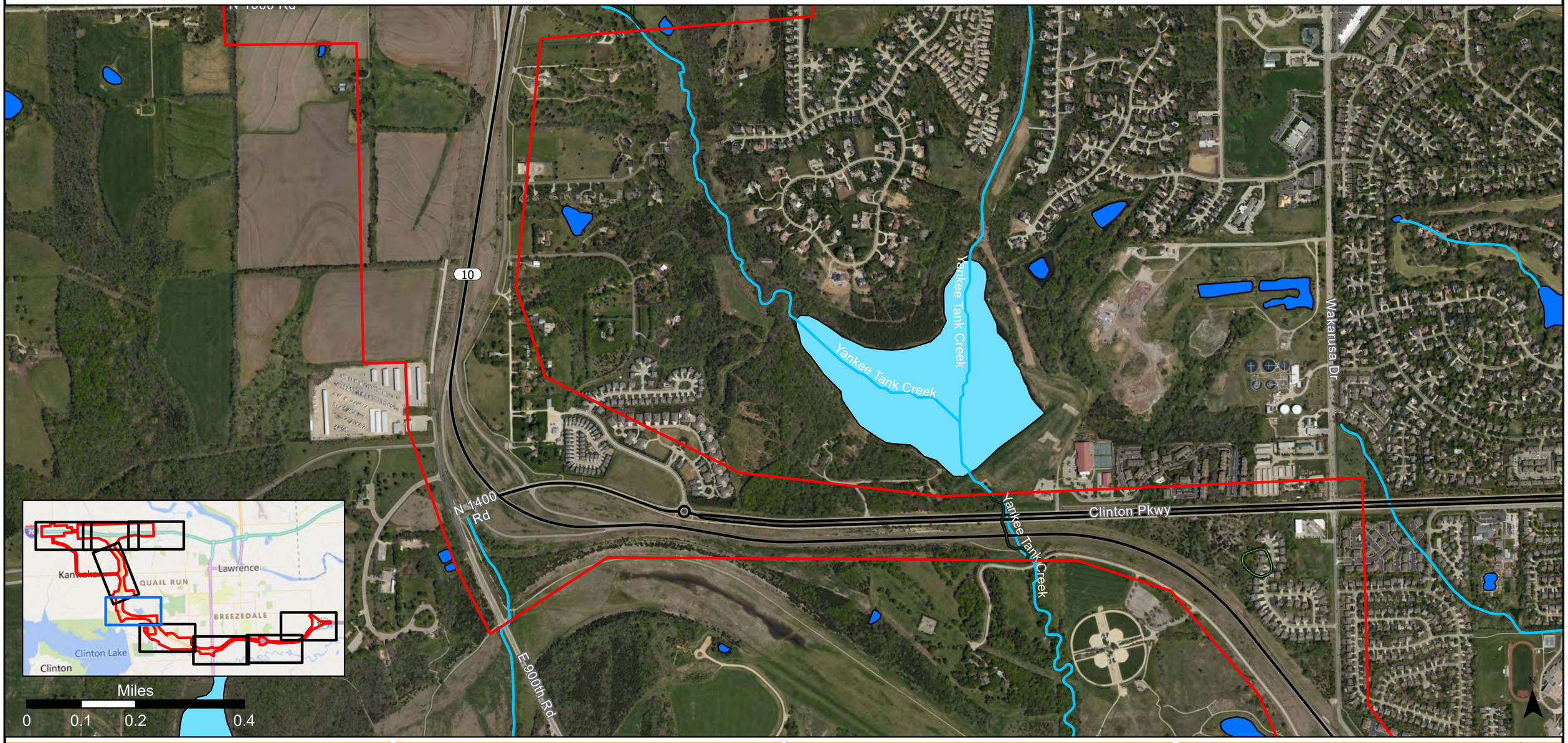

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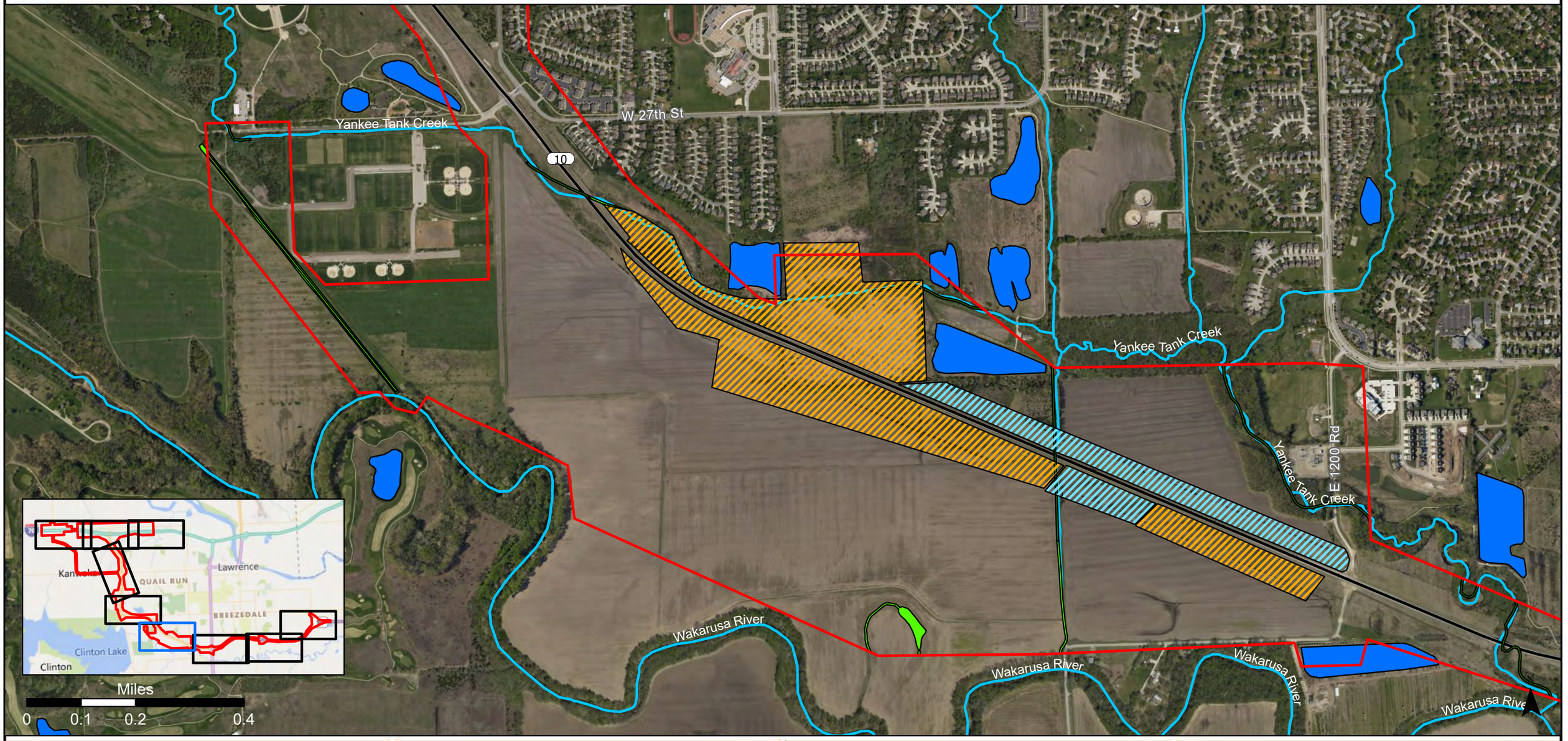

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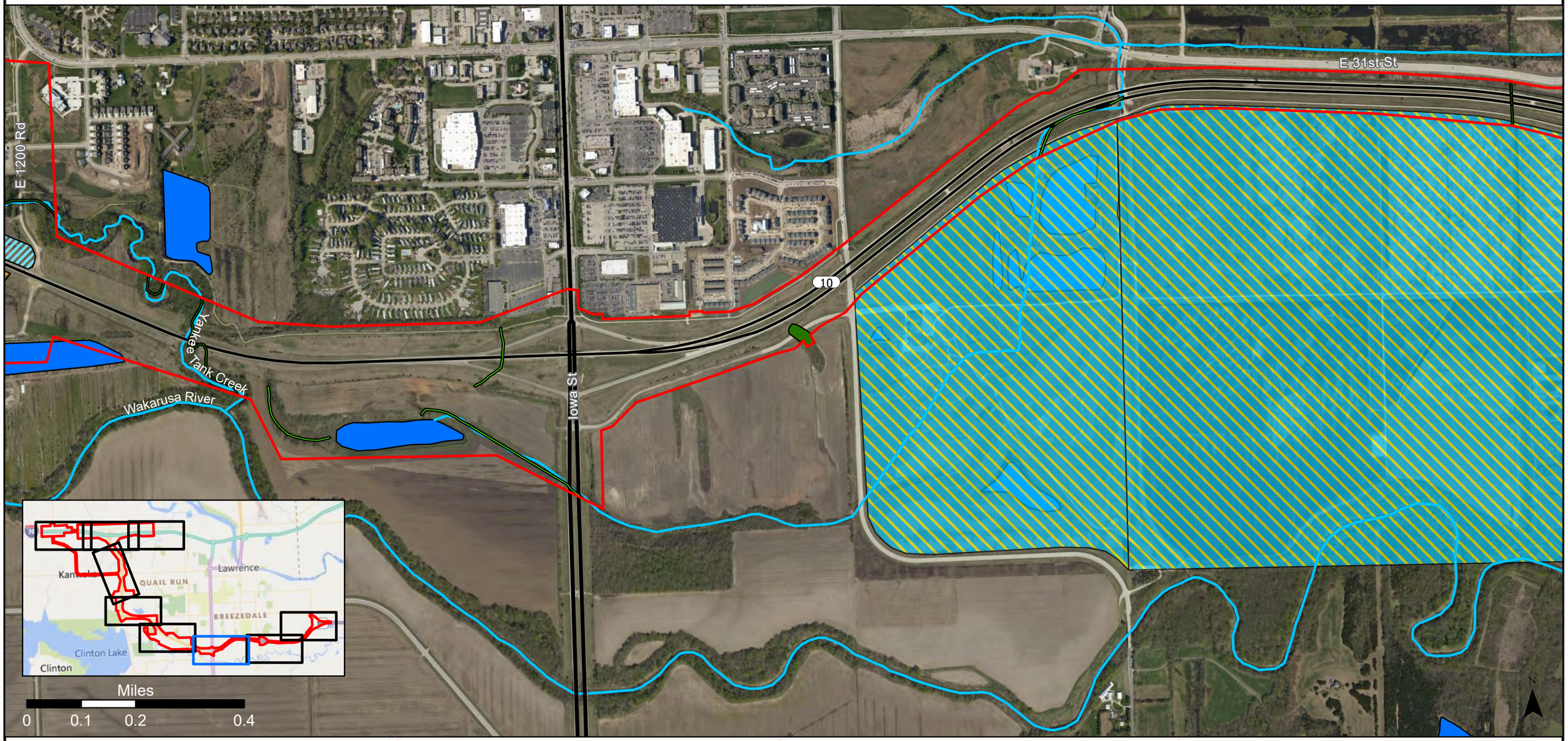

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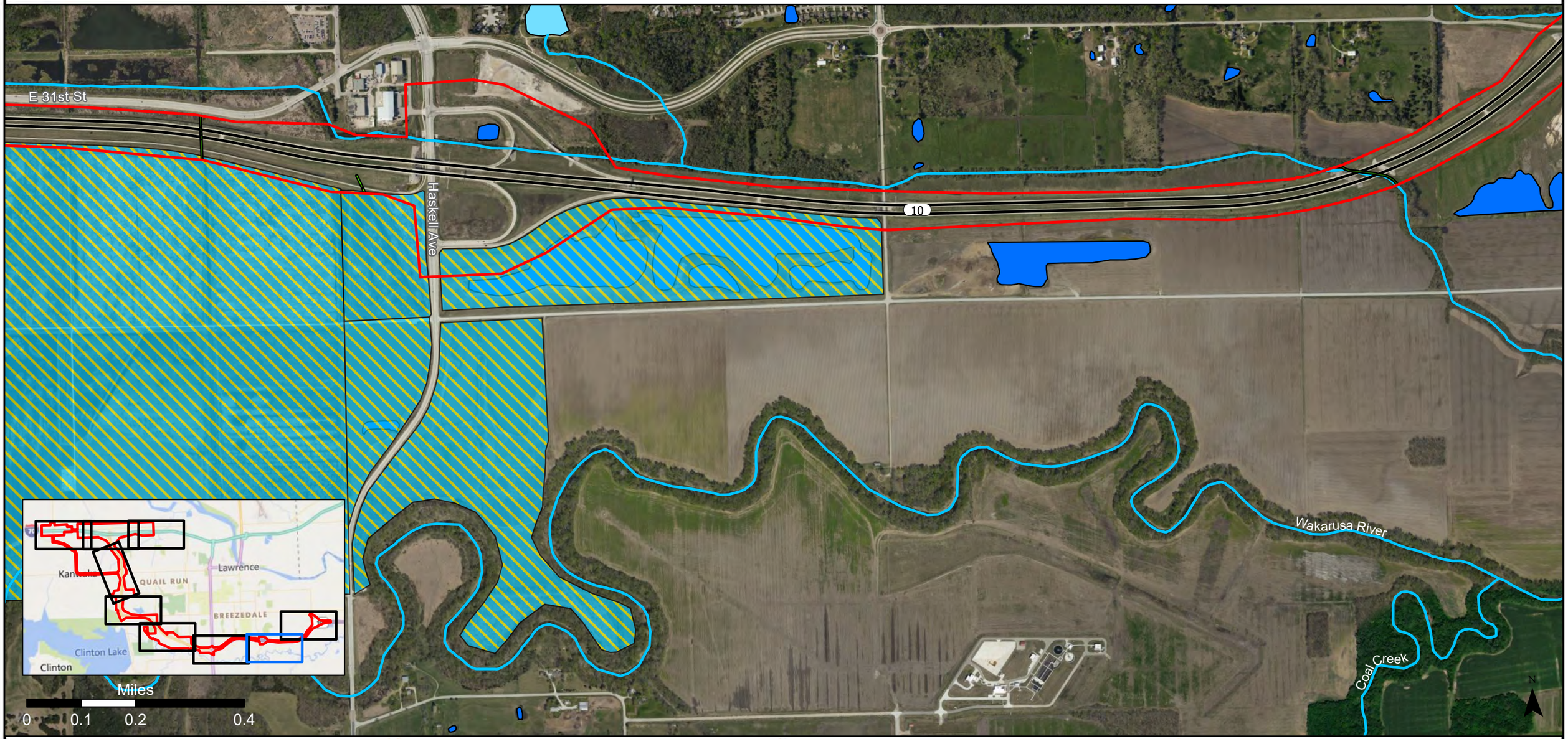

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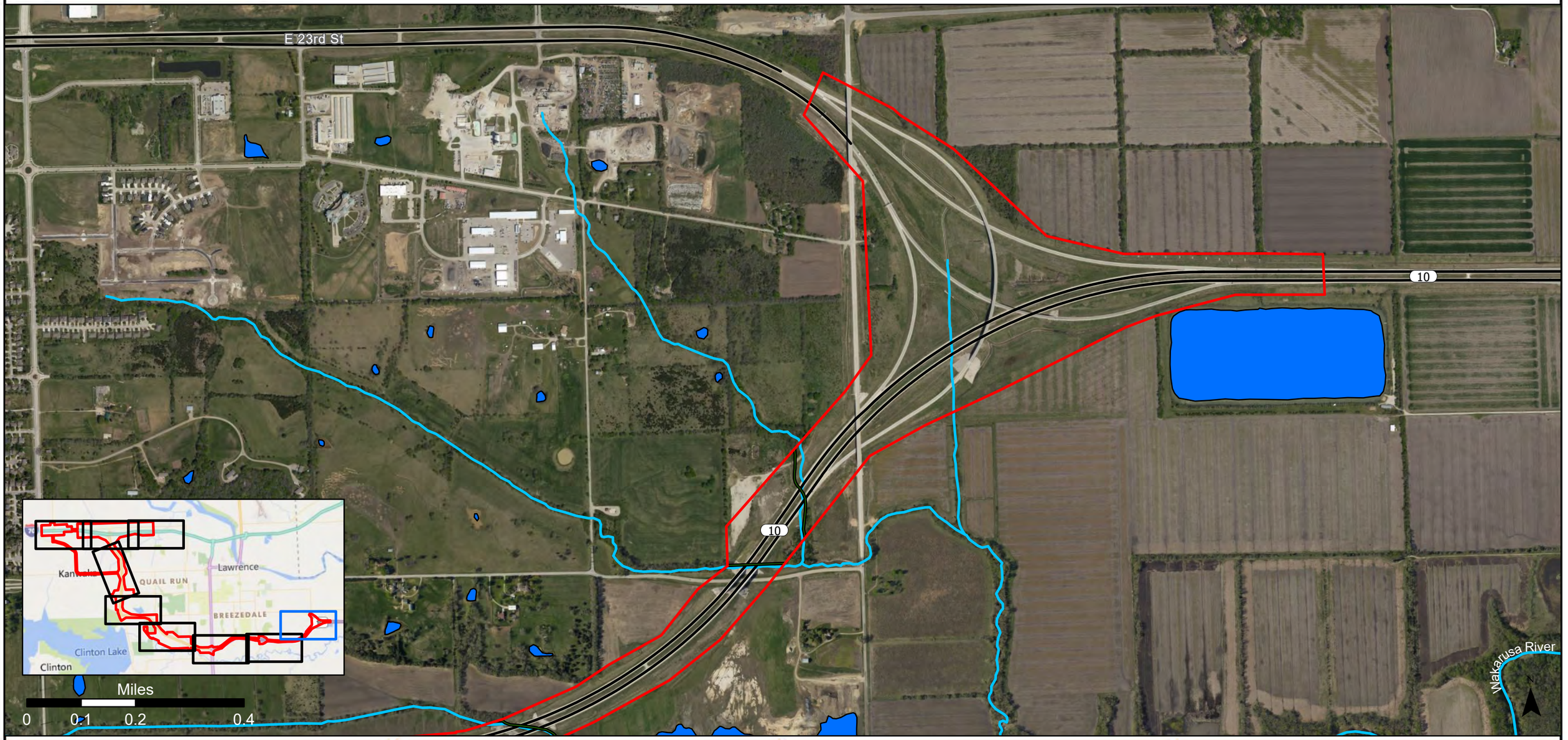

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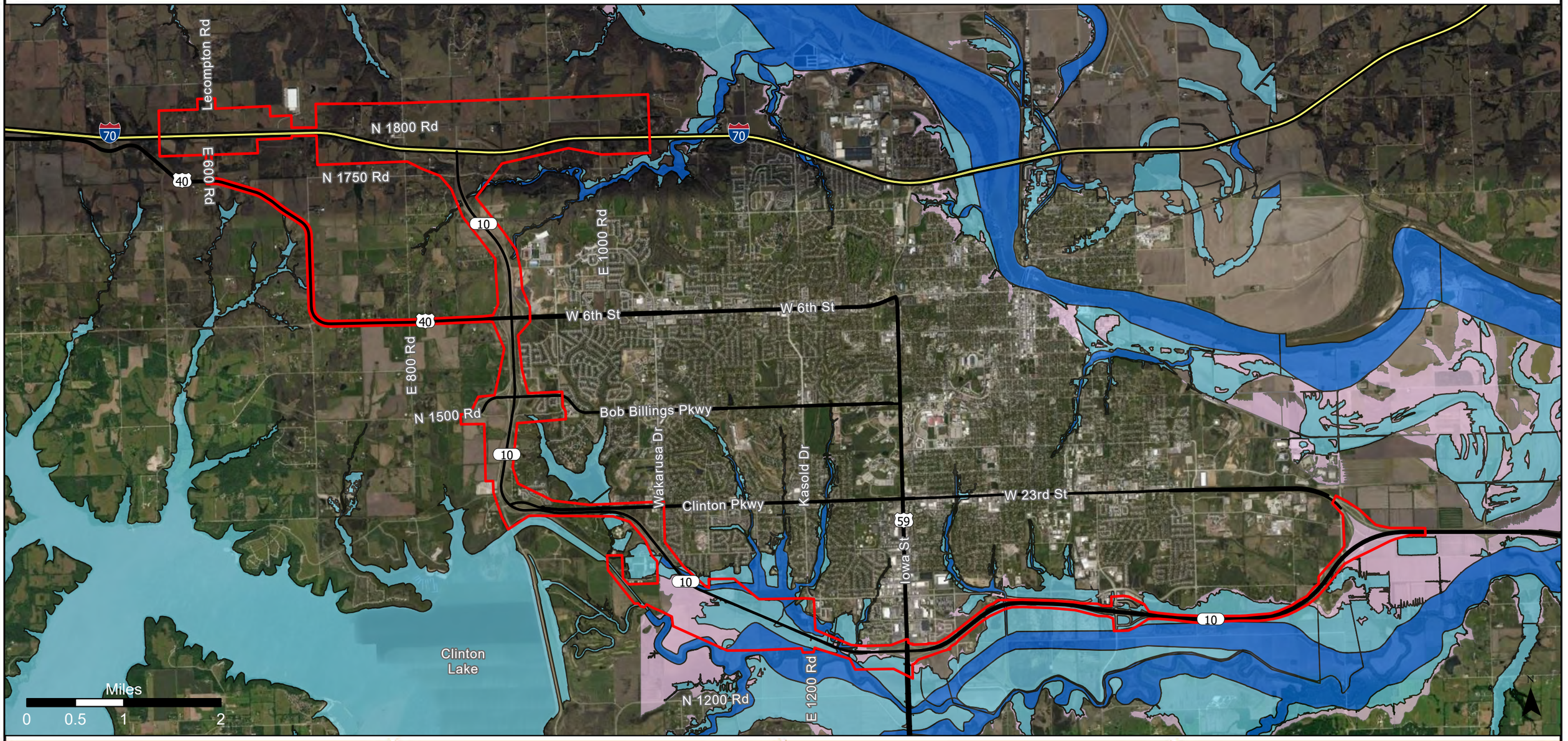
FEMA Floodplain

Exhibit 3-17



SEIS Study Area
Floodway
100-Year Floodplain
500-Year Floodplain

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