Transportation System Plan

Existing Transportation Profile

Lexington's current transportation system allows for a variety of modes and vehicular types, including automobiles, bicycles, air service, railroad and public transit. The following section offers a more detailed description of Lexington's existing transportation system.

Primary Highways

There are currently four major highways in the study area. These four primary highways allow for higher traffic volumes and aim to increase mobility in and around the Lexington Area.

Interstate 80: I-80 is the only interstate highway in the study area. It runs east-west and abuts Lexington on its southern border. I-80 connects to the local roadway network via its intersection with north-south route U.S. 283.

U.S. 30: Locally known as Pacific Street, U.S. 30 runs east-west through Lexington bisecting the study area into two smaller regions, north and south. Union Pacific Railroad runs parallel to the highway and limits access from U.S. 30 to the southern part of Lexington, with the exception of two at-grade crossings bordering the east and west edges of the study area. However, U.S. 30 does serve as a primary route to the northern part of the Lexington Area.

U.S. 283: Locally known as Plum Creek Parkway, U.S. 283 is the principal route between the City of Lexington and I-80. In addition, it serves as one of two main access points connecting the north and south portions of the study area with an above-grade crossing over U.S 30 and the Union Pacific Railroad.

NE-21: NE-21 allows highway access into the study area from the north and is discontinued once it intersects U.S. 30. The highway also serves as a main intercity route as it provides accessibility to local roads, notably the Adams Street viaduct, that serve both north and south regions of the surrounding Lexington Area.

Major Intercity Routes

There are several major routes that permit traffic flow throughout Lexington by distributing traffic to smaller roads while also connecting to the larger roadways mentioned above (e.g., I-80).

There are five north-south routes and three east-west routes in the Lexington Area that are considered major intercity routes:

North-South

Adams Street: Adams Street is one of two primary links connecting north and south Lexington. Adams Street turns into NE-21 north of U.S. 30 and serves as a major passageway in and out of Lexington.

Jackson Street: Jackson Street is the second link which connects the north and south regions of Lexington. U.S. 283 turns into Jackson Street just north of U.S 30 and is a major distributer of I-80 traffic into the City of Lexington.

Taft Street: Taft Street runs along the eastern edge of Lexington's city limit and collects inbound traffic from U.S. 30 and distributes such traffic to smaller, local roads.

Erie Street: Erie Street collects traffic from U.S. 30 and allows access to local streets as well as access to the major east-west route, 13th Street, to move traffic throughout Lexington.

Airport Road, like Erie Street, collects traffic from U.S. 30 and allows access to local streets. While currently on the edge of the city, Airport Road is gaining relevance as residential and recreation amenities are expanding in the northwest.

East-West

Prospect Road. Prospect Road sits approximately halfway between I-80 and U.S. 30. It serves Adams Street which allows access across U.S. 30 into the center of Lexington.

Cattlemens Drive. Cattlemens Drive collects traffic from U.S. 283 (and subsequently I-80), and primarily serves Adams Street which, as previously mentioned, allows access to local roads in the northern and southern areas of Lexington.

13th Street. 13th Street serves as a major route for intercity traffic. It collects and distributes traffic to and from every major north-south route explained above, allowing traffic to move east-west throughout the study area. The airport, hospital, and several schools and parks abut 13th Street, or are within a block.

Federal Functional Classifications

Functional classification is the process by which streets and highways are grouped into classes or systems, according to the character of service they are intended to provide. The brief explanations of the federal functional classifications and the corresponding map, Figure 56, which pertain to Lexington's current classifications:

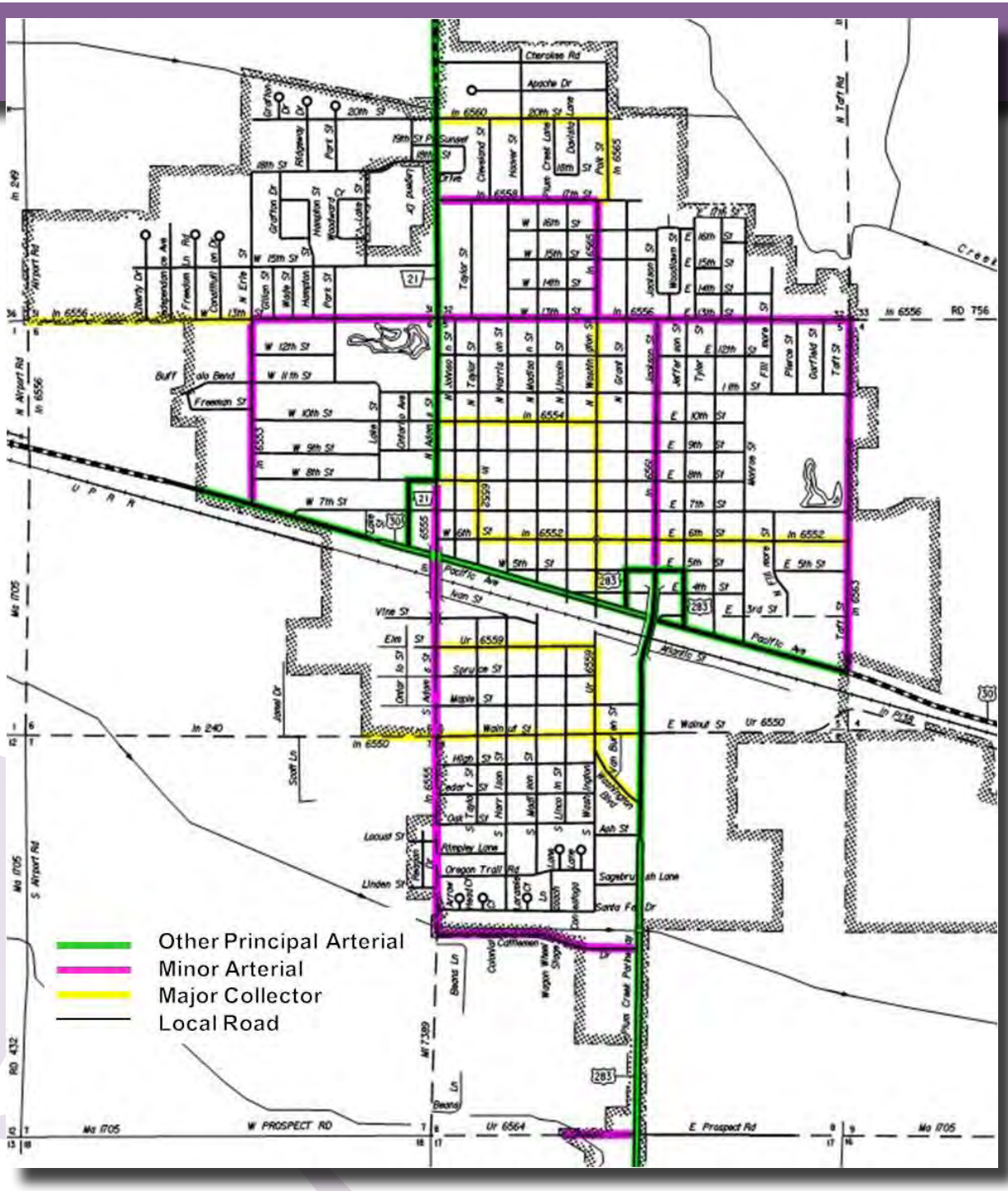

Figure 56: Roadways within the study and the existing federal functional classification

Interstate (e.g., I-80): A divided, limited access facility with no direct land access and no at-grade crossings or intersections. Interstates are intended to provide the highest degree of mobility serving higher traffic volumes and longer trip lengths.

Other Principal Arterial (e.g., U.S. 30): Permit traffic flow through urban areas and between major destinations. Principal arterials carry a high proportion of the total urban travel, since movement and not necessarily access is the primary function.

Minor Arterial (e.g., Adams Street, Cattlemens Drive): Collect and distribute traffic from principal arterials and interstates to streets of lower classification, and, in some cases, allow traffic to directly access destinations. Access to land use activities is generally permitted, but is oftentimes consolidated, shared, or limited to larger-scale users.

Major Collector (e.g., 6th Street, Washington Street): Provide for land access and traffic circulation within and between residential neighborhoods and commercial and industry areas, as well as distribute traffic movements from these areas to arterial streets. Collectors do not typically accommodate long through trips and are not continuous for long distances.

Local Road: Offer the lowest level of mobility and highest level of local property access. Local streets typically make up the largest percentage of street mileage and provide direct access to adjacent land uses.

Traffic Volumes

Average daily traffic (ADT) volumes in the study area collected for existing conditions in 2009 by the Nebraska Department of Roads are shown in Figure 57.

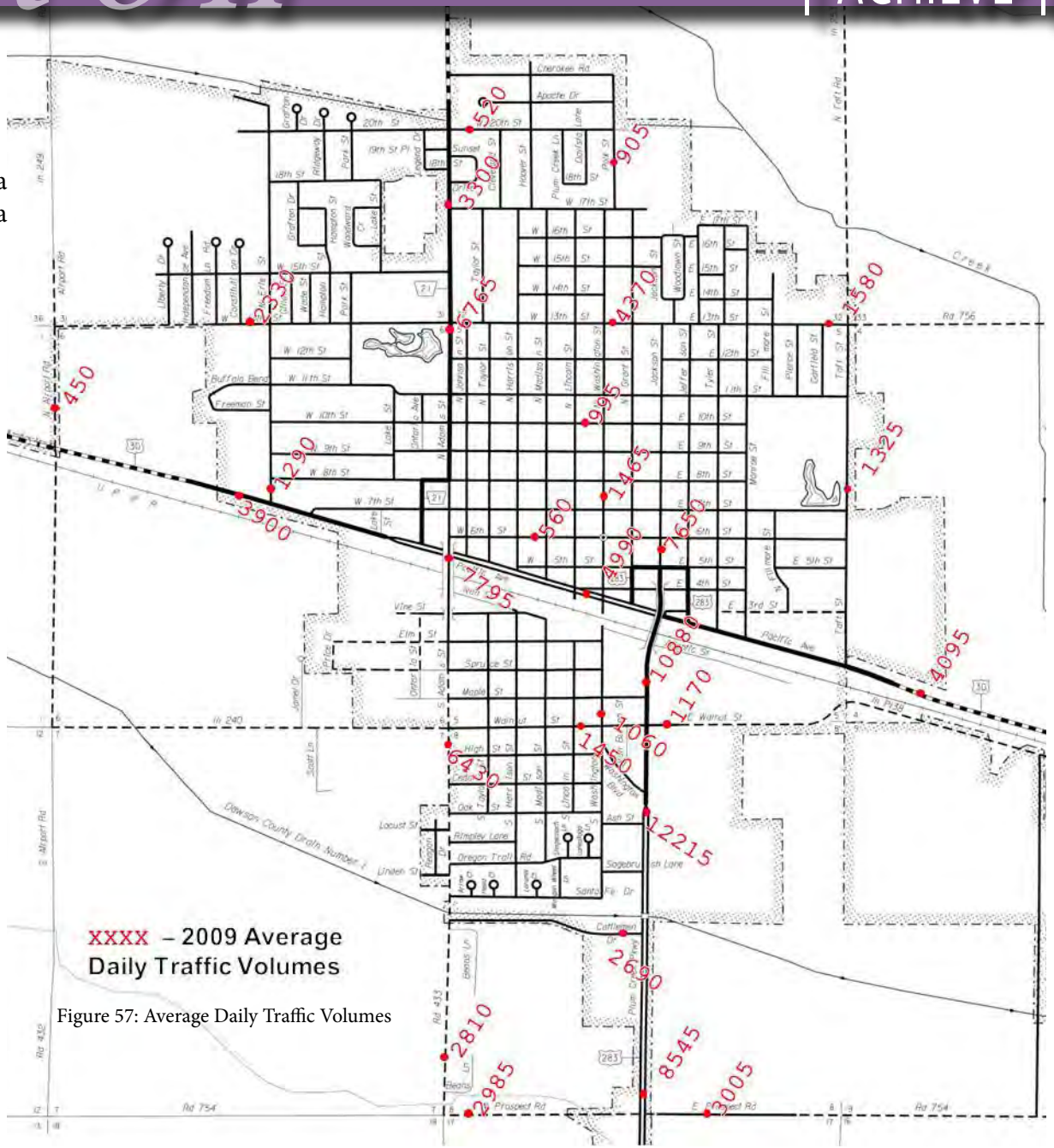

Figure 57: Average Daily Traffic Volumes

Major Bridges

There are two major bridges in the Lexington Area, both of which are used to cross over U.S. 30 as well as the Union Pacific Railroad tracks.

The easternmost bridge in Lexington is served by Jackson Street on the north, and U.S. 283 on the south, allowing direct access to and from I-80.

The bridge on the western side of Lexington is located on Adams Street, an arterial road, which turns into NE-21 just north of the bridge.

Bicycle and Pedestrian Facilities

There are a number of bicycle and pedestrian facilities in and around the Lexington Area including sidewalks, on-road bicycle facilities and off-road paths.

Figure 5 shows existing on-road and off-road facilities in the Lexington Area.

On-Road Facilities. On-Road facilities, such as paved shoulders or bicycle lanes exist in certain areas of Lexington in order to provide connectivity to off-road facilities. Altogether there is about one mile of on-road facilities.

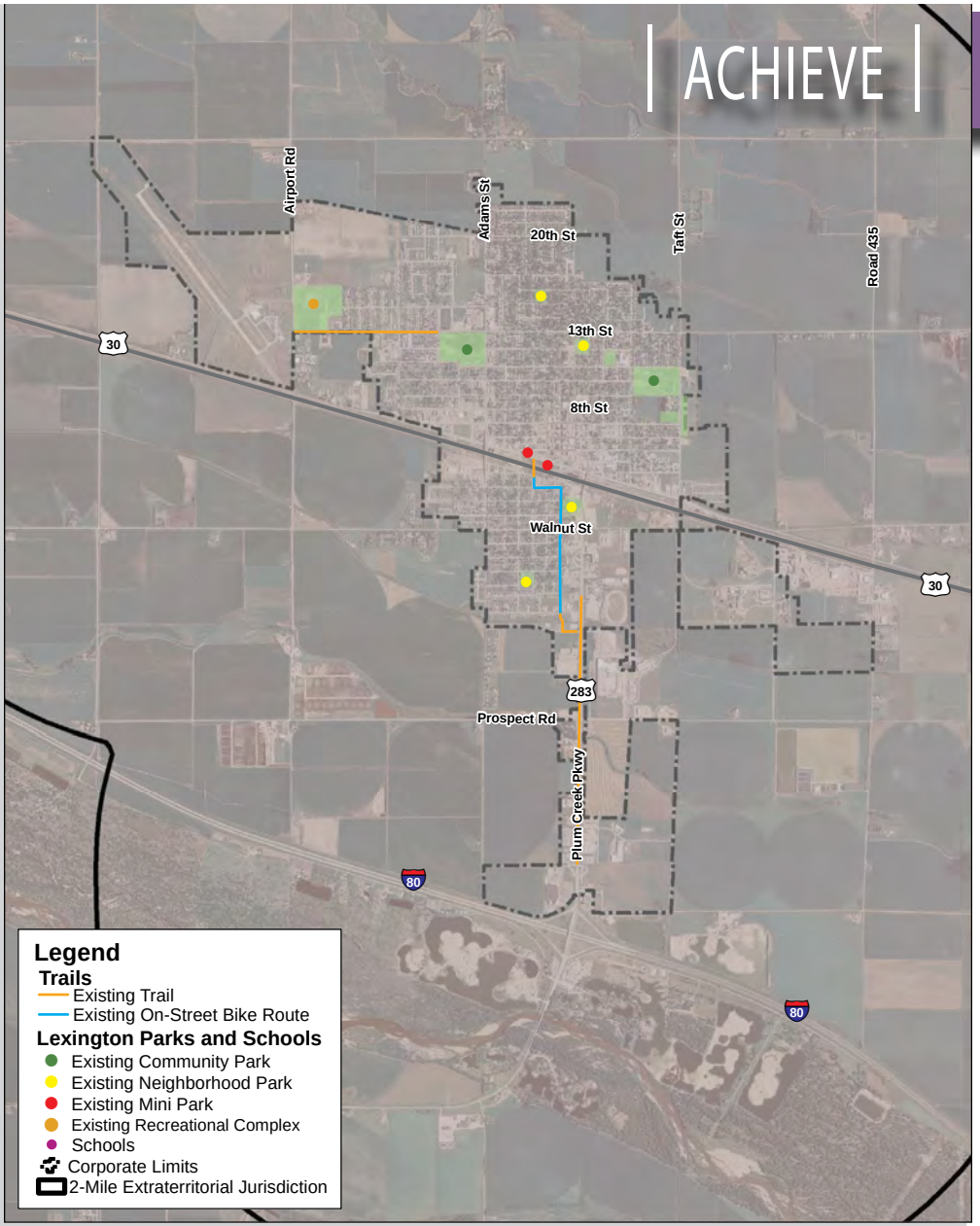

Figure 58: Bicycle and Pedestrian Facilities

City of Lexington

Dawson County, Nebraska

N

0 1,500 3,000 6,000 Feet

Existing Bicycle / Pedestrian System

Created By: JWC
Date: June 2013
Software: ArcGIS 10
File: 100999

Off-Road Facilities. Off-road facilities in Lexington are mostly comprised of shared-use paths for pedestrian and bicycle usage. Currently there are just under three miles of off-road paths in the area, most of which are adjacent to arterial roads. There are two main segments of off-road facilities. The longer of the two runs north-south, starting a quarter mile north of I-80, and stops just south of U.S. 30. The second segment, which is approximately one mile in length, runs east-west (adjacent to 13th street) from Airport Road to Plum Creek Park.

Off-Road

lexington

Air Service

The Lexington Area is currently served by Jim Kelly Field for air-related transportation services. Jim Kelly Field is located at 13th Street and Airport Road and is directly accessible from U.S. 30. Most air-travel to and from Jim Kelly field occurs seasonally from June to August and remains within a 40 mile radius of the Lexington Area.

There are two existing runways at Jim Kelly Field. The larger runway, with dimensions of 5,497 feet long by 100 feet wide, is paved with concrete and is currently in excellent condition. The second runway is 3,200 feet long by 250 feet wide and remains unpaved. Because of limited space, these two runways do not provide room for any future improvements. However, there is space for a third runway (4,600' x 75'), in which future plans indicate construction within the next 20 years. Source: Lexington, Nebraska Airport Layout Plan, 2011.

Railroad

The study area is currently served by a single, major railroad, Union Pacific. The railroad tracks run east-west, adjacent to U.S. 30, bisecting Lexington into two sections, north and south. Currently, more than 100 freight trains run through Lexington daily.

There are two at-grade crossings anchoring the east and west borders of the study area. The at-grade crossing to the east is on County Road 435. The at-grade crossing to the west is on Airport Road. Both crossings allow north-south access across the railroad tracks for vehicular traffic.

Public Transit

Lexington and surrounding areas in Dawson County are served by Reach Your Destination Easily (R.Y.D.E.) Transit. R.Y.D.E. is a public transit system that operates in seven central Nebraska counties. In Dawson County, the R.Y.D.E. system is operated from the Grand Generation Center at 407 East 6th Street in Lexington. R.Y.D.E. offers public transportation to medical appointments, shopping areas, congregate dinners, and social activities in Dawson County Monday through Friday, 8 AM to 5 PM.

"The Lex-Plan 2013"

FUTURE TRANSPORTATION PLAN

Future Transportation Plan

Future Travel Changes

Demands on the future transportation system are forecast based on the future development patterns identified in the Comprehensive Plan's land use planning elements. Transportation systems not only move people and goods, but they also shape the natural and built environment, guide how communities develop, and influence quality of life. The planning process recognizes that transportation and land use development influence one another. The type, location and intensity of land development directly influences travel across a study area. Conversely, the type, location, and level of transportation system access and mobility impacts land use development patterns. Thus, the transportation element of this plan is intrinsically connected to the land development portions of the Lexington Comprehensive Plan.

The Lexington Travel Model

As a part of the Lexington Comprehensive Plan and Transportation Plan, the Lexington travel demand model has been updated. The travel demand model is a tool that is used to evaluate how people travel. The model, a computer application, estimates travel based on two main sets of input data:

1) **Lexington land uses, specifically where people in live, work, go to school and shop.**

2) **Lexington transportation infrastructure, specifically the street system.**

The model is a set of parameters and equations that are adjusted to capture the relationships between these two input data sets in Lexington. When applied, the model evaluates the interaction of the provided land use and street system information. The model can be used to predict answers to these questions:

How does travel change under different land use scenarios?
For instance, we have tested the future Lexington Comprehensive Plan land development scenario and forecast how traffic volumes change across the community.

How does travel change when different improvements or adjustments are made to the roadway network?
An example would be evaluating how traffic volumes change if a new street is added, or if an existing, congested street is widened.

Automobile travel is the primary mode of travel in Lexington. The travel demand model was set up to estimate motor vehicle travel on the roadway network. The model does not estimate bicycle, pedestrian or transit usage.

Applying the model to estimate future travel first requires that the model is validated to current, observed travel conditions. Model validation was completed by adjusting the model parameters so that it provided travel estimates that reasonably reflected observed traffic levels/patterns.

Future Travel Patterns

The Lexington Travel Model was applied using the 2035 land development scenario from the Comprehensive Plan, in combination with the "existing-plus-committed" (E+C) Lexington roadway network. The 2035 E+C roadway network assumes the current street / roadway system is not improved beyond those projects programmed in the current One & Six Year Street Improvement Plan. The Street Improvement Plan is documented in the "Future Street and Roadway System" section of this Chapter.

The amount of growth anticipated for the Lexington Area by 2035 is:

An increase of 1,590 households or 40% increase between 2010 and 2035.

An increase of 1,758 jobs or 26.1% increase between 2010 and 2035.

The anticipated changes in households and employment between 2010 and 2035 are shown in Figures 60 and 61. The new housing and employment growth is illustrated by Traffic Analysis Zone (**TAZ**) boundaries, the basic geography unit of the travel demand model.

Figure 62 documents the existing and forecast 2035 E+C network trip volumes for Lexington. The 2035 traffic forecasts were developed by the travel model, based on the 2035 household and employment levels documented above and the E+C roadway network. For the Lexington area as a whole, the following travel changes are forecast:

- **Trip Growth:** The number daily number of trips that are made across the Lexington area (called "trip generation") is projected to increase by 36% between 2010 and 2035.

- **Vehicle-Miles Traveled (VMT) Growth:** VMT is the total length of all trips made in Lexington, and is a simple calculation of the number of area trips multiplied by their trip length. VMT is projected to increase by 41% between 2010 and 2035. This increase in VMT is related to the average trip length.

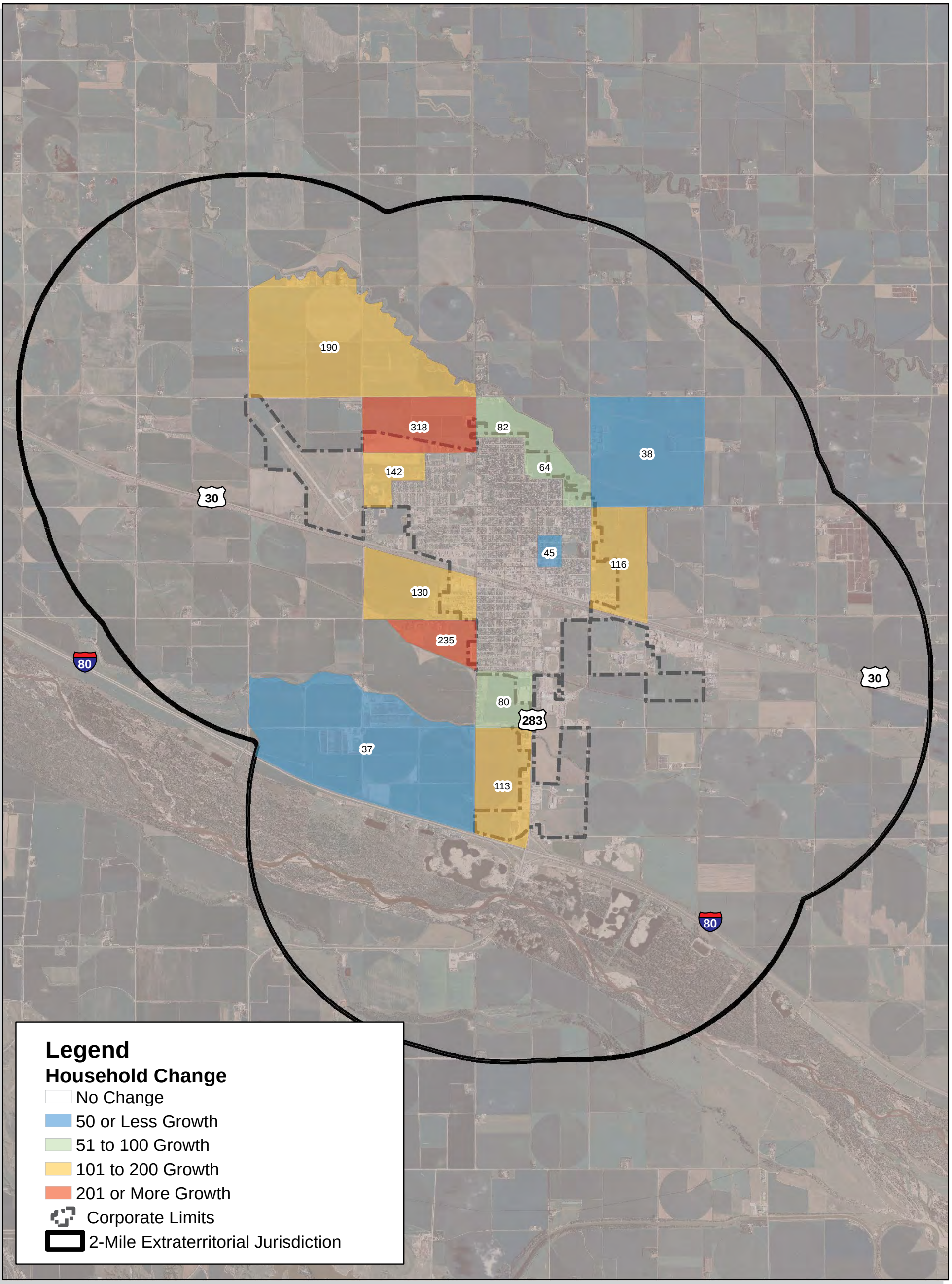

Figure 59: Future Housing

City of Lexington

Dawson County, Nebraska

2010 to 2035 Household Change

N

0 2,500 5,000 10,000 Feet

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Date: June 2013
Software: ArcGIS 10
File: 100999

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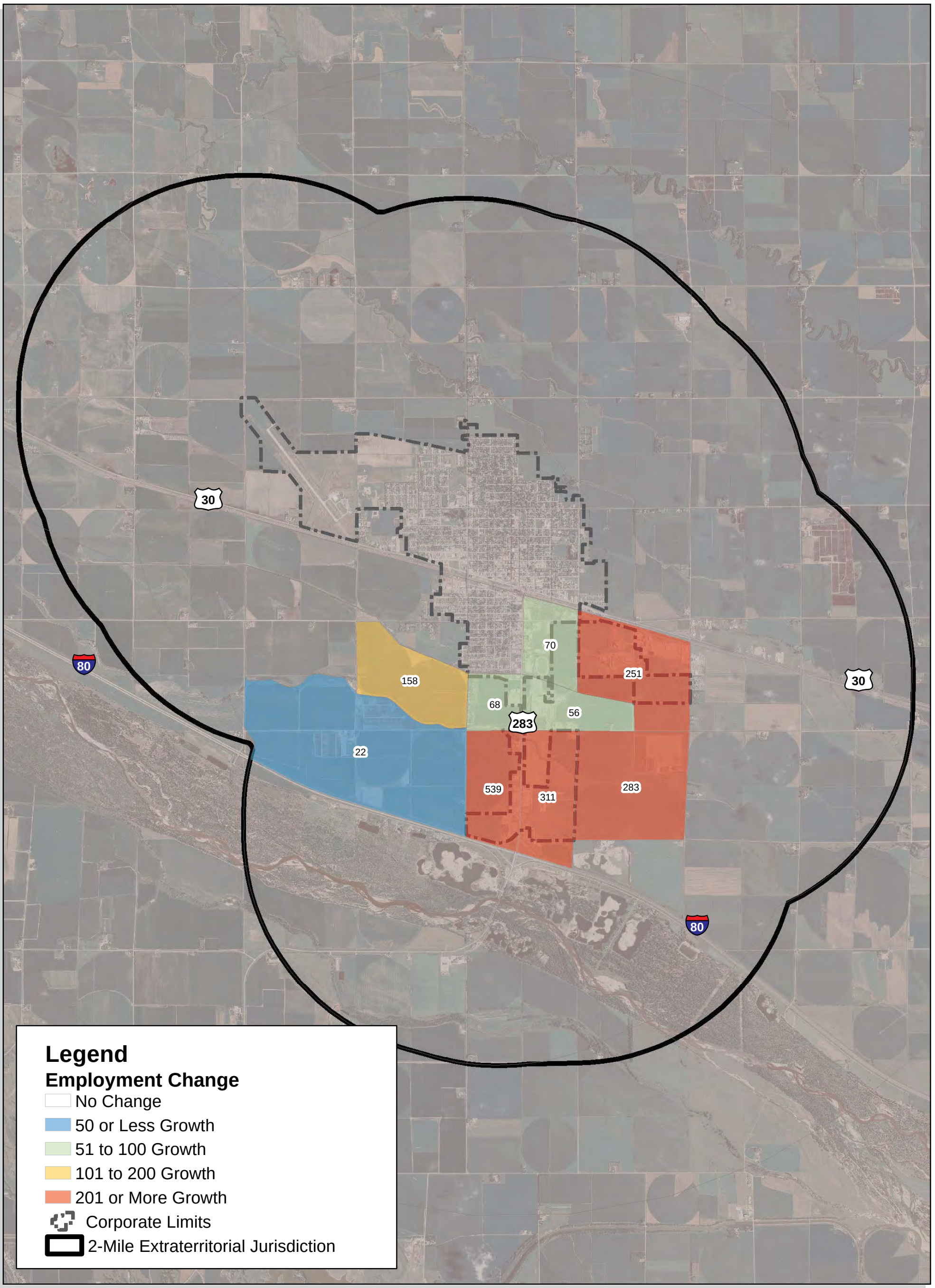

Figure 60: Job Growth

City of Lexington
Dawson County, Nebraska

2010 to 2035 Employment Change

N

0 2,500 5,000 10,000 Feet

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Date: June 2013
Software: ArcGIS 10
File: 100999

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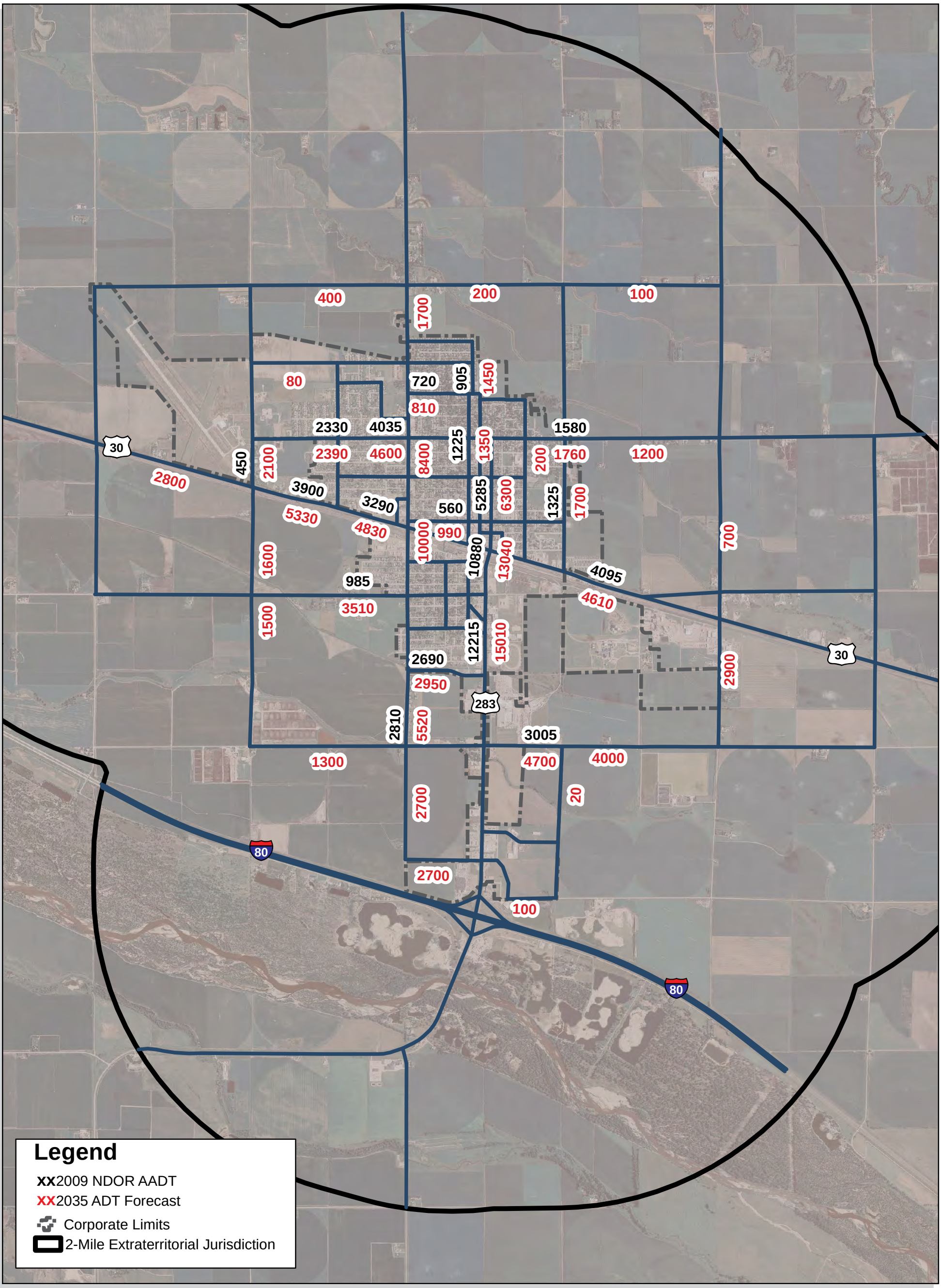


Figure 61: Existing and Future Volumes

City of Lexington
Dawson County, Nebraska

2009 to 2035 Daily Traffic Levels

N

0 1,800 3,600 7,200 Feet

Created By: JWC
Date: June 2013
Software: ArcGIS 10
File: 100999

Future Street System

Roadway System Issues

There are limited traffic operations issues in Lexington, from the perspective of excessive travel delays or congestion. There are, however, opportunities to improve connectivity or address stakeholder-identified transportation deficiencies through the transportation plan. Those issues raised by Stakeholders for the roadway system include:

Identification of a truck route for regional trucking traffic into / through Lexington

Truck routes should be identified for both the existing and future system. The near-term truck route should be an appropriate route based on the existing street and roadway system. A future long-term truck route should also be identified, to take advantage of planned improvements to the Lexington street network.

Grade-Separated Crossings of the Union Pacific Mainline Railroad Tracks

Lexington has grown on both sides of the UP mainline tracks. There are approximately 20,000 daily motor vehicle trips that cross the railroad in the study area. The main crossings through the heart of Lexington are grade separated structures over the tracks. A third roadway-rail grade separation, a County Road 435 bridge over the railroad tracks, is included in the current City of Lexington street improvement plan and is expected to be constructed in the next few years.

Implementation of a Coordinated Wayfinding Signage System

There was interest from stakeholders in providing a coordinated wayfinding system providing signage for the major civic uses and visitor attractions in the Lexington area.

Traffic Safety on Streets around Schools

Stakeholders have identified issues with traffic safety and signage on streets around schools. Safe Routes to School (SRTS) has been a traditional funding source to improve safety for children walking / biking to school, with $1 million in annual funding for SRTS projects and programs in Nebraska. In 2007, Lexington implemented a SRTS program called the Street and Bicycle Safety Program that provided student and parent education and training of volunteer crossing guards around the four elementary schools. The program was run by the Lexington Community Fitness Initiative (CFI). The future of SRTS program in Nebraska is undecided under the recent MAP-21 Federal Transportation funding legislation. Under MAP-21, funding for SRTS eligible programs have been merged into a flexible funding program called "Transportation Alternatives." SRTS projects will compete against other projects for funding. Thus, although possible, funding sources for safety improvements around schools are slightly more uncertain.

Downtown Brick Streets

Lexington has several historical brick streets in the downtown area. Public opinion is mixed on the streets, with some motorists complaining about the uneven and noisy surface. Other stakeholders have pointed out that the brick streets provide effective traffic calming, forcing vehicles to drive at a slower speed improving vehicular and pedestrian safety, while adding character to the downtown area.

Lexington Street Improvement Plan

The City of Lexington maintains a *One & Six Year Street Improvement Plan* that is updated on an annual basis. The Street Improvement Plan represents the programmed street and trail projects that have identified funding sources and are anticipated to be constructed / implemented; the list is broken down into a 1-year list and a 6-year list. The draft 2013-2018 Lexington Street Improvement Plan includes several projects that maintain, reconstruct, or add new infrastructure to the street and roadway system.

The proposed projects programmed in the 2013 ***one-year plan*** include:

Paving improvements to the following street segments:

Heartland Road from Frontier Road to Heartland Drive.
Jackson Street from 8th Street to 13th Street.
Airport Road north to the corporate limits.
Jeffery Road south of Prospect Road.

Reconstruction of all or part of the following street segments:

6th Street and Jackson Street reconstructions, including new center left turn lanes and will allow for future 6th/Jackson traffic signal.
13th Street from Adams Street to Park St (includes Lighting Improvements).
Grant Street from 7th Street to 8th Street to improve sight distance and storm sewer.

New infrastructure projects include:

The grade separation of County Road 435, including a new bridge over the UP Railroad and US Highway 30.
This project is listed in two phases; it is currently undergoing design and environmental documentation.

Lexington Street Improvement Plan

The proposed projects programmed in the 2013 ***six-year plan*** include:

Paving improvements to the following street segments:

Walnut Street near US Highway 283 to ½ mile east.
Ontario Street from 9th Street to 10th Street.
6th Street from Lincoln Street to Taylor Street.
South Adams Street from Prospect Street to Frontier Street.
CED Addition residential street paving (includes sewer improvements)

Reconstruction of all or part of the following street segments:

Taft Street from 6th Street to 13th Street.
Taylor Street storm sewers from US Highway 30 to 8th Street.
20th Street and Polk Street, including new lighting.
Monroe Street from 10th Street to 13th Street.

New infrastructure projects include:

The extension of 18th Street from Adams Street to Lake Street.
The extension of Frontier Road from Plum Creek Parkway to Adams Street.
The extension of 20th Street from Erie Street to Airport Road.
The extension of Independence Street from north of 15th Street to 20th Street.

Other projects, including:

Bridge replacement over city drainage ditch ½ mile east of US Highway 30 and Taft Street.
Miscellaneous ADA Sidewalk Improvements.
Adams Street Lighting and Box Culvert Improvements.
Erie Street lighting improvements, US Highway 30 to 13th Street.
Miscellaneous Street Panel Replacement Projects.
Various Trail Paving Projects from Trail Master Plan.

Improved Wayfinding Opportunities

Stakeholders have identified the desire for an improved wayfinding signage system to direct travelers to civic and tourist destinations in Lexington. While the Transportation Plan is too broad in scope to provide a detailed Wayfinding Plan for Lexington, it does provide an opportunity to lay out a scope and planning process for a Lexington Wayfinding Plan.

The various elements to the Wayfinding Plan approach could include:

Develop a wayfinding vision, including establishing the goals of the wayfinding system. In general, the wayfinding plan should provide:

A coordinated and comprehensive signage system.

Directions to key destinations from major gateways to Lexington.

Limited signage to key locations, to reinforce the importance of each sign.

Establish and define the destinations that the wayfinding system needs to support. Surveys, interviews with stakeholders, or other methods might be used as the means of establishing the destinations to include in the wayfinding system.

Organize the destinations into a hierarchy or groupings, with different signage classes for each grouping of destinations.

Work with stakeholders to develop a signage typology for Lexington. These varying sign types will relate back to the wayfinding goals, and will include the different functional groupings of signs. An example of a sign typology system is provided in Figure 63.

Document the current Lexington directional signage inventory. This establishes the current directional sign conditions in Lexington, providing a baseline for the types of signage additions / changes that need to be implemented.

Develop a consistent sign branding approach that meets the Lexington wayfinding vision. This includes identifying the appropriate signage graphics, lettering fonts, and directional symbology.

Develop a Wayfinding Implementation Policy that covers:

Sign placement location guidelines.

Regulation of the types of destinations eligible for signage.

Identification of program funding.

Jurisdictional requirements for signage on City, County, State facilities.

Hold a system design workshop, where stakeholders identify the primary gateways into Lexington, and the likely routes by which travelers will access the various destinations. This task will lay the framework for potential signage locations and identify the implementation corridors.

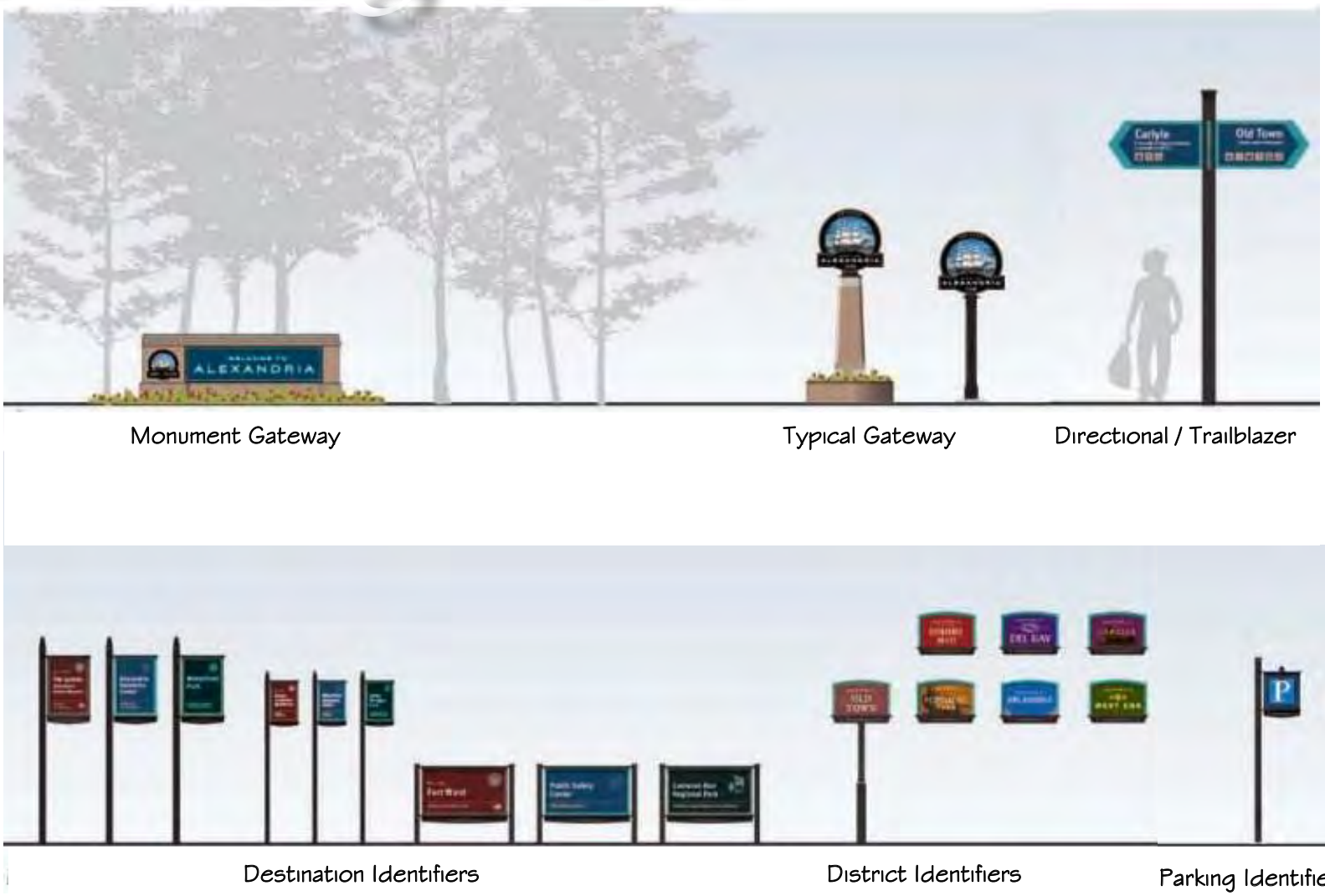
Develop a detailed implementation plan for the wayfinding system. The wayfinding system will include the appropriate locations for sign placement by identifying:

Consistency of existing wayfinding signage. Make recommendations for removal, modification or maintenance of current signage.

Sign placement by corridor. Many variables will affect sign placement, including the presence of other regulatory signs, the presence of obstructions such as trees, street furniture, utilities, etc., and travel speeds in the corridor.

Cost estimates by element.

Funding plan to support implementation.



Source: **City of Alexandria, VA Wayfinding Program Design Guidelines**

Figure 62: Wayfinding Examples

Future Freight System

The efficient movement of freight is an essential component of the Lexington transportation system, as the movement of goods within and through the study area affects several key industries, including manufacturing, retail, and agriculture. The Lexington Transportation Plan addresses Freight by identifying the critical elements of the transportation system that support freight movement, and minimize conflicts between freight movement, quality of life, and other modal systems.

Truck Routes

Lexington stakeholders have identified the need for through truck routes in the city. To be effective, truck routes need to be continuous, direct, and have sufficient pavement and geometrics designed to meet truck travel requirements. Figure 65 identifies the draft truck route plan for Lexington, which provides direct through travel for traffic on US Highway 30 and US Highway 283.

As noted in Figure 65, the truck routes are broken into two phases:

short-term

Short-term routes:

These are routes that can support truck traffic through Lexington with the current street and roadway system.

long-term

Long-term routes:

These are routes that include planned, currently incomplete street and roadway corridors that could support truck travel oriented away from the core of Lexington. One key street and roadway network improvement that is required for the long-term route on the east side of Lexington to be implemented is the County Road 435 Bridge over the UP railroad tracks.

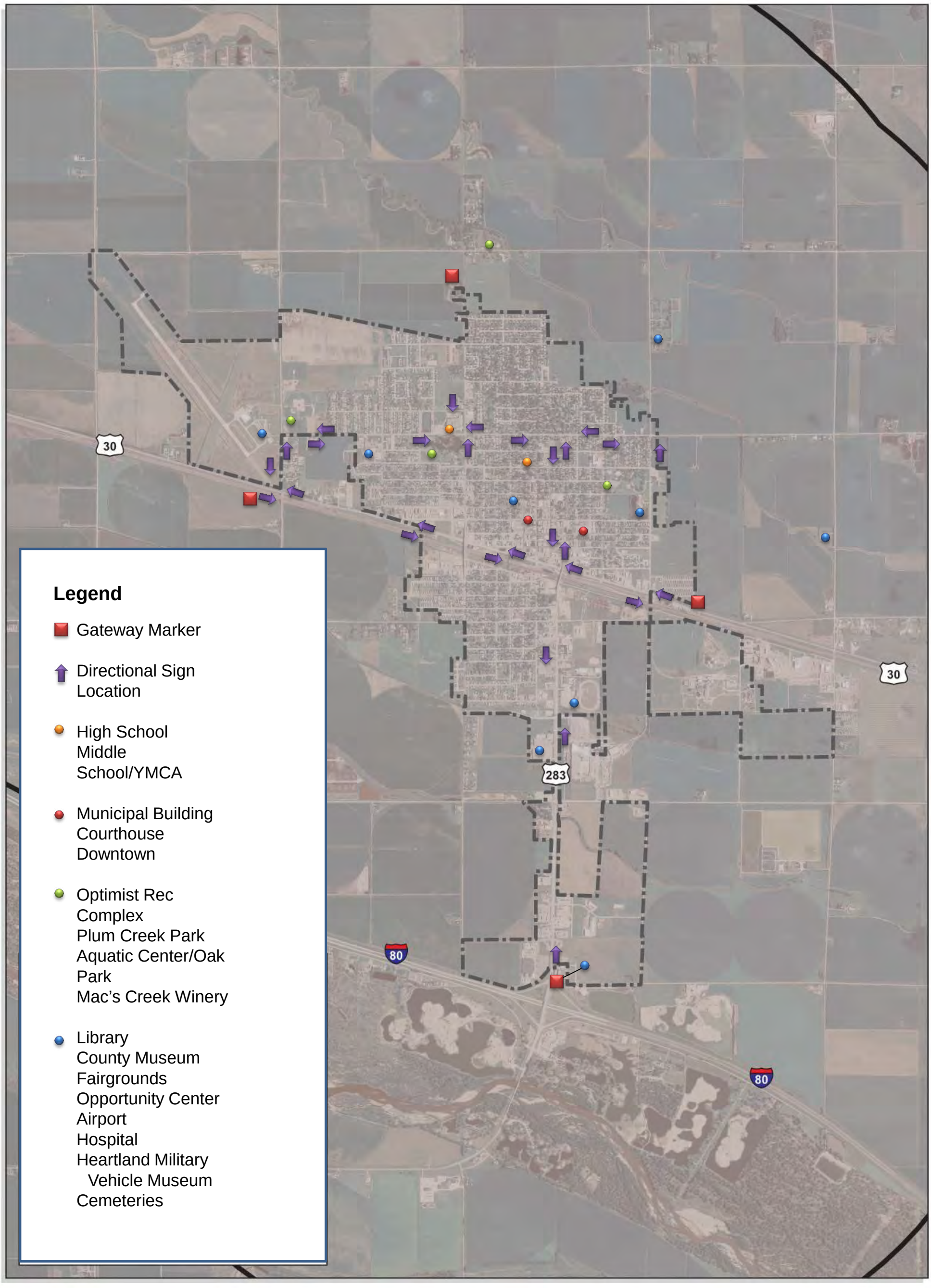


Figure 63: Potential Wayfing Map, Lexington

City of Lexington
Dawson County, Nebraska

Potential Wayfinding Signage System

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0 1,500 3,000 6,000 Feet

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Date: June 2013
Software: ArcGIS 10
File: 100999

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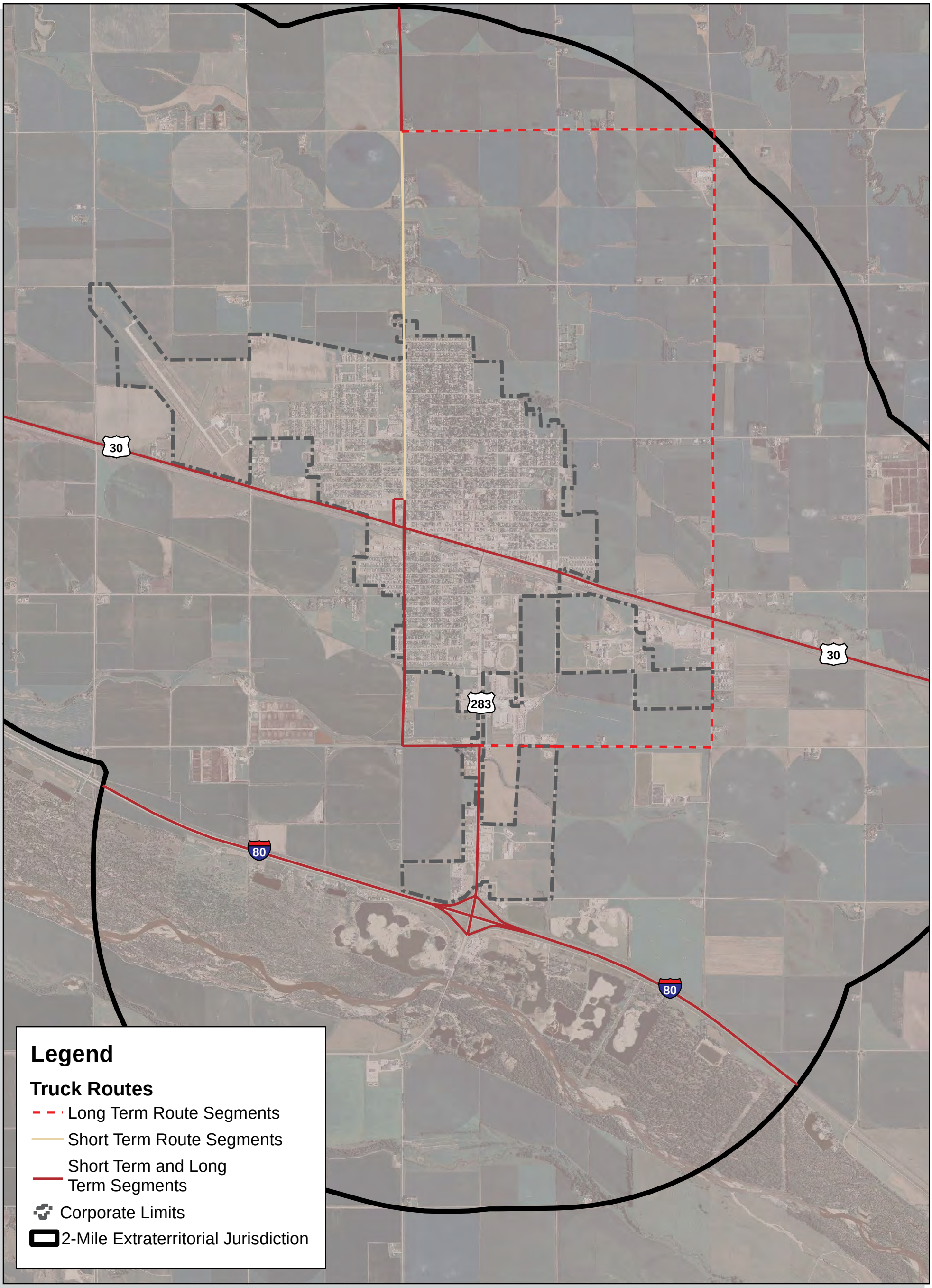

Figure 64: Possible Truck Routes through Lexington

City of Lexington
Dawson County, Nebraska

Short-Term / Long-Term Truck Routes

N

0 1,800 3,600 7,200 Feet

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File: 100999

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Railroad Crossings

Conflicts and train noise related to the street-rail crossings have been identified as an issue by stakeholders. Lexington lies along one of the busiest segments of the Union Pacific (UP) Railroad mainline. This part of the UP carries more than 135 trains a day and is part of one of the longest sections of triple track in the United States. A focus area of the Transportation Plan relative to freight rail is the rail crossings. At grade rail crossings are of particular concern, as these are locations where there is the potential for conflicts between vehicle/pedestrian/bicyclist and train activities. Additionally, noise from train horns affects some residents of Lexington area, as trains must sound their horn when approaching a public road crossing of the rail tracks. Figure 66 illustrates the current at-grade and grade separated rail crossings of the UP mainline in the Lexington area.

Lexington has significantly reduced the number of at-grade rail crossing through the city over the years and currently has very few at-grade crossings of the UP Mainline through the core of the city. Arterial corridors that provide grade-separated bridges over the Union Pacific mainline are:

Adams Street Bridge.

The Plum Creek Parkway / Jackson Street Bridge.

The Madison Street pedestrian bridge also provides a key non-motorized grade-separated crossing of the UP tracks.

The County Road 435 is currently an at-grade crossing of the UP tracks, but a grade separation is programmed near term improvement in City's *Street Improvement Plan*.

The remaining at-grade crossings of the Union Pacific mainline in the study area include:

County Road 429.

County Road 430.

County Road 431.

Airport Road.

County Road 436.

County Road 437.

"Union Pacific in Nebraska", Union Pacific Railroad. www.up.com/cs/groups/public/documents/up_pdf_nativedocs/pdf_nebraska_usguide.pdf

Railroad Crossings

Trains are required to sound their horns within 15 to 20 seconds of crossing a public roadway at-grade, but never more than ¼ mile away from the at-grade crossing. While this leaves over two miles of rail tracks through the heart of Lexington where train horns do not directly sound, train horns are currently required t o sound as they approach crossings on the edges of Lexington. Noise from train horns was an issue identified by Lexington stakeholders.

Automated wayside horns can be a substitute for the locomotive horn at crossings equipped with flashing lights and gates. The automated horns are beneficial because they are acoustically targeted at the crossings to give the proper warning to approaching vehicles and pedestrians, but produce less ambient noise for adjacent neighborhoods.

Quiet Zones are railroad segments where trains are not required to sound the horn at railroad crossings. Quiet Zones are granted in locations where rail crossing(s) meet a certain level of safety. There are several requirements to qualify for a quiet zone, including that each crossing must have at least one Supplementary Safety Measures (SSMs). Potential SSMs that a community can consider include :

Temporary (Time of Day) or Permanent Closure of a Public Highway-Rail Grade Crossing.

Four-Quadrant Gate System.

Gates with Roadway Medians or Channelization Devices.

One Way Street with Gate(s).

A detailed assessment of safety risk is required to qualify for a quiet zone. For a crossing or series of crossings to qualify, it must be demonstrated that the crossing, without a train horn sounding, has a lower crash risk than the national average. The types of crossings currently in place in Lexington are illustrated in Figure 66.

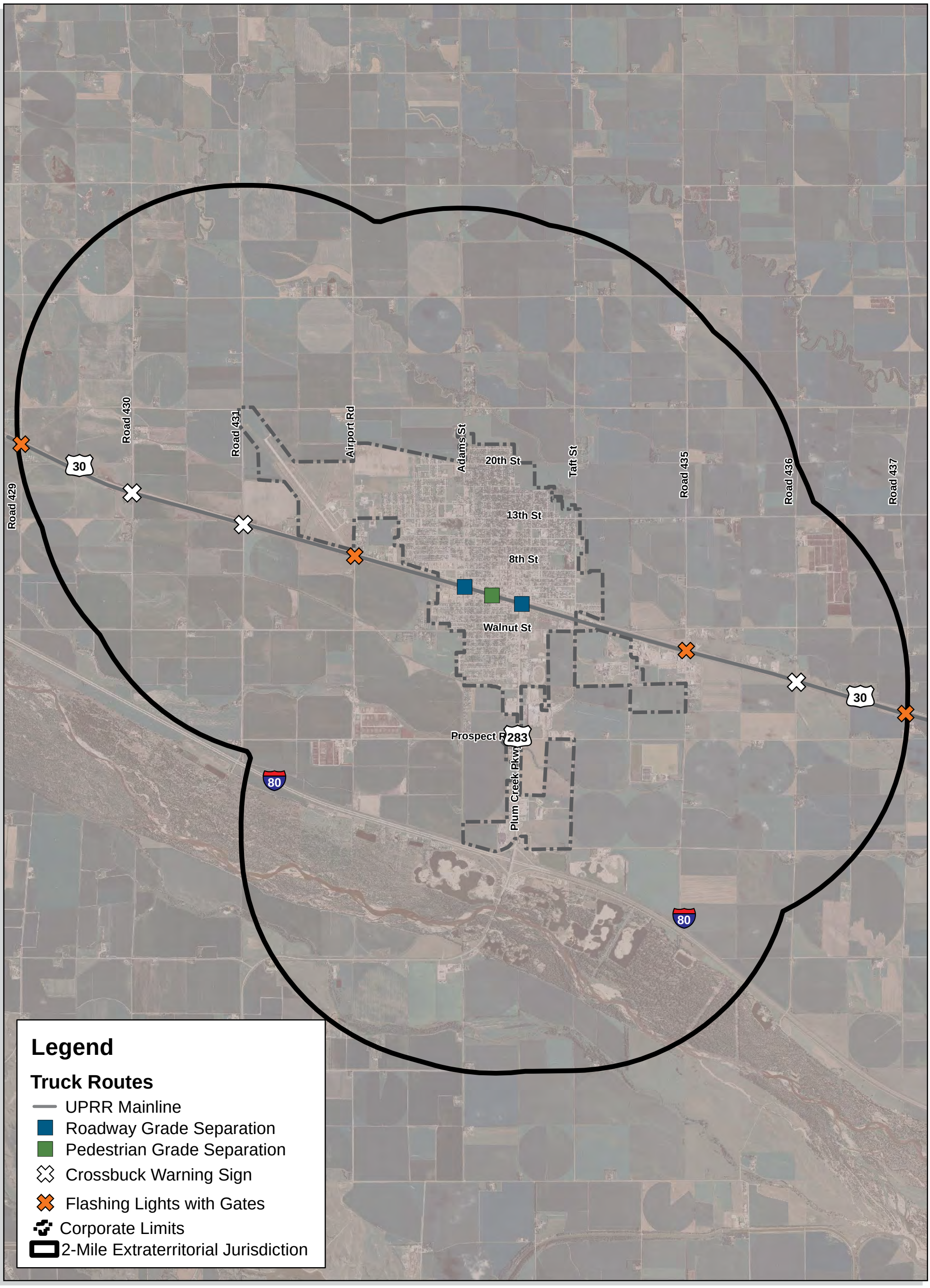

Figure 65: Railroad Crossings

City of Lexington
Dawson County, Nebraska

Current Rail Crossings and Crossing Types

N

0 2,500 5,000 10,000 Feet

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Date: June 2013
Software: ArcGIS 10
File: 100999

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Future Transit System

Transit Issues

The Lexington area demand-response (also known as "dial-a-ride") transit service, the Dawson County Handi Bus, serves the Lexington area the following times each week:

Monday: 8:30 AM and 4:00 PM.
Wednesday: 8:30 AM and 1:30 PM.
Friday: 8:30 AM and 4:00 PM.

In addition to these hours of community operation on Mondays, Wednesdays, and Fridays, Handi Bus provides lunch rides to/from Grand Generation Center between 11:00 AM and 1:30 PM on Tuesdays and Thursdays. The other weekday time slots are used in other towns around Dawson County. No communities receive Saturday, Sunday, or evening service. The fare for most trips is $1, and trips are only made in and around the City limits.

Handi Bus operates two (2) minibuses with a capacity of 14, two (2) of those seats configured for handicap accessibility. Ridership for the entire County system is currently approximately 1,500 boardings per month, with an estimated half of those trips (750) provided in and around Lexington. Handi Bus is available to all community members, but the majority of Handi Bus trips are provided to disabled and senior riders. Another large portion of the trips in the Lexington area are work trips to the Tyson plant.

The main issue raised regarding demand-response service in Lexington is that it is only offered certain days of the week.

Currently, negotiations are underway between DCHB and Reach Your Designation Easily (RYDE). The Kearney-based transportation company may assume the responsibilities of Dawson County's services. If this happens, the schedules, services, and designations may change. This can be a great opportunity to expand services to residents. Currently RYDE serves Buffalo County and their current schedules and designations are listed on their website. http://www.mnca.net/ryde.html.

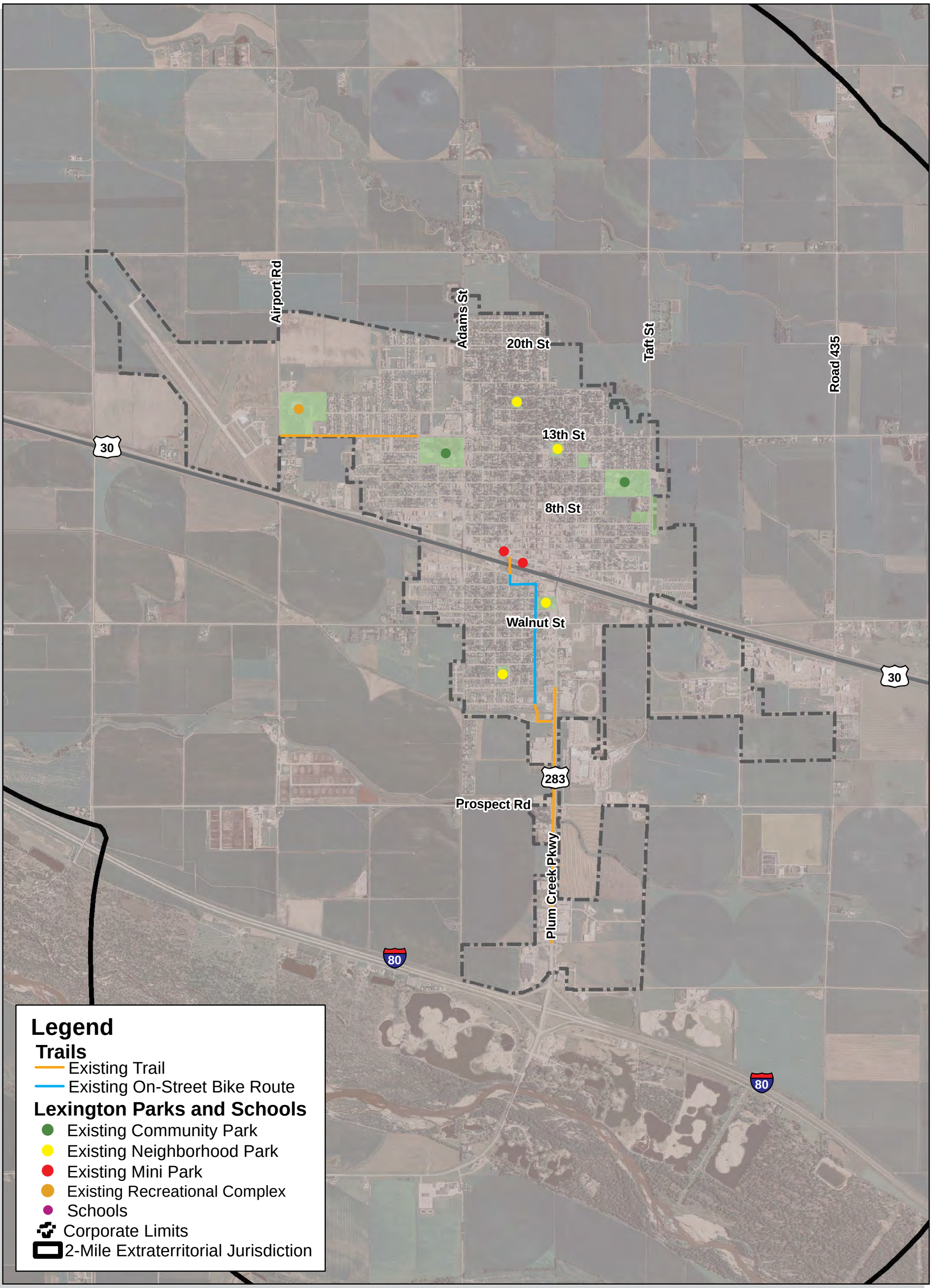

Figure 66: Current Bike & Pedestrian map, Lexington

City of Lexington
Dawson County, Nebraska

Existing Bicycle / Pedestrian System

N

0 1,500 3,000 6,000 Feet

Created By: JWC
Date: June 2013
Software: ArcGIS 10
File: 100999

Future Transit Options

The current transit service-type, demand-response transit, is likely appropriate for Lexington for the foreseeable future. However, in discussions with the current transit provider, it is believed that there is demand for additional service hours in Lexington. Handi Bus is limited in that a county-wide service with only two vehicles controls the level of service that they can offer. If additional vehicle capacity were available in the future, the expansion of Lexington demand-response service should be explored. The first potential step would be to evaluate the expansion of the hours of operation on Wednesdays, and consider offering Tuesday and Thursday service to the Lexington area.

Future Complete Bicycle and Pedestrian Network

Too often in the past, many communities have considered mobility solely from the perspective of vehicular traffic, and how to increase speed and decrease travel time via automobile. This one-sided approach to mobility planning has historically pushed pedestrian and non-vehicular mobility to locations outside of the street environment, in turn limiting the viability of bicycle travel as a practical travel option within the community.

In discussions with Lexington public and stakeholders, a primary transportation system objective was to provide bicycle and pedestrian system connections between some key uses in the city, including trails, parks, schools, and civic institutions. The current trail and bicycle system is shown in Figure 67. Sidewalks are an essential part of the Lexington transportation system, because regardless of travel mode (car, bike, transit, walking) at some point during every trip we are a pedestrian. This need is supported by the extensive sidewalk system that connects most neighborhoods across Lexington.

Future Complete Bicycle and Pedestrian Network

In addition to the stakeholder-identified need for a more comprehensive bike and pedestrian system, specific issues identified by stakeholders include:

Enhancing existing bike paths / trails by adding trees and benches.

Adding bike racks downtown to provide amenities that encourage biking around town.

It is recognized that weather limits the year-round attractiveness of bicycle and pedestrian travel for some community members; rain, snow, and ice covered streets and trails will dissuade many commuters from walking or biking to destinations. However, offering a wide range of non-motorized travel options provides Lexington one means to enhance the quality of life and travel options for its citizens. A "complete streets" approach to the Lexington multimodal network provides an integrated, connected network with access for all modes of travel on the current and planned Lexington street and roadway system. This balanced approach acknowledges that corridors provide bicycle, pedestrian and transit accessibility to different levels; some roadways will continue to emphasize vehicular travel while others will provide on-street bicycle facilities, and accommodate safe pedestrian travel and crossings. The key is to provide a safe and connected network for all modes of travel.

To enhance the existing bike trail and robust sidewalk network, there are several tools available to the Lexington community as it plans for a complete bicycle network. This section describes the various options available to Lexington as different tools and strategies are considered to address the bike and pedestrian connectivity needs of the community.

Available Bicycle / Pedestrian Tools

There are several strategies that can be used to improve the bicycle and pedestrian network in Lexington. In general, these strategies can be placed into one of two categories:

Off-street strategies, such as shared-use paths (trails).

On-street strategies, as part of a shared lane, dedicated bicycle lane or paved shoulders.

Off-Street Strategies

Off-street, shared-use paths (or trails as they are often called) are pedestrian and bikeways that are physically separated from motorized vehicle traffic by an open space, boulevard, or a barrier. Vehicular traffic cannot travel along shared use paths. Shared use paths provide a dedicated segment for recreation and travel for walkers, runners, bicyclists, skaters and other non-motorized users. Lexington has a shared use path that runs for approximately 1.5 miles along Plum Creek Parkway.

Often in an urban setting like Lexington, shared-use paths are provided adjacent to existing roadways within the public right-of-way. Shared-use paths can also be within their own exclusive right-of-way, where available. There are some limitations to implementing off-street paths adjacent to roadways in an urban setting.

Right-of-way limitations: Shared-use paths are generally 10 to 14 feet wide. Add in the separation required between the street and path, and this often exceeds the available public right-of-way adjacent to streets.

Bicyclist safety: Shared-use paths adjacent to roadways with cross-streets and driveways increase the level of bicycle-vehicle conflicts, leading to increased safety concerns. Vehicles turning from / to cross-streets often do not notice or expect bicycle traffic on the sidepath, as they are often looking at the street for vehicular conflicts (not looking at the sidepath). There are multiple other safety concerns with sidepath bicycle travel that increase the average crash rates for bicycle travel on sidepaths compared to on-street travel.

Due to these limitations, it would be nearly impossible to provide a sufficiently comprehensive and connected travel network for the city entirely with shared use paths. In corridors where dedicated off-street path right-of-way cannot be provided, it is beneficial to consider supplementing off-street paths with a robust on-street bicycle network.

Available Bicycle / Pedestrian Tools

On-Street Bicycle Strategies

The majority of the community destinations which stakeholders wish to connect via bicycle and pedestrian facilities are located within already developed parts of Lexington. All of these key uses are adjacent to the street network. Streets and public right-of-ways account for approximately 30 percent of the land used in Lexington. Thus, the street network is an extensive, untapped resource that can provide enhanced bicycle and pedestrian connectivity across the community.

Bicycling is allowed and occurs on all types of streets and roadways, even if there are no special treatments to accommodate such as lanes, signage, striping, or designations to support bicycling. In many cases, streets in good repair can have limited conflicts for bicyclists and can provide a good bicycling environment without any bike-supportive facilities. In other cases, providing the needed bicycle facilities may make sense for the community. Thus, the appropriate type of on-street bicycle application can vary from corridor to corridor. The types of bicycle applications that can be used on-street include dedicated bicycle lanes and shared facilities, such as shared lanes, wide outside lanes, or wide paved shoulders.

Bicycle Lanes

Bicycle lanes, commonly known as bike lanes, are a portion of a roadway cross-section that has been designated for bicycle use by striping, signing and pavement markings. They are one-way facilities that typically carry bicycle travel in the same direction as the adjacent vehicular travel lane.

Dedicated bike lanes are an appropriate consideration when preferential or exclusive bicycle right-of-way is required. Along many collector and arterial streets, conflicts arise between bicyclists and motor vehicles, whether they be traveling or parked. In these cases, it is often beneficial to provide bike lanes to facilitate safe bicycle travel. By placing bicyclists in dedicated parts of the roadway cross-section, bike lanes provide bicyclists a more visible position to motorists that are entering and leaving the roadway.

On-Street Bicycle Strategies

Bicycle Lanes (con't)

The general characteristics of bike lanes are noted below:

Bike lane widths should generally be a minimum 4'-5' of dedicated width , depending on the presence of curb and gutter.

Bike lanes should be a wider 6 to 7 feet adjacent to a narrow parking lane to provide bikes more space outside of the "door zone" where parked vehicles doors may open.

In high-activity bike areas, wider bike lanes of 6 to 8 feet allow bikes of varying speeds to pass one another.

Along higher-speed and high-volume roadways, wider lanes also provide more lateral clearance for bicyclists.

Bike lanes are located to the right of vehicular travel lanes. If on-street parking is present, bike lanes are typically located between the travel lanes and the on-street parking area.

Bike lanes should not include raised pavement markings, rumble strips or rough utility covers for bicycle safety reasons.

Bike lanes are typically most-effectively marked by pavement markings, and some limited signs. The AASHTO guide notes that in cluttered urban settings, particularly with on-street parking, signage can be obstructed and go unnoticed by bicyclists and motorists. Typical signage might include a "Bike Lane Ahead" and a "Bike Lane Ends" to provide advanced warning to bicyclists.

Source: AASHTO Guide for Planning, Design, and Operation of Bicycle Facilities.

On-Street Bicycle Strategies

Shared Lanes

Shared lanes are lanes that bicycles use with vehicular traffic, and can be marked or unmarked. Typically, on local streets with low traffic volumes and low travel speeds, no special design considerations are required for bicycle travel. On more major roadways, shared lanes are typically 14 to 15 feet wide to provide sufficient width for vehicles to pass bicycles traveling in the same direction. When sufficient width is present to provide dedicated bike lanes or paved shoulders, these are the preferred treatments for bicycle travel.

Shared lanes are typically signed with "Share the Road" or "Bicycles May Use Full Lane" signs. Shared lane markings, often called "sharrows," alert motorists to the presence of bicyclists, while providing the following benefits to bicyclists:

Reinforces bicycle direction of travel.

Provides lateral guidance to bicyclists, discouraging riding within the "door zone," encouraging bicyclists to be out in traffic for visibility and encourages motorists to give bicyclists more space when passing.

Discourages sidewalk bicycling, which is typically more dangerous than riding in the street.

Bicycle Parking

Like automobiles, bicycles require a place to be parked at their destination. Providing convenient and visible bike parking at large bike trip destinations can be an essential element of a successful city-wide bicycle system. Policies for establishing a reasonable, unobstructed location for bike parking are common in bike-friendly towns and cities. Policies generally are in place to ensure reasonable parking availability, bike parking is actually usable and maintainable, and that bike parking does not conflict with pedestrian, vehicular and emergency access needs. Bicycle parking comes in a variety of forms and options, including the traditional bike rack, covered bike parking, and bike lockers. There are several resources available for planning and implementing bicycle parking, including the document *Bicycle Parking Guidelines*.

On-Street Bicycle Strategies

Bicycle Parking

A simplified planning process for implementing a Lexington bike parking system might include:

Identify current and planned bicycle routes and priority bike parking locations along those routes.

Determine the anticipated demand for bike parking at the priority parking locations, estimating the likely duration of parking demands, and identifying what type of bike parking that would address those needs.

Engage with property owners / stakeholders at priority locations and understanding their concerns, how pedestrian and vehicle access and circulation happens at the property, and discussing the potential benefits to their business.

Conduct a site evaluation of high-priority bike parking locations to identify visible, easily accessible locations that do not conflict with pedestrians, vehicular parking or emergency vehicle access.

Identify a bike parking configuration that fits within the site, while still meeting the design requirements for a range of bicycle types, while allowing the bike frame to be fully secured onto the bike rack via a range of lock mechanisms.

Estimate costs for bike parking.

Determine an appropriate cost sharing / funding arrangement to pay for bike parking.

On-Street Bicycle Strategies

Bike Sharing

Bike sharing is a transportation program that provides point-to-point bicycle "borrowing" between designated, self-service bike stations. Bike sharing is becoming more popular across the country as many communities are looking at cost-effective and innovative ways to increase mobility for their citizens. In some situations, a bike sharing program fits that need.

Most bike sharing programs include a fleet of bicycles and a network of bike-borrow stations. The station networks are set-up as a point-to-point system where users can rent / borrow a bike at one station and return it another station in the system. The system is typically set up with stations at high bicycle trip origins and destinations. The benefit of the system is that it allows residents and visitors access to bicycle trips in areas where those trips make sense. Bike share users do not need to buy, store, and maintain a bicycle; the bike share program does that for them.

Bike sharing programs are often organized at the local level by a non-profit organization, or are set up and run by private companies. The factors that limit the success of bike sharing programs are typically similar to those of biking in general. Locations that are not hospitable to biking are not good areas to locate bike sharing stations. Generally, in locations where there is little bicycling happening, a bike sharing program will not change that component of the culture.

A bike sharing program might eventually be a good option in Lexington to augment a robust bicycle network, once established. As the community expands its network of off-street trails and on-street bike facilities, it should evaluate how much demand there is on the system, and where the highest concentrations of bike trips are being made. At that point, it might make sense to initiate a bike sharing program at that point in the future.

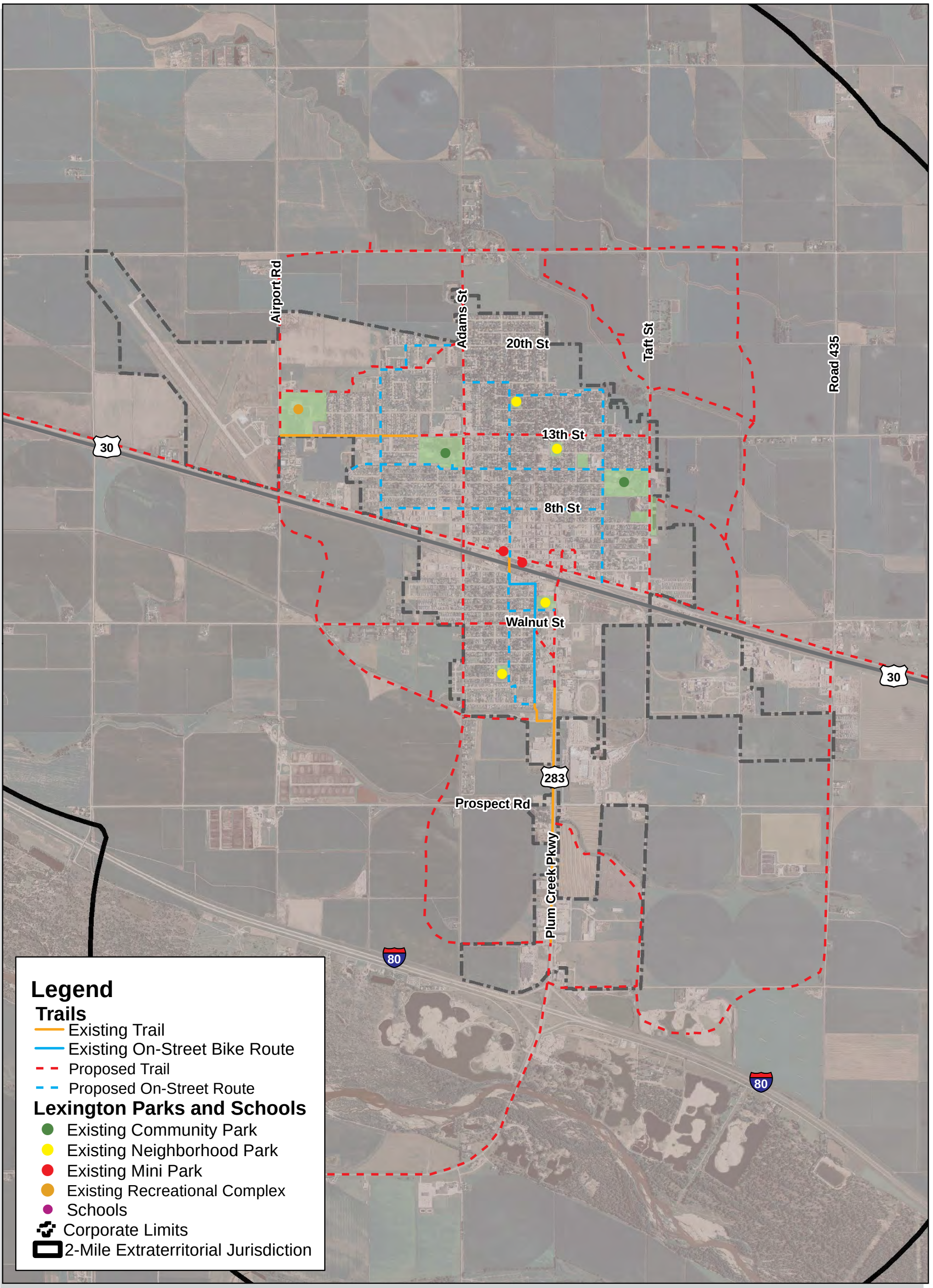

Figure 67: Future Bicycle and Pedestrian System, Lexington

City of Lexington
Dawson County, Nebraska

Future Bicycle / Pedestrian System

N

0 1,500 3,000 6,000 Feet

Created By: JWC
Date: June 2013
Software: ArcGIS 10
File: 100999

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