



APPENDIX E

Congestion Management Process



Congestion Management Process

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LIST OF ACRONYMS

ACS	American Community Survey
CFR	Code of Federal Regulations
CMP	Congestion Management Process
FAST Act	Fixing America's Surface Transportation Act
FHWA	Federal Highway Administration
ISTEA	Intermodal Surface Transportation Efficiency Act
LOTTR	Level of Travel Time Reliability
LRTP	Long Range Transportation Plan
MPO	Metropolitan Planning Organization
NDOT	Nebraska Department of Transportation
NHS	National Highway System
NPMRDS	National Performance Management Research Data Set
PHED	Peak Hour Excessive Delay
SOV	Single Occupancy Vehicle
TIP	Transportation Improvement Program
TMA	Transportation Management Area
TTTR	Truck Travel Time Reliability
v/c	Volume per Capacity
VMT	Vehicle Miles Traveled

I. CMP INTRODUCTION

A. Overview

Federal Requirements

Federal requirements state that metropolitan areas with more than 200,000 people, known as Transportation Management Areas (TMAs), must maintain a Congestion Management Process (CMP) and use it to make informed transportation planning decisions. These requirements were introduced by the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 as a “*Congestion Management System*” and are continued under the successive transportation authorization laws, including the current law, Fixing America’s Surface Transportation (FAST) Act. FAST Act refers to a “*Congestion Management Process*,” reflecting the goal of the law to utilize a process that is an integral component of metropolitan transportation planning.

The Federal Highway Administration (FHWA) guidance¹ refers to a CMP as a “systematic and regionally-accepted approach for managing congestion that provides accurate, up-to-date information on transportation system performance and assesses alternative strategies for congestion management that meet state and local needs.” The purpose of the CMP is to define congested corridors in the region, develop strategies to mitigate the congestion, and provide a way to monitor the effectiveness of the strategies. The CMP is also intended to use performance measures to direct funding toward projects and strategies that are most effective for addressing congestion. The CMP is intended to augment and be folded into the overall metropolitan transportation planning process in Lincoln and Lancaster County.

FHWA suggests that consideration should be given to strategies that manage demand, reduce Single Occupant Vehicle (SOV) travel, improve transportation system management and operations, and improve efficient service integration within and across modes, including highway, transit, passenger and freight rail operations, and non-motorized travel.

The FHWA regulations in 23 CFR Part 450 Sec. 322 specify that an effective CMP should include:

- ▶ Methods to monitor and evaluate the performance of the multimodal transportation system, identify the causes of reoccurring and non-recurring congestion, identify and evaluate alternative strategies, provide information supporting the implementation of actions, and evaluate the efficiency and effectiveness of implemented actions;
- ▶ Definition of objectives and performance measures to assess the extent of congestion and support the evaluation of the effectiveness of congestion reduction and mobility enhancement strategies for the movement of people and goods;
- ▶ Establishment of a program for data collection and system performance monitoring to define the extent and causes of congestion, to contribute in determining the causes of congestion, and to evaluate the efficiency and effectiveness of implemented actions;
- ▶ Identification and evaluation of the anticipated performance and benefits of both traditional and non-traditional congestion management strategies;
- ▶ Identification of an implementation schedule, implementation responsibilities, and possible funding sources for each strategy (or combination of strategies); and

¹ FHWA Congestion Management Process: A Guidebook, April 2011

- ▶ Implementation of a process for periodic assessment of the efficiency and effectiveness of implemented strategies, in terms of the area's established performance measures.

History of Lincoln MPO's CMP

The City of Lincoln is the federally recognized Metropolitan Planning Organization (MPO) for the Lincoln Metropolitan Area, supporting Lincoln and Lancaster County to carry out transportation planning and decision-making within the TMA. The MPO provides a forum for cooperative decision-making among responsible state and local officials, public and private transit operators, and the general public. The MPO coordinates the planning activities of all transportation-related agencies and adopts long range plans to guide transportation investment decisions. Plans and programs consider all transportation modes and support community development and social goals.

The 2000 Census identified the Lincoln Urban Area as having a population of 226,582 and accordingly, the Secretary of Transportation designated the Lincoln MPO as a TMA. This classification qualifies the Lincoln MPO for specific shares of federal transportation funds, but also establishes additional administrative and planning requirements in the transportation planning process. These additional planning activities relate primarily to the development of a Congestion Management Process (CMP), project selection, public involvement and the MPO certification process.

The inaugural CMP for the Lincoln MPO was approved in 2009, and it was created to satisfy the essential requirements of the ISTEA regulations. The 2040 LRTP update included development of goals and objectives for the multimodal transportation network as well as performance measures appropriate for evaluating progress. Data required to assess the performance measures were used to produce the Lincoln MPO 2019 Annual Performance Report. Multiple performance measures address measures of congestion. Future updates of the LRTP provide the Lincoln MPO with the opportunity to update objectives and performance measures that address congestion management.

B. Congestion Management Process: The 8-Steps

The Lincoln MPO views congestion management in the context of the overall transportation planning process and as a tool to ensure that existing and new transportation infrastructure is effectively managed and maintained. The CMP is implemented as a feedback process to inform and understand congestion within the TMA and the appropriate strategies to address it. The 8-Steps of the CMP include:

- ▶ Step 1: Develop Regional Objectives for Congestion Management
- ▶ Step 2: Define CMP Network
- ▶ Step 3: Develop Multimodal Performance Measures
- ▶ Step 4: Collect Data / Monitor System Performance
- ▶ Step 5: Analyze Congestion Problems and Needs
- ▶ Step 6: Identify and Assess CMP Strategies
- ▶ Step 7: Program and Implement CMP Strategies
- ▶ Step 8: Evaluate Strategy Effectiveness

Effective implementation of the CMP may improve the operational efficiency and reliability of Lincoln's transportation system. It provides guidance for effectively allocating finite resources toward improvements that minimize travel-time delays, improve air quality and conserve energy. These improvements are important to the region's environment, economy, and quality of life. They directly benefit automobile and transit vehicle users as well as truck and freight operators, pedestrians and bicyclists. The continued development and coordination of this process is an important element of the Lincoln transportation planning process. It is used as a guide to develop project recommendations for the Transportation Improvement Program (TIP) and to provide policies for the congestion management element of the Long Range Transportation Plan.

C. CMP Structure

The Lincoln MPO's CMP is intended to be a systematic and regionally accepted approach for managing congestion that provides accurate and relevant information on transportation system performance and assesses alternative strategies for congestion management that meet state, regional, and local needs. These strategies can then be developed into policies and/or programmed as projects into the LRTP and TIP. A description of congestion trends and the impacts of congestion is presented to give context for the problems the CMP will address. With this perspective, the CMP is organized into two sections that capture the 8-Step process. The first section addresses how the CMP evaluates congestion. Steps 1-5 are independent steps that work to generate reliable measures of congestion. The second section addresses how the CMP will address congestion. Steps 6-8 identify strategies that may best address congestion and how those strategies will be evaluated going forward.

D. Trends

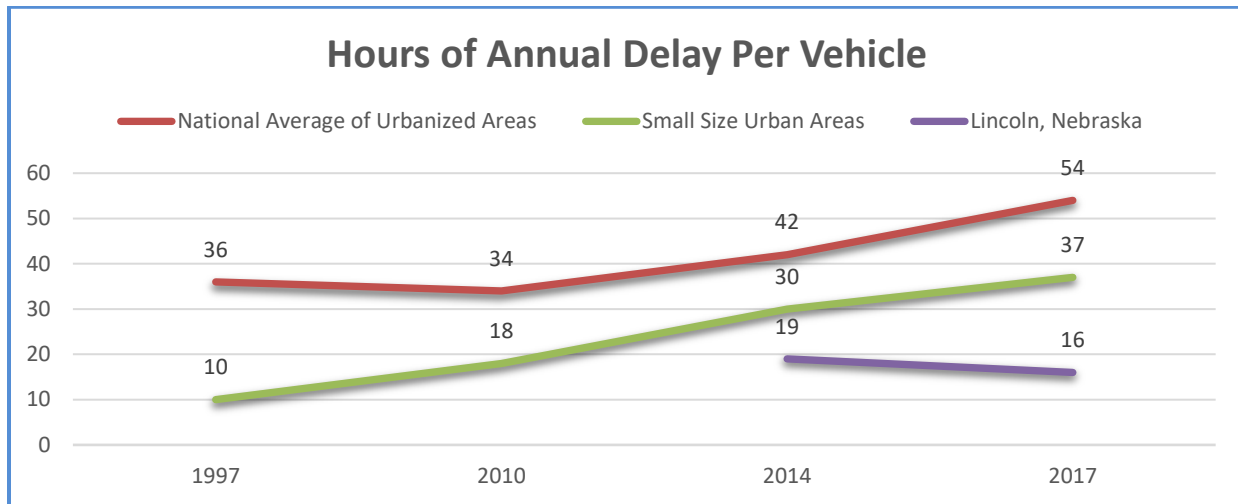
National Trends in Congestion

A primary reference for national statistics and analysis on the current state of roadway congestion comes from the Texas Transportation Institute (TTI). The 2019 Urban Mobility Report gives a detailed description of congestion conditions in all of America's 494 urban areas ranging from smaller cities with populations greater than 50,000 to large urbanized regions with populations of over three million people.

Based on national data compiled by the TTI, roadway congestion increased steadily from the 1980s through 2006 before receding with the December 2007 recession. TTI calculations showed that by 2017, nationwide National Highway System (NHS) congestion within urban areas had generally returned to historic growth pattern. The 10-years of economic growth brought traffic congestion to the highest measured levels in most U.S. cities.

Growing congestion results in lost time and wasted fuel which affects quality of life, the economy and the environment. According to the TTI, congestion in 2017 caused Americans to travel an additional 8.8 billion hours and purchase an extra 3.3 billion gallons of fuel. The number of annual hours expended per vehicle due to congestion is shown in **Figure 1**. The reported values are documented in the Urban Mobility Scorecards which includes the Lincoln Urban Area starting in 2016 reporting on 2014 data.

Figure 1 - Hours of Annual Delay Per Vehicle Comparison²



For the years reported, trends for the Lincoln area are much less than national averages and urban areas of similar size. The total number of extra hours spent in traffic due to congestion helps to compare relative congestion. The lower number of annual hours of delay per vehicle in Lincoln from 2014 to 2017 is noticeable because of the upward national trend. During 2014, the impact of construction projects along portions of Interstate 80 and maintenance along Nebraska Highway 6 in Lincoln likely elevated the number of hours of congestion. Without those non-recurring events, annual hours of delay per vehicle in 2014 would have been lower and the upward trend would likely have occurred for Lincoln as well.

Nebraska Trends in Congestion

Within Nebraska, the small and larger size urban areas demonstrate less traffic congestion relative to national levels. Even so, published public sentiment about congestion indicates Nebraska roadway users value reducing congestion further. The public survey conducted in 2011 as part of the Statewide Long Range Transportation Plan documented 62/52/42% (Omaha/Lincoln/Statewide) of roadway users prioritize projects and programs that would address congestion. The Statewide Long Range Transportation Plan is currently being updated and may demonstrate a shift in priority for addressing congestion, but available funding is expected to limit the scope of what can be accomplished. In 2017, the Nebraska Department of Transportation (NDOT)³ estimated a \$6 billion dollar shortfall in level of funding needed over 20 years to maintain and improve the statewide transportation system.

A key factor that influences travel demand is population. Nationally, Nebraska ranked 37th in population with 1,929,268 residents in 2018. As Nebraska's population grows, that growth is unevenly distributed throughout the state. According to the University of Nebraska – Omaha, Center for Public Affairs Research⁴, statewide population growth averaged 4.4% from 2010-2016, with only seven of 93 counties experiencing growth greater than 5%. In urban counties of Douglas, Sarpy, Lancaster, Dakota and Hall where MPOs are located, land development continues to build out quicker from urban centers. The

² Texas A&M Transportation Institute Urban Mobility Scorecards; 1997, 2012, 2016 and 2019

³ Omaha World Herald, December 14, 2017

⁴ David Drozd, March 21, 2017

effect of this expansion influences transportation needs that have been historically met by the single-occupant automobile trip.

Based on American Community Survey data from 2018, 81.9% of all trips to work in Nebraska were made using SOVs. This measure indicates Lincoln has a lower percentage of SOV trips than some small urban areas such as Jackson, MS with 84.5% SOV, but a higher percentage than others like Madison, WI at 64.2% SOV. The percentage of individuals in the Lincoln urban area who drove to work alone (81.0%) is lower than the state average, but higher than the national average. Lincoln's mode-share is contrasted against Nebraska and National benchmarks in **Table 1**.

Table 1 - Estimated Mode-Split of Lincoln Relative to Nebraska and National Estimates

Commuting to Work 2018 ⁵	Lincoln, NE	Nebraska	National
Drove alone (SOV)	81.0%	81.9%	76.4%
Carpooled	9.1%	9.0%	9.1%
Public transportation (excluding taxicab)	1.4%	0.7%	5.0%
Walked	3.3%	2.7%	2.7%
Bicycled	1.3%	0.4%	0.6%
Other	0.6%	0.8%	1.2%
Worked at Home	3.3%	4.4%	4.9%
Mean Travel Time to Work	18.7 minutes	18.6 minutes	26.6 minutes

The dominance of individuals driving alone to work continues a long-standing pattern of increasing automobile use extending back to 1960 when the American Community Survey first began collecting data on commuting travel modes. Increasing numbers of SOVs adds to the number of Vehicle Miles Traveled (VMT) and can incrementally increase the time of travel to work as congestion worsens. According to the NDOT⁶, the total Average Daily VMT on the all roadways in the state grew from 52.5 million and 57.5 million between 2009 and 2019. In 2018, the mean time for an individual to commute to work was 18.6 minutes in Nebraska, similar to Lincoln, while the national mean was 26.6 minutes. This information reflects all travel modes to work, not just SOVs.

E. Impacts

The effects of roadway congestion can measurably influence lost time, lost income, and reduced safety. In some cases, these effects can be quantified in terms of production costs, such as the costs associated with wasted fuel. Quality of life can also be affected by roadway congestion but is more difficult to quantify in monetary terms. A small sample of the adverse effects of roadway congestion is listed below:

- ▶ **Wasted fuel** – Each year, millions of gallons of fuel are wasted as a result of roadway congestion. This represents billions of dollars in losses to both commercial and private interests. The costs associated with wasted fuel are typically passed on to the consumer.
- ▶ **Diminished quality of life** – Every minute wasted in congestion reduces the available time for family, friends, errands, hobbies, exercise, and other life pursuits. In addition, evidence has

⁵ American Community Survey – 2018 5-Year Average [Table S0801](#)

⁶ Source reference – State of Nebraska Automatic Traffic Recorder Data ([NDOT](#))

suggested that increases in commuter times can negatively affect involvement in community affairs.

- ▶ **Lost economic productivity** – As traffic congestion grows, material storage and delivery systems can be easily disrupted, raising transportation and manufacturing costs while reducing productivity. The costs associated with lost productivity are often passed on to the consumer.
- ▶ **Reduced safety** – Frustrated drivers can exhibit higher risk and aggressive driving behaviors, increasing the potential for crashes. Highway interchanges that require weaving maneuvers on congested roadways also pose significant safety hazards.
- ▶ **Slowed emergency response** – Delays caused by roadway congestion can severely impact response times in emergency situations and add additional safety risk to both roadway users and emergency responders.
- ▶ **Degraded air quality** – In general, vehicles emit far more pollutants that contribute to ground-level ozone and smog during stop-and-go traffic than under free flow conditions. Greenhouse gas emissions also increase as a result of roadway congestion.
- ▶ **Decreased system reliability** – Reliability of the transportation system begins to decrease as roadway congestion grows to absorb longer periods of time and more stretches of highway. Additional buffer time must be committed in order to arrive at a destination on-time, reducing market access and competitiveness.
- ▶ **Increased spending on infrastructure** – When local, state, and federal governments must allocate an increasing amount of resources to simply keep pace with growing roadway demand, fewer funds are available for transportation initiatives and other government services.

Many of these effects can be minimized using congestion mitigation strategies. Strategies discussed in Section III include both physical and operational improvements to the regional transportation network.

II. CMP EVALUATION (STEPS 1-5)

A. Step 1: Develop Regional Objectives for Congestion Management

Congestion management objectives are derived from the vision and goals articulated in the current Long Range Transportation Plan. The vision and goals in these documents enable the CMP to articulate efforts that minimize congestion and improve system reliability in the movement of people, goods, and services.

2040 LRTP Goals

Maintenance	A well-maintained transportation system.
Mobility and System Reliability	An efficient, reliable, and well-connected transportation system for moving people and freight.
Livability and Travel Choice	A multimodal system that provides travel options to support a more compact, livable urban environment.
Safety and Security	A safe and secure transportation system.
Economic Vitality	A transportation system that supports economic vitality for residents and businesses.
Environmental Sustainability	A transportation system that enhances the natural, cultural and built environment.
Funding and Cost Effectiveness	Collaboration in funding transportation projects that maximizes user benefits.

CMP Objectives

With these LRTP goals in mind, the Lincoln MPO has established two objectives that address the multifaceted challenges of measuring congestion, communicating how it is managed, and enabling data driven decisions. These two objectives broadly support the comprehensive nature of all goals in the LRTP.

<i>The first objective of the CMP is to manage the efficient performance of the multimodal transportation network.</i>	Efficiency is desirable because it represents management of resources that avoids wasting energy, money and time. The multimodal transportation network requires the wise investment of resources to achieve the objective of efficient movement of people, goods and services. Users view an efficient transportation network as one that enables them to move from place to place with minimal delay. Therefore, planners and engineers configure the transportation network to accommodate movement with reasonable levels of recurring delay during peak periods. An efficient system is neither under-designed nor over-designed. This objective for infrastructure prioritization, design, construction and operation helps stretch limited funding and keep up with the maintenance costs of aging infrastructure. Efficient performance minimizes lost time and the costs of travel as well as the negative environmental impacts to air quality caused by excessive idling.
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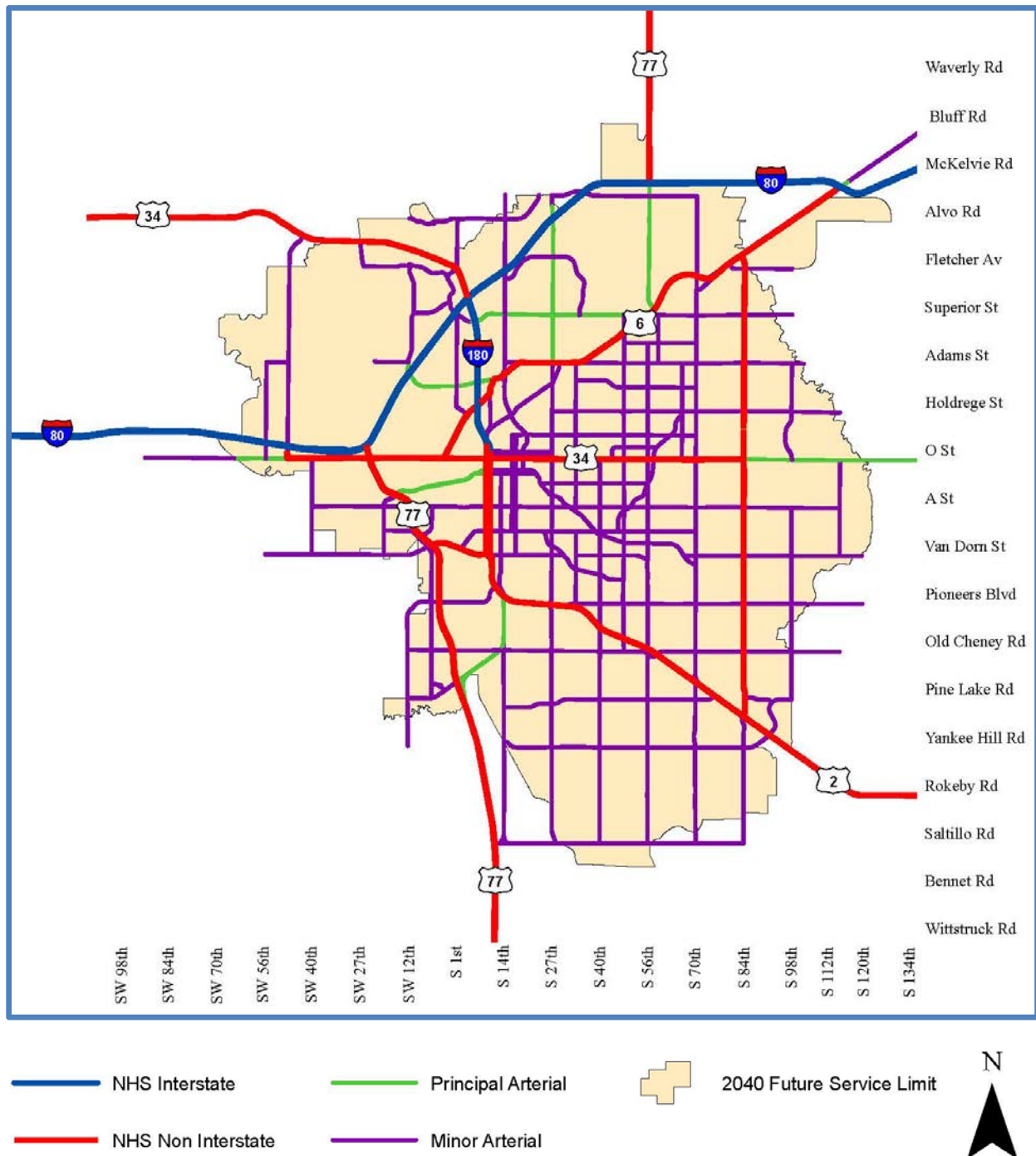
The second objective of the CMP is to manage the reliable performance of the multimodal transportation network.

Reliability is desirable because it represents dependability, offering reasonable expectation of travel time for people, goods and services. The multimodal transportation network must be managed on a day to day basis to limit instances and duration of non-recurring delay to achieve the objective of reliable movement of people, goods and services. Users consider a reliable transportation network to be predictable, even if that predictability includes recurring delay. Some conditions that create non-recurring delay (like events) may be anticipated and managed accordingly, but unpredictable conditions (like accidents) also occur and require strategies that resolve the delay as quickly as possible. Even though the network is managed to be efficient as possible, different strategies are needed to deliver reliable performance. This objective for infrastructure management helps connect people, goods and services to their destination with limited variation day-to-day. Reliable performance will minimize unplanned travel delay and infrastructure maintenance associated with traffic management along the travelled way.

B. Step 2: Define CMP Network

The CMP is applied within a specific geographic area for specific surface transportation facilities that comprise the CMP network. The MPO designates transportation facilities that represent the CMP network and that are evaluated against CMP objectives. The Lincoln MPO designates the CMP network within the City of Lincoln Future Service Limit, the area anticipated to urbanize over the next 20 years. The CMP network includes interstate and non-interstate portions of the NHS, major arterial streets and a small number of major collector streets that are perceived as arterial by roadway users. Transit routes are also considered part of the CMP network. Sidewalks and trails within the application area are to be strategically managed but are not analyzed for congestion management objectives. **Figure 2** illustrates the Lincoln MPO's CMP Network.

Figure 2 - CMP Network of the Lincoln MPO



C. Step 3: Develop Multimodal Performance Measures

The CMP utilizes performance measures that aid in characterizing CMP objectives and the congestion challenges facing the region. The Lincoln MPO measures progress toward CMP objectives using three groups of metrics summarized in this Step. The first group of performance measures are federally mandated and the Lincoln MPO coordinates performance targets for them with NDOT. The second group of performance measures are listed in the current LRTP and provide additional context to local congestion by providing performance targets that support CMP objectives. The final group of performance measures are established specifically for the CMP. The three groups are described below.

Mandated Performance Measures

The performance measures listed in **Table 2** are required by federal regulations for assessing the Interstate and Non-Interstate portions of the NHS within the MPO. The performance measures utilize national data sets that are established in federal regulations to be applied equally by all MPOs.

Table 2 – Mandated Performance Measures

Mandated Measures:	Description:
Interstate (490.507(a)(1)) and Non-Interstate (490.507(a)(2)) Level of Travel Time Reliability (LOTR)	Level of Travel Time Reliability (LOTR) is defined as the ratio of the longer travel times (80th percentile) to a “normal” travel time (50th percentile), using data from FHWA’s National Performance Management Research Data Set (NPMRDS) or equivalent. Data are collected in 15-minute segments during all time periods between 6 a.m. and 8 p.m. local time. The measures are the percent of person-miles traveled on the relevant portion of the NHS that are reliable. Person-miles take into account the users of the NHS. Data to reflect the users can include bus, auto, and truck occupancy levels.
Truck Travel Time Reliability (TTTR) Index (490.607)	Freight movement is assessed by the TTTR Index. Reporting is divided into five periods: morning peak (6-10 a.m.), midday (10 a.m.-4 p.m.) and afternoon peak (4-8 p.m.) Mondays through Fridays; weekends (6 a.m.-8 p.m.); and overnights for all days (8 p.m.-6 a.m.). The TTTR ratio is generated by dividing the 95th percentile time by the normal time (50th percentile) for each segment. The TTTR Index is then generated by multiplying each segment’s largest ratio of the five periods by its length, then dividing the sum of all length-weighted segments by the total length of Interstate.

Table 2 Continued on Next Page

Annual Hours of Peak Hour Excessive Delay per Capita (490.707(a))	Traffic congestion is measured by the annual hours of peak hour excessive delay (PHED) per capita on the NHS. The threshold for excessive delay is based on the travel time at 20 miles per hour or 60% of the posted speed limit travel time, whichever is greater, and is measured in 15-minute intervals during peak travel hours. The total excessive delay metric is then weighted by vehicle volumes and occupancy. <i>The Lincoln MPO is required to begin reporting this measure for 2022.</i>
Percent Non-SOV Travel (490.707(b))	Single Occupancy Vehicle (SOV) use and alternative mode share is measured using American Community Survey (ACS) Commuting (Journey to Work) data from the U.S. Census Bureau. NDOT and the Lincoln MPO may use localized survey or volume/usage counts for each mode to determine the percent non-SOV travel. <i>The Lincoln MPO is required to begin reporting this measure for 2022.</i>

L RTP Performance Measures Relevant to Congestion Management

The Lincoln MPO has also established a range of performance measures which are documented in the LRTP. These performance measures reflect the local nature of Lincoln MPO goals and objectives for the multimodal transportation network. A range of congestion conditions and management approaches are quantified through the periodic assessments of these performance measures. As the LRTP is updated, the Lincoln MPO may revise these performance measures. Therefore, the current LRTP may be referenced for the complete list of LRTP performance measures relevant to congestion management.

Additional Measures Related to Congestion Management

Two additional performance measures listed in **Table 1** have been selected to support evaluation of the CMP. These measures are not currently included within the LRTP but improve the ability to evaluate congestion and support project prioritization and selection related to the TIP. The ongoing use and frequency of evaluation for these measures will be considered during the next LRTP update.

Table 3 Presented on Next Page

Table 3 – Additional Measures Related to Congestion Management

Mobility and System Reliability Measure:	For the Purpose of:	Which Addresses Congestion by:	Limitations include:
Non-NHS Congestion Factor (Location Based Data)	Evaluating efficiency of CMP network.	Indicating the statistical severity of measured travel times experienced during peak periods along CMP network segments compared to free flow speeds.	<ul style="list-style-type: none"> Segment lengths are defined by a corridor trip instead of individual intersections or bottleneck locations where congestion is typically experienced. Segment lengths not standardized allowing longer segments to influence travel time more than shorter segments. Segments are not representative of VMT Location based service data is largely illustrative, not definitive, and requires validation by other measures before applying CMP strategies
Safety and Security Measure:	For the Purpose of:	Which Addresses Congestion by:	Limitations include:
Annual crashes per mile on CMP Network (Ratio) (NDOT/City)	Evaluating reliability of CMP network.	Using crash density as a surrogate to measure crashes per CMP segment mile. This measure is not evaluated to provide safety analysis. It indicates the relative likelihood of experiencing non-recurring delay on each CMP segment caused by a crash.	<ul style="list-style-type: none"> Crashes are only one of many potential traffic incidents. Data limited to reportable crashes only, excluding non-reportable and near miss incidents that may also influence non-recurring congestion. Normalized crash statistics are not representative of traffic safety or efforts to reduce the risk of crashes. Value does not reflect a duration that congestion is created as result of annual crashes per segment mile.

D. Step 4: Collect Data / Monitor System Performance

The Lincoln MPO has identified three groups of performance measures that require data collection to support system monitoring and decision making. The mandated performance measure data is presented as defined by NDOT and adopted by the Lincoln MPO. LRTP performance measure data types, frequency, sources and results are described in the annual performance report. The additional

performance measures recommended for the CMP are presented as analyzed by the Lincoln MPO in completing this CMP update.

Mandated Performance Measure Data

The performance measures listed in **Table 4** are directly influenced by NDOT based on National criteria. The measures were proposed in 2018 and adopted by the Lincoln MPO in 2019.

Table 4 – Mandated Performance Measure Data

	NDOT System Target	Lincoln Performance ⁷
Interstate Level of Travel Time Reliability (LOTTR) Percent	98.9%	100%
Non-Interstate Level of Travel Time Reliability (LOTTR) Percent	92.6%	92.0%
Truck Travel Time Reliability (TTTR) Index	1.10	1.10
Annual Hours of NHS Peak Hour Excessive Delay per Capita	TBD for 2022	TBD for 2022
Percent NHS Non-SOV Travel	TBD for 2022	TBD for 2022

L RTP Performance Measure Data

Data collected for L RTP performance measures and summaries of recent trends are compiled annually by the Lincoln MPO. Information about the performance measures and annual metrics can be reviewed in the most recent L RTP annual report.

Additional Measure Data Recommended for Congestion Management

The CMP identified two additional performance measures used to assess the efficiency and reliability of the multimodal transportation network. Although various measures could be used, these measures provide an appropriate level of analysis for the Lincoln MPO to assess causes of congestion and evaluate strategies to address severe congestion experienced within the CMP network.

Congestion Factor of Other CMP Network Roadways

To help identify CMP network locations where travelers experience the most severe recurring congestion, the Lincoln MPO evaluated Location Based Data (LBD) to calculate a Congestion Factor for a select number of CMP segments. A Congestion Factor is a measure that reflects an increased travel time caused by the difference in average speed compared to free flow travel speed. To illustrate the impact of Congestion Factor on travel time, a hypothetical study segment with a 10-minute travel time under free flow conditions that exhibits an average travel time of 13.3 minutes during an analysis period would have a Congestion Factor value of 0.33. Other free flow travel times can be used to calculate a Congestion Factor.

⁷ NDOT published 2017 NPMRDS Data in, Nebraska PM3 Performance Measures and Target Setting, Measuring Statewide Performance and Setting Targets

Segments were generated to represent travel corridors for the analysis rather than studying individual blocks where congestion is commonly experienced. This scale for segment analysis best represents a user's overall trip and leaves more traditional analysis to further study within segments where severe congestion is represented. The Lincoln MPO assessed the travel time LBD for morning commute (7:00 am to 9:00 am) and afternoon commute (4:00 pm to 6:00pm) periods. Other analysis periods can be used to study congestion.

LBD can provide some insight to the Lincoln MPO when evaluating recurring congestion. Because LBD are largely dependent upon the mobile location of a user's mobile device, they can give a measured duration of time between entering and exiting a defined network segment. The Lincoln MPO studied LBD for this CMP to evaluate travel times during 2019 along defined CMP network segments.

As was described in **Table 3**, some important limitations exist when interpreting LBD. As a result, drawing conclusions from Congestion Factors should not be made independent from other LRTP performance measures. For example, volume to capacity (v/c) ratio compares the number of vehicles to the capacity of a designated intersection. This is another common method of measuring congestion and is already included as a LRTP performance measure. The v/c ratio also inherently measures the number of vehicles that are affected at intersections. A Congestion Factor does not measure the number of vehicles affected. The Lincoln MPO anticipates LBD service availability will continue to grow and improvements to analysis methods may eliminate some limitations to using results for CMP updates.

Crashes per CMP Network Segment Mile

To identify segments where travelers are most likely to experience non-recurring congestion, the Lincoln MPO used State of Nebraska crash data available from 2018 to calculate crash ratios for each CMP segment. This ratio represents the average number of annual crashes per CMP segment mile. Crash ratios are different from commonly reported crash rates which describe the number of crashes in a given period as compared to traffic volume. A crash ratio simply seeks to characterize the potential for a given segment to experience non-recurring delay. Crash rates are a safety analysis measure that is not part of this CMP.

A crash ratio value of 45.0 indicates the segment averaged 45 reportable crashes per mile of that segment over the measured year. A traveler could anticipate half the probability of experiencing non-recurring delay on that segment when compared to a segment with a crash ratio of 90. A Geographic Information System buffer was used to analyze each segment's measured length. Changes to the lengths of a segment could have an impact on calculated crash ratios. The 25 segments with the highest measured crash ratio are listed in **Table 5**.

Table 5 Presented on Next Page

Table 5 - Highest Density Crashes by CMP Segment in 2018

Rank	Segment Name	From	To	Length (mi)	Crash Ratio
1	9 th Street	K Street	Q Street	0.48	136.38
2	10 th Street	K Street	Q Street	0.48	122.30
3	O Street	9 th Street	25 th Street	1.22	104.03
4	L Street	9 th Street	17 th Street	0.63	90.18
5	O Street	25 th Street	84 th Street	4.13	81.84
6	17 th Street	K Street	Q Street	0.49	81.65
7	11 th Street	L Street	P Street	0.23	79.24
8	14 th Street	L Street	P Street	0.23	78.59
9	13 th Street	L Street	P Street	0.23	69.96
10	27 th Street	O Street	Highway 6	1.96	66.83
11	K Street	9 th Street	17 th Street	0.63	66.68
12	27 th Street	Highway 2	O Street	2.93	64.45
13	Antelope Valley Parkway	K Street	Military Road	1.63	61.43
14	A Street	17 th Street	27 th Street	0.73	61.32
15	Q Street	9 th Street	17 th Street	0.65	61.27
16	16 th Street	K Street	Q Street	0.49	59.00
17	33 rd Street	Normal Boulevard	O Street	1.05	51.51
18	48 th Street	O Street	Superior Street	2.98	47.29
19	P Street	9 th Street	17 th Street	0.64	47.15
20	Cornhusker Highway	11 th Street	56 th Street	3.76	46.06
21	Vine Street	27 th Street	70 th Street	2.98	45.37
22	14 th Street	Highway 6	Fletcher Avenue	1.91	45.37
23	Normal Boulevard	Antelope Valley Parkway	56 th Street	3.16	40.76
24	12 th Street	L Street	P Street	0.23	39.45
25	P Street	17 th Street	27 th Street	0.73	38.55
Average of all CMP Network Segments Analyzed					26.10

E. Step 5: Analyze Congestion Problems and Needs

The Lincoln MPO takes the information generated in Step 4 to make observations about locations where congestion is occurring. MPO staff along with agency members of the MPO analyze the data to identify congestion problems and needs that may need addressed. This process is completed in coordination with the CMP Subcommittee of the MPO Technical Committee. The CMP Subcommittee represents the transportation agencies that ensure congestion problems are characterized correctly. Once congestion problems and needs have been characterized, future planning efforts identify appropriate strategies for implementation. These agencies work together to address the causes of congestion through a variety of transportation funding strategies. A brief overview of the common causes of congestion experienced within Lincoln's CMP Network is provided below.

Causes of inefficient performance

- **Physical Bottlenecks** – Sections of roadway network including intersections that have reached their operational capacity which is determined by a number of factors including the number and width of lanes and shoulders, merge areas at interchanges, and roadway alignments (grades and curves).
- **Access Management** – Locations of driveway/street spacing, turn lane configurations, or median treatments that introduce traffic flow disruptions.
- **Signal Timing** – Disruption of traffic flow by traffic control devices and railroad grade crossings. Unoptimized signals, which Lincoln LTU continues to reduce on the CMP network, contribute to congestion and travel time variability.

Causes of unreliable performance

- **Traffic Incidents** – Events that disrupt the normal flow of traffic, usually by physical impedance in the travel lanes. Events such as vehicular crashes, breakdowns, and debris in travel lanes are the most common form of incidents. In addition to blocking travel lanes physically, events that occur on the shoulder or roadside can also influence traffic flow by distracting drivers, leading to changes in driver behavior and ultimately degrading the quality of traffic flow. Even incidents off of the roadway (e.g., a fire in a building next to a highway) can be considered traffic incidents if they affect travel in the travel lanes.
- **Weather Conditions** – Environmental conditions can lead to changes in driver behavior that affect traffic flow. Due to reduced visibility, drivers will usually lower their speeds and increase their headways when precipitation, bright sunlight on the horizon, fog, or smoke are present. Wet, snowy, or icy roadway surface conditions will also lead to the same effect even after precipitation has ended.
- **Work Zones** – Construction activities on the roadway that result in physical changes to the highway environment. These changes may include a reduction in the number or width of travel lanes, lane "shifts," lane diversions, reduction, or elimination of shoulders, and even temporary roadway closures. Delays caused by work zones have been cited by travelers as one of the most frustrating conditions they encounter on trips.
- **Special Events** – Demand fluctuations where traffic flow in the vicinity of an event is disproportionately different from "typical" patterns. Special events such as university sporting events, concerts, municipal festivals, organized recreational events and others occasionally cause "surges" in traffic demand or barriers to traffic patterns that overwhelm the system.

III. CMP IMPLEMENTATION (STEPS 6-8)

A variety of strategies may be considered and employed to address congestion in Lincoln. This section describes the strategy evaluation process that the Lincoln MPO intends to follow once adequate data are compiled and congestion problems appropriately characterized. The implementation steps continue a feedback process of planning, implementation and evaluation that leads to prioritizing transportation investments that minimize congestion.

A. Step 6: Identify and Assess Strategies

The CMP can be used for measuring progress toward objectives using a variety of metrics. The Lincoln MPO considers the applicability of each strategy to address congestion of the CMP network. Some strategies that are not applicable in other MPOs may be well suited for the Lincoln MPO. Similarly, the Lincoln MPO must strive to make wise decisions about the investment into strategies with the highest likelihood of reducing congestion. **Tables 6 - 9** present the subjective assessment by the MPO for four groups of strategies and how applicable each strategy is currently considered within the CMP. The CMP Subcommittee members provided valuable input about the applicability of strategies listed below. Strategies with high applicability to address recurring or non-recurring congestions may be prioritized higher as strategies in the LRTP and when updating the TIP.

Reducing Person Trips or Vehicle Miles Traveled

The transportation network within the City of Lincoln benefits from the long-standing land use development pattern that limits sprawl. Public utilities of water and wastewater are developed within stormwater drainage basins and may be extended upon annexation. This strategic initiative reduces Vehicle Miles Traveled (VMT) relative to other urban areas. Additional strategies may help to further reduce person trips or VMT.

Table 6 - Strategies that Reduce Person Trips or Vehicle Miles Traveled

Description	Current Applicability to Lincoln MPO
A.1 Congestion Pricing or Road User Charge	Lower Potential
A.2 Alternative Work Hours	Lower Potential
A.3 Telecommuting	Some Potential
A.4 Emergency Ride Home Program	Lower Potential
A.5 Alternative Mode Marketing and Education	Some Potential
A.6 Safe Routes to Schools	Some Potential
A.7 Preferential for Free Parking for HOVs	Some Potential
A.8 Negotiated Demand Management Agreements	Lower Potential
A.9 Trip Reduction Ordinance	Lower Potential
A.10 Infill Developments	Higher Potential
A.11 Design Guidelines for Pedestrian-Oriented Development	Some Potential
A.12 Mixed-Use Development	Higher Potential

Shifting Automobile Trips or Other Modes:

The City of Lincoln StarTran bus system operates six-days a week and offers a cost-effective alternative to SOV travel to work and other transportation needs. Bus system routes were reconfigured following the 2016 Transit Development Plan. Following significant drops in ridership after 2014, route changes have seen increasing ridership in 2016-2018. The N-Street Cycle Track constructed in 2014 was the City's first protected bike lane and is connected to a growing network of over 130 miles of award-winning⁸ bicycle infrastructure throughout the Lincoln MPO. This infrastructure provides travelers with an alternative to SOV travel that can see greater seasonal demand in the late Spring through early Fall. In 2019, the City adopted an inaugural shared mobility ordinance which will bring a pilot project for electric scooters that can provide first and last mile options for some travelers. BikeLNK, Lincoln's docked bike share program, includes 21 stations and 105 bikes as of February 2020. BikeLNK was integrated into Lincoln Transportation and Utilities starting in 2020 and additional expansion is anticipated to continue shifting some automobile trips to bicycles.

Table 7 - Strategies that Shift Automobile Trips or Other Modes:

Description	Current Applicability to Lincoln MPO
B.1 Transit Capacity Expansion	Some Potential
B.2 Increasing Bus Route Coverage or Frequency	Some Potential
B.3 Implementing Regional Premium Transit	Lower Potential
B.4 Transit Route Real-Time Information	Some Potential
B.5 Reduced Transit Fares	Higher Potential
B.6 Exclusive Bus Right-of-Way	Some Potential
B.7 New Sidewalk Connections	Some Potential
B.8 Complete Streets	Higher Potential
B.9 Improved Bicycle Facilities at Transit Development Centers or Trip Destinations	Some Potential
B.10 Improved Safety of Existing Bicycle and Pedestrian Facilities	Higher Potential
B.11 Exclusive Non-Motorized ROW	Some Potential
B.12 Intermodal Enhancements Linked to Micro-Mobility Services	Some Potential

Improve Roadway Operations:

The 2015 Traffic Management Master Plan provided a range of recommendations for evaluation and enhancements to improve roadway operations. A few of the primary system needs included Advanced Traffic Management System (ATMS) hardware and software, Location and functionality of the Public Works Operations Center (PWOC), Vehicle detection, Signal phasing alternatives, Signal optimization program, ITS field devices - CCTV cams for system monitoring, Arterial dynamic message signs (DMS) and other important considerations for optimizing existing roadway infrastructure.

In 2016, the City began the process of optimizing signal timing through a program called, Green Light Lincoln. Phase 1 was estimated to save travelers 8.8 million dollars annually by drivers using 575,000 fewer gallons of gas. The successful program is entering into Phase 4 and continues to provide operation

⁸ 2014 American Planning Association – Great Places in America Award for the Great Plains Trails Network

improvements that reduce the cost of vehicle travel and increase reliability of transit services. Additional strategies listed in the Traffic Management Master Plan are also generating a positive impact on congestion that can be influenced by roadway operations.

Table 8 - Strategies that Improve Roadway Operations:

Description	Current Applicability to Lincoln MPO
C.1 Dynamic Messaging	Some Potential
C.2 Advance Traveler Information Systems (ATIS)	Some Potential
C.3 Integrated Corridor Management (ICM)	Some Potential
C.4 Transit Signal Priority (TSIP)	Lower Potential
C.5 Variable Speed Limits	Lower Potential
C.6 Truck Signal Priority	Lower Potential
C.7 Traffic Signal Coordination	Higher Potential
C.8 Channelization	Some Potential
C.9 Bottleneck Removal	Some Potential
C.10 Vehicle Use Limitations and Restrictions	Lower Potential
C.11 Autonomous Vehicle Smart Routing	Some Potential
C.12 Improved Signage	Some Potential
C.13 Geometric Improvements for Transit	Lower Potential
C.14 Goods Movement Management	Some Potential
C.15 Freeway Incident Detection and Management Systems	Lower Potential
C.16 Access Management Policies	Higher Potential
C.17 Corridor Preservation	Some Potential
C.18 Corridor Management	Some Potential

Improve Infrastructure or add Capacity:

The LRTP process considers a range of priorities that are important to stakeholders. Congestion management is an important consideration. The range of priorities are used to help the Lincoln MPO make decisions between projects and strategies. Some strategies consider improving infrastructure or adding capacity to help alleviate congestion. The LRTP documents the need to continue allocating resources to address current and future congestion on the street network at existing intersections. Improvements to existing intersections may reduce bottlenecks and improve safety; both of which address the objectives of the CMP. Roadway projects may minimize future congestion that can be anticipated with additional future growth. The Transit Demand Model maintained by the MPO is used to anticipate the increased demand on the roadway network and helps with the prioritization of projects given funding constraints. Infrastructure and Capacity improvements strategies are part of a comprehensive approach to managing congestion.

Table 9 - Strategies that Improve Infrastructure or add Capacity:

Description	Current Applicability to Lincoln MPO
D.1 Intersection Improvements	Higher Potential
D.2 Interchange Improvements or Additions	Lower Potential
D.3 New Lanes of Travel	Some Potential
D.4 2+1 Center Turn Lane Projects	Higher Potential

B. Step 7: Program and Implement Strategies

Information developed through the CMP is applied to establish priorities in the Transportation Improvement Program (TIP) thereby facilitating the implementation of the CMP, either through formal or informal processes. During the development of the LRTP and TIP, congestion management objectives and performance measures from this document will be referenced in the project prioritization and evaluation processes. Therefore, the information documented in this CMP serves to inform other decision-making processes over the coming years and will be reevaluated when the CMP is updated. The Lincoln MPO staff, Technical Committee and Officials Committee lead and direct the effort to program the CMP strategies for implementation.

C. Step 8: Evaluate Strategy Effectiveness

The central focus of this CMP update is to build upon the MPO's previous CMP by integrating real world data collection and performance measures into the process. Not only must the CMP meet the federal requirements, but the Lincoln MPO has a desire to use the CMP as a regional benchmarking resource to inform transportation investment decisions and to paint a clear picture of the region's transportation needs. This CMP will be integrated into the 2050 LRTP.

The CMP highlights an on-going and iterative process to use strategies that span various timelines and resource demands. The Lincoln MPO works closely with operating agencies to evaluate the effectiveness of congestion reduction strategies implemented in the Lincoln region. There is not a one-size-fits-all approach to congestion management and strategies should remain flexible to address new opportunities and challenges. Future analysts should utilize the performance measures captured within this CMP to determine the effectiveness of the selected strategies. Doing so will lead to identification of areas with congestion or safety issues, development and assessment of potential mitigation strategies, and support of prioritization decisions that lead to investments in congestion and safety improvements.

Appendix E1 - Congestion Management Process

February 8, 2021

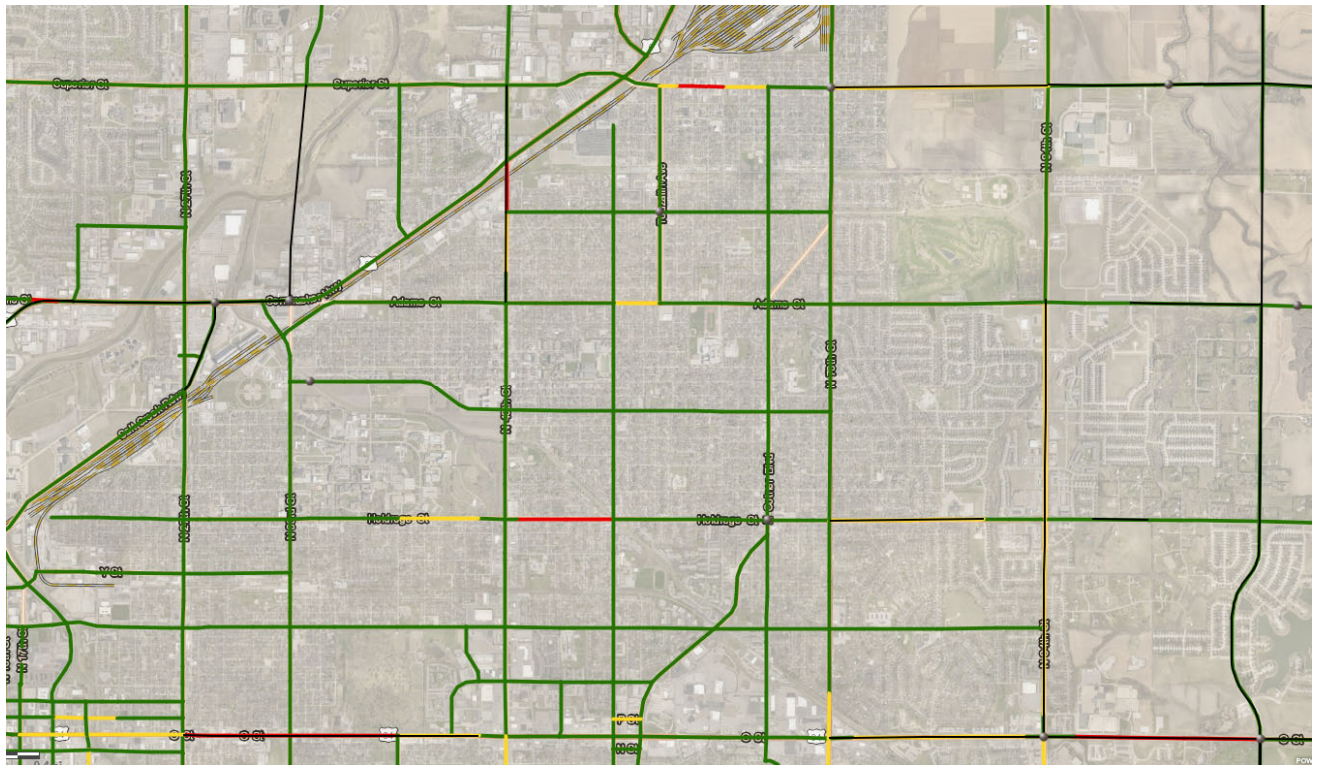
Existing Congestion

Only two segments of roadway with V/C > 1.0

- S. 9th Street from L Street to K Street (1.05)
 - **CMP Strategy A.10** Infill Development to reduce commuting demand
 - **CMP Strategy C.7** Traffic Signal Coordination – Green Light Lincoln Phase 3 Corridor
- Hwy 2 from Van Dorn Street to High Street (southbound) (1.34)
 - Covered by Hwy 2 corridor improvements (82) and 6 Lane Widening (18)

2035 Congestion

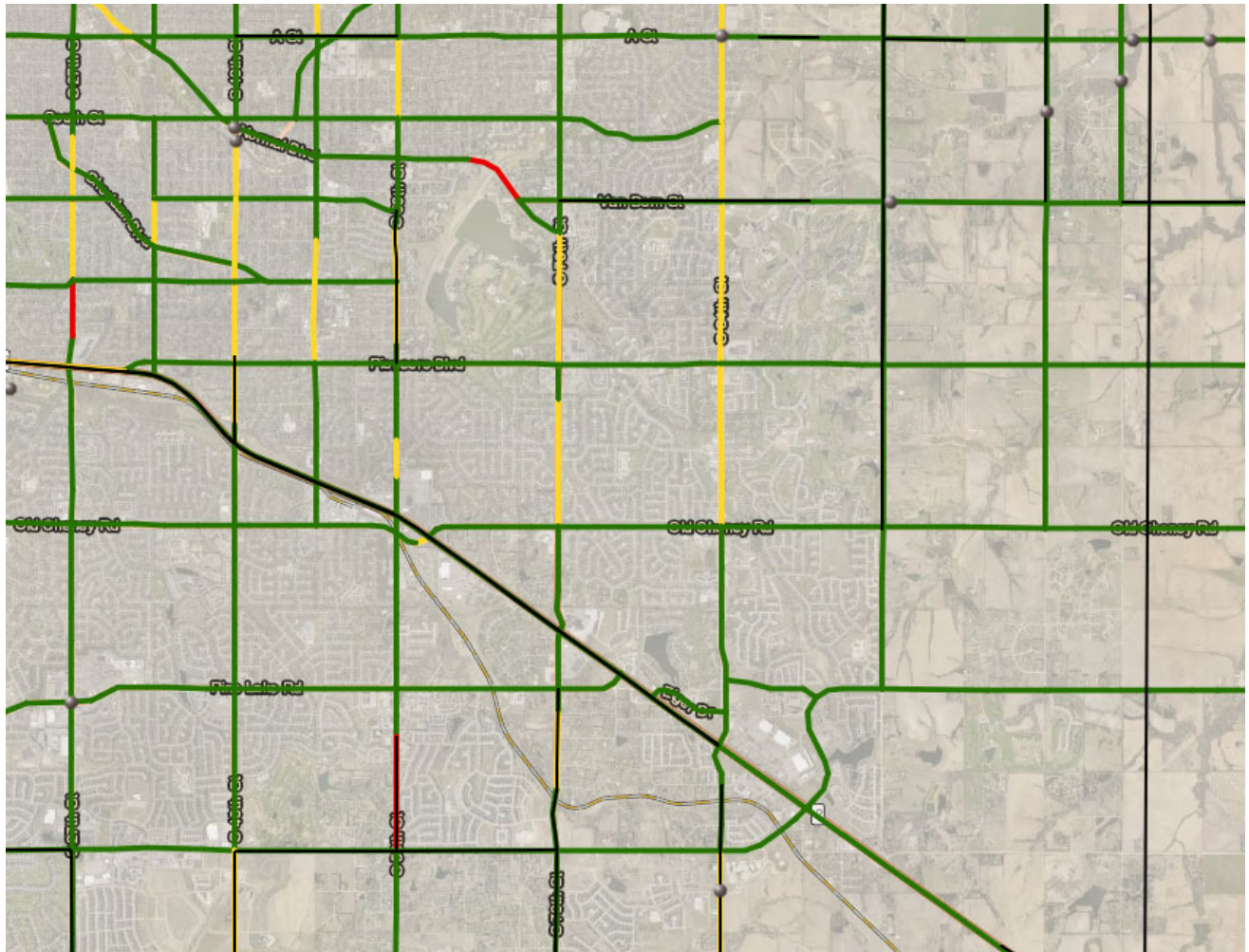
Northeast Lincoln



- Holdrege Street between North 48th Street and North 56th Street (1.11)
 - **CMP Strategy B.10** Improved Safety of Existing Bicycle and Pedestrian Facilities; Bike Plan recommends widening sidewalk on north side to function as sidepath
- Havelock Avenue between North 60th Street and N 63rd Street (1.37)

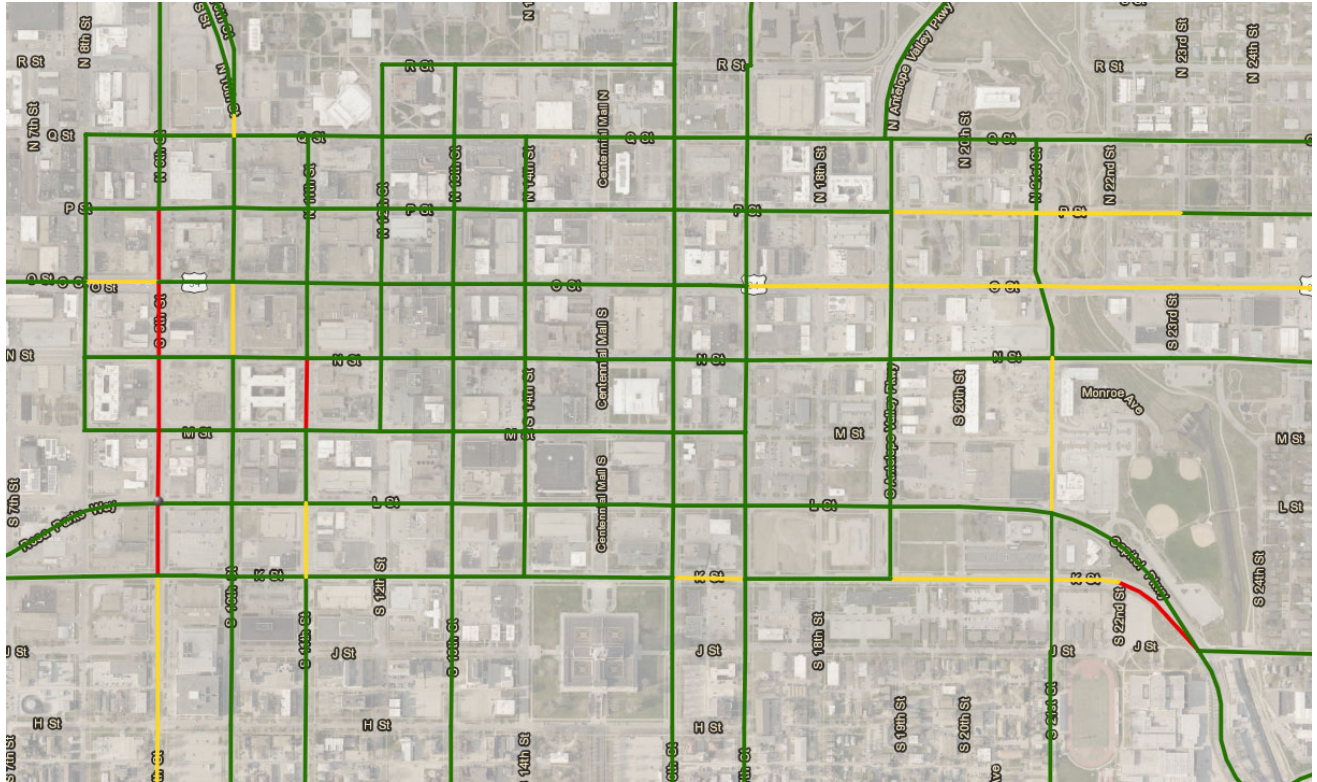
- **CMP Strategy B.8** Complete Streets; Bike Plan recommends separated bike lanes along Havelock
- **CMP Strategy C.7** Traffic Signal Coordination – Green Light Lincoln Phase 2 Corridor
- Other congested corridors are covered by a roadway project

Southeast Lincoln



- South 27th Street between Hwy 2 to Calvert Street (1.11)
 - **CMP Strategy C.7** Traffic Signal Coordination – Green Light Lincoln Phase 2 Corridor
- Normal Boulevard between South 62nd Street to Van Dorn Street (1.13)
 - **CMP Strategy C.7** Traffic Signal Coordination – Green Light Lincoln Phase 1 Corridor; limited benefit to this segment – no signals
 - Consider southbound to eastbound left turn lane
- Other congested corridors are covered by a roadway project

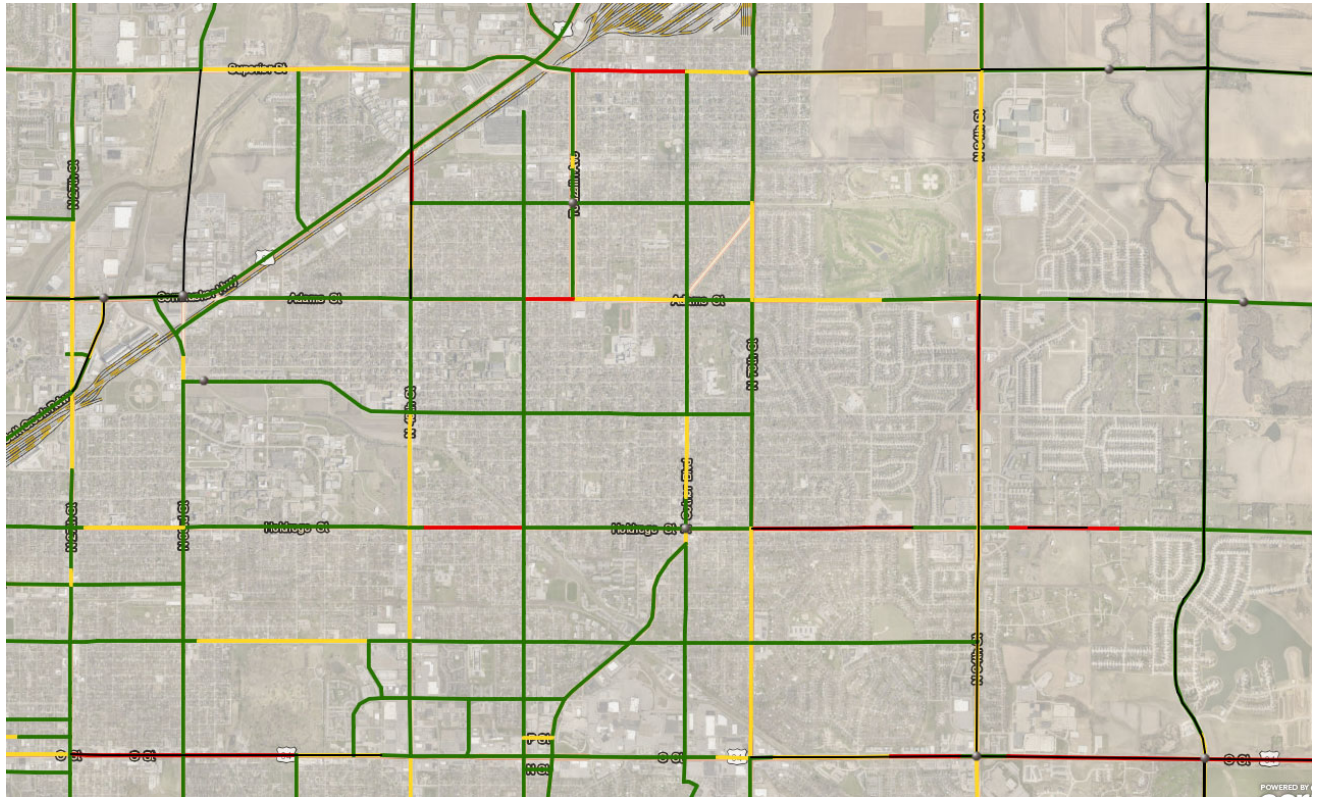
Downtown Lincoln



- South 9th Street between P Street and K Street (1.09 – 1.26)
 - **CMP Strategy C.7** Traffic Signal Coordination – Green Light Lincoln Phase 3 Corridor
 - **CMP Strategy B.8** Complete Streets; Bike Plan recommends buffered bike lanes on 13th Street, 16th/17th Streets – parallel facilities providing north-south bike routes for commuting into downtown
 - **CMP Strategy A.3** Telecommuting; encourage downtown employers to support continued telecommuting post-COVID
 - **CMP Strategy A.10** Infill Development to reduce commuting demand
- South 11th Street between M Street and N Street (1.08)
 - **CMP Strategy C.7** Traffic Signal Coordination – Green Light Lincoln Phase 3 Corridor
 - **CMP Strategy B.8** Complete Streets; Bike Plan recommends buffered bike lanes on 13th Street, 16th/17th Streets – parallel facilities providing north-south bike routes for commuting into downtown; future greenway on 11th Street
 - **CMP Strategy A.3** Telecommuting; encourage downtown employers to support continued telecommuting post-COVID
 - **CMP Strategy A.10** Infill Development to reduce commuting demand
- Capital Parkway between South 22nd Street and J Street, eastbound (1.19)
 - **CMP Strategy C.7** Traffic Signal Coordination – Green Light Lincoln Phase 1 Corridor
 - **CMP Strategy A.3** Telecommuting; encourage downtown employers to support continued telecommuting post-COVID
 - **CMP Strategy A.10** Infill Development to reduce commuting demand

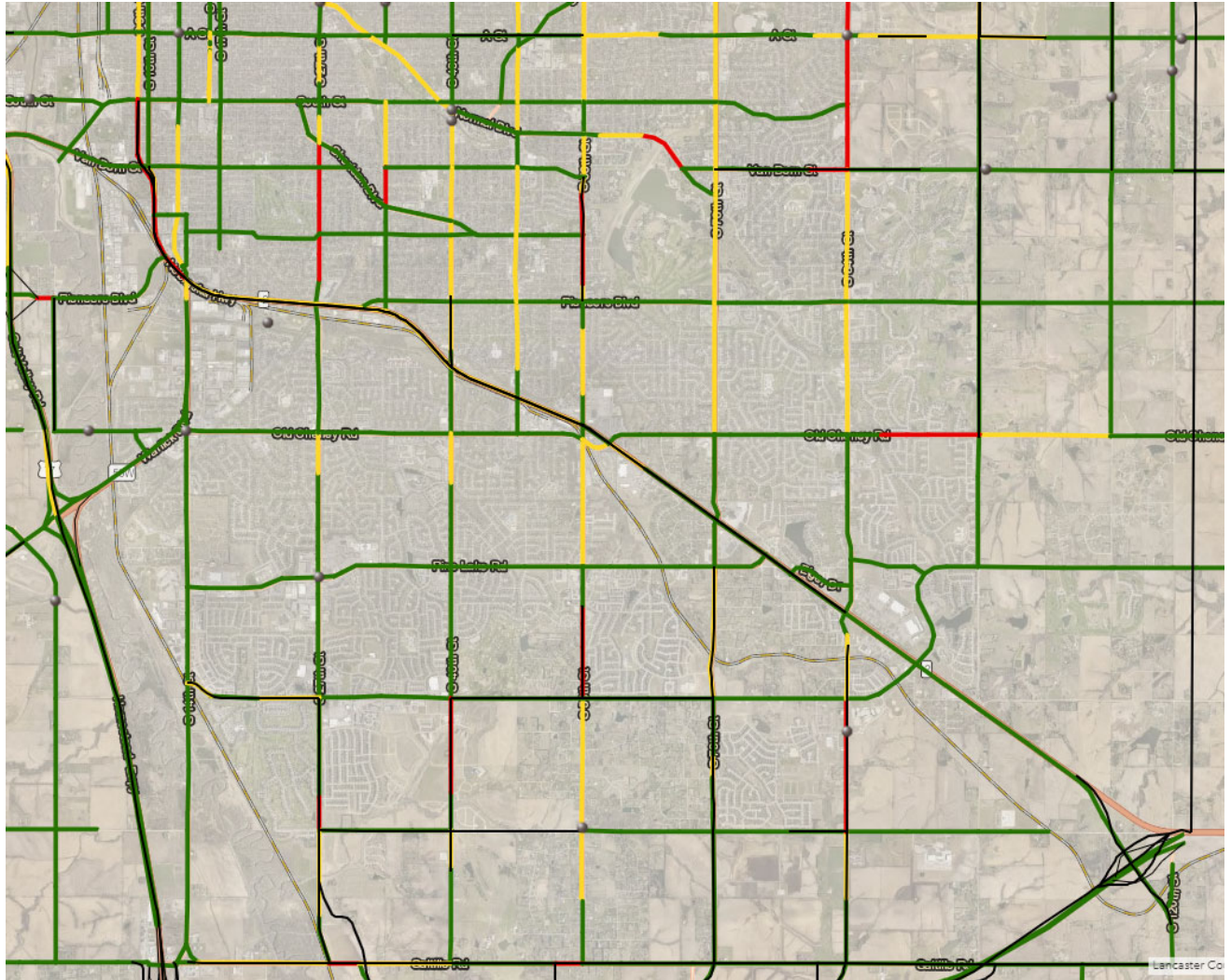
2050 Congestion

Northeast Lincoln



- Havelock Street (see 2035 Congestion)
- Holdrege Street (see 2035 Congestion)
- Adams Street between North 56th Street and North 59th Street (1.02)
 - **CMP Strategy A.6** Safe Routes to School – Focus on improving biking, walking, transit access to Lincoln Northeast High School and education campaign; support alternative modes access and education for Nebraska Wesleyan University students and staff
- Other congested corridors are covered by a roadway project

Southeast Lincoln



- Pioneer Boulevard between S 1st Street and SW 2nd Street (1.11)
 - If/when development occurs on south side of street; evaluate the need for intersection improvements or other traffic mitigation
- South 27th Street between Hwy 2 Sheridan Boulevard (1.01 – 1.22)
 - **CMP Strategy C.7** Traffic Signal Coordination – Green Light Lincoln Phase 2 Corridor
- South 33rd Street between Sheridan Boulevard and Van Dorn Street (1.02)
 - **CMP Strategy A.6** Safe Routes to School – Focus on improving biking, walking (pedestrian crossing improvements) to Sheridan Elementary School and Lincoln Southeast High School and education campaign
- Normal Boulevard (see 2035 Congestion)
- South 84th Street between Van Dorn Street and Sandalwood Drive (1.02-1.06)
 - **CMP Strategy C.7** Traffic Signal Coordination – Green Light Lincoln Phase 1 Corridor
- Old Cheney Road between South 84th Street and South 98th Street (1.00 – 1.18)
 - **CMP Strategy C.7** Traffic Signal Coordination – Green Light Lincoln Phase 2 Corridor

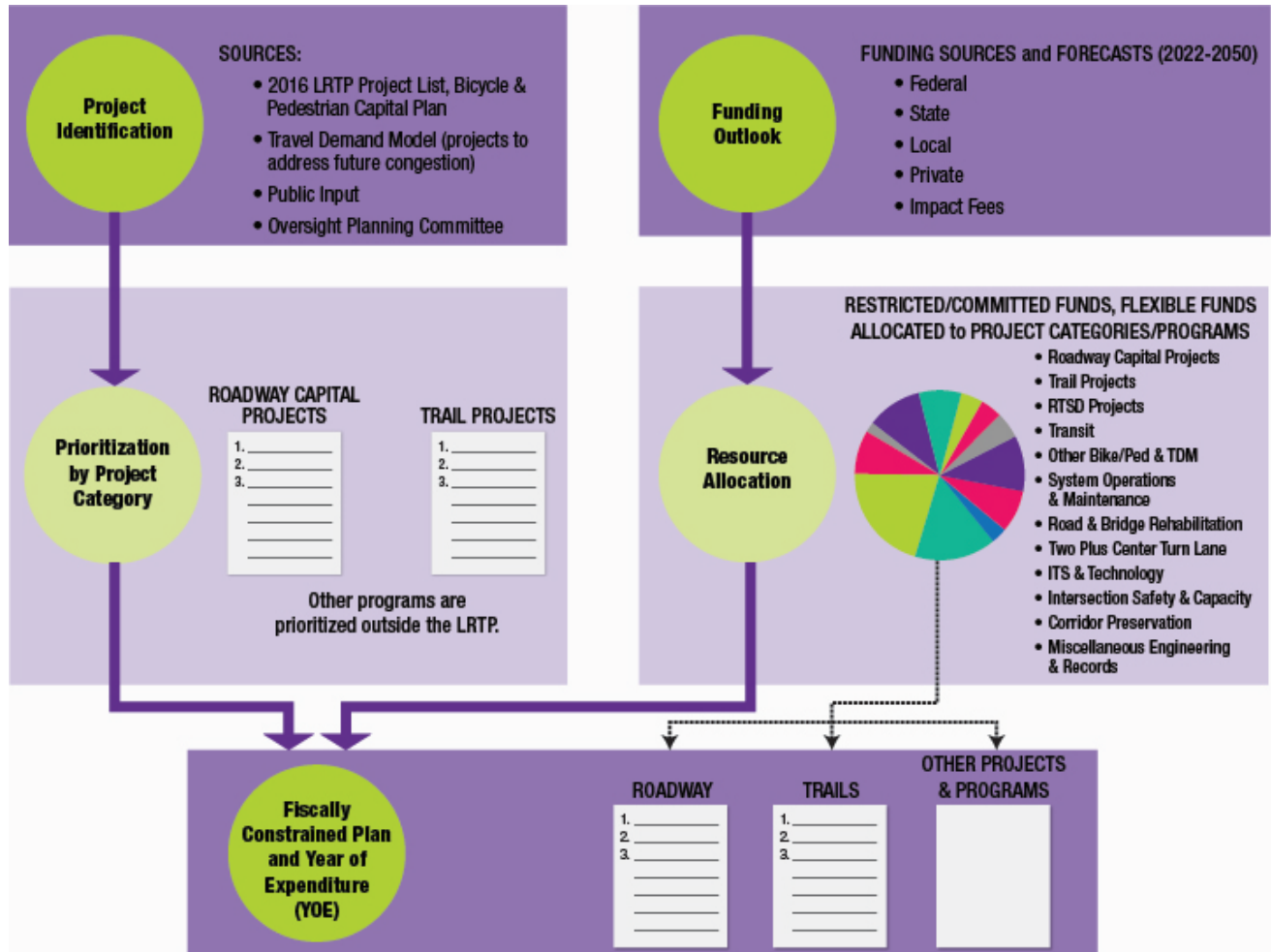


APPENDIX F

Project Prioritization Process

Appendix F – Project Prioritization Process

The purpose of this document is to describe the process used to prioritize projects and develop a fiscally constrained plan for the 2050 Long Range Transportation Plan (LRTP) Update. Although the LRTP addresses funding for a variety of project and program categories, only roadway and trail projects are prioritized within the LRTP. All other project categories (e.g., transit, on-street bicycle, rehabilitation, etc.) are prioritized outside of the LRTP. These other project categories are funded through a “pool” of funding as established in the Resource Allocation step. The Fiscally Constrained Plan includes the top ranked roadway and trail projects, and a pool of funding for the various other project categories.



LRTP Goals

In compliance with federal requirements, the 2050 LRTP Update is a performance-based plan. The Lincoln MPO tracks a series of system-level performance measures that align with the eight LRTP goals (listed below). The project prioritization process is structured to identify those projects that will provide the greatest contributions toward meeting these eight goals. The evaluation criteria used to compare projects are directly related to the eight goals.



A well-maintained transportation system.



A transportation system that supports economic vitality for residents and businesses.



An efficient, reliable, and well-connected transportation system that leverages innovation and technology for moving people and freight.



A transportation system that enhances the natural, cultural, and built environment.



A multi-modal system that provides travel options to support a more compact, livable urban environment.



Collaboration in funding transportation projects that maximizes user benefits.



A safe and secure transportation system.



Transportation investments developed through an inclusive process that promotes equitable outcomes.

Project Identification

The following process was used to identify projects to be evaluated and prioritized in the LRTP:

1. Started with 2040 LRTP Roadway Capital Projects, Rural Road Projects, and Trail Project lists.
2. Identified projects that have been completed; these projects were removed.
3. Identified projects included in the current Capital Improvement Program (CIP)/Transportation Improvement Program (TIP) and County 1 & 6 Year Plan. These committed projects are listed at the top of the Fiscally Constrained Plan.
4. Identified projects with funding obligations such as Lincoln on the Move (LOTM), highway allocation bonds or public-private partnerships. These projects are also listed at the top of the Fiscally Constrained Plan.
5. Used the 2019, 2035, and 2050 travel demand models to identify areas of congestion that would not be addressed by previously identified projects. The Congestion Management Process (CMP) was applied to these congested roads to identify potential congestion mitigation as summarized in Attachment 1 of Appendix A. The initial recommendations were discussed with the Roadway Subcommittee for consideration of additional projects.
6. Overlaid the On-Street Bike projects and the Trail sidepath projects with the Roadway Capital Projects to identify opportunities to combine bike improvements with roadway projects. Such opportunities were presented and discussed with the Trails Subcommittee (and the POPC) for consideration. Trail and On-Street Bike projects that are expected to be constructed with Fiscally Constrained roadway projects are included in the Fiscally Constrained Plan.
7. Based on the September/October 2020 public input (specifically, the Pinmap), identified locations with clusters of public comments that would not be addressed by previously

identified projects. These clusters of public comment were discussed with the Roadway Subcommittee (and the POPC) for consideration of additional projects and/or project refinements.

8. The Roadway and Trail Subcommittees (and the POPC) were be asked to review and refine the project lists.
 - Are there changes in the project scope that should be considered?
 - Are there additional projects to be included?

Project Scoring and Weights

The Lincoln and Lancaster County Roadway Capital Projects were evaluated and prioritized separately in recognition of the unique transportation needs and priorities in the urban versus rural context. The eight LRTP goals (plus community support) were used as the basis for the data-driven project evaluation for both urban and rural projects. Scores for each goal area/criterion are on a 0–1 scale, with 0 being the least favorable and 1 being the most favorable. The roadway projects were evaluated through a data-driven scoring process, and the Roadway Evaluation Subcommittee was responsible for guiding the process, providing relevant data and project information, and reviewing the evaluation results.

Each trail project was given a score ranging from 0 to 1 for each goal. A score of 0 is the least favorable and a score of 1 is the most favorable rating. Because the data for trail projects are not as robust as those for roadway projects, Trail Evaluation Subcommittee members scored the projects independently, and project scores were averaged. The committee met to discuss the scoring results and presented their recommended scores to the POPC.

The relative importance of the eight goals (plus community input) varies; therefore, weights are assigned to each goal category and corresponding evaluation criteria. Because the relative importance of the goals differs for Urban Roadway Projects, Rural Roadway Projects, and Trail Projects, separate weights are established for the three project categories.



The weights shown in Table 1. Weights by Goal Area and Project Category were developed using the combined input from the POPC and the Community Committee. The project score (0–1) for each goal was multiplied by the corresponding weight, resulting in a total project score ranging from 0 to 100.

Table 1. Weights by Goal Area and Project Category

Goal Area	Rural Area Roadway Projects (Lancaster County)	Urban Area Roadway Projects (Lincoln)	Trail Projects
Maintenance	22.1	17.8	13.0
Mobility and System Reliability	12.1	12.4	12.2
Livability and Travel Choice	5.8	11.0	13.7
Safety and Security	13.8	13.5	13.1
Economic Vitality	8.9	7.5	5.8
Environmental Sustainability	12.2	12.8	12.4
Transportation Equity	6.7	10.0	12.1
Funding and Cost Effectiveness	13.4	10.0	7.7
Community Support	5.0	5.0	10.0
Total	100.0	100.0	100.0

Roadway Project Evaluation

The eight LRTP goals were to be used as the basis for project evaluation for both urban and rural roadway projects. Decision Lens was used as the tool to evaluate projects; all evaluation metrics were converted to a 0-1 scale, with 0 being the least favorable and 1 being the most favorable. The following sections describe the evaluation criteria and supporting data.

 Maintenance	Evaluation Question: Is the project located on a road that is in poor condition and would therefore serve dual functions of rehabilitating and improving the road?	
Decision Lens Scale: The project with the worst PCI was given a score of 1; all other scores were scaled proportionately. If the PCI varies over the length of the project, the score is a weighted average based on length.	Evaluation Metric: Current pavement condition index (PCI)	
	Data Sources: LTU 2020 PCI data, Lancaster County 2020 PCI data, and NDOT National Service Index (NSI) data	Data Gaps/Validation: None anticipated.
 Mobility and System Reliability	Evaluation Question: Is the project located on a road that is currently congested or expected to experience congestion in the future?	
Decision Lens Scale: Weighted Average V/C = $0.5 * (2019 \text{ V/C}) +$ $0.3 * (2035 \text{ V/C}) +$ $0.2 * (2050 \text{ V/C})$ Value of 1 in Decision Lens was set based on the highest value in the dataset.	Evaluation Metric: Volume to capacity ratio (V/C)	
	Data Sources: 2019, 2035, and 2050 V/C ratios from updated Lincoln MPO travel demand model	Data Gaps/Validation: Areas of Lancaster County outside of the model area; traffic counts were used to estimate V/C over time with an average annual growth rate of one percent. A capacity of 400 vehicles per day (vpd) was used for gravel roads.



Livability and Travel Choice

Evaluation Question: Does the project include multimodal elements?

Evaluation Metric: Presence of StarTran route; inclusion of bicycle or pedestrian enhancements

Decision Lens Scale:

- No additional modes = 0
- 1 additional mode = 0.33
- 2 additional modes = 0.67
- 3 additional modes = 1.0

Data Sources: StarTran existing routes (assumes that StarTran will benefit from project along the route); bicycle and trail project overlay; project description (to identify bicycle and pedestrian improvements)

Data Gaps/Validation: Project sponsors assisted in identifying bicycle and pedestrian improvements associated with each project.



Transportation Equity

Evaluation Question: Is the project located in an area with a high number of underserved and overburdened communities and does the project address the needs identified for that area?

Evaluation Metric: Underserved and overburdened communities (NOTE: Felsburg Holt & Ullevig (FHU) calculated the Transportation Equity score using a GIS spatial overlay)

Decision Lens Scale:

Equity index category

- Low = 0
- Low to moderate = 0.33
- Moderate to high = 0.67
- High = 1.0

If the project passes through areas with different equity index categories, the score defaults to the higher score.

If the project could have adverse impacts, the score was reduced by one or more levels.

Data Sources: Equity index which includes: older adults, people with disabilities, people with limited English proficiency, single parent households, people with low income, minority populations, and people without access to a vehicle); Pinmap public comments

Data Gaps/Validation: Projects with potential adverse impacts were flagged and discussed categorically with the Equity Subcommittee to determine if a reduction in score was appropriate.



Safety and Security

Evaluation Question: Will the project alleviate a known safety problem?

Evaluation Metric: Crash rate, number of bicycle and pedestrian crashes, number of injury and fatal crashes

Decision Lens Scale:

Each of three crash metrics within the project area were calculated and scaled. The Decision Lens score is a cumulative score with a maximum total score of 1.

- Crash Rate (50% of score)
- Number of Bicycle and Pedestrian Crashes (25% of score)
- Number of Injury and Fatal Crashes (25% of score)

Data Sources: NDOT crash data; model Vehicle Miles Traveled (VMT) to calculate crash rates

Data Gaps/Validation: VMT estimates for County projects outside of model area were calculated based on existing traffic counts and project length.



Economic Vitality

NOTE: This category has two evaluation criteria; the combined score was used with each criterion representing half of the score.

Evaluation Question 1: Will the project improve access to and/or add value to surrounding land uses?

Evaluation Metric 1: Proximity of project to commercial, industrial, or light industrial land uses in Future Land Use (FLU) map

Decision Lens Scale:

- Not proximate to commercial or industrial land uses = 0
- Proximate to commercial or industrial land uses = 1

Data Sources: Future Land Use map

Data Gaps/Validation:

Confirmation from Urban Development on results

Evaluation Question 2: Will the project improve travel on a designated truck route and/or the National Highway System (NHS)?

Evaluation Metric 2: Primary and secondary truck routes and NHS routes

Decision Lens Scale:

- Not a truck route = 0
- Secondary truck route = 0.5
- Primary truck route or NHS = 1.0

Data Sources: Truck Routes and National Highway System

Data Gaps/Validation:

Secondary truck routes in Lancaster County identified by County Engineer's office



Environmental Sustainability

Evaluation Question: Will the project impact the natural, cultural, or built environment?

Evaluation Metric: Presence of red-flag environmental resources within the project area


Decision Lens Scale:


The number of red-flag environmental considerations within the project area was counted. Value of 1 in Decision Lens was set based on the lowest value in the dataset.

Data Sources: Natural, cultural, and built environmental data mapping including floodplains, wetlands, native prairie, tree mass, threatened and endangered species, parks and open space, historic sites

Data Gaps/Validation:

None anticipated

 Funding and Cost Effectiveness	Evaluation Question: How does the cost of the project compare to the benefits?	
	Evaluation Metric: Benefit/Cost Ratio (NOTE: FHU calculated the Funding and Cost Effectiveness score after the other seven scores were established)	
Decision Lens Scale: Benefits were calculated as the sum of the prior seven evaluation scores (maximum possible value of 7). That score was divided by the project cost. Value of 1 in Decision Lens was set based on the highest value in the dataset.	Data Sources: LTU and Lancaster County (project costs)	Data Gaps/Validation: None anticipated

 Optional Community Support Bonus	Evaluation Question: Does the project have strong community support?	
	Evaluation Metric: Number of "votes"	
Decision Lens Scale: The number of "votes" for each project was counted. Value of 1 in Decision Lens was set based on the highest value in the dataset.	Data Sources: Phase 2 public engagement	Data Gaps/Validation: None anticipated

Trail Project Evaluation

The LRTP goals were used as the basis for trail project evaluation. Each evaluation criterion (linked to a goal) was scored from 0 to 1, with 0 being the least favorable and 1 being the most favorable. The following sections describe the evaluation criteria scoring guidance that was provided to the Trails Subcommittee for individual scoring. Scores for the trail projects included in the 2040 LRTP were revisited by the Trails Subcommittee and adjusted to account for current conditions.



Maintenance

Evaluation Question: Will the project improve the condition an existing trail?

Assessment	Score
Project will reconstruct or replace a trail segment that is in poor condition.	1
Project will reconstruct or replace a trail segment that is in fair or better condition.	0.67
Project will have no impact on the condition of the existing trail.	0.33
Project will result in higher demands on a trail segment that is in poor condition.	0



Mobility and System Reliability

Evaluation Question: Will the project complete a gap in the trail system?

Assessment	Score
Project will fully complete a gap in the trail system.	1
Project will extend the trail system.	0.67
Project will partially complete a gap in the trail system.	0.33
Project will detract from the connectivity of the trail system.	0



Livability and Travel Choice

Evaluation Question: Will the project encourage the use of alternative transportation?

Assessment	Score
Project will serve a significant commuter travel pattern – AND – will improve access to a major employment area – AND – will improve access to transit.	1
Project will serve a significant commuter travel pattern – OR – will improve access to a major employment area – OR – will improve access to transit.	0.67
Project will serve a minor commuter travel pattern – OR – will improve access to a minor employment area – OR – will marginally improve access to transit.	0.33
Project will not encourage the use of alternatives modes of transportation.	0



Safety and Security

Evaluation Question: Will the project alleviate a known safety problem?


Assessment	Score
Project will directly address a major identified safety problem.	1
Project will improve (but not eliminate) an identified safety problem.	0.67
Project will only marginally improve safety; no safety problems are identified.	0.33
Project will have no identifiable safety benefits.	0




Economic Vitality

Evaluation Question: Will the project improve access to and/or add value to surrounding land uses?

Assessment	Score
Project will significantly improve access to a major employment base and/or commercial area – OR – project will support a more attractive environment that adds value to adjacent uses.	1
Project will moderately improve access to an employment base and/or commercial area – OR – project will moderately contribute to the value of adjacent uses.	0.67
Project will not improve access to a major employment base or commercial area nor will the project contribute to the value of adjacent uses.	0.33
Project will detract from the value of surrounding land uses.	0

	Environmental Sustainability	Evaluation Question: Will the project impact the natural, cultural, or built environment?	
		Evaluation Metric: Presence of red-flag environmental resources within the project area	
Decision Lens Scale: The number of red-flag environmental considerations within the project area was counted. Value of 1 in Decision Lens was set based on the lowest value in the dataset.		Data Sources: Natural, cultural, and built environmental data mapping including floodplains, wetlands, native prairie, tree mass, threatened and endangered species, parks and open space, historic sites	Data Gaps/ Validation: None anticipated
Assessment			Score
No red-flag environmental resources have been identified within the project buffer.			1
Some environmental resources exist within the project buffer, but avoidance is expected.			0.67
Some environmental resources exist within the project buffer, but mitigation is expected.			0.33
Red-flag environmental resources may be negatively impacted within the project buffer.			0

 Transportation Equity	Evaluation Question: Is the project located in an area with a high number of underserved and overburdened communities?
Decision Lens Scale: Equity index category <ul style="list-style-type: none"> Low = 0 Low to moderate = 0.33 Moderate to high = 0.67 High = 1.0 If the project passes through areas with different equity index categories, the score defaults to the higher score. All trail projects are assumed to be beneficial (i.e., no adverse impacts).	Evaluation Metric: Underserved and overburdened communities (NOTE: Felsburg Holt & Ullevig (FHU) calculated the Transportation Equity score using a GIS spatial overlay) Data Sources: Equity index which includes older adults, people with disabilities, people with limited English proficiency, single parent households, people with low income, minority populations, and people without access to a vehicle). Data Gaps: None



Funding and Cost Effectiveness

Evaluation Question: How does the cost of the project compare to the benefits?

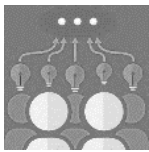
Evaluation Metric: Benefit/Cost Ratio (NOTE: FHU calculated the Funding and Cost Effectiveness score after the other seven scores were established)

Decision Lens Scale:

Benefits were calculated as the sum of the prior seven evaluation scores (maximum possible value of 7). That score was divided by the project cost. Value of 1 in Decision Lens was set based on the highest value in the dataset.

Data Sources: Project Costs from Lincoln Parks & Recreation Department

Data Gaps: None anticipated.



Optional Community Support Bonus

Evaluation Question: Does the project have strong community support?

Evaluation Metric: Number of "votes"

Decision Lens Scale:

The number of "votes" for each project was counted. Value of 1 in Decision Lens was set based on the highest value in the dataset.

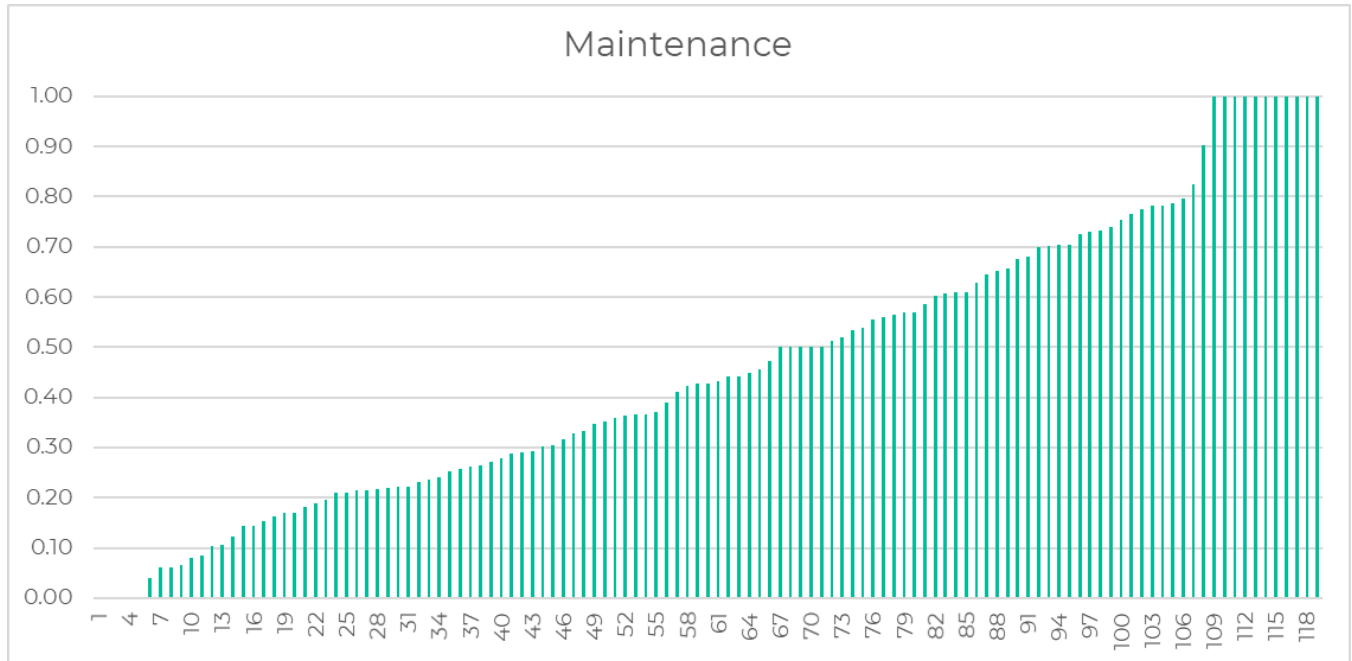
Data Sources: Phase 2 public engagement

Data Gaps: None anticipated

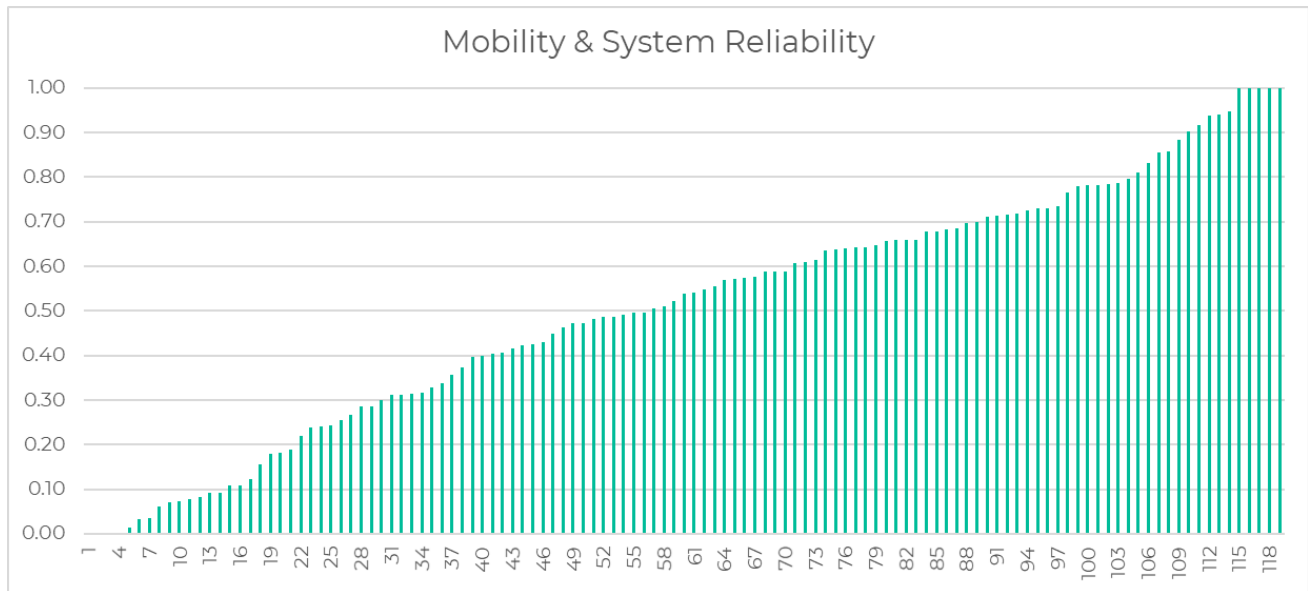
Project Scoring Distribution and Adjustments

In March 2021, the preliminary urban and rural roadway project scores were presented and discussed with the Roadway Subcommittee. The distribution of scores for each evaluation criteria were discussed, and some adjustments were made to account for anomalies in the project scoring. The following sections document the preliminary scores (as of March 2021) and the associated adjustments that were made (which are reflected in the final scoring results documented in **Appendix G**).

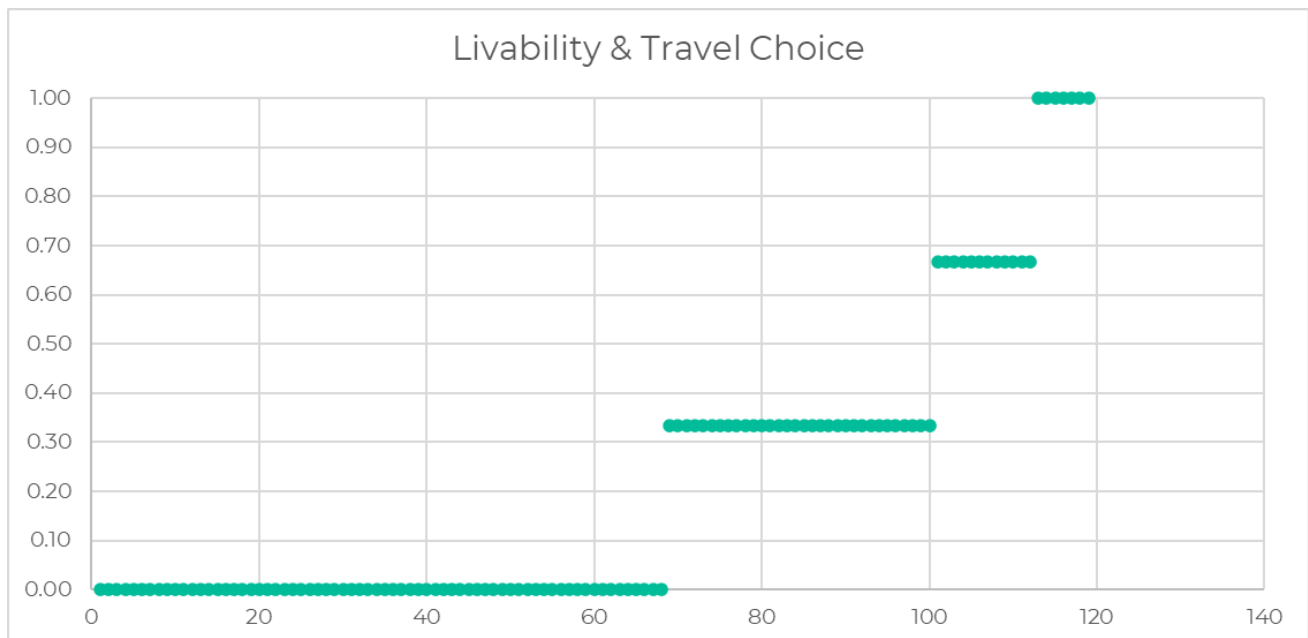
Urban Roadway Projects (Lincoln)



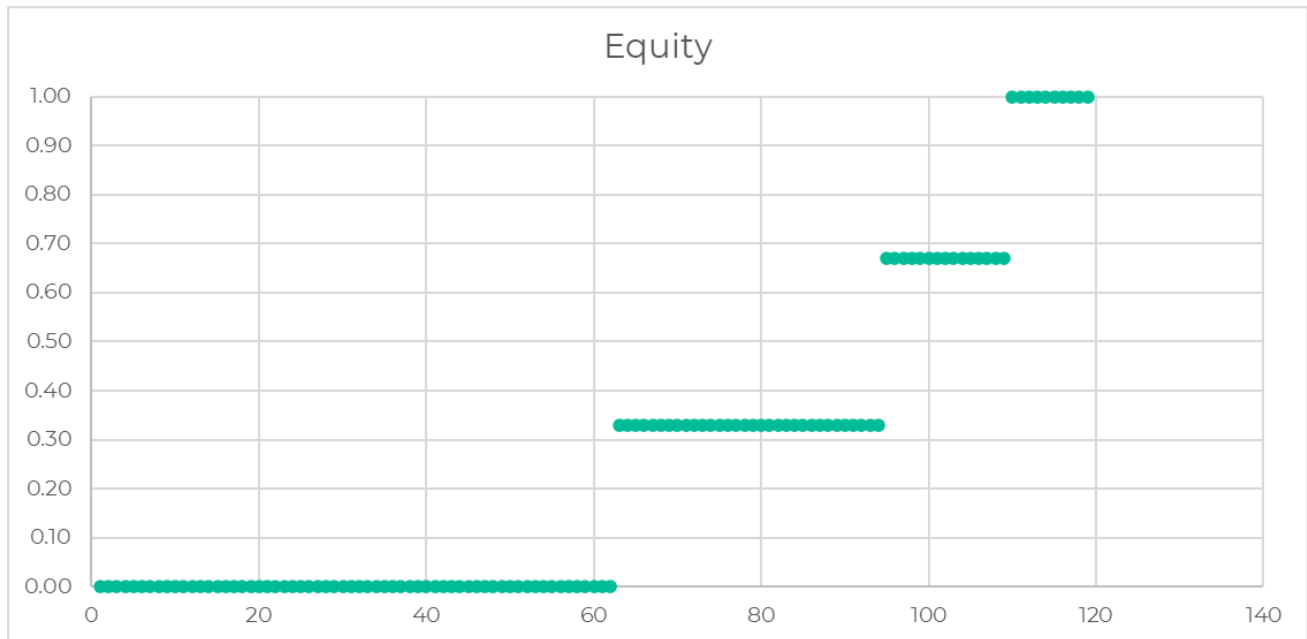
- Projects with poor pavement (or bridge) condition get a higher score
- Gravel roads automatically get a maximum score
- Good distribution of scores – no adjustment



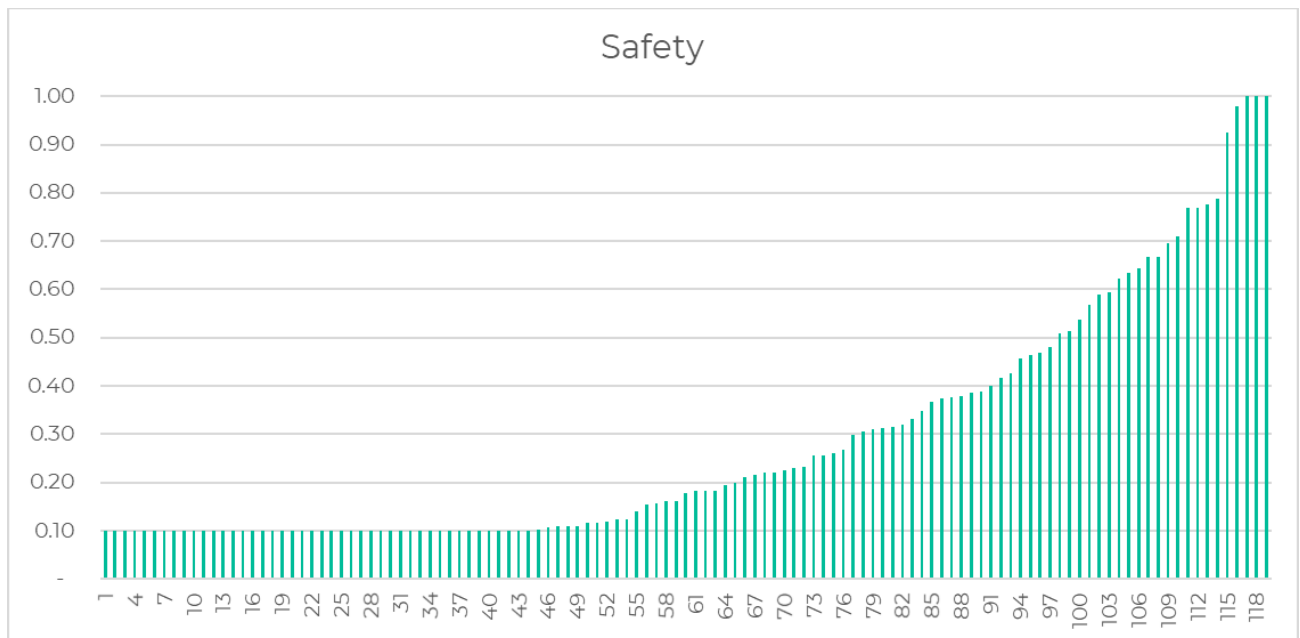
- Based on 2019, 2035, and 2050 volume to capacity ratios (from model)
- Gravel roads – used capacity of 400 vpd
- Mobility scores were scaled based on 5th highest score, where distribution of scores started to smooth; top 5 projects receive a score of 1.0



- Based on the number of modes that would benefit from the project
- Over half of the roadway projects would not benefit another mode
- No adjustment

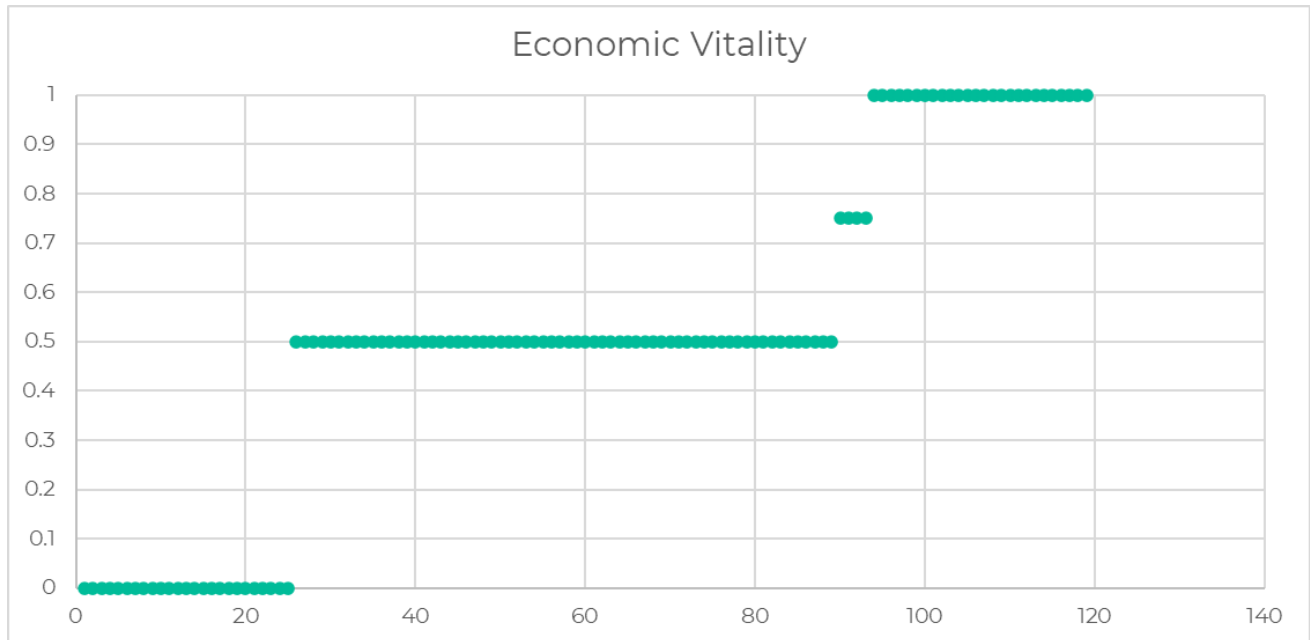


- Based on four levels of underserved and overburdened communities in the study area; projects with the highest concentrations of underserved and overburdened communities get the highest score
- Over half of the roadway projects are located in areas with low concentrations of underserved and overburdened communities.
- No adjustment

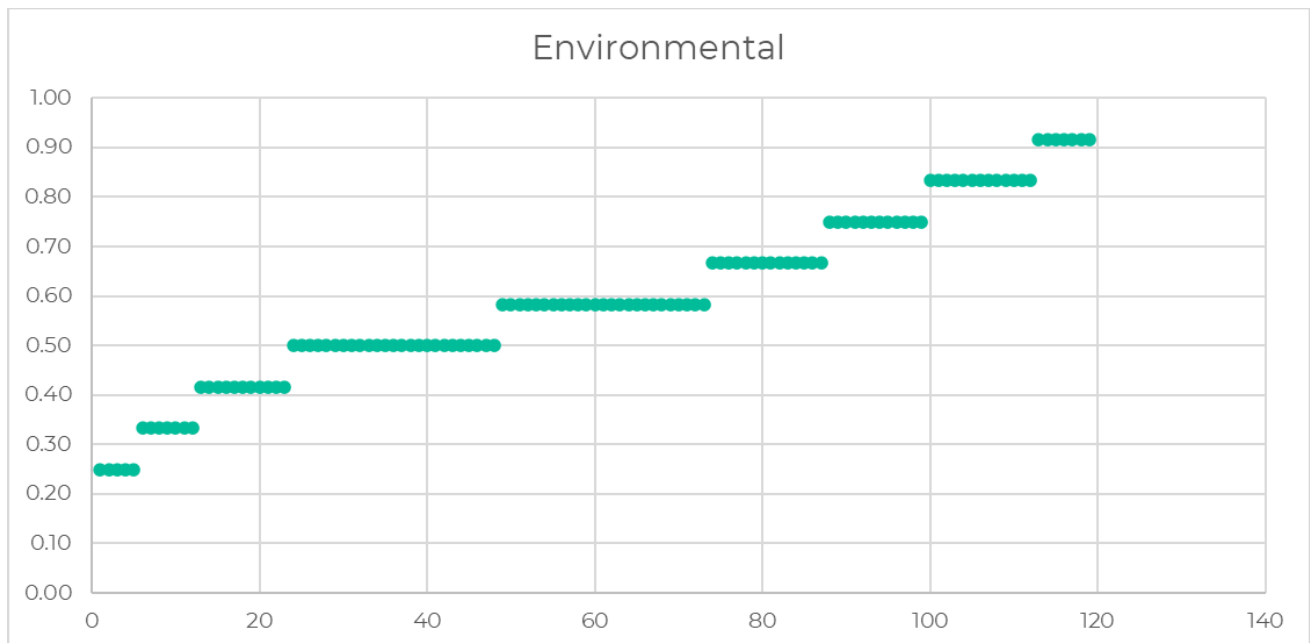


- Based on crash rate (crashes per million vehicles); fatal & injury crashes; bicycle and pedestrian crashes
- Applied a minimum score of 0.1 – although these projects don't have a crash history, they would still offer safety improvements

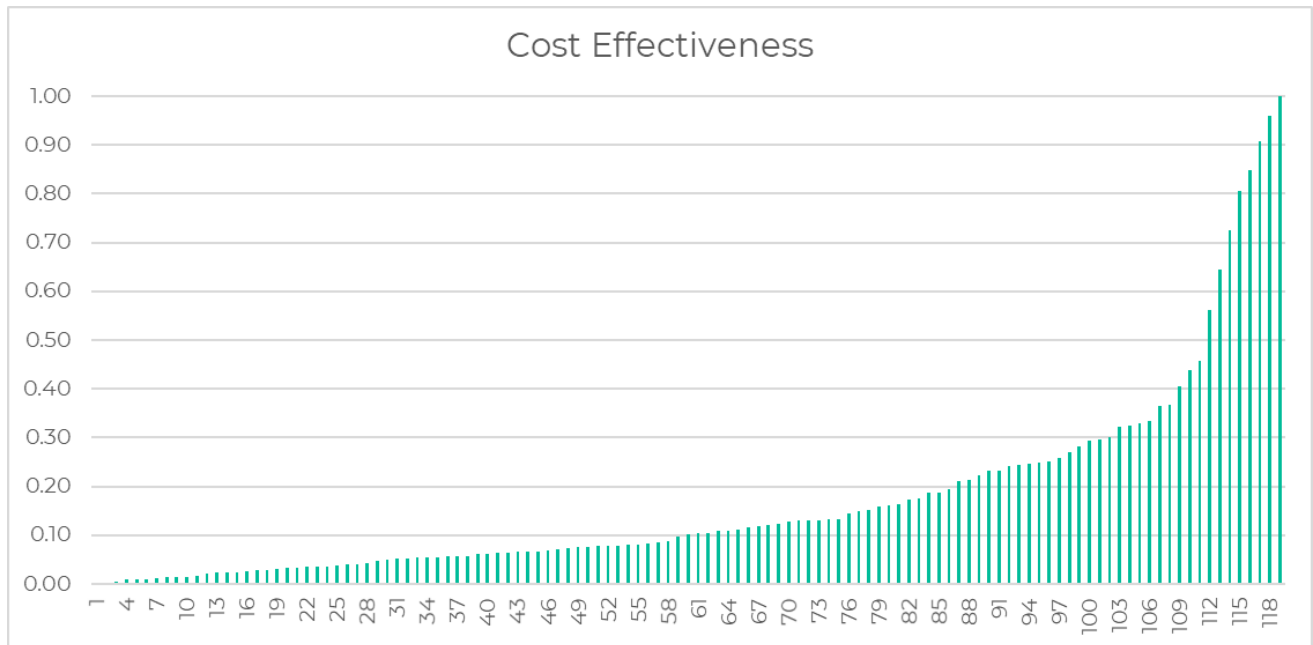
- Safety scores were scaled based on 3rd highest score, where distribution of scores started to smooth; top 3 projects receive a score of 1.0



- Based on proximity to commercial/industrial land use AND NHS/primary truck route/secondary truck route
- No adjustment



- Based on number of red flag environmental resources in project area; few environmental resources in the area results in a higher score
- No projects score a 1.0 – they all have at least one environmental resource within the project buffer.
- No adjustment



- Based on sum of the score for the other 7 categories divided by the project score
- Only the Top 8 projects get a score greater than 0.5:
- No adjustment

Other Scoring Adjustments

The benefits of new roadways like South Beltway and East Beltway are underrepresented by scoring process

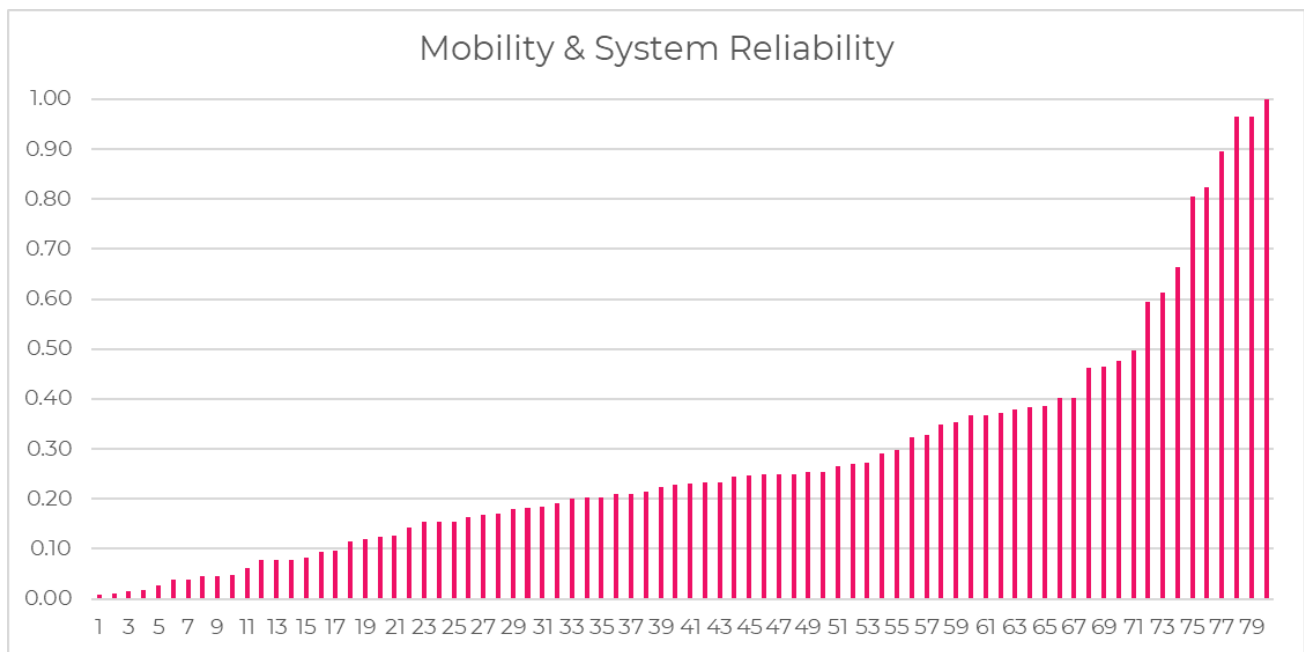
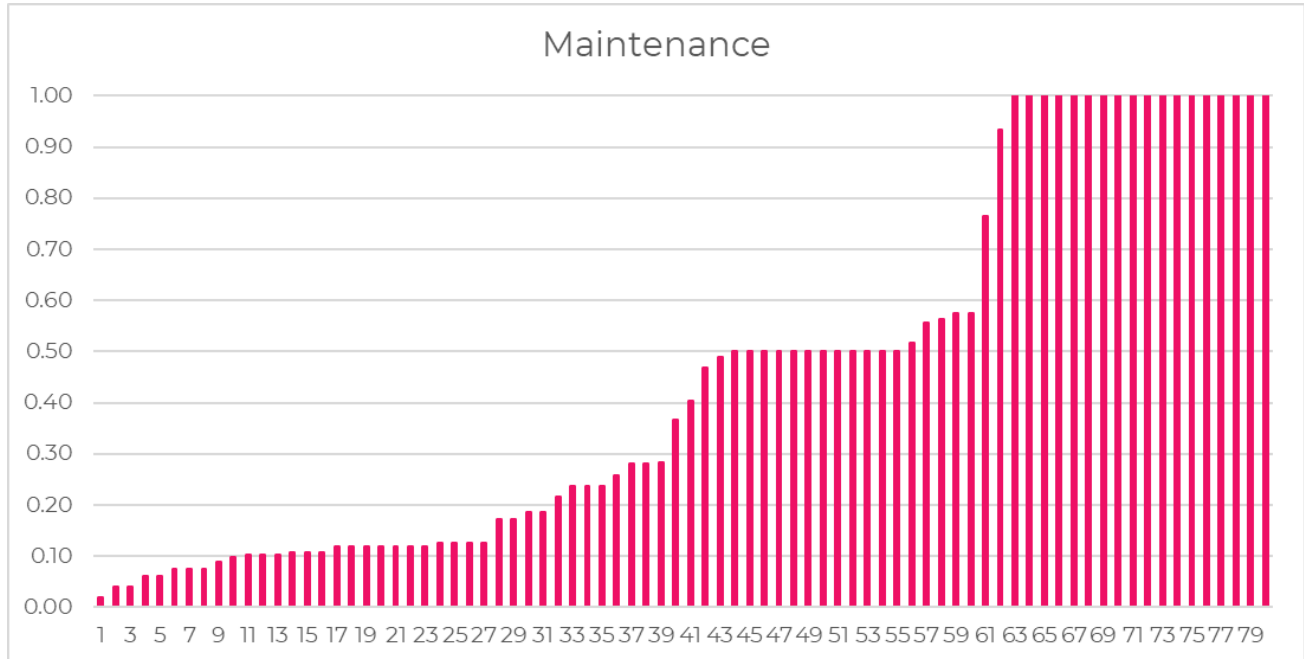
- Mobility
- Safety
- Economic

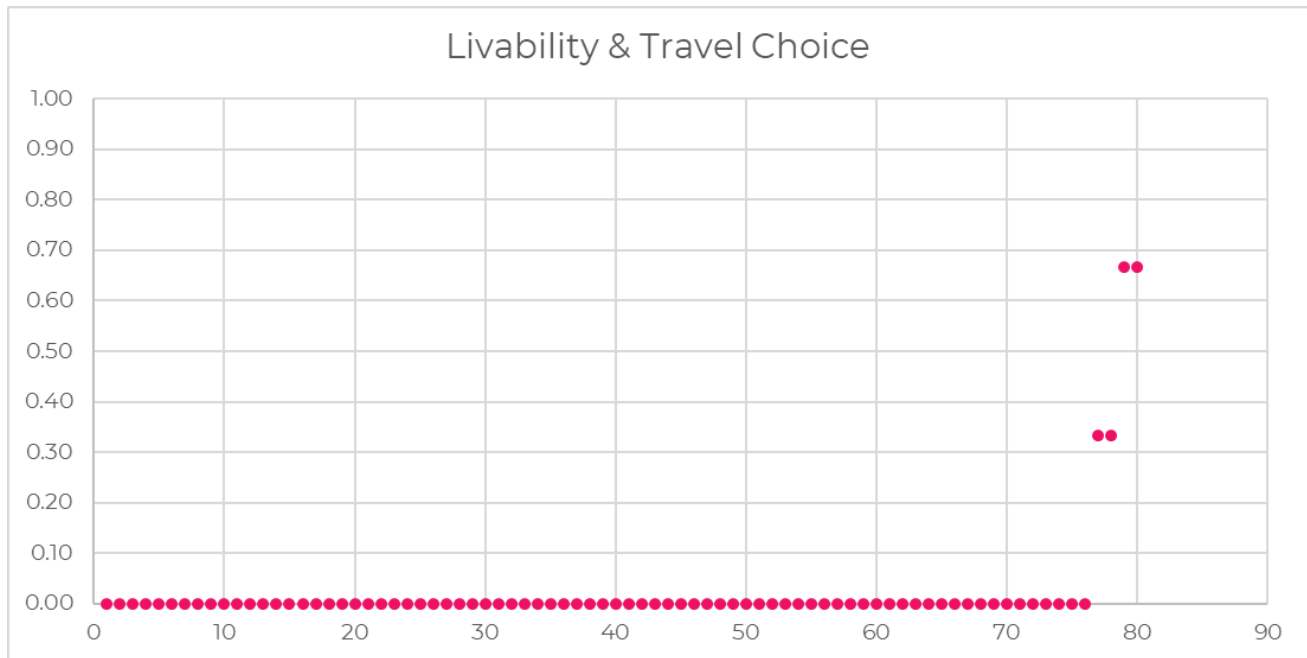
Economic – added “Primary Truck Route” designation to both corridors; giving both the highest economic score (1.0)

Used N & S 84th Street as a surrogate for the mobility and safety scores for East Beltway

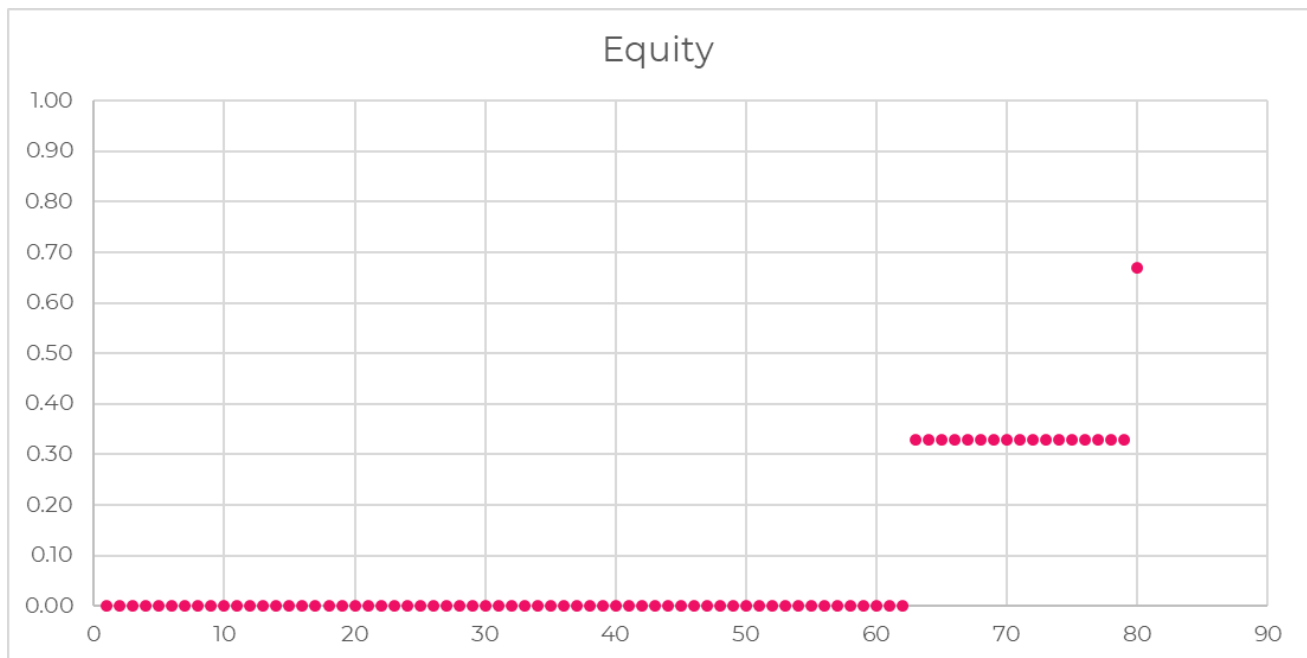
Used Hwy 2 as a surrogate for the mobility and safety scores for South Beltway

Rural Road and Bridge Projects (Lancaster County)

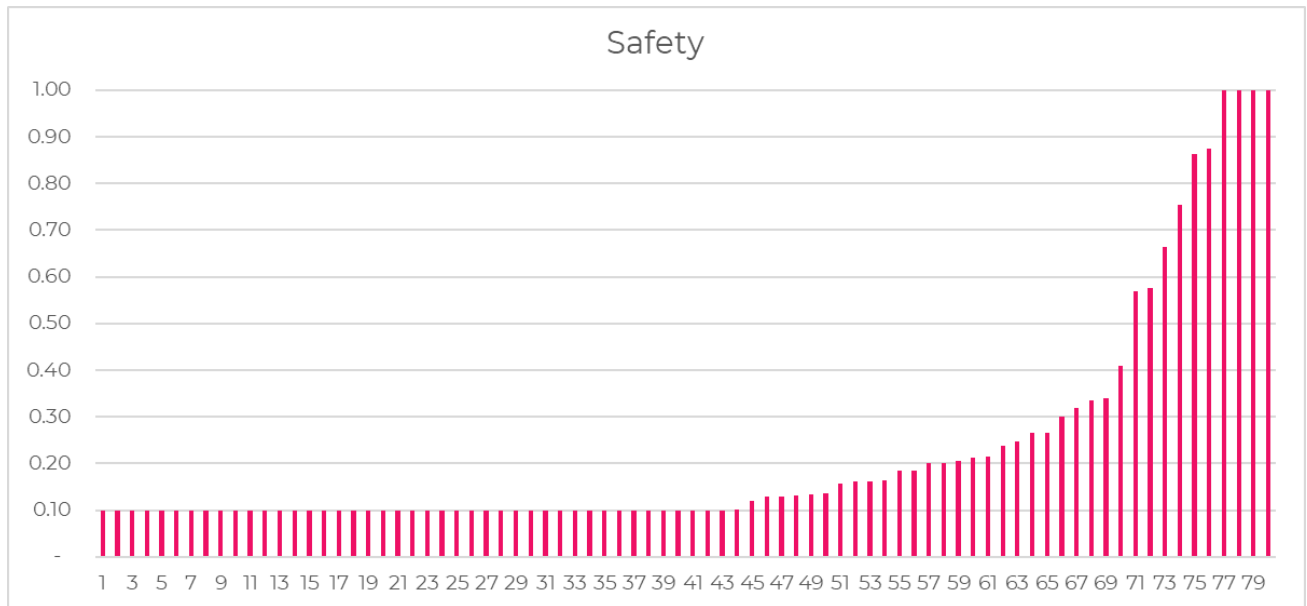




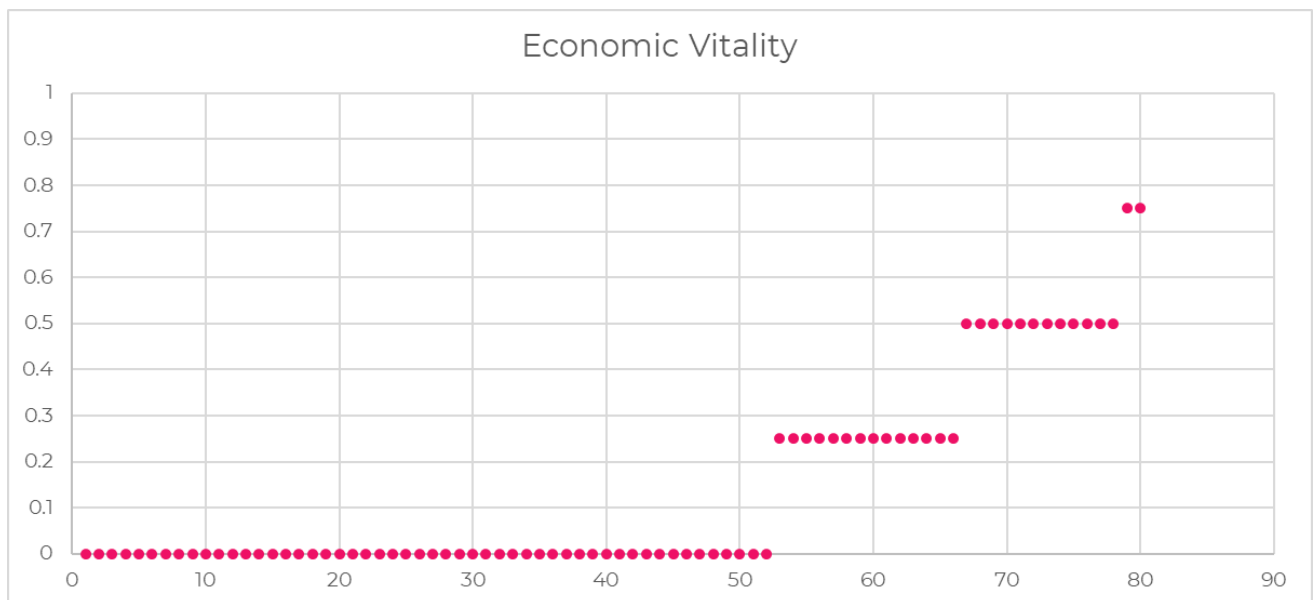
- Based on the number of modes that would benefit from the project
- Only four projects improve multiple modes; none improve transit.
- No adjustment



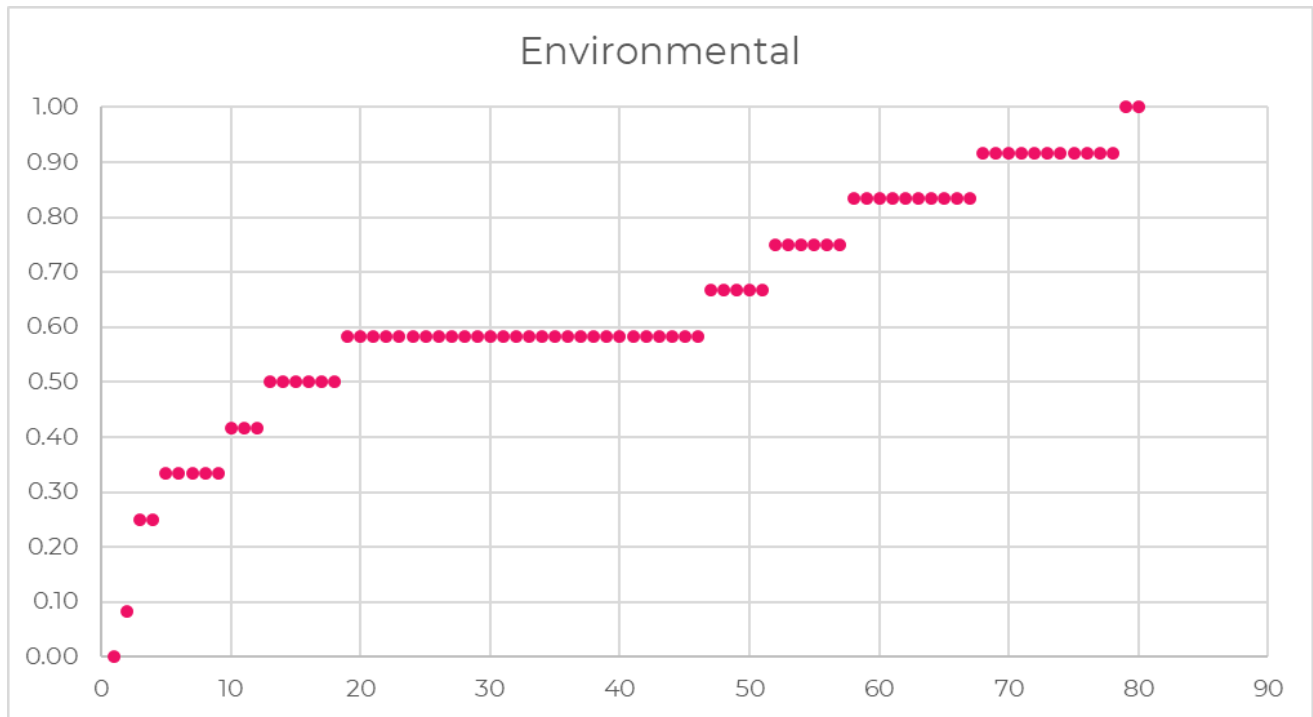
- Based on four levels of underserved and overburdened communities in the study area; projects with the highest concentrations of underserved and overburdened communities get the highest score
- More than $\frac{3}{4}$ of the projects are in areas with low concentrations of underserved and overburdened communities; none are in areas with high concentrations.
- No adjustment



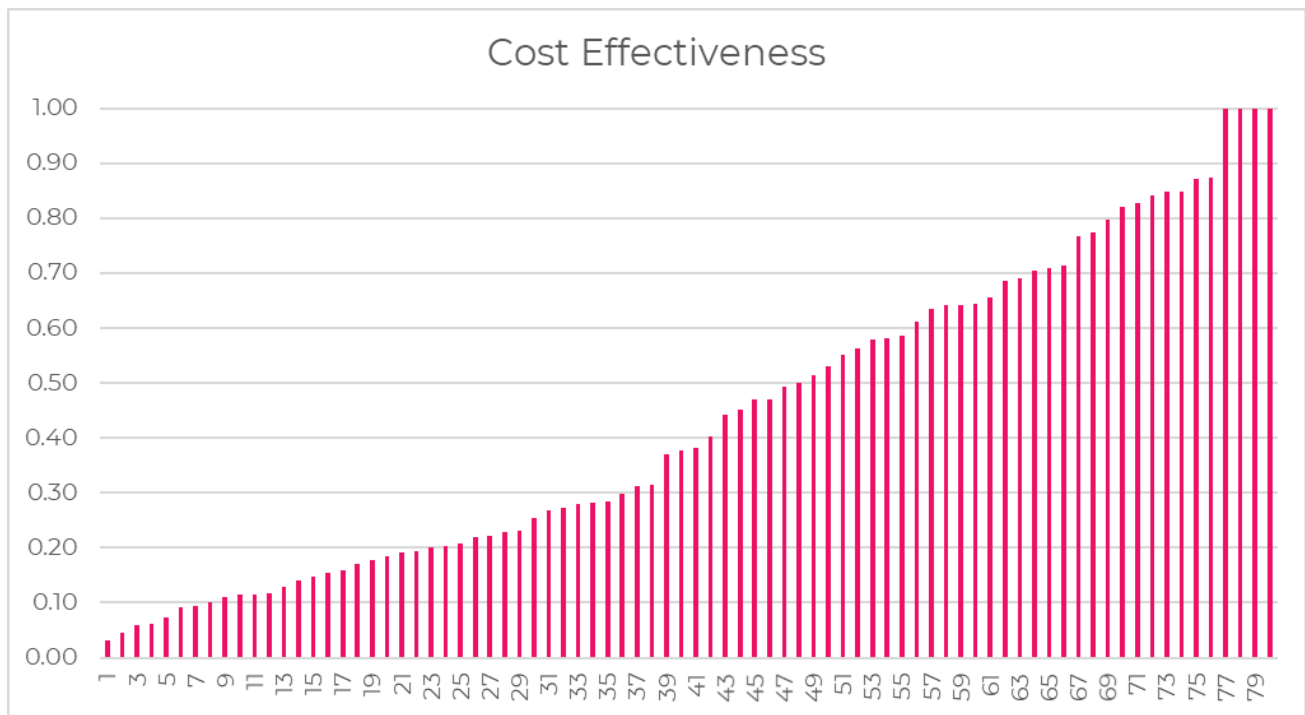
- Based on crash rate (crashes per million vehicles); fatal & injury crashes; bicycle and pedestrian crashes
- Applied a minimum score of 0.1 – although these projects don't have a crash history, they would still offer safety improvements
- Safety scores were scaled based on 4th highest score, where distribution of scores started to smooth; top 4 projects receive a score of 1.0



- Based on proximity to commercial/industrial land use AND NHS/primary truck route/secondary truck route
- No projects score a 1.00; highest score is 0.75.
- No adjustment



- Based on number of red flag environmental resources in project area; few environmental resources in the area results in a higher score
- No adjustment



- Based on sum of the score for the other 7 categories divided by the project score
- Funding scores were scaled based on 4th highest score, where distribution of scores started to smooth; top 4 projects receive a score of 1.0



APPENDIX G

Roadway and Trail Project Scoring Results

Table G-1. Lancaster County Rural Road & Bridge Projects - Project ID Order

ID	Street Name	Limits	Description	Project Length (Miles)	Project Cost (2021\$)	Status	22.1	12.1	5.8	6.7	13.8	8.9	12.2	13.4	5.0	Total Score	Rank
							Maintena nce Score	Mobility Score	Livability Score	Equity Score	Safety Score	Economic Score	Enviro Score	Funding Score	Public Input Score		
91	S 68th Street	Hickman to Roca Road	Two Lane Widening with Shoulders	2.0	\$2,000,000	Fiscally Constrained	0.04	0.42	0.33	0.00	0.95	0.5	0.67	0.43	1.00	44.27	21
92	Saltillo Road	S 27th Street to S 68th Street	Two Lane Widening	2.8	\$7,500,000	Committed											
93	W A Street	SW 84th Street to SW 52nd Street	Programmed Paving	2.0	\$2,600,000	Fiscally Constrained	1.00	0.83	0.00	0.00	0.21	0	0.58	0.30	0.63	49.26	10
94	Havelock Avenue	Stevens Creek to N 112th Street	Potential Paving	1.4	\$1,820,000	Fiscally Constrained	1.00	0.63	0.00	0.00	0.20	0	0.58	0.39	0.47	47.24	12
95	NW 27th Street	Hwy-34 to W Waverly Road	Potential Paving	3.5	\$4,550,000	Fiscally Constrained	1.00	0.39	0.67	0.00	0.35	0.5	0.50	0.22	0.53	51.64	9
96	S 68th Street	Firth Road to Stagecoach Road	Two Lane Widening with Shoulders	5.0	\$5,400,000	Illustrative Plan	0.22	0.24	0.33	0.00	1.00	0	0.58	0.13	0.25	33.47	39
97	N 14th Street	Waverly Road to Raymond Road	Two Lane Widening	2.0	\$1,000,000	Illustrative Plan	0.13	0.23	0.00	0.00	1.00	0	0.33	0.50	0.25	31.37	44
98	S 98th Street	Old Cheney Road to US-34	Programmed Paving	4.0	\$2,600,000	Committed											
99	N 14th Street	Arbor Road to Waverly Road	Two Lane Widening	2.5	\$1,250,000	Illustrative Plan	0.57	0.21	0.00	0.00	0.45	0	0.25	0.35	0.25	30.42	46
100	SW 14th Street	NE-33 to W Bennet Road	Programmed Paving	2.0	\$1,300,000	Fiscally Constrained	1.00	0.85	0.00	0.00	0.30	0.5	0.58	0.73	0.13	58.58	3
101	Fletcher Avenue	N 84th Street to N 148th Street	Programmed Paving	4.4	\$5,000,000	Fiscally Constrained	1.00	0.93	0.00	0.00	0.17	0.75	0.58	0.20	0.34	53.92	8
102	N 98th Street	Holdrege Street to US-6	Potential Paving	4.0	\$7,700,000	Fiscally Constrained	1.00	0.36	0.00	0.00	0.22	0.5	0.33	0.09	0.66	42.57	24
103	W Van Dorn Street	SW 112th Street to SW 84th Street	Programmed Paving	2.0	\$1,300,000	Fiscally Constrained	1.00	1.00	0.00	0.00	0.37	0	0.58	0.66	0.19	56.21	4
104	S 120th Street	Bennet Road North 0.5 Miles	Potential Paving	0.5	\$650,000	Fiscally Constrained	1.00	0.93	0.00	0.33	0.59	0	0.92	1.00	0.13	68.96	1
105	Arbor Road	N 27th Street to US-77	Potential Paving	2.0	\$4,400,000	Fiscally Constrained	1.00	0.90	0.67	0.67	0.11	0.5	0.08	0.26	0.59	54.82	5
107	W Van Dorn Street	SW 140th Street to SW 112th Street	Potential Paving	2.0	\$1,300,000	Fiscally Constrained	1.00	1.00	0.00	0.00	0.11	0	0.75	0.64	0.22	54.52	6
108***	S 1st Street	Old Cheney Road to Pioneers Boulevard	Programmed Paving	1.0	\$1,000,000	Illustrative Plan	1.00	0.25	0.00	0.33	0.10	0	0.42	0.61	0.69	45.49	16
109	W Waverly Road	NW 112th Street to NE-79	Potential Paving	4.0	\$5,200,000	Illustrative Plan	1.00	0.21	0.00	0.00	0.24	0	0.58	0.11	0.09	37.09	32
110	W Waverly Road	NE-79 to N 14th Street	Potential Paving	5.0	\$6,500,000	Illustrative Plan	1.00	0.37	0.00	0.00	0.43	0	0.33	0.10	0.09	38.32	29
111	N 1st Street	Alvo Road to McKelvie Road	Potential Paving	1.0	\$1,300,000	Fiscally Constrained	1.00	0.31	0.00	0.33	0.24	0	0.50	0.54	0.19	45.61	15
112	N 27th Street	Arbor Road to Waverly Road	Potential Paving	2.5	\$3,250,000	Illustrative Plan	1.00	0.01	0.00	0.00	0.10	0	0.00	0.10	0.16	25.75	63
114	W Adams Street	NW 84th Street to NW 56th Street	Potential Paving	2.0	\$2,600,000	Fiscally Constrained	1.00	0.48	0.00	0.00	0.39	0	0.58	0.28	0.22	45.17	20
115	Van Dorn Street	S 120th Street to S 148th Street	Potential Paving	2.0	\$2,600,000	Fiscally Constrained	1.00	0.49	0.00	0.33	0.15	0	0.50	0.28	0.19	43.17	22
116	Panama Road	US-77 to S 54th Street	Potential Paving	3.0	\$3,900,000	Illustrative Plan	1.00	0.39	0.00	0.00	0.21	0	0.58	0.16	0.16	39.77	27
117	McKelvie Road	NW 27th Street to N 14th Street	Potential Paving	3.0	\$3,900,000	Illustrative Plan	1.00	0.04	0.00	0.33	0.11	0	0.25	0.13	0.13	31.76	43
118	Bluff Road	I-80 to N 190th Street	Potential Paving	1.1	\$1,430,000	Illustrative Plan	1.00	0.04	0.00	0.00	0.10	0	0.67	0.37	0.03	37.19	31
156	NW 56th Street	W O to W Holdrege Street	Potential Paving	1.0	\$1,200,000	Fiscally Constrained	1.00	0.89	0.00	0.33	0.28	0.5	0.75	0.92	0.50	67.36	2
157	S 148th Street	Yankee Hill Road to O Street	Two Lane Widening	6.0	\$4,900,000	Illustrative Plan	0.09	0.38	0.00	0.33	1.00	0.25	0.42	0.15	0.34	33.55	38
158	N 148th Street	O Street to McKelvie Road	Two Lane Widening	6.0	\$4,018,000	Illustrative Plan	0.12	0.40	0.00	0.00	1.00	0.75	0.58	0.21	0.22	38.94	28
159	S 148th Street	Yankee Hill Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.08	0.19	0.00	0.33	0.10	0.25	0.92	0.84	0.22	33.31	40
160	S 148th Street	Pine Lake Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.08	0.21	0.00	0.33	0.10	0.25	0.75	0.77	0.19	30.39	47
161	S 148th Street	Old Cheney Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.08	0.24	0.00	0.33	0.17	0.25	0.92	0.89	0.31	36.08	33
162	S 148th Street	Pioneers Boulevard	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.10	0.28	0.00	0.33	0.10	0.25	0.83	0.85	0.19	33.97	37
163	S 148th Street	Van Dorn Street	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.10	0.19	0.00	0.33	0.10	0.25	0.92	0.85	0.25	34.18	36
164	S 148th Street	A Street	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.10	0.25	0.00	0.00	0.10	0.25	0.83	0.69	0.13	29.02	55
165	N 148th Street	Holdrege Street	Intersection improvements	0.0	\$650,000	Committed											
166	N 148th Street	Adams Street	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.12	0.19	0.00	0.00	0.10	0.25	0.92	0.71	0.06	29.48	53
167	N 148th Street	Havelock Avenue	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.12	0.26	0.00	0.00	0.10	0.25	1.00	0.78	0.16	32.78	41
168	N 148th Street	Fletcher Avenue	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.12	0.18	0.00	0.00	0.10	0.25	0.83	0.67	0.13	28.11	58
169	N 148th Street	Prairie Home	Intersection improvements	0.0	\$1,300,000	Illustrative Plan	0.12	0.40	0.00	0.00	0.10	0.75	0.83	0.50	0.00	32.37	42
170	N 148th Street	Alvo Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.12	0.22	0.00	0.00	0.10	0.25	0.92	0.72	0.03	29.92	49
171	N 162nd Street	US-6 to Ashland Road	Potential Paving	7.9	\$5,530,000	Fiscally Constrained	1.00	0.62	0.00	0.00	0.30	0.25	0.58	0.15	0.09	45.43	18
173	S 68th Street	Pella Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.19	0.16	0.00	0.00	0.10	0	0.92	0.61	0.06	27.12	61
174	S 68th Street	Princeton Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.24	0.16	0.00	0.00	0.23	0	0.83	0.66	0.03	29.50	52
175	S 68th Street	Olive Creek Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.19	0.16	0.00	0.00	0.29	0	0.92	0.70	0.03	30.76	45
176	S 68th Street	Panama Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.24	0.26	0.00	0.00	0.15	0	0.83	0.67	0.06	30.00	48
177	S 68th Street	Stagecoach Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.24	0.26	0.00	0.00	0.10	0	0.83	0.65	0.13	29.27	54
178	S 68th Street	Martel Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.04	0.42	0.00	0.00	0.10	0.5	0.92	0.89	0.22	35.95	34
179	S 68th Street	Wittstruck Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.28	0.20	0.00	0.00	0.10	0	0.83	0.64	0.19	29.66	50
180	S 68th Street	Bennett Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.28	0.22	0.00	0.00	0.10	0	0.58	0.53	0.16	25.37	65
181	Saltillo Road	S 68th Street to S 120th Street	Two Lane Widening	3.6	\$2,450,000	Fiscally Constrained	0.56	0.13	0.00	0.00	0.82	0.5	0.58	0.31	0.91	45.48	17
182	N 14th Street	Arbor Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.56	0.30	0.00	0.33	0.13	0	0.58	0.86	0.28	40.06	25
183	N 14th Street	Bluff Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.17	0.13	0.00	0.00	0.10	0	0.58	0.44	0.06	20.14	76

Table G-1. Lancaster County Rural Road & Bridge Projects - Project ID Order

							22.1	12.1	5.8	6.7	13.8	8.9	12.2	13.4	5.0		
ID	Street Name	Limits	Description	Project Length (Miles)	Project Cost (2021\$)	Status	Mainten ance Score	Mobility Score	Livability Score	Equity Score	Safety Score	Economic Score	Enviro Score	Funding Score	Public Input Score	Total Score	Rank
184	N 14th Street	Waverly Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.17	0.12	0.00	0.00	0.22	0	0.67	0.53	0.06	23.81	74
185	N 14th Street	Mill Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.13	0.24	0.00	0.00	0.11	0	0.58	0.48	0.09	21.16	75
186	N 14th Street	Raymond Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.13	0.26	0.00	0.00	0.10	0	0.75	0.56	0.16	24.68	72
187	N 14th Street	Branched Oak Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.11	0.26	0.00	0.00	0.10	0	0.83	0.58	0.06	25.17	69
188	N 14th Street	Davey Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.11	0.08	0.00	0.00	0.14	0	0.92	0.56	0.03	24.24	73
189	N 14th Street	Rock Creek Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.11	0.08	0.00	0.00	0.10	0	1.00	0.58	0.09	25.18	68
190	N 14th Street	Agnew Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.06	0.08	0.00	0.00	0.43	0	0.75	0.60	0.03	25.68	64
191	N 14th Street	Raymond Road to Agnew Road	Two Lane Widening	4.0	\$2,000,000	Illustrative Plan	0.13	0.17	0.00	0.00	1.00	0	0.33	0.24	0.09	26.39	62
192	N 14th Street	Agnew Road to Ashland Rd	Two Lane Widening	2.0	\$1,000,000	Illustrative Plan	0.06	0.07	0.00	0.00	0.12	0	0.75	0.29	0.09	17.40	77
195	Arbor Road	Bridge F-201 near N 27th Street	Bridge Replacement	0.0	\$1,530,000	Illustrative Plan	0.50	0.28	0.00	0.00	0.10	0	0.33	0.23	0.41	25.04	70
196	N 112th Street	Bridge J-126 near Holdrege Street	Bridge Replacement	0.0	\$1,571,000	Illustrative Plan	0.50	0.34	0.00	0.00	0.10	0	0.58	0.28	0.25	28.67	56
197	Van Dorn Street	Bridge K-37 near S 98th Street	Replace CBC	0.0	\$652,000	Illustrative Plan	0.50	0.10	0.00	0.00	0.10	0.5	0.58	0.80	0.47	38.22	30
198	S 56th Street	Bridge P-92 near Rokeby Road	Replace with CBC	0.0	\$1,460,000	Illustrative Plan	0.50	0.38	0.00	0.00	0.10	0	0.58	0.31	0.25	29.61	51
199	A Street	Bridge J-47 near S 120th Street	Replace with CCS	0.0	\$739,000	Illustrative Plan	0.50	0.05	0.00	0.00	0.10	0	0.58	0.49	0.13	27.25	60
200	S 112th Street	Bridge J-135 near A Street	Replace with CBC	0.0	\$612,000	Fiscally Constrained	1.00	0.15	0.00	0.00	0.10	0	0.58	0.87	0.22	45.18	19
201	S 120th Street	Bridge J-138 near A Street	Replace with CBC	0.0	\$612,000	Fiscally Constrained	0.50	0.01	0.00	0.00	1.00	0	0.58	1.00	0.03	45.61	14
202	Old Cheney Road	Bridge O-37 near S 1st Street	Bridge Replacement	0.0	\$3,465,000	Illustrative Plan	0.50	0.52	0.00	0.33	0.10	0.25	0.50	0.19	0.63	34.86	35
203	Van Dorn Street	Bridge J-22 near S 134th Street	Bridge Replacement	0.0	\$1,060,000	Illustrative Plan	0.50	0.03	0.00	0.33	0.10	0	0.50	0.40	0.25	27.71	59
204	Adams Street	Bridge K-123 near N 102nd Street	Bridge Replacement	0.0	\$1,940,000	Illustrative Plan	0.50	0.17	0.00	0.00	0.10	0	0.50	0.19	0.34	24.93	71
205	Havelock Avenue	Bridge K-144 near N 98th Street	Bridge Replacement	0.0	\$2,079,000	Illustrative Plan	0.50	0.08	0.00	0.00	0.10	0	0.58	0.18	0.47	25.30	66
206	SW 16th Street	Bridge O-1 near W Calvert Street	Replace CB	0.0	\$168,000	Fiscally Constrained	1.00	0.05	0.00	0.00	0.10	0	0.67	1.00	0.38	47.49	11
207	SW 15th Street	Bridge O-140 near W Stockwell Street	Replace CB	0.0	\$168,000	Fiscally Constrained	1.00	0.12	0.00	0.00	0.10	0	0.67	1.00	0.09	46.98	13
208	Pioneers Blvd	Bridge Q-72 near S 138th Street	Bridge Replacement	0.0	\$1,188,000	Illustrative Plan	0.50	0.02	0.00	0.33	0.10	0	0.58	0.38	0.22	28.13	57
210	A Street	Bridge J-46 near S 134th Street	Bridge Replacement	0.0	\$1,237,000	Illustrative Plan	0.50	0.05	0.00	0.00	0.14	0	0.58	0.30	0.09	25.19	67
211	S 46th Street	Bridge S-59 near Bennet Road	Replace CB	0.0	\$925,000	Illustrative Plan	1.00	0.10	0.00	0.00	0.10	0	0.58	0.56	0.09	39.84	26
213	SW 42nd Street	W Hallam Road to W Pella Road	Potential Paving	1.0	\$920,000	Fiscally Constrained	1.00	0.69	0.00	0.00	0.10	0	0.83	0.83	0.22	54.26	7
215	Pine Lake Road	S 112th Street to S 134th Street	Grading and Pavement; bridge	1.5	\$3,188,000	Fiscally Constrained	1.00	0.59	0.00	0.33	0.10	0	0.58	0.24	0.00	43.15	23
***Project ID 108 is shown in the illustrative plan (even though it scored high enough to be included in the FC plan) due to uncertainty of the Old Cheney configuration at the West Beltway - closure vs. overpass, and therefore the need for this project will be determined at a later date																	

Table G-2. Lancaster County Rural Road & Bridge Projects - Rank Order

ID	Street Name	Limits	Description	Project Length (Miles)	Project Cost (2021\$)	Status	22.1	12.1	5.8	6.7	13.8	8.9	12.2	13.4	5.0	Total Score	Rank
							Mainten ance Score	Mobility Score	Livability Score	Equity Score	Safety Score	Economic Score	Enviro Score	Funding Score	Public Input Score		
165	N 148th Street	Holdrege Street	Intersection improvements	0.0	\$650,000	Committed											
98	S 98th Street	Old Cheney Road to US-34	Programmed Paving	4.0	\$2,600,000	Committed											
92	Saltillo Road	S 27th Street to S 68th Street	Two Lane Widening	2.8	\$7,500,000	Committed											
104	S 120th Street	Bennet Road North 0.5 Miles	Potential Paving	0.5	\$650,000	Fiscally Constrained	1.00	0.93	0.00	0.33	0.59	0	0.92	1.00	0.13	68.96	1
156	NW 56th Street	W O to W Holdrege Street	Potential Paving	1.0	\$1,200,000	Fiscally Constrained	1.00	0.89	0.00	0.33	0.28	0.5	0.75	0.92	0.50	67.36	2
100	SW 14th Street	NE-33 to W Bennet Road	Programmed Paving	2.0	\$1,300,000	Fiscally Constrained	1.00	0.85	0.00	0.00	0.30	0.5	0.58	0.73	0.13	58.58	3
103	W Van Dorn Street	SW 112th Street to SW 84th Street	Programmed Paving	2.0	\$1,300,000	Fiscally Constrained	1.00	1.00	0.00	0.00	0.37	0	0.58	0.66	0.19	56.21	4
105	Arbor Road	N 27th Street to US-77	Potential Paving	2.0	\$4,400,000	Fiscally Constrained	1.00	0.90	0.67	0.67	0.11	0.5	0.08	0.26	0.59	54.82	5
107	W Van Dorn Street	SW 140th Street to SW 112th Street	Potential Paving	2.0	\$1,300,000	Fiscally Constrained	1.00	1.00	0.00	0.00	0.11	0	0.75	0.64	0.22	54.52	6
213	SW 42nd Street	W Hallam Road to W Pella Road	Potential Paving	1.0	\$920,000	Fiscally Constrained	1.00	0.69	0.00	0.00	0.10	0	0.83	0.83	0.22	54.26	7
101	Fletcher Avenue	N 84th Street to N 148th Street	Programmed Paving	4.4	\$5,000,000	Fiscally Constrained	1.00	0.93	0.00	0.00	0.17	0.75	0.58	0.20	0.34	53.92	8
95	NW 27th Street	Hwy-34 to W Waverly Road	Potential Paving	3.5	\$4,550,000	Fiscally Constrained	1.00	0.39	0.67	0.00	0.35	0.5	0.50	0.22	0.53	51.64	9
93	W A Street	SW 84th Street to SW 52nd Street	Programmed Paving	2.0	\$2,600,000	Fiscally Constrained	1.00	0.83	0.00	0.00	0.21	0	0.58	0.30	0.63	49.26	10
206	SW 16th Street	Bridge O-1 near W Calvert Street	Replace CB	0.0	\$168,000	Fiscally Constrained	1.00	0.05	0.00	0.00	0.10	0	0.67	1.00	0.38	47.49	11
94	Havelock Avenue	Stevens Creek to N 112th Street	Potential Paving	1.4	\$1,820,000	Fiscally Constrained	1.00	0.63	0.00	0.00	0.20	0	0.58	0.39	0.47	47.24	12
207	SW 15th Street	Bridge O-140 near W Stockwell Street	Replace CB	0.0	\$168,000	Fiscally Constrained	1.00	0.12	0.00	0.00	0.10	0	0.67	1.00	0.09	46.98	13
201	S 120th Street	Bridge J-138 near A Street	Replace with CBC	0.0	\$612,000	Fiscally Constrained	0.50	0.01	0.00	0.00	1.00	0	0.58	1.00	0.03	45.61	14
111	N 1st Street	Alvo Road to McKelvie Road	Potential Paving	1.0	\$1,300,000	Fiscally Constrained	1.00	0.31	0.00	0.33	0.24	0	0.50	0.54	0.19	45.61	15
181	Saltillo Road	S 68th Street to S 120th Street	Two Lane Widening	3.6	\$2,450,000	Fiscally Constrained	0.56	0.13	0.00	0.00	0.82	0.5	0.58	0.31	0.91	45.48	17
171	N 162nd Street	US-6 to Ashland Road	Potential Paving	7.9	\$5,530,000	Fiscally Constrained	1.00	0.62	0.00	0.00	0.30	0.25	0.58	0.15	0.09	45.43	18
200	S 112th Street	Bridge J-135 near A Street	Replace with CBC	0.0	\$612,000	Fiscally Constrained	1.00	0.15	0.00	0.00	0.10	0	0.58	0.87	0.22	45.18	19
114	W Adams Street	NW 84th Street to NW 56th Street	Potential Paving	2.0	\$2,600,000	Fiscally Constrained	1.00	0.48	0.00	0.00	0.39	0	0.58	0.28	0.22	45.17	20
91	S 68th Street	Hickman to Roca Road	Two Lane Widening with Shoulders	2.0	\$2,000,000	Fiscally Constrained	0.04	0.42	0.33	0.00	0.95	0.5	0.67	0.43	1.00	44.27	21
115	Van Dorn Street	S 120th Street to S 148th Street	Potential Paving	2.0	\$2,600,000	Fiscally Constrained	1.00	0.49	0.00	0.33	0.15	0	0.50	0.28	0.19	43.17	22
215	Pine Lake Road	S 112th Street to S 134th Street	Grading and Pavement; bridge Q-110 near S 134th St	1.5	\$3,188,000	Fiscally Constrained	1.00	0.59	0.00	0.33	0.10	0	0.58	0.24	0.00	43.15	23
102	N 98th Street	Holdrege Street to US-6	Potential Paving	4.0	\$7,700,000	Fiscally Constrained	1.00	0.36	0.00	0.00	0.22	0.5	0.33	0.09	0.66	42.57	24
182	N 14th Street	Arbor Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.56	0.30	0.00	0.33	0.13	0	0.58	0.86	0.28	40.06	25
211	S 46th Street	Bridge S-59 near Bennet Road	Replace CB	0.0	\$925,000	Illustrative Plan	1.00	0.10	0.00	0.00	0.10	0	0.58	0.56	0.09	39.84	26
116	Panama Road	US-77 to S 54th Street	Potential Paving	3.0	\$3,900,000	Illustrative Plan	1.00	0.39	0.00	0.00	0.21	0	0.58	0.16	0.16	39.77	27
158	N 148th Street	O Street to McKelvie Road	Two Lane Widening	6.0	\$4,018,000	Illustrative Plan	0.12	0.40	0.00	0.00	1.00	0.75	0.58	0.21	0.22	38.94	28
110	W Waverly Road	NE-79 to N 14th Street	Potential Paving	5.0	\$6,500,000	Illustrative Plan	1.00	0.37	0.00	0.00	0.43	0	0.33	0.10	0.09	38.32	29
197	Van Dorn Street	Bridge K-37 near S 98th Street	Replace CBC	0.0	\$652,000	Illustrative Plan	0.50	0.10	0.00	0.00	0.10	0.5	0.58	0.80	0.47	38.22	30
118	Bluff Road	I-80 to N 190th Street	Potential Paving	1.1	\$1,430,000	Illustrative Plan	1.00	0.04	0.00	0.00	0.10	0	0.67	0.37	0.03	37.19	31
109	W Waverly Road	NW 112th Street to NE-79	Potential Paving	4.0	\$5,200,000	Illustrative Plan	1.00	0.21	0.00	0.00	0.24	0	0.58	0.11	0.09	37.09	32
161	S 148th Street	Old Cheney Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.08	0.24	0.00	0.33	0.17	0.25	0.92	0.89	0.31	36.08	33
178	S 68th Street	Martel Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.04	0.42	0.00	0.00	0.10	0.5	0.92	0.89	0.22	35.95	34
202	Old Cheney Road	Bridge O-37 near S 1st Street	Bridge Replacement	0.0	\$3,465,000	Illustrative Plan	0.50	0.52	0.00	0.33	0.10	0.25	0.50	0.19	0.63	34.86	35
163	S 148th Street	Van Dorn Street	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.10	0.19	0.00	0.33	0.10	0.25	0.92	0.85	0.25	34.18	36
162	S 148th Street	Pioneers Boulevard	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.10	0.28	0.00	0.33	0.10	0.25	0.83	0.85	0.19	33.97	37
157	S 148th Street	Yankee Hill Road to O Street	Two Lane Widening	6.0	\$4,900,000	Illustrative Plan	0.09	0.38	0.00	0.33	1.00	0.25	0.42	0.15	0.34	33.55	38
96	S 68th Street	Firth Road to Stagecoach Road	Two Lane Widening with Shoulders	5.0	\$5,400,000	Illustrative Plan	0.22	0.24	0.33	0.00	1.00	0	0.58	0.13	0.25	33.47	39
159	S 148th Street	Yankee Hill Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.08	0.19	0.00	0.33	0.10	0.25	0.92	0.84	0.22	33.31	40
167	N 148th Street	Havelock Avenue	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.12	0.26	0.00	0.00	0.10	0.25	1.00	0.78	0.16	32.78	41
169	N 148th Street	Prairie Home	Intersection improvements	0.0	\$1,300,000	Illustrative Plan	0.12	0.40	0.00	0.00	0.10	0.75	0.83	0.50	0.00	32.37	42
117	McKelvie Road	NW 27th Street to N 14th Street	Potential Paving	3.0	\$3,900,000	Illustrative Plan	1.00	0.04	0.00	0.33	0.11	0	0.25	0.13	0.13	31.76	43
97	N 14th Street	Waverly Road to Raymond Road	Two Lane Widening	2.0	\$1,000,000	Illustrative Plan	0.13	0.23	0.00	0.00	1.00	0	0.33	0.50	0.25	31.37	44
175	S 68th Street	Olive Creek Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.19	0.16	0.00	0.00	0.29	0	0.92	0.70	0.03	30.76	45
99	N 14th Street	Arbor Road to Waverly Road	Two Lane Widening	2.5	\$1,250,000	Illustrative Plan	0.57	0.21	0.00	0.00	0.45	0	0.25	0.35	0.25	30.42	46
160	S 148th Street	Pine Lake Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.08	0.21	0.00	0.33	0.10	0.25	0.75	0.77	0.19	30.39	47
176	S 68th Street	Panama Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.24	0.26	0.00	0.00	0.15	0	0.83	0.67	0.06	30.00	48
170	N 148th Street	Alvo Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.12	0.22	0.00	0.00	0.10	0.25	0.92	0.72	0.03	29.92	49
179	S 68th Street	Wittstruck Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.28	0.20	0.00	0.00	0.10	0	0.83	0.64	0.19	29.66	50

Table G-2. Lancaster County Rural Road & Bridge Projects - Rank Order

ID	Street Name	Limits	Description	Project Length (Miles)	Project Cost (2021\$)	Status	22.1	12.1	5.8	6.7	13.8	8.9	12.2	13.4	5.0	Total Score	Rank
							Mainten ance Score	Mobility Score	Livability Score	Equity Score	Safety Score	Economic Score	Enviro Score	Funding Score	Public Input Score		
198	S 56th Street	Bridge P-92 near Rokeby Road	Replace with CBC	0.0	\$1,460,000	Illustrative Plan	0.50	0.38	0.00	0.00	0.10	0	0.58	0.31	0.25	29.61	51
174	S 68th Street	Princeton Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.24	0.16	0.00	0.00	0.23	0	0.83	0.66	0.03	29.50	52
166	N 148th Street	Adams Street	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.12	0.19	0.00	0.00	0.10	0.25	0.92	0.71	0.06	29.48	53
177	S 68th Street	Stagecoach Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.24	0.26	0.00	0.00	0.10	0	0.83	0.65	0.13	29.27	54
164	S 148th Street	A Street	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.10	0.25	0.00	0.00	0.10	0.25	0.83	0.69	0.13	29.02	55
196	N 112th Street	Bridge J-126 near Holdrege Street	Bridge Replacement	0.0	\$1,571,000	Illustrative Plan	0.50	0.34	0.00	0.00	0.10	0	0.58	0.28	0.25	28.67	56
208	Pioneers Blvd	Bridge Q-72 near S 138th Street	Bridge Replacement	0.0	\$1,188,000	Illustrative Plan	0.50	0.02	0.00	0.33	0.10	0	0.58	0.38	0.22	28.13	57
168	N 148th Street	Fletcher Avenue	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.12	0.18	0.00	0.00	0.10	0.25	0.83	0.67	0.13	28.11	58
203	Van Dorn Street	Bridge J-22 near S 134th Street	Bridge Replacement	0.0	\$1,060,000	Illustrative Plan	0.50	0.03	0.00	0.33	0.10	0	0.50	0.40	0.25	27.71	59
199	A Street	Bridge J-47 near S 120th Street	Replace with CCS	0.0	\$739,000	Illustrative Plan	0.50	0.05	0.00	0.00	0.10	0	0.58	0.49	0.13	27.25	60
173	S 68th Street	Pella Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.19	0.16	0.00	0.00	0.10	0	0.92	0.61	0.06	27.12	61
191	N 14th Street	Raymond Road to Agnew Road	Two Lane Widening	4.0	\$2,000,000	Illustrative Plan	0.13	0.17	0.00	0.00	1.00	0	0.33	0.24	0.09	26.39	62
112	N 27th Street	Arbor Road to Waverly Road	Potential Paving	2.5	\$3,250,000	Illustrative Plan	1.00	0.01	0.00	0.00	0.10	0	0.00	0.10	0.16	25.75	63
190	N 14th Street	Agnew Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.06	0.08	0.00	0.00	0.43	0	0.75	0.60	0.03	25.68	64
180	S 68th Street	Bennett Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.28	0.22	0.00	0.00	0.10	0	0.58	0.53	0.16	25.37	65
205	Havelock Avenue	Bridge K-144 near N 98th Street	Bridge Replacement	0.0	\$2,079,000	Illustrative Plan	0.50	0.08	0.00	0.00	0.10	0	0.58	0.18	0.47	25.30	66
210	A Street	Bridge J-46 near S 134th Street	Bridge Replacement	0.0	\$1,237,000	Illustrative Plan	0.50	0.05	0.00	0.00	0.14	0	0.58	0.30	0.09	25.19	67
189	N 14th Street	Rock Creek Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.11	0.08	0.00	0.00	0.10	0	1.00	0.58	0.09	25.18	68
187	N 14th Street	Branched Oak Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.11	0.26	0.00	0.00	0.10	0	0.83	0.58	0.06	25.17	69
195	Arbor Road	Bridge F-201 near N 27th Street	Bridge Replacement	0.0	\$1,530,000	Illustrative Plan	0.50	0.28	0.00	0.00	0.10	0	0.33	0.23	0.41	25.04	70
204	Adams Street	Bridge K-123 near N 102nd Street	Bridge Replacement	0.0	\$1,940,000	Illustrative Plan	0.50	0.17	0.00	0.00	0.10	0	0.50	0.19	0.34	24.93	71
186	N 14th Street	Raymond Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.13	0.26	0.00	0.00	0.10	0	0.75	0.56	0.16	24.68	72
188	N 14th Street	Davey Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.11	0.08	0.00	0.00	0.14	0	0.92	0.56	0.03	24.24	73
184	N 14th Street	Waverly Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.17	0.12	0.00	0.00	0.22	0	0.67	0.53	0.06	23.81	74
185	N 14th Street	Mill Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.13	0.24	0.00	0.00	0.11	0	0.58	0.48	0.09	21.16	75
183	N 14th Street	Bluff Road	Intersection improvements	0.0	\$650,000	Illustrative Plan	0.17	0.13	0.00	0.00	0.10	0	0.58	0.44	0.06	20.14	76
192	N 14th Street	Agnew Road to Ashland Rd	Two Lane Widening	2.0	\$1,000,000	Illustrative Plan	0.06	0.07	0.00	0.00	0.12	0	0.75	0.29	0.09	17.40	77
108***	S 1st Street	Old Cheney Road to Pioneers Boulevard	Programmed Paving	1.0	\$1,000,000	Illustrative Plan	1.00	0.25	0.00	0.33	0.10	0	0.42	0.61	0.69	45.49	16

***Project ID 108 is shown in the illustrative plan (even though it scored high enough to be included in the FC plan) due to uncertainty of the Old Cheney configuration at the West Beltway - closure vs. overpass, and therefore the need for this project will be determined at a later date

Table G-3. Lincoln Roadway Projects - Project ID Order

ID	Street Name	Limits	Description	Project Length (Miles)	Project Cost (2021\$)	Status	17.8	12.4	11.0	10.0	13.5	7.5	12.8	10.0	5.0	Total Score	Rank
							Mainten ance Score	Mobility Score	Livability Score	Equity Score	Safety Score	Economic Score	Enviro Score	Funding Score	Public Input Score		
2	S 40th Street	Normal Blvd and South Street	Major intersection area work	0.0	\$10,000,000	Fiscally Constrained	0.37	0.73	0.00	0.67	0.59	0.5	0.75	0.08	0.82	48.49	12
3	W Superior Street	NW 70th Street to NW 56th Street	2 lanes + intersection improvem	1.0	\$7,000,000	Illustrative Plan	1.00	0.07	0.00	0.00	0.10	0	0.58	0.05	0.08	28.46	62
4	W Adams Street	NW 70th Street to NW 56th Street	2 lanes + intersection improvem	1.0	\$7,000,000	Illustrative Plan	0.44	0.12	0.00	0.00	0.63	0	0.58	0.05	0.07	26.28	70
5	NW 56th Street	W Partridge Lane to W "O" Street	2 lanes + intersection improvem	1.3	\$9,000,000	Illustrative Plan	0.78	0.29	0.67	0.33	0.11	0.5	0.50	0.07	0.10	40.89	37
6	NW 38th Street	W Adams Street to W Holdrege Street	2 lanes + intersection improvem	1.0	\$7,200,000	Illustrative Plan	1.00	0.00	0.33	0.33	0.10	0.5	0.42	0.08	0.03	36.16	42
7	NW 70th Street	W Superior Street to W Adams Street	2 lanes + intersection improvem	1.0	\$7,000,000	Illustrative Plan	1.00	0.08	0.00	0.00	0.48	0	0.58	0.07	0.07	33.72	51
8	W Van Dorn Street	SW 40th Street to Coddington Avenue	2 lanes + intersection improvem	1.5	\$10,500,000	Illustrative Plan	0.55	0.40	0.67	0.00	0.18	0.5	0.42	0.06	0.13	34.91	48
10	W Holdrege Street	NW 56th Street to NW 48th Street	2 lanes + intersection improvem	0.6	\$4,700,000	Committed											
11	NW 40th Street	W Vine Street to US-6, including I-80 Overpass	Overpass	0.5	\$11,250,000	Illustrative Plan	0.65	0.56	0.33	0.33	0.10	0.5	0.50	0.06	0.07	37.78	40
12	NW 40th Street	W Holdrege Street to W Vine Street	2 lanes + intersection improvem	0.5	\$3,500,000	Illustrative Plan	1.00	0.24	0.33	0.33	0.10	0.5	0.58	0.19	0.00	42.20	31
13	W Van Dorn Street	Coddington Avenue to US-77	2 lanes + intersection improvem	1.0	\$6,900,000	Illustrative Plan	0.19	0.58	0.33	0.00	0.21	0.5	0.33	0.07	0.10	26.20	71
14	NW 48th Street	Adams Street to Cuming Street	2 lanes + intersection improvem	1.4	\$10,000,000	Fiscally Constrained	0.53	0.72	1.00	0.00	0.18	1	0.33	0.08	0.12	45.04	16
15	NW 56th Street	W Cuming Street to W Superior Street	2 lanes + intersection improvem	0.4	\$2,900,000	Illustrative Plan	1.00	0.00	0.33	0.33	0.10	0	0.58	0.17	0.00	35.31	45
16	W Cuming Street	NW 56th Street to NW 52nd Street	2 lanes + intersection improvem	0.2	\$1,600,000	Illustrative Plan	0.06	0.00	0.33	0.33	0.10	0	0.50	0.18	0.00	17.54	82
17	NW 12th Street	Aster Road to Missoula Road	2 lanes + turn lanes	0.3	\$2,300,000	Illustrative Plan	0.00	0.00	0.00	0.33	0.10	0.5	0.83	0.16	0.00	20.70	81
19	O Street (US-34)	Wedgewood Drive to 98th Street	Intersection Improvements	1.0	\$6,080,000	Illustrative Plan	0.30	0.84	0.33	0.00	0.46	1	0.50	0.12	0.05	40.97	35
20	Rokeby Road	S 31st Street to S 40th Street	2 lanes + intersection improvem	0.7	\$3,000,000	Public-Private Partnership											
21	Saltillo Road	S 14th Street to S 27th Street	2 lanes + intersection improvements, reconstruction to address flooding	1.1	\$7,600,000	Illustrative Plan	0.44	0.72	0.00	0.00	0.12	0.5	0.42	0.06	0.55	30.87	55
22	W Denton Road	Amaranth Lane to S Folsom Street	2 additional lanes	0.3	\$2,200,000	Illustrative Plan	0.09	0.36	0.33	0.00	0.10	0.5	0.83	0.21	0.03	27.70	63
23	S 56th Street	Thompson Creek Boulevard to Yankee Hill Road	4 lanes + intersection improvem	0.7	\$9,800,000	Illustrative Plan	0.00	1.00	0.33	0.33	0.10	0.5	0.75	0.07	0.12	35.30	46
24	Yankee Hill Road	S 56th Street to S 70th Street	2 lanes + intersection improvem	1.0	\$6,900,000	Illustrative Plan	0.54	0.50	0.67	0.00	0.16	0.5	0.50	0.09	0.23	37.51	41
25	S 84th Street	Amber Hill Road to Yankee Hill Road	4 lanes + intersection improvem	0.4	\$5,700,000	Illustrative Plan	0.42	0.61	0.33	0.00	0.10	0.5	0.33	0.09	0.10	29.47	59
27	Yankee Hill Road	S 40th Street to S 48th Street	2 lanes + intersection improvem	0.5	\$5,700,000	Public-Private Partnership											
28	Rokeby Road	S 48th Street to S 56th Street	2 lanes + intersection improvem	0.5	\$3,500,000	Illustrative Plan	0.68	0.29	0.00	0.00	0.10	0.5	0.58	0.13	0.07	29.88	57
29	Rokeby Road	S 77th Street to S 84th Street	2 lanes + intersection improvem	0.4	\$3,500,000	Committed											
30	S 70th Street	Yankee Hill Road to Rokeby Road	2 lanes + intersection improvem	1.0	\$14,000,000	Illustrative Plan	0.22	0.43	0.33	0.00	0.12	0.5	0.50	0.03	0.12	25.68	73
31	S 70th Street	Pine Lake Road to Yankee Hill Road	4 lanes + intersection improvem	1.0	\$14,000,000	Illustrative Plan	0.61	0.74	1.00	0.00	0.18	0.5	0.42	0.05	0.12	43.63	23
32	O Street (US-34)	Antelope Valley N/S Rdwy. (19th St.) to 46th Street	Intersection Improvements	1.4	\$6,840,000	Fiscally Constrained	0.35	1.00	0.33	0.00	1.00	1	0.50	0.13	0.27	52.26	6
33	N 84th Street	O Street to Adams Street	Intersection Improvements	2.0	\$15,200,000	Fiscally Constrained	0.29	0.91	0.67	0.00	0.70	1	0.50	0.06	0.10	48.15	13
35	S 9th Street	Van Dorn Street to South Street	3 lanes + intersection improvem	0.5	\$5,300,000	Illustrative Plan	0.46	1.00	0.00	0.33	0.33	0.5	0.67	0.13	0.30	43.40	25
37	Cornhusker Hwy (US-6)	N 20th Street to N 33rd Street	Intersection Improvements per C	1.1	\$1,200,000	Fiscally Constrained	0.21	0.65	0.67	1.00	0.92	1	0.33	0.85	0.33	63.56	2
38	Cornhusker Hwy (US-6)	N 11th Street to N 20th Street	Intersection Improvements per C	0.8	\$975,000	Fiscally Constrained	0.28	0.70	0.33	1.00	0.42	1	0.67	0.96	0.25	59.82	4
40	Van Dorn Street	S 70th Street to S 84th Street	Intersection Improvements	1.0	\$4,560,000	Illustrative Plan	0.37	0.61	0.00	0.67	0.39	0.5	0.58	0.15	0.12	39.38	39
41	N 48th Street	Adams Street to Superior Street	4 lanes + intersection improvem	1.0	\$14,100,000	Fiscally Constrained	0.73	0.79	1.00	0.00	0.98	0.75	0.42	0.07	0.23	59.86	3
42	Havelock Avenue	N 70th Street to N 84th Street	2 lanes + intersection improvem	1.0	\$7,000,000	Illustrative Plan	0.16	0.78	0.67	0.33	0.31	0.5	0.67	0.10	0.05	40.94	36
43	N 98th Street	Adams Street to Holdrege Street	2 lanes + intersection improvem	1.0	\$7,000,000	Illustrative Plan	0.29	0.18	0.00	0.00	0.22	0	0.50	0.04	0.07	17.53	83
45	S 98th Street	A Street to Pioneers Boulevard	4 lanes + intersection improvem	2.0	\$28,000,000	Illustrative Plan	0.63	0.25	0.00	0.00	0.20	0.5	0.42	0.02	0.10	26.60	69
46	S 112th Street	US-34 to Van Dorn Street	2 lanes + intersection improvem	2.0	\$14,000,000	Illustrative Plan	0.90	0.19	0.00	0.00	0.16	0	0.50	0.03	0.03	27.40	64
47	N 98th Street	Holdrege Street to O Street	Additional 2 lanes	1.1	\$7,500,000	Illustrative Plan	0.33	0.31	0.33	0.00	0.10	0.5	0.58	0.06	0.10	27.14	67
48	N 112th Street	Holdrege Street to US-34	2 lanes + intersection improvem	1.0	\$7,000,000	Illustrative Plan	1.00	0.43	0.00	0.00	0.10	0	0.58	0.06	0.03	32.70	53
50	Havelock Avenue	N 84th Street to N 98th Street	2 lanes + intersection improvem	1.0	\$7,000,000	Illustrative Plan	0.04	0.11	0.00	0.00	0.59	0.5	0.58	0.06	0.03	21.99	80
51	N 33rd Street	Cornhusker Hwy to Superior Street	4 lanes + int. impr. & bridge	1.0	\$20,000,000	Illustrative Plan	0.18	0.26	0.33	0.33	1.00	0.5	0.33	0.03	0.17	36.03	43
52	A Street	S 98th Street to 105th Street	2 lanes + intersection improvem	0.5	\$3,500,000	Illustrative Plan	0.70	0.32	0.00	0.00	0.10	0	0.67	0.11	0.00	27.36	65
53	W Fletcher Avenue	NW 31st Street to NW 27th Street	2 lanes + intersection improvem	0.4	\$2,800,000	Illustrative Plan	0.26	0.24	0.00	0.00	0.16	0.5	0.83	0.15	0.05	25.86	72
54	Adams Street	N 90th Street to N 98th Street	2 lanes + intersection improvem	0.6	\$4,300,000	Illustrative Plan	0.43	0.33	0.67	0.00	0.10	0	0.42	0.10	0.02	26.86	68
55	S 98th Street	US-34 (O Street) to A St	4 lanes + intersection improvem	1.0	\$14,000,000	Illustrative Plan	0.45	0.47	0.00	0.00	0.14	0.5	0.75	0.04	0.10	29.96	56
56	Holdrege Street	N 70th Street to N 80th Street	4 lanes + intersection improvem	0.7	\$10,000,000	Illustrative Plan	0.39	0.95	0.33	0.33	0.38	0.5	0.58	0.07	0.12	43.26	27
57	Yankee Hill Road	S 14th Street to S 27th Street	Additional 2 lanes	1.0	\$7,200,000	Illustrative Plan	0.10	0.79	1.00	0.67	0.11	0.5	0.50	0.11	0.15	42.77	30
58	S 56th Street	Van Dorn Street to Pioneers Boulevard	4 lanes + intersection improvem	0.9	\$13,200,000	Illustrative Plan	0.67	0.94	0.00	0.67	0.37	0	0.50	0.05	0.32	43.89	21
59	East Beltway	Nebraska Hwy 2 to I-80	New 4 lane divided highway	12.6	\$315,000,000	Illustrative Plan	0.00	0.64	0.00	0.00	0.26	1	0.33	0.00	0.82	27.31	66
60	Rokeby Road	S 40th Street to Snapdragon Road	2 lanes + intersection improvem	0.3	\$2,152,000	Public-Private Partnership											
61	S 27th Street	Yankee Hill Road to Saltillo Road	2 lane realignment + int. impr.	2.0	\$14,100,000	Illustrative Plan	0.41	0.49	0.67	0.00	0.10	0.5	0.50	0.04	0.12	33.27	52
62	S 70th Street	Rokeby Rd to Saltillo Rd	4 lanes + intersection improvem	1.0	\$14,000,000	Illustrative Plan	0.20	0.40	0.00	0.00	0.10	0.5	0.67	0.03	0.05	22.59	79
63	S 84th Street	Yankee Hill Road to Rokeby Road	4 lanes + intersection improvem	1.0	\$14,000,000	Illustrative Plan	0.47	0.68	0.33	0.00	0.10	0.5	0.42	0.04	0.02	31.41	54
64	S 84th Street	Rokeby Road to Saltillo Road	4 lanes + intersection improvem	1.0	\$14,000,000	Illustrative Plan	0.27	0.42	0.00	0.00	0.10	0.5	0.58	0.03	0.03	23.03	78

Table G-3. Lincoln Roadway Projects - Project ID Order

ID	Street Name	Limits	Description	Project Length (Miles)	Project Cost (2021\$)	Status	17.8	12.4	11.0	10.0	13.5	7.5	12.8	10.0	5.0	Total Score	Rank
							Mainten ance Score	Mobility Score	Livability Score	Equity Score	Safety Score	Economic Score	Enviro Score	Funding Score	Public Input Score		
66	W Alvo Road	NW 12th Street to Tallgrass Parkway	2 lanes + intersection improvem	0.2	\$1,300,000	Illustrative Plan	0.06	0.11	0.33	0.33	0.31	0	0.67	0.30	0.02	25.25	74
67	S 40th Street	Yankee Hill Road to Rokeby Road	3 lane section with raised median and turn lanes as appropriate	1.0	\$14,000,000	Committed											
75	Salt Creek Roadway**	State Fair Park Drive to Cornhusker Hwy	6 lanes + intersection improvem	0.4	\$26,000,000	Illustrative Plan	0.25	0.53	0.33	0.33	0.51	0.5	0.50	0.07	0.03	35.93	44
77	W A Street	SW 36th Street to SW 24th Street	2 lanes + intersection improvem	2.4	\$14,000,000	Committed											
79	S 14th Street/Warlick/Old Cheney	14th/Warlick/Old Cheney	Intersection improvements and	0.0	\$26,400,000	Committed											
81	W Holdrege Street	NW 48th Street to Chitwood Lane (east 1/4 mile)	2 lanes + intersection improvem	0.2	\$2,000,000	Public-Private Partnership											
82	Nebraska Hwy 2	S 84th Street to Van Dorn Street	Corridor Improvements (TBD by	6.7	\$50,000,000	Fiscally Constrained	0.22	0.86	0.00	0.00	1.00	1	0.25	0.01	1.00	43.97	20
83	Yankee Hill Road	S 48th Street to S 56th Street	2 lanes + intersection improvem	0.5	\$2,200,000	Public-Private Partnership											
85	NW 12th Street	Fletcher Avenue to Aster Road with overpass of US-34	2 lanes + Overpass	0.4	\$9,370,000	Fiscally Constrained	0.65	0.45	0.33	0.67	0.11	0.5	0.83	0.08	0.05	44.52	18
86	Saltillo Road	S 56th Street to S 70th Street	2 lanes + intersection improvem	1.0	\$7,000,000	Illustrative Plan	0.36	0.58	0.00	0.00	0.12	0.5	0.67	0.07	0.10	28.61	61
87	W Holdrege Street	Chitwood Lane to NW 40th Street	2 lanes + intersection improvem	0.3	\$1,950,000	Fiscally Constrained	1.00	1.00	0.67	0.33	0.10	0.5	0.58	0.46	0.02	58.04	5
88	Rokeby Road	S 27th Street to S 31st Street	2 lanes + intersection improvem	0.3	\$2,400,000	Illustrative Plan	0.60	0.18	0.00	0.00	0.10	0	0.58	0.13	0.00	23.07	77
89	W Alvo Road	NW 27th Street to NW 12th Street	2 lanes + intersection improvem	1.0	\$7,100,000	Illustrative Plan	0.06	0.08	0.00	0.33	0.10	0	0.50	0.03	0.00	13.46	84
120	A Street	S 89th Street to S 93rd Street	2 lanes with raised median, roundabouts at 89th St and 93rd St	0.4	\$3,000,000	Committed											
121	A Street	S 40th Street to S 56th Street	Intersection improvements 40th, 48th and 50th/Cotner and widening of A Street from 40th to 48th for a center turn lane	1.0	\$10,500,000	Committed											
124	S Folsom Street	W Old Cheney Road to 1/4 mile south	Paving one lane in each direction with raised center medians; roundabout at the future Palm Canyon Road intersection and intersection improvements at W Old Cheney and S Folsom	0.3	\$2,400,000	Public-Private Partnership											
125	S 40th Street	Rokeby Road to 1/4 south	2 lanes with raised median and roundabout 1/4 mile south of Rokeby Rd	0.3	\$3,400,000	Public-Private Partnership											
126	W Old Cheney Road	S Folsom Street to SW12th Street	2 lanes with raised median	0.5	\$3,500,000	Illustrative Plan	0.36	0.03	0.00	0.00	0.18	0.5	0.83	0.12	0.00	24.92	75
127	Holdrege Street	87th Street to Cedar Cove	2 lanes with raised median	0.3	\$2,300,000	Public-Private Partnership											
128	Holdrege Street	N 104th Street	Roundabout	0.0	\$1,600,000	Public-Private Partnership											
129	Saltillo Road	S 70th Street to 1/2 mile east	Roadway and intersection improvements including on S 7th St from Saltillo Rd to Carger Ln	0.9	\$7,095,000	Public-Private Partnership											
130	N 14th Street	Cornhusker Hwy (and N Antelop Valley Pkwy and Oak Cre	Bridge Replacements	0.0	\$10,000,000	Fiscally Constrained	1.00	0.86	1.00	1.00	0.10	1	0.83	0.12	0.42	72.33	1
131	Huntington Avenue	Dead Mans Run	Bridge Replacement	0.0	\$3,500,000	Illustrative Plan	0.50	0.30	0.67	1.00	0.10	0	0.50	0.19	0.03	39.77	38
133	S 27th Street	SE Upper Salt Creek	Bridge Replacement	0.0	\$4,500,000	Fiscally Constrained	0.50	0.79	0.00	0.33	0.79	0.5	0.50	0.16	0.20	45.37	15
134	W South Street	Salt Creek	Bridge Replacement	0.0	\$3,200,000	Fiscally Constrained	1.00	0.43	0.33	1.00	0.12	0.5	0.42	0.25	0.12	50.54	10
135	Southwood Drive	Beal Slough	Bridge Replacement	0.0	\$2,200,000	Illustrative Plan	1.00	0.09	0.00	0.33	0.26	0	0.50	0.21	0.05	34.45	49
136	S 1st Street	Cardwell Branch Salt Creek	Bridge Replacement	0.0	\$850,000	Illustrative Plan	0.50	0.89	0.00	0.33	0.10	0.5	0.58	0.73	0.02	43.14	28
137	N 70th Street	Salt Creek	Bridge Replacement	0.0	\$3,000,000	Fiscally Constrained	0.50	0.47	0.33	1.00	0.10	0.75	0.50	0.26	0.05	44.70	17
138	S 40th Street	Antelope Creek	Bridge Replacement	0.0	\$2,500,000	Illustrative Plan	0.50	0.95	0.00	0.67	0.10	0.5	0.58	0.28	0.15	43.56	24
139	Rosa Parks Way	K Street and L Street	Bridge Rehab and Preventive Ma	0.0	\$3,400,000	Illustrative Plan	0.00	0.66	0.00	1.00	0.23	1	0.83	0.23	0.22	42.90	29
141	A Street	S 6th Street to S 17th Street	Intersections improvements at 13th and 17th and widening from 6th to 17th for a center turn lane	0.9	\$6,586,000	Committed											
142	Fremont Street	Touzalin Avenue	Remove existing traffic signal and construct roundabout	0.0	\$2,700,000	Fiscally Constrained	0.78	0.54	0.33	0.67	0.23	0.5	0.75	0.30	0.00	50.51	11

Table G-4. Lincoln Roadway Projects - Rank Order

ID	Street Name	Limits	Description	Project Length (Miles)	Project Cost (2021\$)	Status	17.8	12.4	11.0	10.0	13.5	7.5	12.8	10.0	5.0	Total Score	Rank
							Mainten ance Score	Mobility Score	Livability Score	Equity Score	Safety Score	Economic Score	Enviro Score	Funding Score	Public Input Score		
121	A Street	S 40th Street to S 56th Street	Intersection improvements 40th, 48th and 50th/Cotner and widening of A Street from 40th to 48th for a center turn lane	1.0	\$10,500,000	Committed											
79	S 14th Street/Warlick/Old Cheney	14th/Warlick/Old Cheney	Intersection improvements and	0.0	\$26,400,000	Committed											
145	Cotner Boulevard	O Street to Starr Street	Intersection improvements at Starr and Holdrege, pavement repair, and mill and overlay	1.2	\$6,671,000	Committed											
141	A Street	S 6th Street to S 17th Street	Intersections improvements at 13th and 17th and widening from 6th to 17th for a center turn lane	0.9	\$6,586,000	Committed											
77	W A Street	SW 36th Street to SW 24th Street	2 lanes + intersection improvem	2.4	\$14,000,000	Committed											
67	S 40th Street	Yankee Hill Road to Rokeby Road	3 lane section with raised median and turn lanes as appropriate	1.0	\$14,000,000	Committed											
143	N 84th Street	Cornhusker Hwy (US-6)	Intersection improvements	0.0	\$5,500,000	Committed											
216	Adams Street	N 36th Street to N 48th Street	Widening for a center turn lane and pavement rehabilitation	0.8	\$3,010,000	Committed											
10	W Holdrege Street	NW 56th Street to NW 48th Street	2 lanes + intersection improvem	0.6	\$4,700,000	Committed											
29	Rokeby Road	S 77th Street to S 84th Street	2 lanes + intersection improvem	0.4	\$3,500,000	Committed											
120	A Street	S 89th Street to S 93rd Street	2 lanes with raised median, roundabouts at 89th St and 93rd St	0.4	\$3,000,000	Committed											
20	Rokeby Road	S 31st Street to S 40th Street	2 lanes + intersection improvem	0.7	\$3,000,000	Public-Private Partnership											
27	Yankee Hill Road	S 40th Street to S 48th Street	2 lanes + intersection improvem	0.5	\$5,700,000	Public-Private Partnership											
60	Rokeby Road	S 40th Street to Snapdragon Road	2 lanes + intersection improvem	0.3	\$2,152,000	Public-Private Partnership											
81	W Holdrege Street	NW 48th Street to Chitwood Lane (east 1/4 mile)	2 lanes + intersection improvem	0.2	\$2,000,000	Public-Private Partnership											
83	Yankee Hill Road	S 48th Street to S 56th Street	2 lanes + intersection improvem	0.5	\$2,200,000	Public-Private Partnership											
124	S Folsom Street	W Old Cheney Road to 1/4 mile south	Paving one lane in each direction with raised center medians; roundabout at the future Palm Canyon Road intersection and intersection improvements at W Old Cheney and S Folsom	0.3	\$2,400,000	Public-Private Partnership											
125	S 40th Street	Rokeby Road to 1/4 south	2 lanes with raised median and roundabout 1/4 mile south of Rokeby Rd	0.3	\$3,400,000	Public-Private Partnership											
127	Holdrege Street	87th Street to Cedar Cove	2 lanes with raised median	0.3	\$2,300,000	Public-Private Partnership											
128	Holdrege Street	N 104th Street	Roundabout	0.0	\$1,600,000	Public-Private Partnership											
129	Saltillo Road	S 70th Street to 1/2 mile east	Roadway and intersection improvements including on S 7th St from Saltillo Rd to Carger Ln	0.9	\$7,095,000	Public-Private Partnership											
130	N 14th Street	Cornhusker Hwy (and N Antelop Valley Pkwy and Oak Creek)	Bridge Replacements	0.0	\$10,000,000	Fiscally Constrained	1.00	0.86	1.00	1.00	0.10	1	0.83	0.12	0.42	72.33	1
37	Cornhusker Hwy (US-6)	N 20th Street to N 33rd Street	Intersection Improvements per C	1.1	\$1,200,000	Fiscally Constrained	0.21	0.65	0.67	1.00	0.92	1	0.33	0.85	0.33	63.56	2
41	N 48th Street	Adams Street to Superior Street	4 lanes + intersection improvem	1.0	\$14,100,000	Fiscally Constrained	0.73	0.79	1.00	0.00	0.98	0.75	0.42	0.07	0.23	59.86	3
38	Cornhusker Hwy (US-6)	N 11th Street to N 20th Street	Intersection Improvements per C	0.8	\$975,000	Fiscally Constrained	0.28	0.70	0.33	1.00	0.42	1	0.67	0.96	0.25	59.82	4
87	W Holdrege Street	Chitwood Lane to NW 40th Street	2 lanes + intersection improvem	0.3	\$1,950,000	Fiscally Constrained	1.00	1.00	0.67	0.33	0.10	0.5	0.58	0.46	0.02	58.04	5
32	O Street (US-34)	Antelope Valley N/S Rdwy. (19th St.) to 46th Street	Intersection Improvements	1.4	\$6,840,000	Fiscally Constrained	0.35	1.00	0.33	0.00	1.00	1	0.50	0.13	0.27	52.26	6

Table G-4. Lincoln Roadway Projects - Rank Order

ID	Street Name	Limits	Description	Project Length (Miles)	Project Cost (2021\$)	Status	17.8	12.4	11.0	10.0	13.5	7.5	12.8	10.0	5.0	Total Score	Rank
							Mainten ance Score	Mobility Score	Livability Score	Equity Score	Safety Score	Economic Score	Enviro Score	Funding Score	Public Input Score		
146	N 70th Street	Havelock Avenue	Remove existing traffic signal and construct roundabout	0.0	\$2,000,000	Fiscally Constrained	0.24	0.65	0.33	0.67	0.57	0.75	0.92	0.44	0.00	51.98	7
153	Cornhusker Hwy (US-6)	State Fair Park Drive	Intersection Improvements: dual westbound left turn lanes	0.0	\$760,000	Fiscally Constrained	0.22	0.59	0.00	0.33	0.77	1	0.67	1.00	0.02	51.03	8
151	O Street (US-34)	84th Street	Intersection Improvement: dual eastbound left-turn lanes and eastbound right-turn lane and widening to east; maybe northbound right-turn lane	0.0	\$2,280,000	Fiscally Constrained	0.43	0.68	0.33	0.00	0.67	1	0.83	0.37	0.07	50.90	9
134	W South Street	Salt Creek	Bridge Replacement	0.0	\$3,200,000	Fiscally Constrained	1.00	0.43	0.33	1.00	0.12	0.5	0.42	0.25	0.12	50.54	10
142	Fremont Street	Touzalin Avenue	Remove existing traffic signal and construct roundabout	0.0	\$2,700,000	Fiscally Constrained	0.78	0.54	0.33	0.67	0.23	0.5	0.75	0.30	0.00	50.51	11
2	S 40th Street	Normal Blvd and South Street	Major intersection area work	0.0	\$10,000,000	Fiscally Constrained	0.37	0.73	0.00	0.67	0.59	0.5	0.75	0.08	0.82	48.49	12
33	N 84th Street	O Street to Adams Street	Intersection Improvements	2.0	\$15,200,000	Fiscally Constrained	0.29	0.91	0.67	0.00	0.70	1	0.50	0.06	0.10	48.15	13
149	S 27th Street	Pine Lake Road	Intersection Improvement: eastbound right-turn lane	0.0	\$760,000	Fiscally Constrained	0.12	0.62	0.00	0.33	0.51	0.75	0.92	0.91	0.10	47.00	14
133	S 27th Street	SE Upper Salt Creek	Bridge Replacement	0.0	\$4,500,000	Fiscally Constrained	0.50	0.79	0.00	0.33	0.79	0.5	0.50	0.16	0.20	45.37	15
14	NW 48th Street	Adams Street to Cuming Street	2 lanes + intersection improvem	1.4	\$10,000,000	Fiscally Constrained	0.53	0.72	1.00	0.00	0.18	1	0.33	0.08	0.12	45.04	16
137	N 70th Street	Salt Creek	Bridge Replacement	0.0	\$3,000,000	Fiscally Constrained	0.50	0.47	0.33	1.00	0.10	0.75	0.50	0.26	0.05	44.70	17
85	NW 12th Street	Fletcher Avenue to Aster Road with overpass of US-34	2 lanes + Overpass	0.4	\$9,370,000	Fiscally Constrained	0.65	0.45	0.33	0.67	0.11	0.5	0.83	0.08	0.05	44.52	18
147	S 56th Street	Cotner Boulevard/Randolph Street	Remove signal and evaluate roundabout or new signal	0.0	\$2,750,000	Fiscally Constrained	0.61	0.55	0.00	0.67	0.39	0	0.92	0.24	0.13	44.43	19
82	Nebraska Hwy 2	S 84th Street to Van Dorn Street	Corridor Improvements (TBD by	6.7	\$50,000,000	Fiscally Constrained	0.22	0.86	0.00	0.00	1.00	1	0.25	0.01	1.00	43.97	20
58	S 56th Street	Van Dorn Street to Pioneers Boulevard	4 lanes + intersection improvem	0.9	\$13,200,000	Illustrative Plan	0.67	0.94	0.00	0.67	0.37	0	0.50	0.05	0.32	43.89	21
214	Normal Boulevard	Van Dorn Street	Intersection improvements	0.0	\$750,000	Illustrative Plan	0.22	0.80	0.00	0.67	0.40	0	0.75	0.81	0.00	43.64	22
31	S 70th Street	Pine Lake Road to Yankee Hill Road	4 lanes + intersection improvem	1.0	\$14,000,000	Illustrative Plan	0.61	0.74	1.00	0.00	0.18	0.5	0.42	0.05	0.12	43.63	23
138	S 40th Street	Antelope Creek	Bridge Replacement	0.0	\$2,500,000	Illustrative Plan	0.50	0.95	0.00	0.67	0.10	0.5	0.58	0.28	0.15	43.56	24
35	S 9th Street	Van Dorn Street to South Street	3 lanes + intersection improvem	0.5	\$5,300,000	Illustrative Plan	0.46	1.00	0.00	0.33	0.33	0.5	0.67	0.13	0.30	43.40	25
155	S 84th Street	Yankee Woods Drive	Roundabout	0.0	\$2,750,000	Illustrative Plan	0.56	0.74	0.33	0.00	0.43	0.5	0.67	0.25	0.02	43.38	26
56	Holdrege Street	N 70th Street to N 80th Street	4 lanes + intersection improvem	0.7	\$10,000,000	Illustrative Plan	0.39	0.95	0.33	0.33	0.38	0.5	0.58	0.07	0.12	43.26	27
136	S 1st Street	Cardwell Branch Salt Creek	Bridge Replacement	0.0	\$850,000	Illustrative Plan	0.50	0.89	0.00	0.33	0.10	0.5	0.58	0.73	0.02	43.14	28
139	Rosa Parks Way	K Street and L Street	Bridge Rehab and Preventive Ma	0.0	\$3,400,000	Illustrative Plan	0.00	0.66	0.00	1.00	0.23	1	0.83	0.23	0.22	42.90	29
57	Yankee Hill Road	S 14th Street to S 27th Street	Additional 2 lanes	1.0	\$7,200,000	Illustrative Plan	0.10	0.79	1.00	0.67	0.11	0.5	0.50	0.11	0.15	42.77	30
12	NW 40th Street	W Holdrege Street to W Vine Street	2 lanes + intersection improvem	0.5	\$3,500,000	Illustrative Plan	1.00	0.24	0.33	0.33	0.10	0.5	0.58	0.19	0.00	42.20	31
154	Cornhusker Hwy (US-6)	N 70th Street / Railroad viaduct	Intersection/viaduct reconfigura	0.0	\$10,000,000	Illustrative Plan	0.30	0.41	0.00	1.00	0.10	1	0.92	0.08	0.02	41.90	32
144	S 33rd Street	D Street	Remove existing traffic signal and construct mini roundabout	0.0	\$1,000,000	Illustrative Plan	0.52	0.50	0.00	0.33	0.38	0	0.92	0.56	0.12	41.78	33
152	S 84th Street	A Street	Intersection Improvements: dual northbound left turn lanes and NB right turn lane	0.0	\$1,520,000	Illustrative Plan	0.59	0.66	0.00	0.00	0.32	0.5	0.83	0.41	0.05	41.64	34
19	O Street (US-34)	Wedgewood Drive to 98th Street	Intersection Improvements	1.0	\$6,080,000	Illustrative Plan	0.30	0.84	0.33	0.00	0.46	1	0.50	0.12	0.05	40.97	35
42	Havelock Avenue	N 70th Street to N 84th Street	2 lanes + intersection improvem	1.0	\$7,000,000	Illustrative Plan	0.16	0.78	0.67	0.33	0.31	0.5	0.67	0.10	0.05	40.94	36
5	NW 56th Street	W Partridge Lane to W "O" Street	2 lanes + intersection improvem	1.3	\$9,000,000	Illustrative Plan	0.78	0.29	0.67	0.33	0.11	0.5	0.50	0.07	0.10	40.89	37
131	Huntington Avenue	Dead Mans Run	Bridge Replacement	0.0	\$3,500,000	Illustrative Plan	0.50	0.30	0.67	1.00	0.10	0	0.50	0.19	0.03	39.77	38
40	Van Dorn Street	S 70th Street to S 84th Street	Intersection Improvements	1.0	\$4,560,000	Illustrative Plan	0.37	0.61	0.00	0.67	0.39	0.5	0.58	0.15	0.12	39.38	39
11	NW 40th Street	W Vine Street to US-6, including I-80 Overpass	Overpass	0.5	\$11,250,000	Illustrative Plan	0.65	0.56	0.33	0.33	0.10	0.5	0.50	0.06	0.07	37.78	40
24	Yankee Hill Road	S 56th Street to S 70th Street	2 lanes + intersection improvem	1.0	\$6,900,000	Illustrative Plan	0.54	0.50	0.67	0.00	0.16	0.5	0.50	0.09	0.23	37.51	41
6	NW 38th Street	W Adams Street to W Holdrege Street	2 lanes + intersection improvem	1.0	\$7,200,000	Illustrative Plan	1.00	0.00	0.33	0.33	0.10	0.5	0.42	0.08	0.03	36.16	42
51	N 33rd Street	Cornhusker Hwy to Superior Street	4 lanes + int. impr. & bridge	1.0	\$20,000,000	Illustrative Plan	0.18	0.26	0.33	0.33	1.00	0.5	0.33	0.03	0.17	36.03	43
75	State Fair Park Dr	Salt Creek Roadway to Cornhusker Hwy	6 lanes + intersection improvem	0.4	\$9,300,000	Illustrative Plan	0.25	0.53	0.33	0.33	0.51	0.5	0.50	0.07	0.03	35.93	44
15	NW 56th Street	W Cuming Street to W Superior Street	2 lanes + intersection improvem	0.4	\$2,900,000	Illustrative Plan	1.00	0.00	0.33	0.33	0.10	0	0.58	0.17	0.00	35.31	45
23	S 56th Street	Thompson Creek Boulevard to Yankee Hill Road	4 lanes + intersection improvem	0.7	\$9,800,000	Illustrative Plan	0.00	1.00	0.33	0.33	0.10	0.5	0.75	0.07	0.12	35.30	46

Table G-4. Lincoln Roadway Projects - Rank Order

ID	Street Name	Limits	Description	Project Length (Miles)	Project Cost (2021\$)	Status	17.8	12.4	11.0	10.0	13.5	7.5	12.8	10.0	5.0	Total Score	Rank
							Mainten ance Score	Mobility Score	Livability Score	Equity Score	Safety Score	Economic Score	Enviro Score	Funding Score	Public Input Score		
148	O Street (US-34)	98th Street	Construct roundabout with S 98th Street project OR when signal otherwise warranted	0.0	\$2,750,000	Illustrative Plan	0.26	0.69	0.00	0.00	0.10	1	0.83	0.22	0.03	35.06	47
8	W Van Dorn Street	SW 40th Street to Coddington Avenue	2 lanes + intersection improvem	1.5	\$10,500,000	Illustrative Plan	0.55	0.40	0.67	0.00	0.18	0.5	0.42	0.06	0.13	34.91	48
135	Southwood Drive	Beal Slough	Bridge Replacement	0.0	\$2,200,000	Illustrative Plan	1.00	0.09	0.00	0.33	0.26	0	0.50	0.21	0.05	34.45	49
193	NW 12th Street	W Alvo Road to Missoula Road	2 lanes + turn lanes	0.3	\$2,400,000	Illustrative Plan	0.00	0.09	0.67	0.33	0.78	0	0.75	0.23	0.00	34.16	50
7	NW 70th Street	W Superior Street to W Adams Street	2 lanes + intersection improvem	1.0	\$7,000,000	Illustrative Plan	1.00	0.08	0.00	0.00	0.48	0	0.58	0.07	0.07	33.72	51
61	S 27th Street	Yankee Hill Road to Saltillo Road	2 lane realignment + int. impr.	2.0	\$14,100,000	Illustrative Plan	0.41	0.49	0.67	0.00	0.10	0.5	0.50	0.04	0.12	33.27	52
48	N 112th Street	Holdrege Street to US-34	2 lanes + intersection improvem	1.0	\$7,000,000	Illustrative Plan	1.00	0.43	0.00	0.00	0.10	0	0.58	0.06	0.03	32.70	53
63	S 84th Street	Yankee Hill Road to Rokeby Road	4 lanes + intersection improvem	1.0	\$14,000,000	Illustrative Plan	0.47	0.68	0.33	0.00	0.10	0.5	0.42	0.04	0.02	31.41	54
21	Saltillo Road	S 14th Street to S 27th Street	2 lanes + intersection improvements, reconstruction to address flooding	1.1	\$7,600,000	Illustrative Plan	0.44	0.72	0.00	0.00	0.12	0.5	0.42	0.06	0.55	30.87	55
55	S 98th Street	US-34 (O Street) to A St	4 lanes + intersection improvem	1.0	\$14,000,000	Illustrative Plan	0.45	0.47	0.00	0.00	0.14	0.5	0.75	0.04	0.10	29.96	56
28	Rokeby Road	S 48th Street to S 56th Street	2 lanes + intersection improvem	0.5	\$3,500,000	Illustrative Plan	0.68	0.29	0.00	0.00	0.10	0.5	0.58	0.13	0.07	29.88	57
217	Rokeby Road	Snapdragon Road to S 48th Street	2 lanes + intersection improvem	0.3	\$10,330,000	Illustrative Plan	0.73	0.27	0.00	0.00	0.10	0.5	0.58	0.05	0.03	29.57	58
25	S 84th Street	Amber Hill Road to Yankee Hill Road	4 lanes + intersection improvem	0.4	\$5,700,000	Illustrative Plan	0.42	0.61	0.33	0.00	0.10	0.5	0.33	0.09	0.10	29.47	59
212	27th Street Realignment	Saltillo Road to Rokeby Road	New Two Lane Road	1.1	\$20,200,000	Illustrative Plan	0.56	0.47	0.00	0.00	0.10	0.5	0.58	0.02	0.07	28.94	60
86	Saltillo Road	S 56th Street to S 70th Street	2 lanes + intersection improvem	1.0	\$7,000,000	Illustrative Plan	0.36	0.58	0.00	0.00	0.12	0.5	0.67	0.07	0.10	28.61	61
3	W Superior Street	NW 70th Street to NW 56th Street	2 lanes + intersection improvem	1.0	\$7,000,000	Illustrative Plan	1.00	0.07	0.00	0.00	0.10	0	0.58	0.05	0.08	28.46	62
22	W Denton Road	Amaranth Lane to S Folsom Street	2 additional lanes	0.3	\$2,200,000	Illustrative Plan	0.09	0.36	0.33	0.00	0.10	0.5	0.83	0.21	0.03	27.70	63
46	S 112th Street	US-34 to Van Dorn Street	2 lanes + intersection improvem	2.0	\$14,000,000	Illustrative Plan	0.90	0.19	0.00	0.00	0.16	0	0.50	0.03	0.03	27.40	64
52	A Street	S 98th Street to 105th Street	2 lanes + intersection improvem	0.5	\$3,500,000	Illustrative Plan	0.70	0.32	0.00	0.00	0.10	0	0.67	0.11	0.00	27.36	65
59	East Beltway	Nebraska Hwy 2 to I-80	New 4 lane divided highway	12.6	\$315,000,000	Illustrative Plan	0.00	0.64	0.00	0.00	0.26	1	0.33	0.00	0.82	27.31	66
47	N 98th Street	Holdrege Street to O Street	Additional 2 lanes	1.1	\$7,500,000	Illustrative Plan	0.33	0.31	0.33	0.00	0.10	0.5	0.58	0.06	0.10	27.14	67
54	Adams Street	N 90th Street to N 98th Street	2 lanes + intersection improvem	0.6	\$4,300,000	Illustrative Plan	0.43	0.33	0.67	0.00	0.10	0	0.42	0.10	0.02	26.86	68
45	S 98th Street	A Street to Pioneers Boulevard	4 lanes + intersection improvem	2.0	\$28,000,000	Illustrative Plan	0.63	0.25	0.00	0.00	0.20	0.5	0.42	0.02	0.10	26.60	69
4	W Adams Street	NW 70th Street to NW 56th Street	2 lanes + intersection improvem	1.0	\$7,000,000	Illustrative Plan	0.44	0.12	0.00	0.00	0.63	0	0.58	0.05	0.07	26.28	70
13	W Van Dorn Street	Coddington Avenue to US-77	2 lanes + intersection improvem	1.0	\$6,900,000	Illustrative Plan	0.19	0.58	0.33	0.00	0.21	0.5	0.33	0.07	0.10	26.20	71
53	W Fletcher Avenue	NW 31st Street to NW 27th Street	2 lanes + intersection improvem	0.4	\$2,800,000	Illustrative Plan	0.26	0.24	0.00	0.00	0.16	0.5	0.83	0.15	0.05	25.86	72
30	S 70th Street	Yankee Hill Road to Rokeby Road	2 lanes + intersection improvem	1.0	\$14,000,000	Illustrative Plan	0.22	0.43	0.33	0.00	0.12	0.5	0.50	0.03	0.12	25.68	73
66	W Alvo Road	NW 12th Street to Tallgrass Parkway	2 lanes + intersection improvem	0.2	\$1,300,000	Illustrative Plan	0.06	0.11	0.33	0.33	0.31	0	0.67	0.30	0.02	25.25	74
126	W Old Cheney Road	S Folsom Street to SW12th Street	2 lanes with raised median	0.5	\$3,500,000	Illustrative Plan	0.36	0.03	0.00	0.00	0.18	0.5	0.83	0.12	0.00	24.92	75
194	W Old Cheney Road	SW 9th Street	Roundabout	0.0	\$900,000	Illustrative Plan	0.37	0.01	0.00	0.00	0.10	0	0.92	0.33	0.03	23.21	76
88	Rokeby Road	S 27th Street to S 31st Street	2 lanes + intersection improvem	0.3	\$2,400,000	Illustrative Plan	0.60	0.18	0.00	0.00	0.10	0	0.58	0.13	0.00	23.07	77
64	S 84th Street	Rokeby Road to Saltillo Road	4 lanes + intersection improvem	1.0	\$14,000,000	Illustrative Plan	0.27	0.42	0.00	0.00	0.10	0.5	0.58	0.03	0.03	23.03	78
62	S 70th Street	Rokeby Rd to Saltillo Rd	4 lanes + intersection improvem	1.0	\$14,000,000	Illustrative Plan	0.20	0.40	0.00	0.00	0.10	0.5	0.67	0.03	0.05	22.59	79
50	Havelock Avenue	N 84th Street to N 98th Street	2 lanes + intersection improvem	1.0	\$7,000,000	Illustrative Plan	0.04	0.11	0.00	0.00	0.59	0.5	0.58	0.06	0.03	21.99	80
17	NW 12th Street	Aster Road to Missoula Road	2 lanes + turn lanes	0.3	\$2,300,000	Illustrative Plan	0.00	0.00	0.00	0.33	0.10	0.5	0.83	0.16	0.00	20.70	81
16	W Cuming Street	NW 56th Street to NW 52nd Street	2 lanes + intersection improvem	0.2	\$1,600,000	Illustrative Plan	0.06	0.00	0.33	0.33	0.10	0	0.50	0.18	0.00	17.54	82
43	N 98th Street	Adams Street to Holdrege Street	2 lanes + intersection improvem	1.0	\$7,000,000	Illustrative Plan	0.29	0.18	0.00	0.00	0.22	0	0.50	0.04	0.07	17.53	83
89	W Alvo Road	NW 27th Street to NW 12th Street	2 lanes + intersection improvem	1.0	\$7,100,000	Illustrative Plan	0.06	0.08	0.00	0.33	0.10	0	0.50	0.03	0.00	13.46	84

Table G-6. NDOT Highway Projects - Rank Order

ID	Street Name	Limits	Description	Project Length (Miles)	Project Cost (2021\$)	Status	17.8	12.4	11.0	10.0	13.5	7.5	12.8	10.0	5.0	Total Score	Rank
							Mainten ance Score	Mobility Score	Livability Score	Equity Score	Safety Score	Economic Score	Enviro Score	Funding Score	Public Input Score		
78	South Beltway	US-77 to Nebraska Hwy 2	4 lane freeway	8.2	\$255,000,000	Committed											
76	West Beltway (US 77)	I-80 to Saltillo Road	Freeway with new interchanges	9.6	\$34,520,000	Committed											
44	O Street (US-34)	84th Street to 120th Street	4 lanes + intersection improvem	2.5	\$17,900,000	Illustrative Plan	0.61	0.72	0.67	0.00	0.22	1	0.42	0.04	0.08	43.74	1
34	US-6 (Sun Valley)	Cornhusker Hwy (US-6) to WO St.(US-6)	4 lanes + turn lanes	2.0	\$20,400,000	Illustrative Plan	0.57	0.77	0.00	0.33	0.47	1	0.25	0.04	0.15	41.14	2
73	US-34	US-34 and Fletcher Avenue	New interchange	0.0	\$31,900,000	Illustrative Plan	0.33	0.72	0.00	0.33	0.30	1	0.75	0.02	0.15	40.18	3
72	I-180	I-80 to US-6	Reconstruction + bridges	2.9	\$51,200,000	Illustrative Plan	0.32	0.59	0.00	1.00	0.32	1	0.25	0.01	0.08	38.51	4
1	I-80	I-80 and I-180	Major interchange work	0.0	\$52,300,000	Illustrative Plan	0.15	0.48	0.00	0.33	0.10	0.5	0.92	0.01	0.33	30.49	5
71	I-80	Pleasant Dale to NW 56th Street	6 lanes + bridges	6.0	\$97,000,000	Illustrative Plan	0.21	0.79	0.00	0.00	0.10	1	0.50	0.01	0.13	29.46	6
68	O Street (US-34)	120th Street to east county line	4 lanes + intersection improvem	5.0	\$37,000,000	Illustrative Plan	0.15	0.49	0.00	0.00	0.10	1	0.42	0.01	0.02	23.20	7
70	US-34	NE-79 to Malcolm Spur	4 lanes + intersection improvem	1.9	\$15,300,000	Illustrative Plan	0.08	0.34	0.00	0.00	0.10	0.5	0.50	0.02	0.03	17.51	8

Table G-7. Trail Projects - Project ID Order

ID	Trail Name	Limits	Description	Project Length (Miles)	Project Cost (2021\$)	Status	13	12.2	13.7	13.1	5.8	12.4	12.1	7.7	10	Total Score	Rank
							Mainten ance	Mobility and System Reliabilit y	Livabilit y and Travel Choice	Safety and Security	Economi c Vitality	Environ mental Sustaina bility	Transpor tation Equity	Funding and Cost Effectiv eness	Comm unity Input		
T-03	Woodlands	Jensen Park to Rokeby Rd	New Trail	1.18	\$500,000	Illustrative Plan	0.25	0.50	0.42	0.46	0.42	0.54	0.00	0.12	0.24	33.5	49
T-04	Woodlands	Rokeby Rd to S 70th St to Yankee Hill Rd	New Trail	1.50	\$950,000	Committed											
T-07	Landmark Fletcher	33rd St & Superior St to 27th St	New Trail; Sidepath	1.79	\$700,000	Illustrative Plan	0.25	0.67	0.79	0.58	0.63	0.50	0.33	0.12	0.48	49.4	18
T-09	Wilderness Hills	Yankee Hill Rd to Rokeby Rd and S 40th St	New Trail	0.95	\$1,200,000	Committed											
T-11	Waterford	N 84th St to Stevens Creek	New Trail	2.74	\$900,000	Committed											
T-12	Stevens Creek	Murdock Trail to Waterford Trail	New Trail	1.79	\$1,300,000	Illustrative Plan	0.33	0.67	0.39	0.44	0.56	0.50	0.00	0.05	0.14	34.9	45
T-13	Cardwell Branch Trail	GPTN Connector to Folsom Trail	New Trail	1.15	\$800,000	Illustrative Plan	0.33	0.56	0.50	0.44	0.56	0.67	0.33	0.10	0.17	41.7	29
T-15	W Holdrege Street Trail	NW 48th St to NW 56th St	Sidepath	0.48	\$250,000	Bundle with Roadway FC Project 10											
T-16	N 48th Street Trail	Murdock Trail to Superior St	Sidepath	0.52	\$200,000	Bundle with Roadway FC Project 41											
T-18	Deadmans Run Trail	Murdock Trail to Cornhusker Hwy and Railroad grade separation	New Trail and Grade Separation	0.65	\$300,000	Priority Project	0.25	0.92	0.71	0.79	0.71	0.38	0.33	0.32	0.50	54.7	12
T-19	Boosalis - Bison Connector	Van Dorn St to S 17th St/Burnam St	Sidepath	1.09	\$300,000	Priority Project	0.42	0.92	0.75	0.75	0.75	0.79	0.33	0.36	1.00	67.7	1
T-20	Deadmans Run Trail	N 48th St to Mo Pac Trail	New Trail	1.35	\$550,000	Priority Project	0.25	0.75	0.71	0.67	0.54	0.54	0.67	0.17	0.69	57.0	7
T-21	East Campus Trail	Leighton St to Holdrege St	New Trail	0.15	\$150,000	Priority Project	0.25	0.75	0.67	0.63	0.54	0.79	1.00	0.71	0.45	64.8	3
T-23	S 27th Street Connector	Rokeby Rd to South Beltway	New Trail	1.87	\$800,000	Illustrative Plan	0.33	0.72	0.50	0.39	0.56	0.67	0.00	0.09	0.31	40.4	33
T-24	S 56th Street Connector	Rokeby Rd to South Beltway	New Trail	1.92	\$1,200,000	Illustrative Plan	0.33	0.72	0.50	0.39	0.56	0.67	0.00	0.06	0.19	39.0	38
T-25	S 84th Street Connector	Rokeby Rd to South Beltway	New Trail	1.36	\$700,000	Illustrative Plan	0.33	0.72	0.50	0.39	0.56	0.67	0.00	0.10	0.26	40.0	35
T-26	South Beltway Trail - Phase I	S 27th St to S 56th St	New Trail	1.26	\$1,500,000	Illustrative Plan	0.33	0.67	0.50	0.67	0.78	0.56	0.00	0.05	0.26	42.5	26
T-27	Greenway Corridor Trail/Haines Branch	Pioneers Park Nature Center to Spring Creek Prairie Audubon Center	New Trail	8.01	\$4,500,000	Committed											
T-28	NW 56th Street Trail	W Adams St to W Superior St	New Trail	1.63	\$600,000	Illustrative Plan	0.25	0.67	0.63	0.63	0.63	0.67	0.33	0.15	0.33	48.5	19
T-29	South Street	Folsom St to Jamaica Trail	Sidepath	1.07	\$750,000	Priority Project	1.00	0.67	0.79	0.46	0.58	0.54	0.33	0.14	0.45	57.7	6
T-30	W. O Street	SW 40th St to SW 48th St	Sidepath	0.51	\$260,000	Committed											
T-31	W A Street Connector	A Street from SW 36th to SW 40th; SW 40th from A St to F St	Sidepath	0.69	\$120,000	Priority Project	0.27	1.00	0.83	0.90	0.77	0.67	0.33	0.92	0.19	64.6	4
T-33	Stevens Creek	Murdock trail to Hwy 6	New Trail	1.93	\$1,000,000	Illustrative Plan	0.33	0.67	0.50	0.44	0.67	0.56	0.00	0.07	0.19	38.4	39
T-34	N 48th Street/Bike Park Trail	Superior St to N 56th St	New Trail; Sidepath	2.09	\$900,000	Priority Project	0.25	0.75	0.63	0.46	0.50	0.46	1.00	0.10	0.21	50.6	17
T-35	N 1st Street	N 1st St crossing of Hwy 34	Sidepath	0.28	\$400,000	Priority Project	0.27	1.00	0.63	0.79	0.67	0.75	0.00	0.24	0.21	51.7	14
T-36	NW 12th Street	W Fletcher Ave to Aster St with US 34 grade separated crossing	Sidepath; Grade Sepa	1.03	\$400,000	Priority Project	0.25	0.75	0.63	0.75	0.67	0.67	0.33	0.23	0.24	51.1	16
T-37	Rock Island	Old Cheney grade separated crossing	Grade Separation	0.00	\$1,200,000	Committed - As part of Committed Roadway Project											
T-38	Tierra Williamsburg	Old Cheney grade separated crossing	Grade Separation	0.00	\$1,200,000	Illustrative Plan	0.30	0.33	0.42	1.00	0.25	0.54	0.33	0.06	0.48	44.2	22
T-39	10th Street Trail	Hwy 2 intersection improvements	Crossing Improve	0.00	\$2,200,000	Bundle with Roadway FC Project 82											
T-40	S 91st Street Trail	Hwy 2 grade separated crossing	Grade Separation	0.00	\$2,200,000	Illustrative Plan	0.29	0.38	0.54	1.00	0.42	0.63	0.00	0.03	0.07	40.0	34
T-41	Mo Pac Trail	S 112th Street grade separated crossing	Grade Separation		\$1,210,000	Illustrative Plan	0.30	0.30	0.43	0.77	0.27	0.63	0.00	0.33	0.07	36.2	42
T-42	Mo Pac Trail	S 84th Street grade separated crossing	Grade Separation	0.00	\$1,700,000	Illustrative Plan	0.29	0.29	0.46	0.83	0.25	0.63	0.00	0.04	0.17	35.7	43
T-43	Yankee Hill Rd	S 56th St to S 70th St	Sidepath	0.97	\$350,000	Priority Project	0.33	1.00	0.67	0.67	0.67	1.00	0.00	0.29	0.36	56.4	9
T-44	S 14th Street & Yankee Hill Connector (w/RTSD project)	South LPS Property Line to Yankee Hill	Sidepath	0.98	\$400,000	Priority Project	0.33	1.00	0.67	1.00	0.67	1.00	0.67	0.31	0.19	67.4	2
T-45	Landmark Fletcher	Fletcher Ave from N 27th St to N 14th St	Sidepath	1.22	\$990,000	Committed											
T-46	Prairie Village Trail	N 84th St to Stevens Creek, South of Adams	New Trail; Sidepath	1.16	\$500,000	Illustrative Plan	0.33	0.67	0.67	0.33	0.67	0.67	0.00	0.15	0.02	39.5	37
T-47	Van Dorn Trail	S 84th St and Van Dorn to S 106th and MoPac Trail	New Trail	1.70	\$1,200,000	Illustrative Plan	0.33	0.67	0.67	0.33	0.67	0.67	0.00	0.06	0.40	42.6	25
T-48	Air Park Connector - Phase I	NW 13th St to NW 27th St	Sidepath	0.98	\$600,000	Priority Project	0.33	1.00	1.00	1.00	1.00	0.67	0.00	0.19	0.21	61.0	5
T-49	Air Park Connector - Phase II	NW 27th St to NW 48th St	Sidepath	2.00	\$900,000	Priority Project	0.33	1.00	1.00	0.33	1.00	0.67	0.00	0.11	0.17	51.2	15
T-51	South Beltway Trail - Phase II	S 56th St to S 84th St	New Trail	2.23	\$3,500,000	Illustrative Plan	0.33	0.83	0.33	0.00	0.83	0.67	0.00	0.02	0.14	33.7	48
T-52	South Beltway Trail - Phase III	S 84th Street to Hwy 2	New Trail	2.12	\$3,500,000	Illustrative Plan	0.33	0.67	0.33	0.00	0.67	0.67	0.00	0.02	0.10	30.3	50

Table G-7. Trail Projects - Project ID Order

ID	Trail Name	Limits	Description	Project Length (Miles)	Project Cost (2021\$)	Status	13	12.2	13.7	13.1	5.8	12.4	12.1	7.7	10	Total Score	Rank
							Mainten ance	Mobility and System Reliabilit y	Livabilit y and Travel Choice	Safety and Security	Economi c Vitality	Environ mental Sustaina bility	Transpor tation Equity	Funding and Cost Effective ness	Communi ty Input		
T-53	NW 56th Street Trail	W Holdrege to W Partridge	Sidepath	0.22	\$100,000	Priority Project	0.33	1.00	0.67	0.33	0.67	1.00	0.00	0.93	0.14	54.9	11
T-54	Chris Buetler Trail - Jamaica North Conr	J Street to N Street	New Trail	0.34	\$250,000	Committed											
T-55	Yankee Hill Road	S 40th St to S 56th St	Sidepath	1.02	\$350,000	Bundle with Roadway FC Project 27 & 83											
T-61	Beal Slough Trail	S 56th St and London Rd to S 70th St and Yankee Hill	New Trail	2.22	\$1,480,000	Committed											
T-63	Folsom Street	W Old Cheney south 1/2 mile	Sidepath	0.49	\$65,000	Illustrative Plan	0.27	0.38	0.31	0.50	0.51	0.83	0.00	1.00	0.07	40.7	31
T-64	S 70th Street Connector	Old Post Rd to MoPac Trail	Sidepath	1.87	\$700,000	Priority Project	0.47	0.99	0.79	0.57	0.69	0.83	0.00	0.14	0.36	55.3	10
T-65	Pine Lake Rd/S 98th St	Billy Wolff Trail to Napa Ridge Dr	Sidepath	0.66	\$300,000	Illustrative Plan	0.40	0.70	0.44	0.43	0.55	0.82	0.00	0.26	0.07	41.5	30
T-66	Yankee Hill Road	S 14th St to S 27th St	Sidepath	1.02	\$350,000	Priority Project	0.40	0.77	0.60	0.53	0.56	0.89	0.67	0.29	0.24	56.8	8
T-67	Old Cheney Rd	Warlick Blvd to Jamaica North	Sidepath	0.54	\$250,000	Committed - As part of Committed Roadway Project											
T-68	Folsom St	Old Cheney to Pioneers Blvd	Sidepath	1.02	\$350,000	Illustrative Plan	0.27	0.44	0.36	0.50	0.41	0.77	0.00	0.18	0.07	34.3	46
T-69	Pioneers Blvd	Jamaica North Trail to Coddington Ave	Sidepath	1.84	\$700,000	Illustrative Plan	0.27	0.55	0.37	0.50	0.41	0.67	0.00	0.09	0.10	34.1	47
T-70	Coddington Ave	Pioneers Blvd to South St	Sidepath	1.57	\$650,000	Illustrative Plan	0.39	0.59	0.35	0.50	0.49	0.67	0.00	0.11	0.12	36.8	41
T-71	Van Dorn St	SW 40th St to Prairie Corridor Trail	Sidepath	1.26	\$500,000	Illustrative Plan	0.27	0.61	0.41	0.50	0.45	0.67	0.33	0.15	0.14	40.6	32
T-72	SW 40th St	Van Dorn St to W A Street	Sidepath	1.00	\$350,000	Illustrative Plan	0.27	0.52	0.41	0.50	0.45	0.67	0.33	0.21	0.12	39.7	36
T-74	Oak Creek Trail	Saline Wetlands Nature Center to N 1st St	New Trail	0.58	\$300,000	Illustrative Plan	0.27	0.65	0.47	0.41	0.61	0.52	0.33	0.25	0.31	42.3	27
T-75	Arbor Road Trail	N 14th St to I-80 with grade separation at I-80	Sidepath and Grade Separation	1.55	\$600,000	Illustrative Plan	0.27	0.60	0.40	0.47	0.48	0.60	1.00	0.15	0.19	47.7	20
T-76	Arbor Road Trail	I-80 to Salt Creek Trail	Sidepath	2.94	\$2,400,000	Illustrative Plan	0.27	0.48	0.41	0.47	0.51	0.60	1.00	0.04	0.07	44.6	21
T-77	Little Salt Creek Trail	Arbor Rd to Landmark Fletcher	New Trail	1.63	\$2,000,000	Illustrative Plan	0.27	0.53	0.41	0.37	0.54	0.47	1.00	0.04	0.14	43.2	23
T-78	Salt Creek Trail	N 56th St to Stevens Creek	New Trail	1.73	\$900,000	Illustrative Plan	0.27	0.49	0.40	0.37	0.45	0.51	1.00	0.09	0.07	42.1	28
T-79	Stevens Creek Trail	Salt Creek Trail to Cornhusker Hwy with grade separation of Cornhusker Hwy	New Trail	1.05	\$1,000,000	Illustrative Plan	0.27	0.47	0.40	0.42	0.46	0.56	1.00	0.08	0.07	43.2	24
T-80	NW 12th Street	NW 10th St to W Fletcher Ave	Sidepath	0.46	\$200,000	Priority Project	0.39	0.71	0.75	0.57	0.74	0.97	0.00	0.48	0.10	52.2	13
T-81	Folsom Street Connector	1/2 mile north of W Denton Rd to Cardwell Branch Trail	Trail	0.77	\$800,000	Illustrative Plan	0.27	0.51	0.31	0.50	0.51	0.87	0.00	0.09	0.02	35.1	44
T-82	Stevens Creek	Waterford Trail to MoPac Trail	New Trail	2.43	\$1,700,000	Illustrative Plan	0.30	0.67	0.39	0.37	0.61	0.57	0.00	0.04	0.38	36.9	40

Table G-8. Trail Projects - Rank Order

ID	Trail Name	Limits	Description	Project Length (Miles)	Project Cost (2021\$)	Status	13	12.2	13.7	13.1	5.8	12.4	12.1	7.7	10	Total Score	Rank
							Mainten ance	Mobility and System Reliabilit y	Livabilit y and Travel Choice	Safety and Security	Economi c Vitality	Environ mental Sustaina bility	Transpor tation Equity	Funding and Cost Effectiv eness	Comm unity Input		
T-45	Landmark Fletcher	Fletcher Ave from N 27th St to N 14th St	Sidepath	1.22	\$990,000	Committed											
T-61	Beal Slough Trail	S 56th St and London Rd to S 70th St and Yankee Hill	New Trail	2.22	\$1,480,000	Committed											
T-54	Chris Buetler Trail - Jamaica North Con	J Street to N Street	New Trail	0.34	\$250,000	Committed											
T-04	Woodlands	Rokeyby Rd to S 70th St to Yankee Hill Rd	New Trail	1.50	\$950,000	Committed											
T-09	Wilderness Hills	Yankee Hill Rd to Rokeyby Rd and S 40th St	New Trail	0.95	\$1,200,000	Committed											
T-11	Waterford	N 84th St to Stevens Creek	New Trail	2.74	\$900,000	Committed											
T-30	W. O Street	SW 40th St to SW 48th St	Sidepath	0.51	\$260,000	Committed											
T-27	Greenway Corridor Trail/Haines Branch	Pioneers Park Nature Center to Spring Creek Prairie Audubon Center	New Trail	8.01	\$4,500,000	Committed											
T-37	Rock Island	Old Cheney grade separated crossing	Grade Separation	0.00	\$1,200,000	Committed - As part of Committed Roadway Project											
T-67	Old Cheney Rd	Warlick Blvd to Jamaica North	Sidepath	0.54	\$250,000	Committed - As part of Committed Roadway Project											
T-16	N 48th Street Trail	Murdock Trail to Superior St	Sidepath	0.52	\$200,000	Bundle with Roadway FC Project 41											
T-55	Yankee Hill Road	S 40th St to S 56th St	Sidepath	1.02	\$350,000	Bundle with Roadway FC Project 27 & 83											
T-15	W Holdrege Street Trail	NW 48th St to NW 56th St	Sidepath	0.48	\$250,000	Bundle with Roadway FC Project 10											
T-39	10th Street Trail	Hwy 2 intersection improvements	Crossing Improve	0.00	\$2,200,000	Bundle with Roadway FC Project 82											
T-19	Boosalis - Bison Connector	Van Dorn St to S 17th St/Burnam St	Sidepath	1.09	\$300,000	Priority Project	0.42	0.92	0.75	0.75	0.75	0.79	0.33	0.36	1.00	67.7	1
T-44	S 14th Street & Yankee Hill Connector (w/RTSD project)	South LPS Property Line to Yankee Hill	Sidepath	0.98	\$400,000	Priority Project	0.33	1.00	0.67	1.00	0.67	1.00	0.67	0.31	0.19	67.4	2
T-21	East Campus Trail	Leighton St to Holdrege St	New Trail	0.15	\$150,000	Priority Project	0.25	0.75	0.67	0.63	0.54	0.79	1.00	0.71	0.45	64.8	3
T-31	W A Street Connector	A Street from SW 36th to SW 40th; SW 40th from A St to F St	Sidepath	0.69	\$120,000	Priority Project	0.27	1.00	0.83	0.90	0.77	0.67	0.33	0.92	0.19	64.6	4
T-48	Air Park Connector - Phase I	NW 13th St to NW 27th St	Sidepath	0.98	\$600,000	Priority Project	0.33	1.00	1.00	1.00	1.00	0.67	0.00	0.19	0.21	61.0	5
T-29	South Street	Folsom St to Jamaica Trail	Sidepath	1.07	\$750,000	Priority Project	1.00	0.67	0.79	0.46	0.58	0.54	0.33	0.14	0.45	57.7	6
T-20	Deadmans Run Trail	N 48th St to Mo Pac Trail	New Trail	1.35	\$550,000	Priority Project	0.25	0.75	0.71	0.67	0.54	0.54	0.67	0.17	0.69	57.0	7
T-66	Yankee Hill Road	S 14th St to S 27th St	Sidepath	1.02	\$350,000	Priority Project	0.40	0.77	0.60	0.53	0.56	0.89	0.67	0.29	0.24	56.8	8
T-43	Yankee Hill Rd	S 56th St to S 70th St	Sidepath	0.97	\$350,000	Priority Project	0.33	1.00	0.67	0.67	0.67	1.00	0.00	0.29	0.36	56.4	9
T-64	S 70th Street Connector	Old Post Rd to MoPac Trail	Sidepath	1.87	\$700,000	Priority Project	0.47	0.99	0.79	0.57	0.69	0.83	0.00	0.14	0.36	55.3	10
T-53	NW 56th Street Trail	W Holdrege to W Partridge	Sidepath	0.22	\$100,000	Priority Project	0.33	1.00	0.67	0.33	0.67	1.00	0.00	0.93	0.14	54.9	11
T-18	Deadmans Run Trail	Murdock Trail to Cornhusker Hwy and Railroad grade separation	New Trail and Grade Separation	0.65	\$300,000	Priority Project	0.25	0.92	0.71	0.79	0.71	0.38	0.33	0.32	0.50	54.7	12
T-80	NW 12th Street	NW 10th St to W Fletcher Ave	Sidepath	0.46	\$200,000	Priority Project	0.39	0.71	0.75	0.57	0.74	0.97	0.00	0.48	0.10	52.2	13
T-35	N 1st Street	N 1st St crossing of Hwy 34	Sidepath	0.28	\$400,000	Priority Project	0.27	1.00	0.63	0.79	0.67	0.75	0.00	0.24	0.21	51.7	14
T-49	Air Park Connector - Phase II	NW 27th St to NW 48th St	Sidepath	2.00	\$900,000	Priority Project	0.33	1.00	1.00	0.33	1.00	0.67	0.00	0.11	0.17	51.2	15
T-36	NW 12th Street	W Fletcher Ave to Aster St with US 34 grade separated crossing	Sidepath; Grade Sepa	1.03	\$400,000	Priority Project	0.25	0.75	0.63	0.75	0.67	0.67	0.33	0.23	0.24	51.1	16
T-34	N 48th Street/Bike Park Trail	Superior St to N 56th St	New Trail; Sidepath	2.09	\$900,000	Priority Project	0.25	0.75	0.63	0.46	0.50	0.46	1.00	0.10	0.21	50.6	17
T-07	Landmark Fletcher	33rd St & Superior St to 27th St	New Trail; Sidepath	1.79	\$700,000	Illustrative Plan	0.25	0.67	0.79	0.58	0.63	0.50	0.33	0.12	0.48	49.4	18
T-28	NW 56th Street Trail	W Adams St to W Superior St	New Trail	1.63	\$600,000	Illustrative Plan	0.25	0.67	0.63	0.63	0.63	0.67	0.33	0.15	0.33	48.5	19
T-75	Arbor Road Trail	N 14th St to I-80 with grade separation at I-80	Sidepath and Grade Separation	1.55	\$600,000	Illustrative Plan	0.27	0.60	0.40	0.47	0.48	0.60	1.00	0.15	0.19	47.7	20
T-76	Arbor Road Trail	I-80 to Salt Creek Trail	Sidepath	2.94	\$2,400,000	Illustrative Plan	0.27	0.48	0.41	0.47	0.51	0.60	1.00	0.04	0.07	44.6	21
T-38	Tierra Williamsburg	Old Cheney grade separated crossing	Grade Separation	0.00	\$1,200,000	Illustrative Plan	0.30	0.33	0.42	1.00	0.25	0.54	0.33	0.06	0.48	44.2	22
T-77	Little Salt Creek Trail	Arbor Rd to Landmark Fletcher	New Trail	1.63	\$2,000,000	Illustrative Plan	0.27	0.53	0.41	0.37	0.54	0.47	1.00	0.04	0.14	43.2	23

Table G-8. Trail Projects - Rank Order

ID	Trail Name	Limits	Description	Project Length (Miles)	Project Cost (2021\$)	Status	13	12.2	13.7	13.1	5.8	12.4	12.1	7.7	10	Total Score	Rank
							Mainten ance	Mobility and System Reliabilit y	Livabilit y and Travel Choice	Safety and Security	Economi c Vitality	Environ mental Sustaina bility	Transpor tation Equity	Funding and Cost Effectiv eness	Comm unity Input		
T-79	Stevens Creek Trail	Salt Creek Trail to Cornhusker Hwy with grade separation of Cornhusker Hwy	New Trail	1.05	\$1,000,000	Illustrative Plan	0.27	0.47	0.40	0.42	0.46	0.56	1.00	0.08	0.07	43.2	24
T-47	Van Dorn Trail	S 84th St and Van Dorn to S 106th and MoPac Trail	New Trail	1.70	\$1,200,000	Illustrative Plan	0.33	0.67	0.67	0.33	0.67	0.67	0.00	0.06	0.40	42.6	25
T-26	South Beltway Trail - Phase I	S 27th St to S 56th St	New Trail	1.26	\$1,500,000	Illustrative Plan	0.33	0.67	0.50	0.67	0.78	0.56	0.00	0.05	0.26	42.5	26
T-74	Oak Creek Trail	Saline Wetlands Nature Center to N 1st St	New Trail	0.58	\$300,000	Illustrative Plan	0.27	0.65	0.47	0.41	0.61	0.52	0.33	0.25	0.31	42.3	27
T-78	Salt Creek Trail	N 56th St to Stevens Creek	New Trail	1.73	\$900,000	Illustrative Plan	0.27	0.49	0.40	0.37	0.45	0.51	1.00	0.09	0.07	42.1	28
T-13	Cardwell Branch Trail	GPTN Connector to Folsom Trail	New Trail	1.15	\$800,000	Illustrative Plan	0.33	0.56	0.50	0.44	0.56	0.67	0.33	0.10	0.17	41.7	29
T-65	Pine Lake Rd/S 98th St	Billy Wolff Trail to Napa Ridge Dr	Sidepath	0.66	\$300,000	Illustrative Plan	0.40	0.70	0.44	0.43	0.55	0.82	0.00	0.26	0.07	41.5	30
T-63	Folsom Street	W Old Cheney south 1/2 mile	Sidepath	0.49	\$65,000	Illustrative Plan	0.27	0.38	0.31	0.50	0.51	0.83	0.00	1.00	0.07	40.7	31
T-71	Van Dorn St	SW 40th St to Prairie Corridor Trail	Sidepath	1.26	\$500,000	Illustrative Plan	0.27	0.61	0.41	0.50	0.45	0.67	0.33	0.15	0.14	40.6	32
T-23	S 27th Street Connector	Rokeby Rd to South Beltway	New Trail	1.87	\$800,000	Illustrative Plan	0.33	0.72	0.50	0.39	0.56	0.67	0.00	0.09	0.31	40.4	33
T-40	S 91st Street Trail	Hwy 2 grade separated crossing	Grade Separation	0.00	\$2,200,000	Illustrative Plan	0.29	0.38	0.54	1.00	0.42	0.63	0.00	0.03	0.07	40.0	34
T-25	S 84th Street Connector	Rokeby Rd to South Beltway	New Trail	1.36	\$700,000	Illustrative Plan	0.33	0.72	0.50	0.39	0.56	0.67	0.00	0.10	0.26	40.0	35
T-72	SW 40th St	Van Dorn St to W A Street	Sidepath	1.00	\$350,000	Illustrative Plan	0.27	0.52	0.41	0.50	0.45	0.67	0.33	0.21	0.12	39.7	36
T-46	Prairie Village Trail	N 84th St to Stevens Creek, South of Adams	New Trail; Sidepath	1.16	\$500,000	Illustrative Plan	0.33	0.67	0.67	0.33	0.67	0.67	0.00	0.15	0.02	39.5	37
T-24	S 56th Street Connector	Rokeby Rd to South Beltway	New Trail	1.92	\$1,200,000	Illustrative Plan	0.33	0.72	0.50	0.39	0.56	0.67	0.00	0.06	0.19	39.0	38
T-33	Stevens Creek	Murdock trail to Hwy 6	New Trail	1.93	\$1,000,000	Illustrative Plan	0.33	0.67	0.50	0.44	0.67	0.56	0.00	0.07	0.19	38.4	39
T-82	Stevens Creek	Waterford Trail to MoPac Trail	New Trail	2.43	\$1,700,000	Illustrative Plan	0.30	0.67	0.39	0.37	0.61	0.57	0.00	0.04	0.38	36.9	40
T-70	Coddington Ave	Pioneers Blvd to South St	Sidepath	1.57	\$650,000	Illustrative Plan	0.39	0.59	0.35	0.50	0.49	0.67	0.00	0.11	0.12	36.8	41
T-41	Mo Pac Trail	S 112th Street grade separated crossing	Grade Separation		\$1,210,000	Illustrative Plan	0.30	0.30	0.43	0.77	0.27	0.63	0.00	0.33	0.07	36.2	42
T-42	Mo Pac Trail	S 84th Street grade separated crossing	Grade Separation	0.00	\$1,700,000	Illustrative Plan	0.29	0.29	0.46	0.83	0.25	0.63	0.00	0.04	0.17	35.7	43
T-81	Folsom Street Connector	1/2 mile north of W Denton Rd to Cardwell Branch Trail	Trail	0.77	\$800,000	Illustrative Plan	0.27	0.51	0.31	0.50	0.51	0.87	0.00	0.09	0.02	35.1	44
T-12	Stevens Creek	Murdock Trail to Waterford Trail	New Trail	1.79	\$1,300,000	Illustrative Plan	0.33	0.67	0.39	0.44	0.56	0.50	0.00	0.05	0.14	34.9	45
T-68	Folsom St	Old Cheney to Pioneers Blvd	Sidepath	1.02	\$350,000	Illustrative Plan	0.27	0.44	0.36	0.50	0.41	0.77	0.00	0.18	0.07	34.3	46
T-69	Pioneers Blvd	Jamaica North Trail to Coddington Ave	Sidepath	1.84	\$700,000	Illustrative Plan	0.27	0.55	0.37	0.50	0.41	0.67	0.00	0.09	0.10	34.1	47
T-51	South Beltway Trail - Phase II	S 56th St to S 84th St	New Trail	2.23	\$3,500,000	Illustrative Plan	0.33	0.83	0.33	0.00	0.83	0.67	0.00	0.02	0.14	33.7	48
T-03	Woodlands	Jensen Park to Rokeby Rd	New Trail	1.18	\$500,000	Illustrative Plan	0.25	0.50	0.42	0.46	0.42	0.54	0.00	0.12	0.24	33.5	49
T-52	South Beltway Trail - Phase III	S 84th Street to Hwy 2	New Trail	2.12	\$3,500,000	Illustrative Plan	0.33	0.67	0.33	0.00	0.67	0.67	0.00	0.02	0.10	30.3	50



APPENDIX H

Environmental Overview

H. Environmental Overview

Introduction

Environmental stewardship of the natural, social, and cultural environment is a priority for the Lincoln MPO. This Appendix provides an overview of the potential environmental, social, and cultural resources that could prompt further analyses for the proposed transportation system improvements considered for this Plan. The following sections provide a general description of the resources, potential project overlap indicating future assessment needs, and recommended mitigation measures associated with proposed multimodal alternatives. This overview is broad in scope and meant to assist in the prioritization of future projects; specific improvement projects would still require separate resource reviews, as needed, for environmental compliance.

Federal Requirements

FAST Act states that the MPO will communicate with state and local agencies concerning land use management, natural resources, environmental protection, conservation, and historic preservation during the LRTP planning process. Discussions are to include the identification of potential mitigation measures, in consultation with Federal, State, and tribal wildlife agencies, as well as land management and regulatory agencies. This Appendix documents assessments conducted to comply with these requirements. The assessments were used to identify additional planning needs or mitigation measures associated with proposed projects.

Location of Projects

Lancaster County is located in southeast Nebraska and encompasses an area of

847 square miles or 542,080 acres. Lincoln is the largest city in Lancaster County with an estimated population of 283,839 (US Census Bureau 2019). Twelve other cities and villages are located in the county. Most of the proposed projects occur within the future service limit of the City of Lincoln.

Environmental Study Area (ESA)

Each fiscally constrained roadway project under consideration in the Plan was assigned a 120-foot (ft) right-of-way (ROW) regardless of its hierarchy, such as two-lane or four-lane (i.e., 60 feet on either side of the centerline of the alignment). In addition to ROW, a 100-ft buffer was established on both sides of the ROW to represent an area of potential disturbance to natural, social and cultural environment resources (for a total ESA width of 320 ft). For fiscally constrained trail projects, a 100-ft buffer was used around the trail alignment (for a total ESA width of 200 ft).

Resource Assessment Methodology

For most of the environmental, social, and cultural resources, maps were created in ArcMap to identify potential areas of concern associated with the 44 fiscally constrained urban and NDOT roadway, 26 rural roadway and 31 trail projects (**Chapter 7**). A few resources required other inventory methods. The ESA boundary for each fiscally constrained roadway (rural and urban areas) and trail project was overlaid onto each resource map to determine potential concerns requiring further investigation. **Table H.1** provides as a summary of the number of projects identified during the resources assessment which are explained further in this Appendix.

Table H.1 Number of Fiscally Constrained Roadway and Trail Project Overlapping with Environmental, Social, and Cultural Resources

Resource Reviewed	Rural Area Roadway Projects (Lancaster County)	Urban Area Roadway Projects (Lincoln)	Trail Projects (County-wide)
Floodplains	18	23	17
Stream Corridors	20	34	26
Freshwater Wetlands	21	23	22
Saline Wetlands	6	11	6
Northern Long-Eared Bat	22	21	18
Northern Long-Eared Bat Hibernaculum	0	1	2
Western Prairie Fringed Orchid	5	2	2
Saltwort	1	8	7
Salt Creek Tiger Beetle	1	0	2
Salt Creek Tiger Beetle Critical Habitat	1	0	1
Parks/Open Space and Trails (potential Section 4(f) resources)	5	21	21
Schools	0	3	6
Environmental Justice - Minority Populations	6	31	27
Environmental Justice - Low Income Populations	0	5	1
Equity Index – Highest Quartile	1	9	4
Equity Index – Moderate to High Quartile	0	7	4
Equity Index – Low to Moderate Quartile	5	10	9
Equity Index – Lowest Quartile	20	18	14
Historic Sites	0	4	0
Historic Districts	0	3	1

Natural Environment

Topography

Lancaster County is located in the Rolling Hills, Valleys, and Plains Topographic Regions. The general topography of the county consists of hilly land with moderate to steep slopes and rounded ridge crests composed mostly of glacial till that has been eroded and mantled by loess. The hills slope towards the Valley regions and gradually flatten near the historic floodplains of creek channels. At the southwest edge of the county, the topography transitions from Rolling Hills to Plains region, the flat land that lies above the valley. Elevations range from a high of 1,520 feet above sea level (asl) in the northwest and southwest part of the county to a low of 1,080 feet asl in the northeast.

Hydrology

Surface water flows in over 400 miles of warm water streams that meander through Lancaster County. Most notably Salt Creek flows from across the county southwest to northeast towards the Platte River. Major Salt Creek tributaries include Middle Creek, Oak Creek, Haines Branch, Beal Slough, and Stevens Creek. Several tributaries of the Nemaha River drain to the southeast in the southeast corner of the county. Many of the streams and their adjoining corridors consist of a variety of floodplain and riparian habitats. The floodplains for these streams account for 13.8% of the land area of the county.

Vegetation

Historically, tallgrass prairie dominated the landscape of Lancaster County; however, only approximately 8,640 acres of native prairie remain and is mostly concentrated in the west-central portion of the county. Forested areas generally occur along stream corridors, within recreational areas, and on city/state properties. Planted trees are also common

along residential streets. The Salt Creek basin is designated as a Saline Wetlands biologically unique landscape by the Nebraska Natural Legacy Project's State Wildlife Action Plan (Schneider et al. 2011). Freshwater wetlands occur throughout the county within floodplain depressions, closed depressions, ditch depressions and within stream or riparian corridors. Agricultural land uses surround the City of Lincoln and other urban areas and consist of row crops, pasture, hay land, other farming operations.

Natural Areas

There are 10 state wildlife management or recreation areas with reservoirs within the county, including Branched Oak, Pawnee, Conestoga Lake, Bluestem, Olive Creek, and Stagecoach. Several other natural areas at the edge of or outside of urban boundaries are managed by the City of Lincoln, Lower Platte South Natural Resource District (LPSNRD), Nebraska Game and Parks Commission (NGPC), and other organizations. These include Pioneers Park, Arbor Lake, Frank Shoemaker Marsh, Marsh Wren, Helmuth Marsh Public Access Area, Nine-Mile Prairie, and several others.

Natural Resource Assessments

The following resource assessments summarize potential impacts needing environmental review for future projects. These resource assessments are based on data from the City of Lincoln/Lancaster County Planning Department utilizing their Natural Resource Geographic Information Systems (NRGIS) dataset (Lincoln-Lancaster County Planning Department 2001). The NRGIS dataset was initiated in 2000 to inventory county natural resources and complement a Greenprint Challenge guidance document for Lancaster County and the City of Lincoln (City of Lincoln and Lancaster County 2001).

Figure H.1 Watersheds

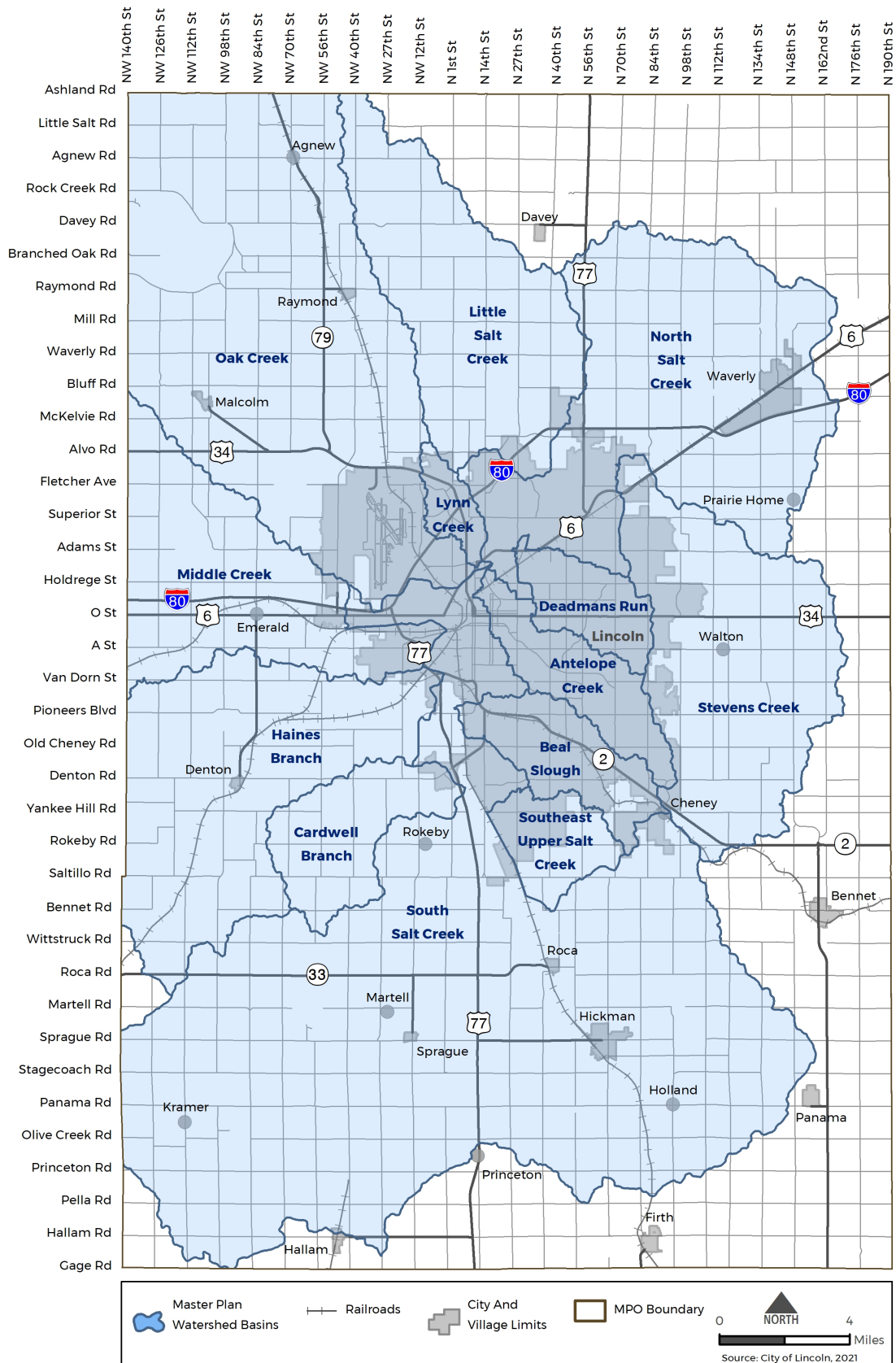


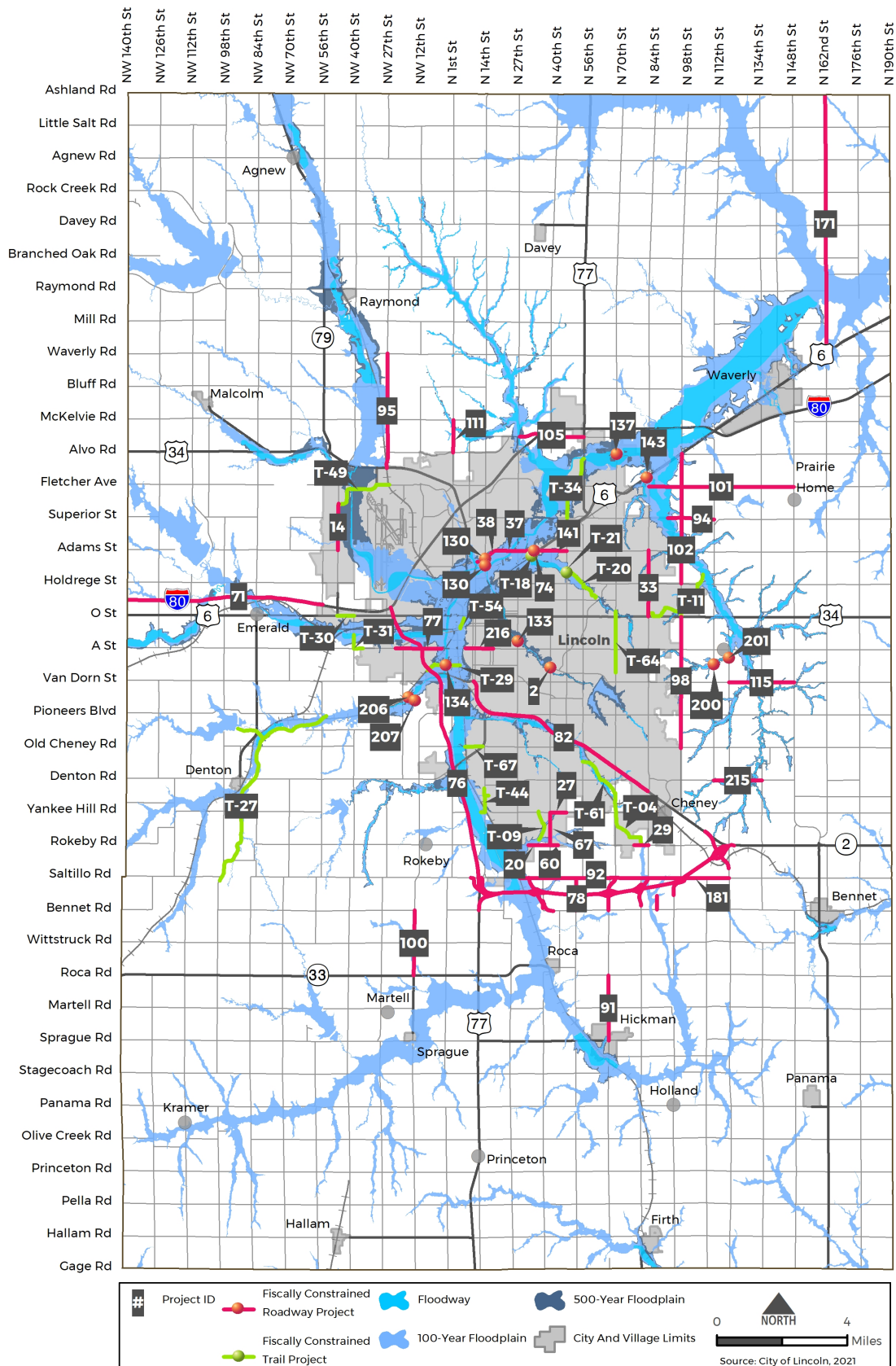
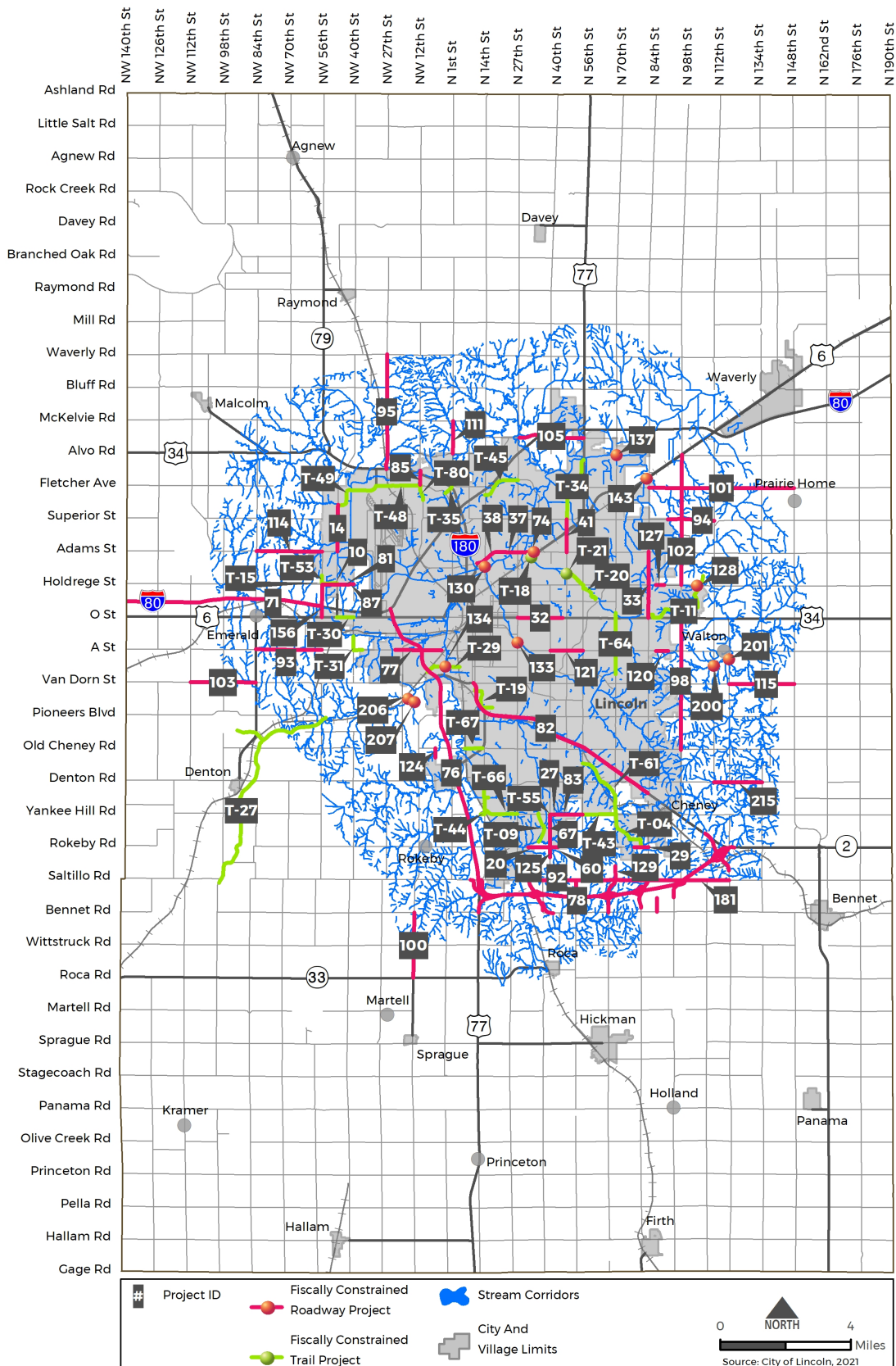
Figure H.2 Floodplains

Figure H.3 Stream Corridors

Water Quality and Watershed Master Plans

The protection of water quality is important because of the need for a reliable drinking water supply, for swimming and recreation, for fish and shellfish consumption, for adequate agricultural production, for fish and wildlife habitat, and other beneficial uses. Clean water is pivotal in the protection of human health and the environment.

Watershed Master Plans were created to provide long-term planning tools and guidance to address water quality, flood management, and stream stability for sustainable urban growth in each major Lancaster County watershed. An important component of water quality management involves monitoring and managing pollutants in stormwater runoff. Stormwater runoff can carry sediment, nutrients, road salts, heavy metals, bacteria, oil, and other pollutants that deteriorate water quality within a watershed or adjacent wetlands.

City of Lincoln regulations are in place to address water quality, including post-construction stormwater management, stormwater best management practices, and Stormwater Pollution Prevention Plans (SWPPP) for erosion and sediment control. These regulations were developed to minimize adverse effects of pollutants entering waterways from stormwater runoff associated with the continued development of hard surfaces, such as roads, parking lots, sidewalks, and trails.

The boundary for 13 watershed master plans were provided by the Lincoln City/Lancaster County Planning Department (**Figure H.1**). Based on the resource assessment, only one roadway project (#104 west of Bennett) lies outside of a watershed master plan area and some roadway projects cross into as many as four watersheds. Fiscally constrained trail projects are located in all watersheds, except

for the Little Salt Creek and Cardwell Branch watersheds.

Additional coordination may be needed to adhere to each watershed master plan. In addition to utilizing the Watershed Master Plans, all future projects would need to develop SWPPP documents for erosion and sediment management.

Floodplains

Floodplains are defined as the land area adjacent to a stream, river, or other waterbody that is subject to periodic inundation by regular flooding. The floodplain includes the floodway, which consists of the channel and overbank areas, and the flood fringe, which begins at the edge of the floodway and continues outward to the transitional upland fringe. The surface hydrology of floodplains is important because it affects the risk of flooding and flooding can create erosion or sedimentation problems.

To reduce the risk of flooding and flood damage, floodplains are protected by city ordinances, which require a floodplain development permit for construction in the floodplain. A National Pollutant Discharge Elimination System (NPDES) permit is required from the Nebraska Department of Environment and Energy (NDEE) for any construction sites greater than 1.0 acre.

Floodplains were identified using Flood Insurance Rate Maps (FIRMs) provided by the Federal Emergency Management Agency (FEMA) (FEMA 2011-2013). These maps identify the base floodplain, which is the area subject to a one percent or greater chance of flooding in any given year (also known as the 100-year flood). Based on the resource assessment, 41 roadway and 17 trail projects are located within the base floodplain (**Table H.1** and **Figure H.2**). These projects may require a floodplain development permit and may be subject to restrictions

concerning raises in floodplain surface elevations.

Similar to stream corridors, projects can be designed to avoid or minimize impacts to the base floodplain. Construction grading and future maintenance for trails located in floodplains may require additional consideration due to potential sediment and debris deposit during flood events, movement of the base material due to high water table, and increased vegetative growth. Mitigation may consist of onsite solutions to restore the flood corridor and habitat or offsite solutions to attenuate flood levels or preserve, restore, or establish similar habitat. If unavoidable, changes in floodplain surface elevations within the base floodplain may require submittal of a conditional letter of map revision (CLOMR) to FEMA.

Stream Corridors

Stream corridors consist of the waterway, its floodplain, and the transitional upland fringe. The corridors generally include diverse habitat types which are supported by a close connection to the hydrology of the waterway. These ecosystems can be important to wildlife because they provide water, shelter, a source of food, and connections to other habitat areas, especially in the areas surrounding Little Salt Creek where the federally endangered Salt Creek tiger beetle (*Cicindela nevadica lincolniana*) and state endangered saltwort (*Salicornia rubra*) occur. Stream corridors also provide floodwater attenuation and improve water quality by filtering runoff and collecting sediment before it enters the waterway.

The City of Lincoln has a building code regulation that limits the placement of buildings or fill within a 60-ft buffer surrounding drainageways (i.e., streams or creeks) and is referred to as the “minimum flood corridor” (LMC Ordinance 26.07.126). Stream channels are also protected under the Clean Water Act which requires compliance with Section 404 regulations for excavation or fill activities.

Stream corridors were identified using the National Hydrography Dataset which is available online (USGS 2020). For this resource review, a 60-ft buffer area was created along all streams within the 3-mile ETJ of the City of Lincoln to identify the “minimum flood corridor”. Based on the resource assessment, 54 roadway and 26 trail projects cross streams and/or occur within the minimum flood corridor (**Table H.1** and **Figure H.3**).

Project constraints or resource impacts associated with stream corridors would be reduced through avoidance, minimization, and mitigation measures. Project designs would be developed to avoid or minimize fill within the “minimum flood corridor” and to lessen disturbance within the natural habitat. If impacts cannot be avoided or minimized, then mitigation would be developed. Mitigation may consist of on-site solutions to restore the flood corridor and habitat, or off-site solutions to attenuate flood levels or preserve, restore, or establish similar habitat. NDEE guidelines may require a 30-ft vegetated buffer along impacted channels and be planted with perennial, native species. Impacts to stream channels or wetlands within the corridor would require Section 404 permitting.

Figure H.4 Freshwater Wetlands

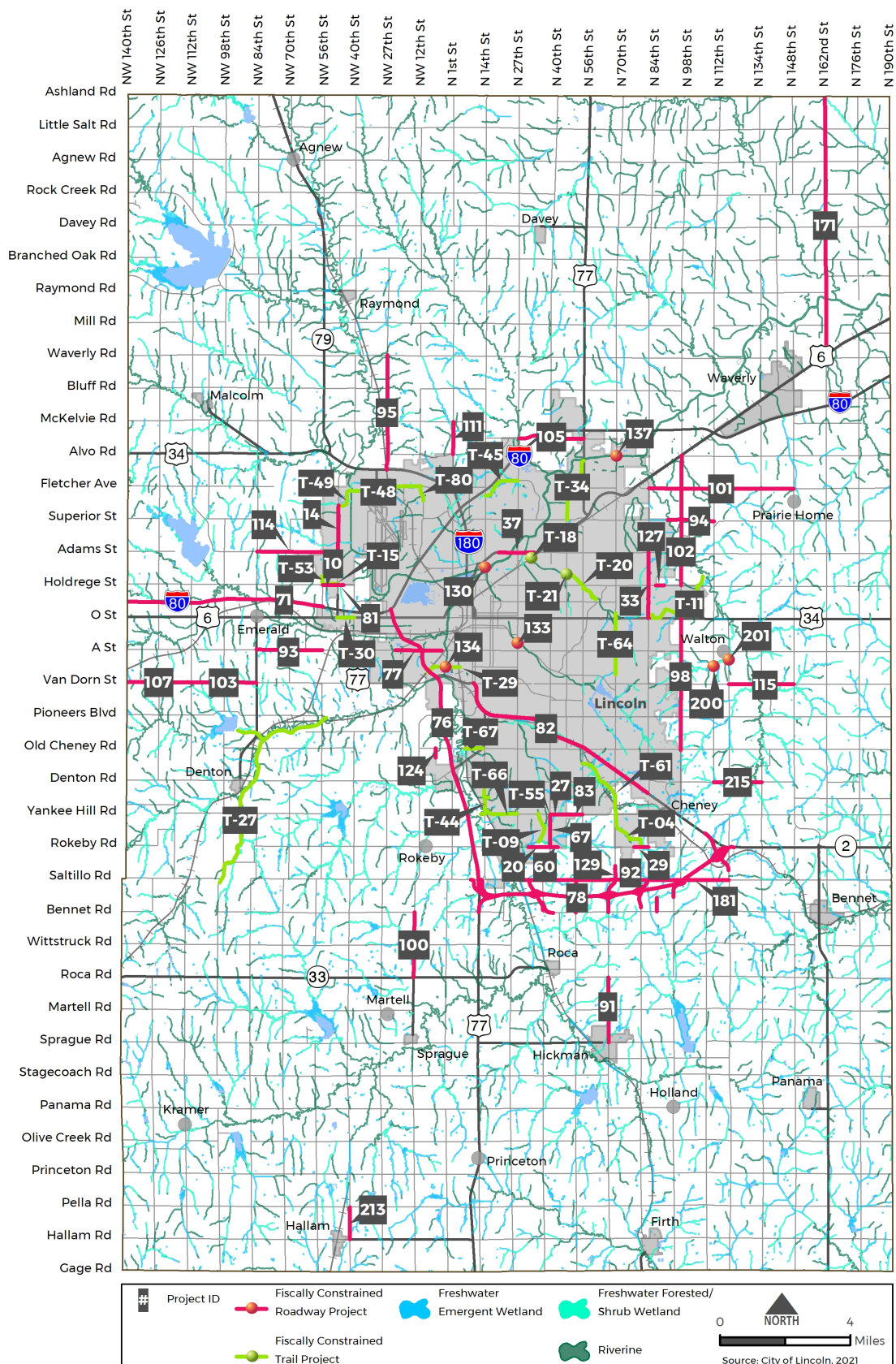
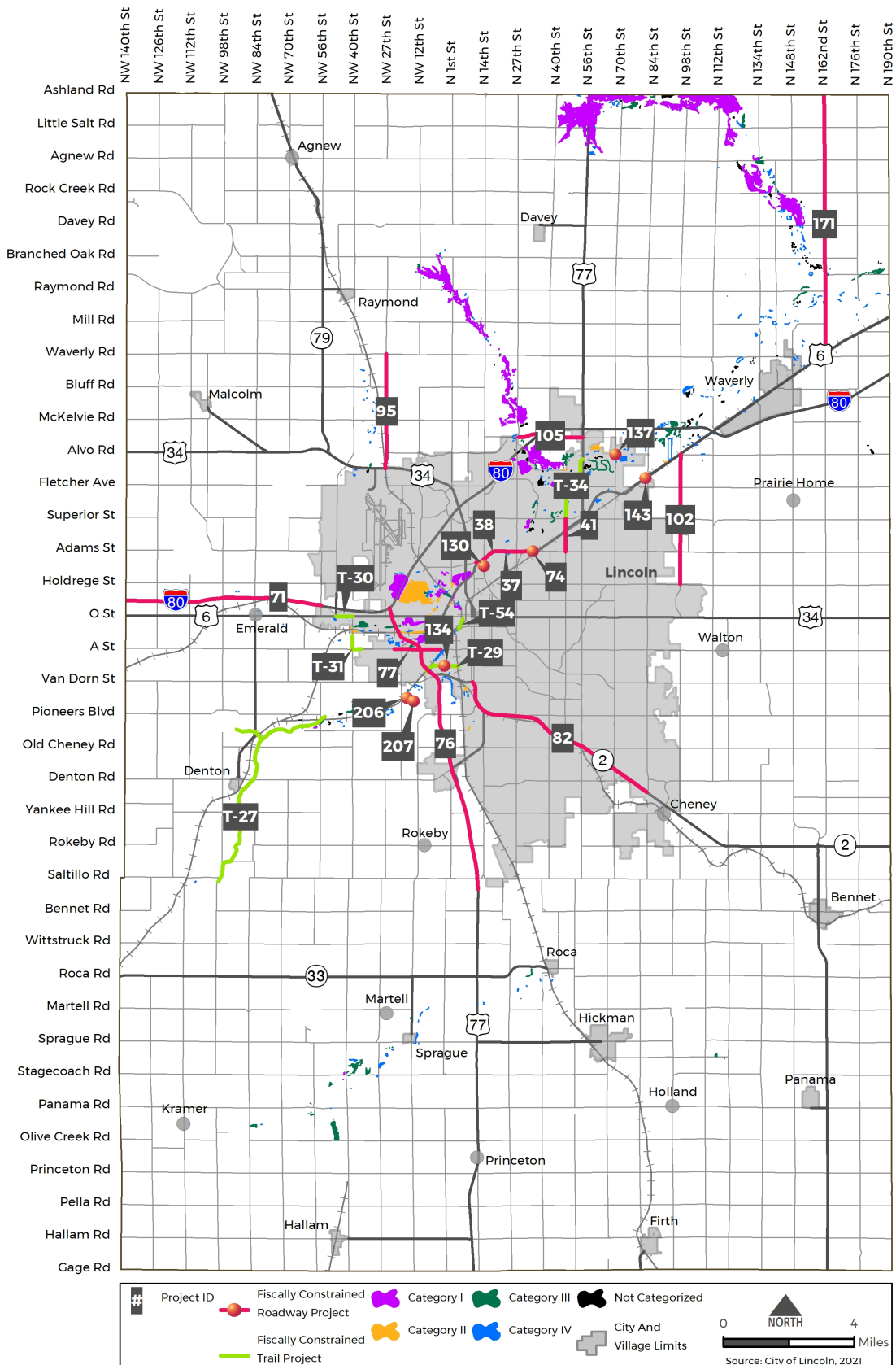


Figure H.5 Saline Wetlands



Freshwater and Saline Wetlands

Wetlands are defined as “those areas that are inundated or saturated by surface or groundwater 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” (33 CFR 328).

Wetlands and riparian areas are important because they provide habitat for plants, fish,

and wildlife; serve as groundwater recharge areas; provide storage areas for storm and flood waters; serve as natural water filtration areas; and provide protection from wave action, erosion, and storm damage.

Eastern Nebraska saline wetlands are found only in Lancaster and southern Saunders counties and are categorized as a measure of their functionality and restoration potential (**Table H.2**).

Table H.2 Saline Wetland Categorization

Category	Description
I	These wetlands support salt-loving plants, occur on saline soils, and have high value saline wetland functions or the potential to provide high values following restoration or enhancement measures.
II	These wetlands occur on saline soils but are significantly disturbed or degraded by adjacent land use or altered hydrology. Salt-loving plants may occur as part of the site's flora, but the degree of degradation would not allow restoration to a higher quality saline character.
III	These wetlands occur on saline soils but support freshwater vegetation. These sites represent former saline wetlands that had an influx of freshwater runoff due to urban or agricultural modifications within the watershed, thus diluting soil salt concentrations.
IV	These freshwater wetlands on non-saline soils occur within the saline wetland study area boundary (additional freshwater wetlands are mapped separately).

Saline wetlands are unique in that they support salt-adapted plant communities and provide habitat for the federally endangered Salt Creek tiger beetle and state endangered saltwort. Saline wetlands were historically present along the terraces of Salt Creek and its tributaries but have been greatly reduced due to urban development, agriculture, and flood control projects along Salt Creek and its tributaries.

All wetlands are protected under Title 117 of the Nebraska Administrative Code as implemented by NDEE and wetlands meeting the definitions for Waters of the U.S. in the Navigable Waters Projection Rule are protected by Section 404 of the Clean Water Act by the U.S. Army Corps of Engineers (USACE).

Wetlands were identified using the National Wetland Inventory (NWI) (USFWS 2021c), supplemented by NRGIS dataset. Freshwater and saline wetlands were mapped separately because mitigation requirements are often greater for saline wetlands. Based on the resource assessment, 44 roadway and 22 trail projects would cross freshwater wetlands (**Table H.1** and **Figure H.4**).

Seventeen roadway and six trail projects would cross saline wetlands (**Table H.1** and **Figure H.5**). These projects may require a Section 404 permit and may be subject to restrictions concerning temporary and permanent wetland impacts. Similar to stream corridors and floodplains, project designs would be developed to avoid or minimize impacts to wetlands. If permanent

impacts to wetlands are unavoidable and greater than 0.1 acre, then compensatory mitigation may be required with a Section 404 permit issued by USACE, and potentially Water Quality Certification by the Nebraska Department of Environment and Energy (NDEE).

Wetland impacts would be offset by one of the following methods:

- Use of mitigation bank credits
- Construction of permittee-responsible mitigation consisting of either on-site or off-site wetland restoration, enhancement, establishment, or preservation, in addition to yearly monitoring for five years

Compensatory mitigation may be required at a 2:1 or higher ratio depending on the type and quality of wetland being impacted. Impacts to saline wetlands would require higher mitigation ratios, especially for Category I saline wetlands (Taylor and Krueger 1997).

Threatened and Endangered Species

Endangered species are plants or animals that are in danger of extinction throughout all or a significant portion of their range; threatened species are likely to become endangered within the foreseeable future. Conservation of threatened and endangered (T & E) species and their habitats help maintain the diversity and functioning of natural areas. T & E species are protected by the Endangered Species Act and the Nebraska Nongame and Endangered Species Conservation Act, which are administered by U.S. Fish and Wildlife Service (USFWS) and NGPC, respectively. Information on the potential presence of T & E species and their habitat was collected using the Conservation and Environmental Review Tool (CERT) (NGPC 2021) and the

Information for Planning and Conservation (IPaC) website (USFWS 2021a). **Table H.3** identifies the eight species listed as potentially occurring in Lancaster County. Only four of the species listed in **Table H.3** have mapped ranges extending into Lancaster County. Suitable habitat within a designated range may be limited. For example, the ranges of the northern long-eared bat and western prairie fringed orchid cover all of Lancaster County; therefore, the resource assessment would have indicated that all of the roadway and trail projects occur within the ranges of those two species. However, the northern long-eared bat would likely only occur in areas with tree masses and low urban development, whereas the western prairie fringed orchid would likely only occur in rural areas with native prairie or wet meadows. Therefore, the potential habitats for northern long-eared bats and western prairie fringed orchids are further described in the below subsections relative to tree masses and native prairie.

Tree Mass and Northern Long-Eared Bat

Tree masses are defined as various wooded areas, which are mostly located in the periphery of Lincoln, in public parks, or in rural areas. Trees are important because they provide habitat for wildlife, such as the northern long-eared bat, sustain soil stabilization, attenuate wind disturbance, and provide shade. The City of Lincoln has been designated as a “Tree City USA” by the Arbor Day Foundation since 1976 (Arbor Day Website 2021). Hickman and Waverly also hold the distinction as a “Tree City USA” (Arbor Day Website 2021).

Natural wooded areas are protected by the Fish and Wildlife Coordination Act and in some cases the Endangered Species Act, which are administered by USFWS and NGPC. The Lincoln Parks and Recreation

Department Community Forestry Section is responsible for all trees on public property.

Tree mass areas were identified using the NRGIS dataset, which utilized information from updates in 2004 and 2007 (Lincoln-Lancaster County Planning Department 2001). The dataset primarily maps tree masses in rural, riparian and park settings. Although many residential areas have tree-lined streets, this data was not available for the resource assessment and in general, northern long-eared bats avoid urban areas. Based on the resource assessment, 43 roadway and 18 trail projects cross tree mass areas within the range of the northern long-eared bat (**Table H.1** and **Figure H.6**). Additionally, a known hibernacula for the northern long-eared bat requires consideration within a 0.25 mile buffer. One roadway project and two trail projects are located within the buffer for the hibernacula.

Project construction could indirectly impact tree masses by altering the area hydrology through grade changes or damaging roots through compaction. The use of retaining walls may minimize the effects of extensive grade changes. Where possible, tree removals would be minimized during planning and design. If tree removal is unavoidable and within potential habitat for the northern long-eared bat, then removal needs to avoid pups rearing season (June 1 – July 31) or may need surveys to confirm presence or absence per USFWS guidelines.

In areas not considered potential habitat for northern long-eared bats, replacement tree planting would be a suitable mitigation measure; however, special consideration should be given to the location and variety of re-planted trees. For example, several alternatives to replace ash trees (*Fraxinus* spp.) are provided by the Lincoln Parks and Recreation Department

Community Forestry unit to minimize the spread and adverse impacts of the emerald ash borer (*Agrilus planipennis*) (Lincoln Parks and Recreation, 2021; Lincoln Emerald Ash Borer Response and Recovery Plan, 2018). The emerald ash borer was confirmed in the City of Lincoln in August 2018.

Native Prairie and Western Prairie Fringed Orchid

Native prairie is a grassland ecosystem lacking trees and dominated by native grasses, such as big bluestem, little bluestem, and Indian grass in the eastern Nebraska tallgrass prairie. Prairie grasslands are an important natural resource for wildlife and plant species, such as the western prairie fringed orchid, and provide a variety of ecological benefits, such as protection of water quality through sediment retention, forming and protecting soil, maintaining biodiversity, and providing seasonal habitat for migratory birds. Native prairies are protected by the Fish and Wildlife Coordination Act, which is administered by the NGPC and USFWS.

Native prairies were identified using the NRGIS dataset, which used information from prairie inventories conducted in 1990 and 1997 (Lincoln-Lancaster County Planning Department 2001). Based on the resource assessment, seven roadway and two trail projects cross native prairies within the range of the western prairie fringed orchid (**Table H.1** and **Figure H.7**). Similar to other resources, impacts to prairies would be minimized through planning and design, and could be mitigated through prairie restoration efforts. Surveys may be needed during the blooming period (June 15 – July 7) to confirm the presence or absence of western prairie fringed orchids. Additional coordination with USFWS and NGPC would be needed if these plants were present.

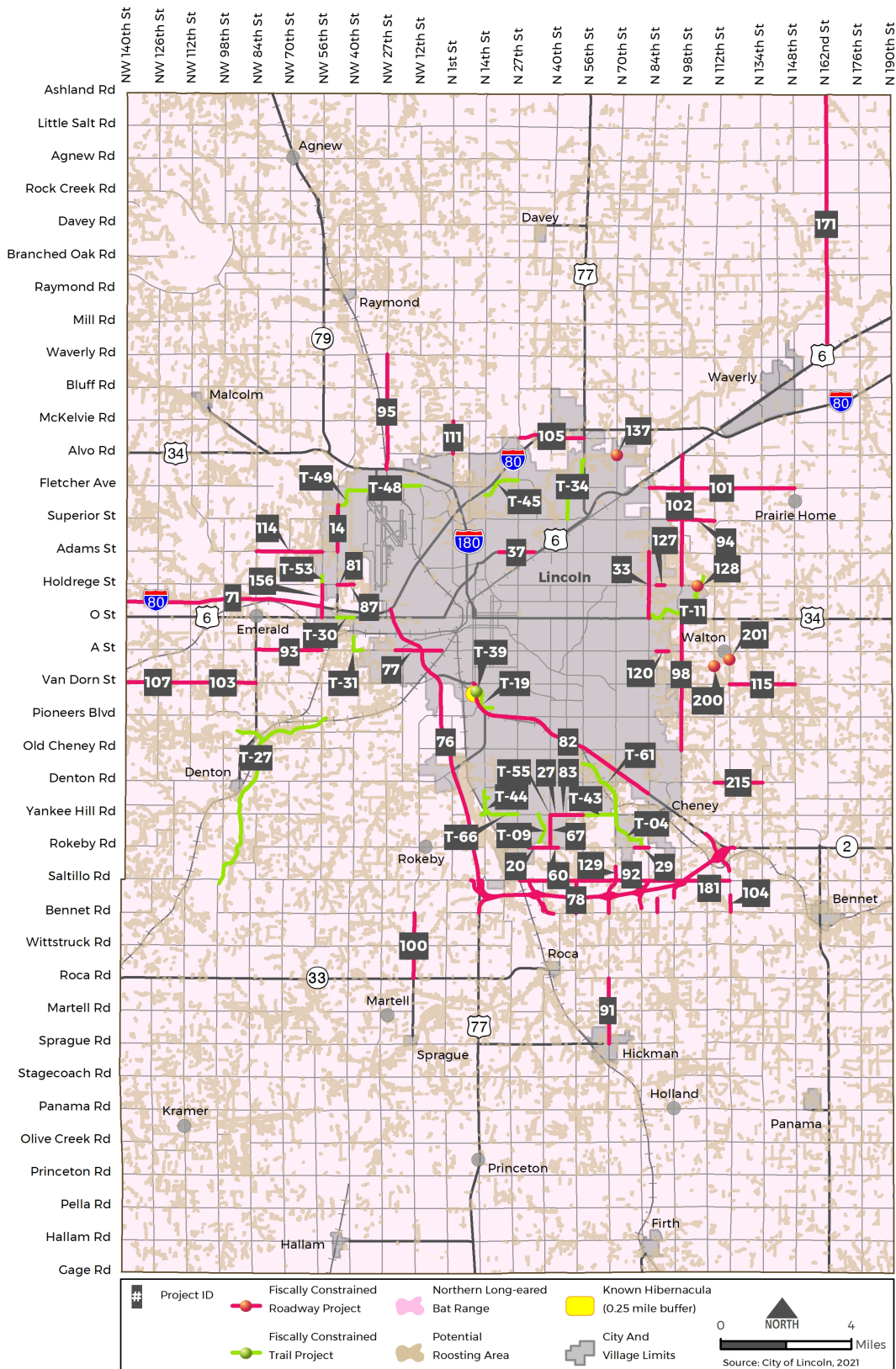
Figure H.6 Tree Masses and Northern Long-Eared Bat

Figure H.7 Native Prairie and Western Prairie Fringed Orchid

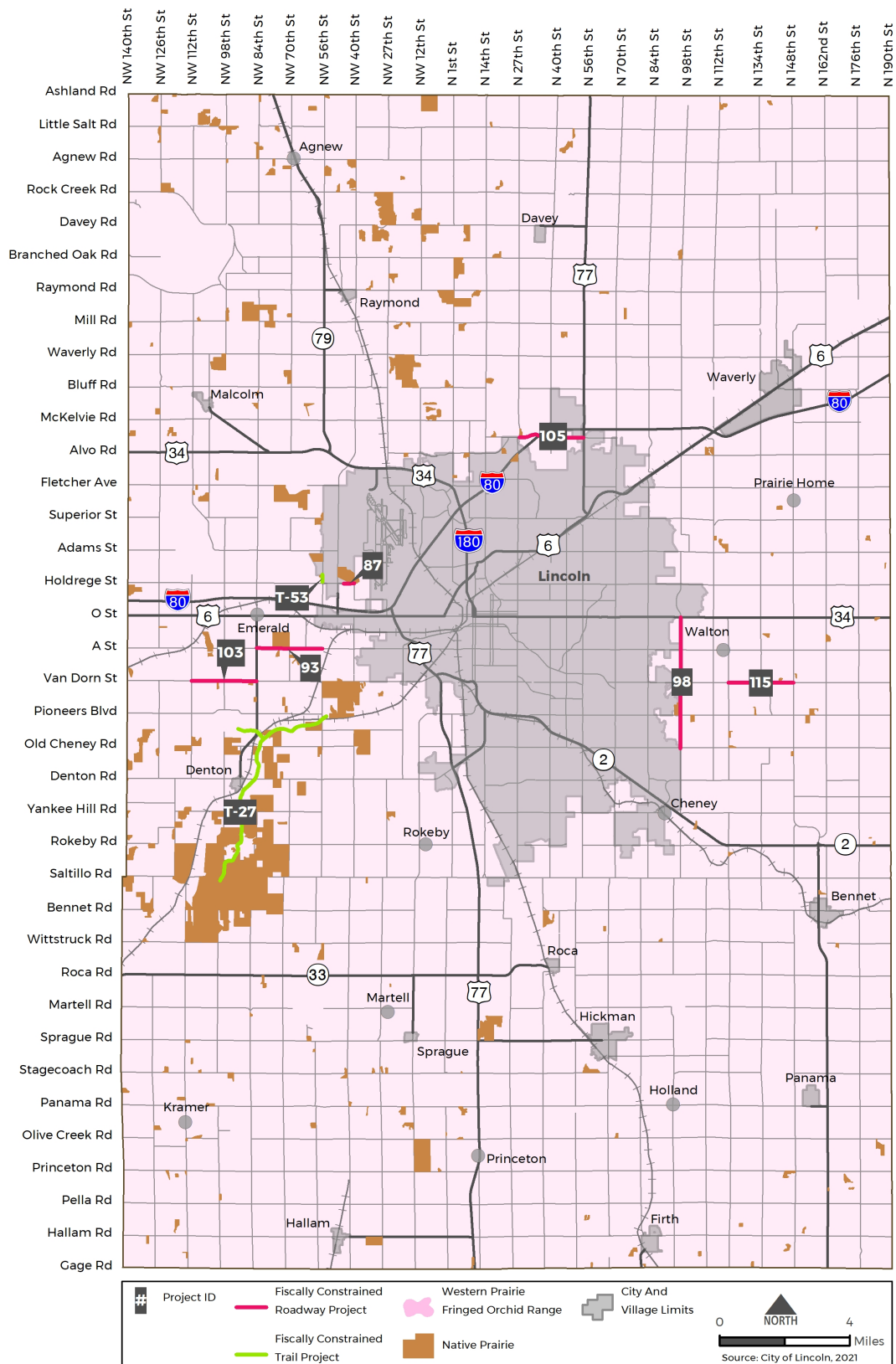


Figure H.8 Saltwort

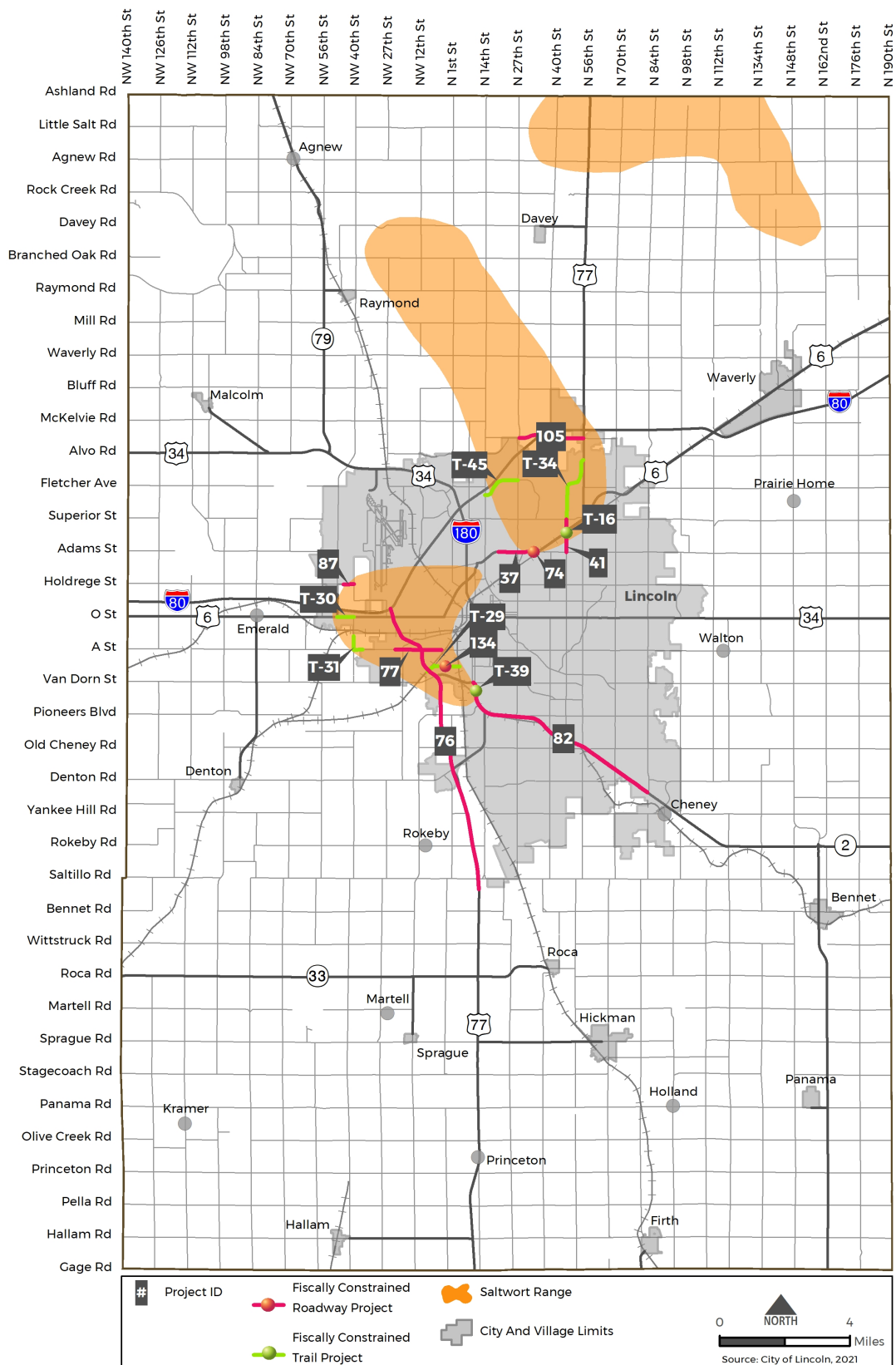


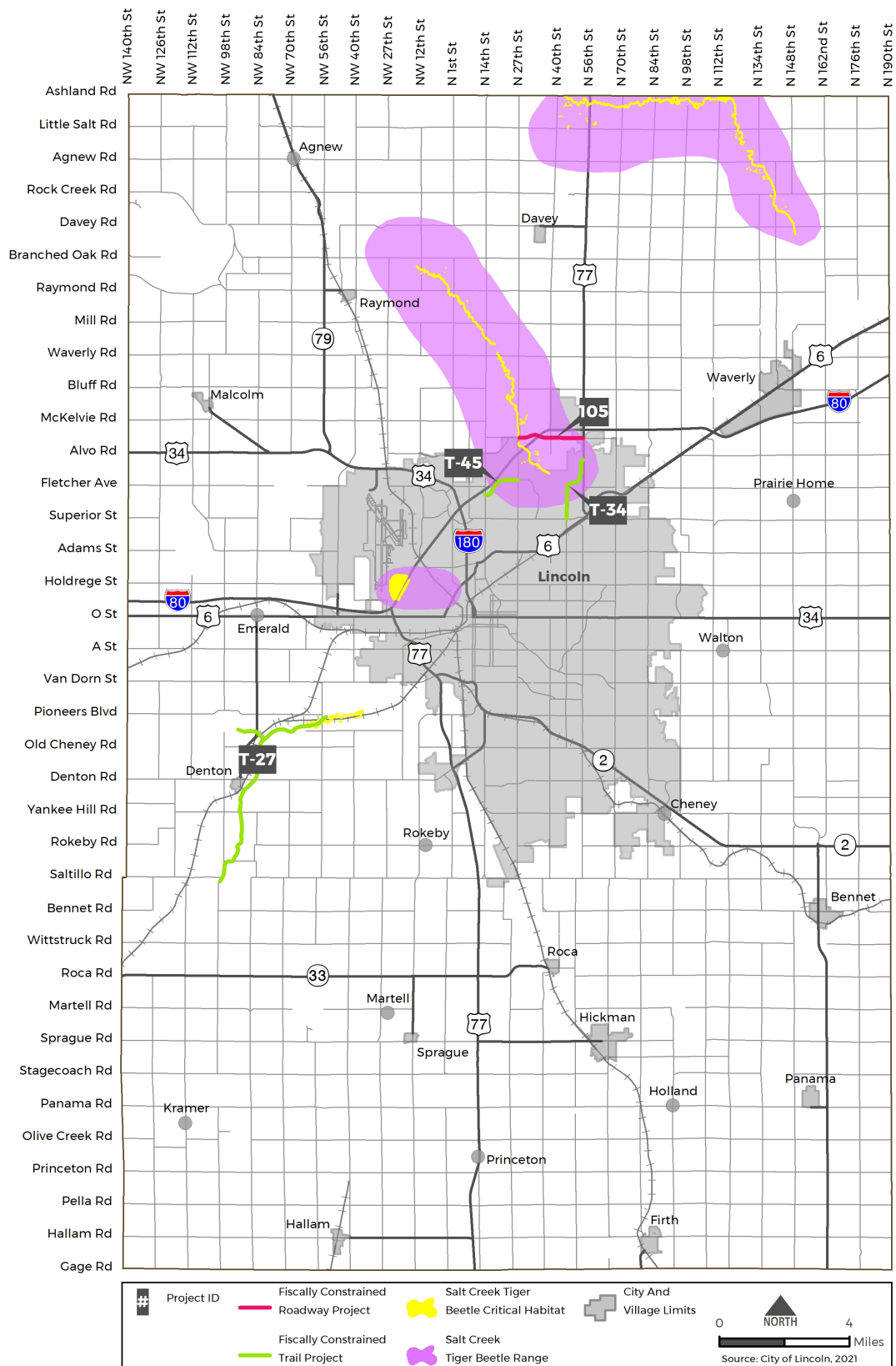
Figure H.9 Salt Creek Tiger Beetle

Table H.3 Threatened and Endangered Species Listed in Lancaster County

Common Name (Scientific Name)	Status ¹	Range within Lancaster County ²
Birds		
Eastern black rail (<i>Laterallus jamaicensis</i>)	FT, ST	No ³
Piping plover (<i>Charadrius melodus</i>)	FT, ST	No
Whooping crane (<i>Grus americana</i>)	FE, SE	No
Fishes		
Pallid sturgeon (<i>Scaphirhynchus albus</i>)	FE, SE	No
Invertebrates		
Salt Creek tiger beetle (<i>Cicindela nevadica lincolniensis</i>)	FE, SE	Yes
Mammals		
Northern long-eared bat (<i>Myotis septentrionalis</i>)	FT, ST	Yes
Plants		
Saltwort (<i>Salicornia rubra</i>)	SE	Yes
Western prairie fringed orchid (<i>Platanthera praeclara</i>)	FT, ST	Yes

¹FE = Federally Endangered, FT = Federally Threatened, SE = State Endangered, ST = State Threatened

²Ranges were provided by Nebraska Game and Parks Commission (NGPC 2021).

³This species was recently listed and may not have a range updated in CERT.

Based on the resource assessment, nine roadway and seven trail projects occur within the range of the saltwort, and one roadway and two trail projects occur within the range of the Salt Creek tiger beetle (**Table H.1, Figure H.8, and Figure H.9**).

Each project utilizing federal-aid funds would be evaluated for potential T & E presence using the Nebraska Biological Evaluation Process (NDOT 2017) to ensure that proper conservation measures are incorporated into the project planning and design to avoid and minimize impacts to T & E species or their habitat. If impacts are not sufficiently mitigated with the use of conservation measures, then further consultation with NGPC and USFWS would be required.

When possible, trails would be located outside of sensitive habitats to avoid impacting T & E species. If design and planning considerations involve T & E

conservation, then trails can provide educational signage and increase awareness.

T & E Critical Habitat

The designation of critical habitat by USFWS provides special protection to areas that are considered essential to species conservation. The Salt Creek tiger beetle (SCTB) is the only T & E species in **Table H.3** with critical habitat occurring in Lancaster County. The SCTB is a sub-species that is endemic (i.e., not found in any other part of the world) to the remnant saline wetland ecosystems within the county. These beetles are an insect predator on saline mudflats and along the muddy stream banks of Salt Creek and its tributaries.

Federal agencies are required to avoid destruction or adverse modification of designated critical habitat (USFWS 2017). Critical habitat for SCTB is protected by the

Endangered Species Act, which is administered by USFWS.

Critical habitat was identified using data provided by USFWS (2021b). Based on the resource assessment, one roadway and one trail project crosses critical habitat for SCTB (**Table H.1** and **Figure H.9**). To avoid, minimize or mitigate impacts to SCTB critical habitat, coordination with USFWS would be initiated as early as possible during project planning.

Bald and Golden Eagles

Bald eagles utilize mature, forested riparian areas along large rivers and lakes throughout the state. There are several areas within Lancaster County with suitable habitat for bald eagles, such as at Branched Oak Lake and along Salt Creek. Golden eagles use shortgrass and mixed-grass prairie habitat in western Nebraska; therefore, no golden eagle habitat is present in Lancaster County.

Bald and golden eagles have specific protection under the Bald and Golden Eagle Protection Act (BGEPA), administered by the USFWS. This act prohibits the “taking” or possession of bald or golden eagles or their parts, feathers, nests, or eggs. The BGEPA also protects bald eagles from disturbance that may interfere with their normal behavior or cause abandonment of nests.

Specific habitat and ranges were not available for the roadway and trail project resource assessments; however, it is likely that much of the City of Lincoln future service limit area does not contain suitable habitat for bald eagles because of the urban setting.

If bald eagles, bald eagle nests, or suitable habitat are found within 0.5 miles of a project area, then certain conservation measures, such as presence/absence surveys, would be implemented to help avoid impacts. A qualified biologist would conduct a survey prior to construction to determine the presence or absence of nesting/roosting

eagles or bald eagle nests. The implementation of surveys ensures that no bald eagles nesting within the project area would be directly displaced from their active nest by construction activities. NDOT has developed an Avian Protection Plan (APP) to help avoid and minimize project impacts to bald eagles. The APP is a useful reference because it includes standard evaluation procedures and protocols for compliance with BGEPA (NDOT 2018).

Migratory Birds

Migratory birds are species that travel from one habitat to another at specific times of the year and often over long distances. These birds are important components of the ecosystems they migrate to and from because they help balance the food web, disperse seeds, and function in plant pollination. According to the USFWS IPaC website (USFWS 2021a), over 25 species of migratory birds could utilize trees, shrub-scrub, wetland, stream, and grassland habitats within Lancaster County for breeding and nesting. Bridges and large culverts also provide habitat for various species of swallows.

Most migratory birds in Nebraska are provided protection under Nebraska Revised Statute §37-540, which prohibits take and destruction of nests or eggs of protected birds (as defined in Nebraska Revised Statute §37-237.01). The Migratory Bird Treaty Act (MBTA) also provides protection against the taking of migratory birds, which includes shooting, wounding, killing, trapping, capturing and collecting. Incidental take of protected birds is prohibited by the state statute. Construction activities that would result in the “taking” of migratory birds, eggs, young, and/or active nests, should be avoided. Although the provisions for protected birds are applicable year-round, most migratory bird nesting activity in Nebraska is from April 1 to September 1 and

from February 1 to July 15 for raptors. Nonnative species such as European starlings, rock (feral) pigeons, house sparrows, and mute swans, as well as upland gamebirds such as grouse, turkey and quail, are not included in the definition of protected birds in Nebraska nor the MBTA.

While specific habitat and species ranges have not been evaluated, general considerations can be applied to all of the fiscally constrained roadway and trail projects to avoid or minimize impacts to migratory birds.

To avoid impacts to these species, construction activities would include certain conservation measures. Removal of vegetation in suitable nesting areas would occur outside the primary nesting season (i.e., April 1 to September 1) and when no birds are actively nesting (note: some may be ground nesting birds). Work on bridges or culverts would also occur outside the primary nesting season. If removal of potential nesting habitat cannot be avoided during the primary nesting season, then a qualified biologist would survey prior to construction to determine the presence or absence of breeding birds and active nests. The NDOT APP is a useful reference because it includes standard evaluation procedures and protocols for compliance with MBTA (NDOT 2018).

Socioeconomic Environment

Public Use Properties

Parks and recreation resources are important community facilities that warrant consideration in the planning process. These public use areas include parks, open space

areas, trails, and some school playgrounds that offer opportunities for recreation.

The Department of Transportation Act (DOT Act) of 1966 includes a special provision, Section 4(f), which stipulates that the Federal Highway Administration (FHWA) and other DOT agencies cannot approve the use of land from publicly owned parks, recreation areas, wildlife and waterfowl refuges, and public or private historical sites (**Cultural Environment** discusses historic sites) unless the following conditions apply:

- There is no feasible and prudent avoidance alternative to the use of land; and
- The action includes all possible planning to minimize harm to the property resulting from such use;

OR

- The Administration determines that the use of the property will have a *de minimis* impact.

In certain cases, school playgrounds may be considered Section 4(f) properties. Project activities that restrict access may also be considered a “use” under Section 4(f).

Recreation resources developed with federal funding through the Land and Water Conservation Fund (LWCF) are protected under Section 6(f) of the LWCF Act, which prohibits the conversion of these properties to anything other than public outdoor recreation uses.

Figure H.10 Parks/Open Space

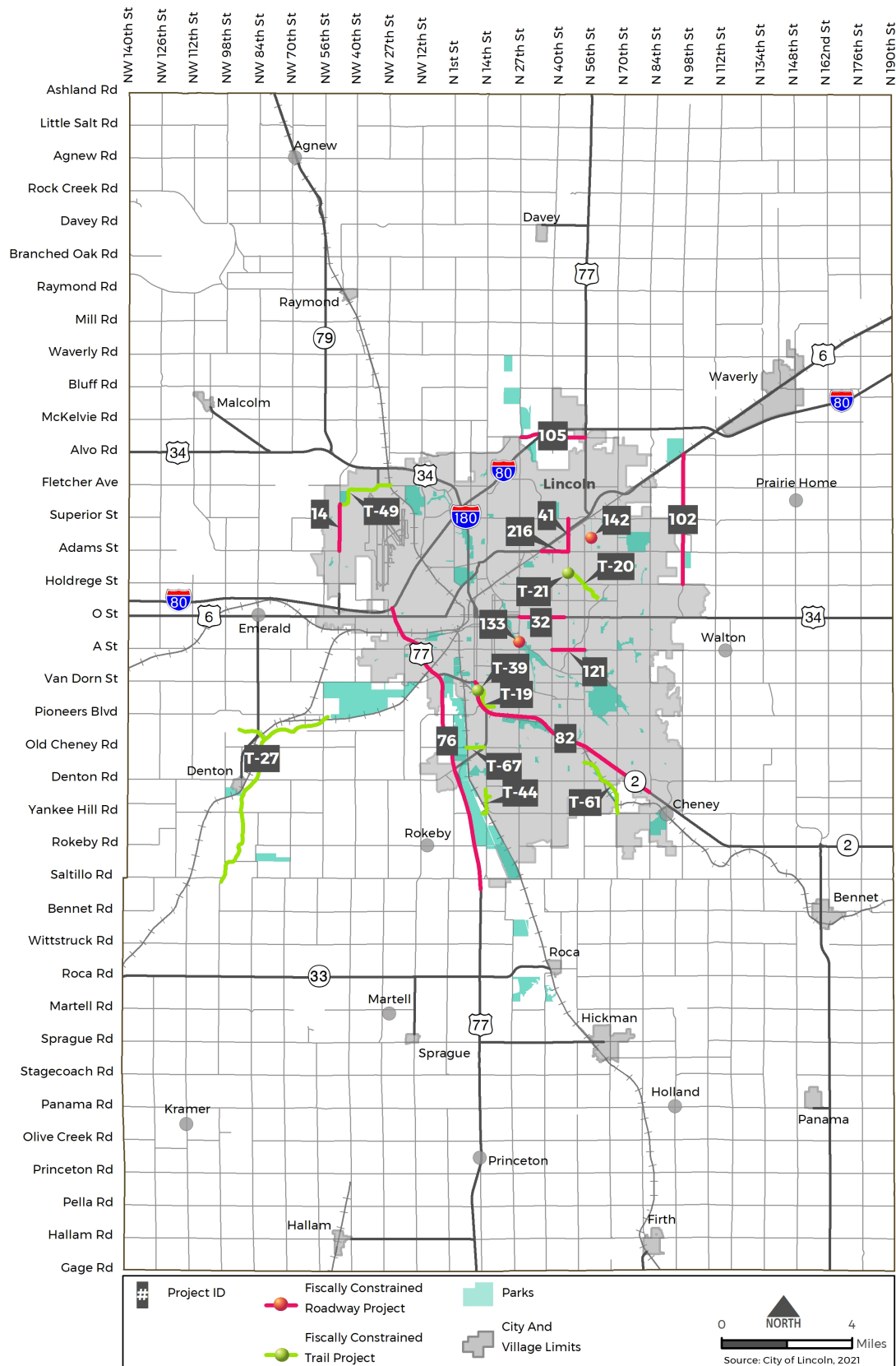


Figure H.11 Trails

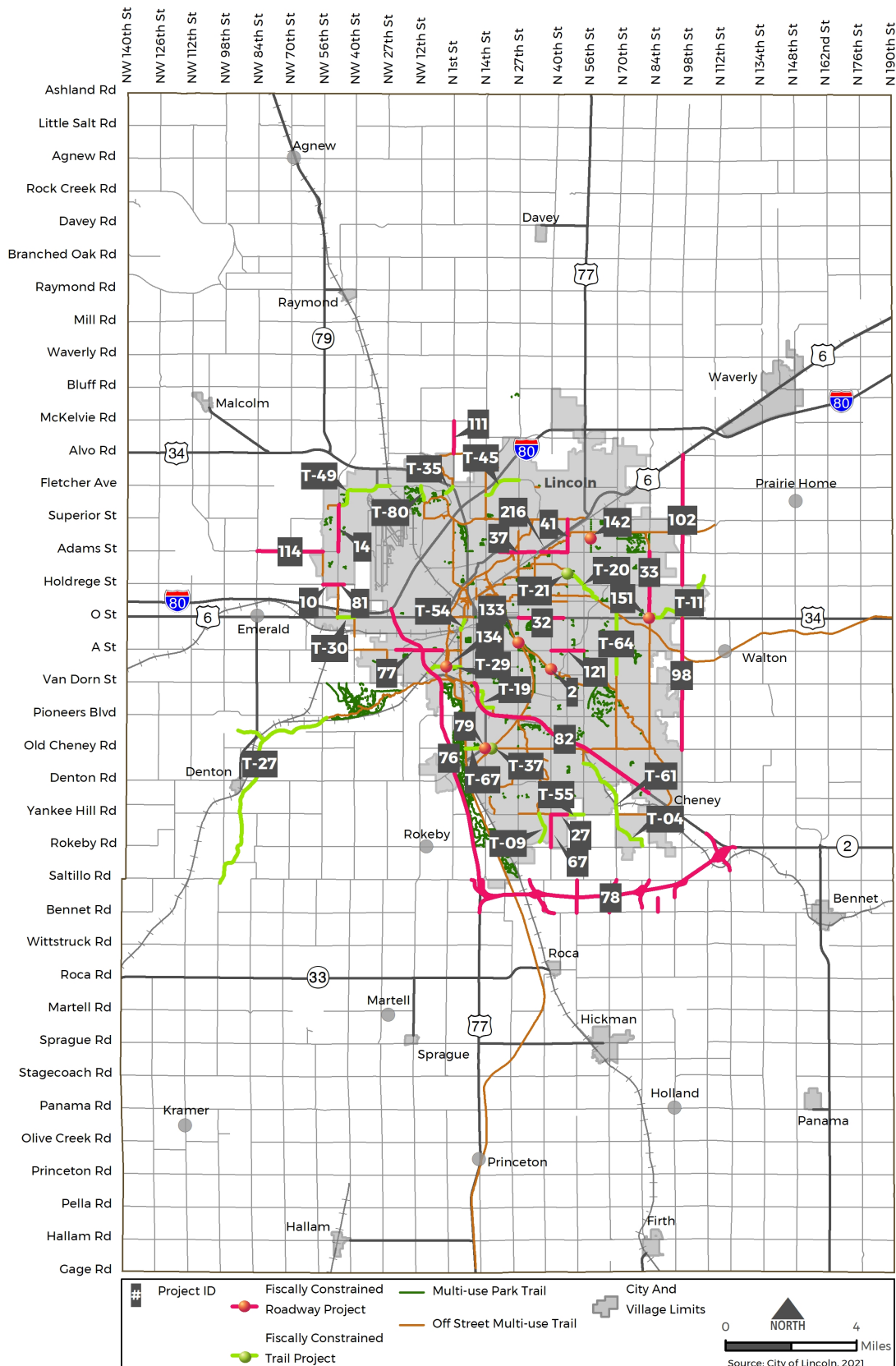
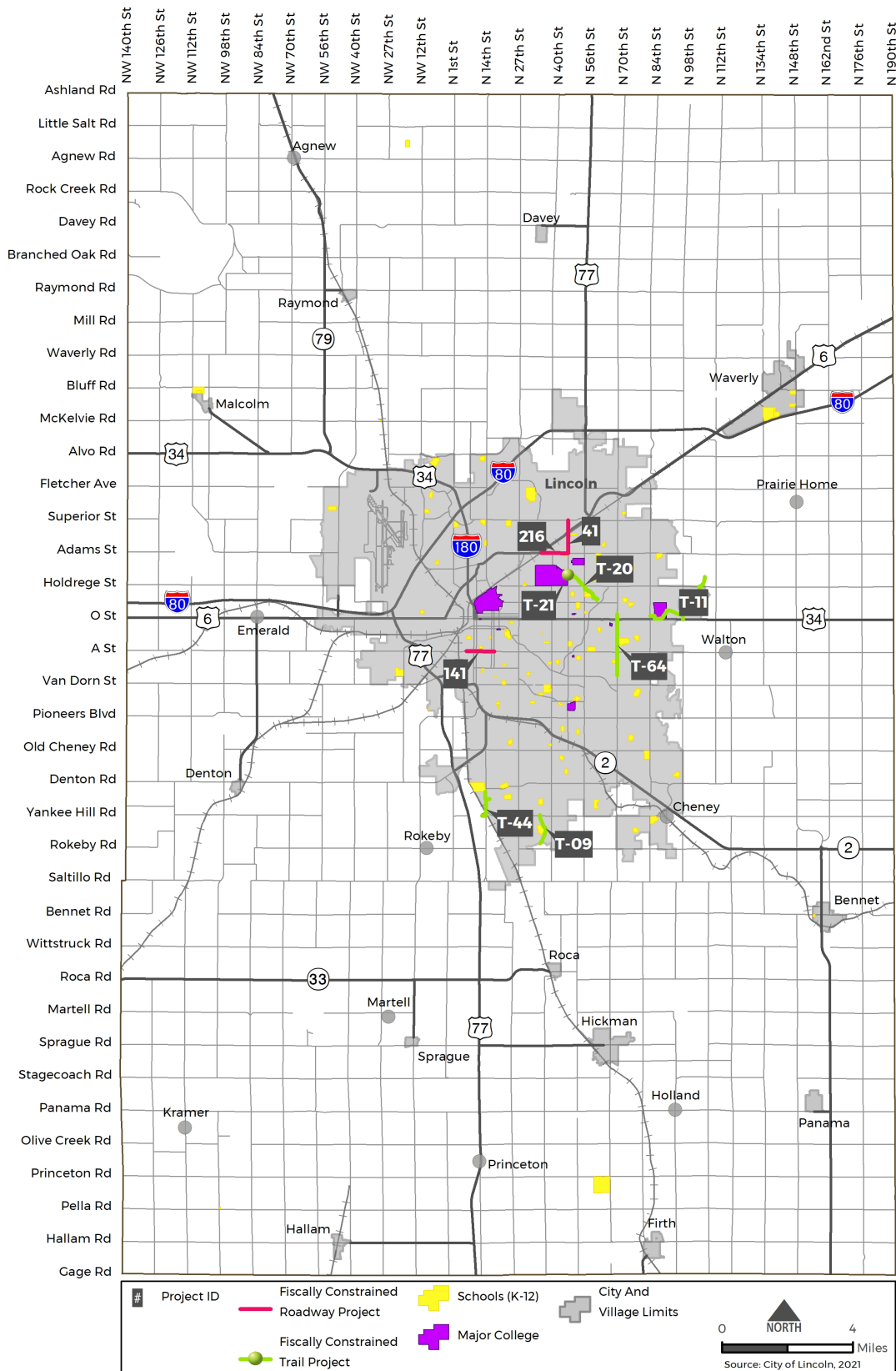


Figure H.12 Schools



Parks, Open Space, and Trails

Parks, open space areas, and bike trail locations were identified using GIS data provided by the Lincoln City Planning Department. Each of these resources was evaluated as a potential Section 4(f) property. Based on the resource assessment, 26 roadway and 21 trail projects potentially cross Section 4(f) properties (**Table H.1, Figure H.10, and Figure H.11**).

Schools

While some school properties may not meet Section 4(f) criteria, the resource assessment identified all school locations using GIS data provided by the Lincoln City Planning Department. Based on the resource assessment, three roadway and six trail projects are located near school properties and may need Section 4(f) consideration (**Table H.1 and Figure H.12**).

Projects would require assessment of impacts on the activities, features and attributes of the 4(f) resource. Depending on the type and size of the impact, and the type and size of the 4(f) resource a number of options may be available to minimize harm to the property and resolve the impact, including programmatic evaluations, *de minimis* determinations, exceptions, and Individual 4(f) evaluations.

Environmental Justice and Transportation Equity

Federal requirements that protect low-income and minority populations from adverse impacts of transportation projects have additional value when combined with a wider scope of criteria that define an overburdened and underserved portion of the community. Environmental Justice reflects the intent of minimizing or mitigating harm from transportation investments to

vulnerable populations. The broader goal of providing Transportation Equity within a community intends to reduce the existing disparity between population groups by improving conditions for underserved and overburdened communities by directing transportation investments accordingly. NDOT added one additional State project (ID 71) to the fiscally constrained project list after screening for Environmental Justice was completed and is therefore not included.

Environmental Justice

Title VI of the Civil Rights Act of 1964 (Title VI) ensures that individuals are not 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, or national origin (42 United States Code [USC] 2000d et seq.). Executive Order 12898 on Environmental Justice (EJ) sets forth US DOT's policy to promote the principles of EJ in all programs, policies, and activities under its jurisdiction. It directs that programs, policies, and activities not have a disproportionately high and adverse human health or environmental effect on minority and low-income populations (59 FR 7629). The three fundamental EJ principles include:

1. Avoiding, minimizing, or mitigating disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority and low-income populations.
2. Ensuring the full and fair participation by all potentially affected communities in the transportation decision making process.
3. Preventing the denial of, reduction of, or significant delay in the receipt of benefits by minority and low-income populations.

Table H.4 Environmental Justice Definitions

Term	FHWA Definition
Adverse Effects	The totality of significant individual or cumulative human health or environmental effects, including interrelated social and economic effects, which may include, but are not limited to: bodily impairment, infirmity, illness or death; air, noise, and water pollution and soil contamination; destruction or disruption of human-made or natural resources; destruction or diminution of aesthetic values; destruction or disruption of community cohesion or a community's economic vitality; destruction or disruption of the availability of public and private facilities and services; vibration; adverse employment effects; displacement of persons, businesses, farms, or nonprofit organizations; increased traffic congestion, isolation, exclusion or separation of minority or low-income individuals within a given community or from the broader community; and the denial of, reduction in, or significant delay in the receipt of, benefits of FHWA programs, policies, or activities.
Disproportionately High and Adverse Effect to Low-Income and Minority Populations	An adverse effect that: <ol style="list-style-type: none"> 1. is predominately borne by a minority population and/or a low-income population; OR 2. will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the nonminority population and/or non-low-income population.
Minority	A person who is: <ol style="list-style-type: none"> 1. Black: a person having origins in any of the black racial groups of Africa; 2. Hispanic or Latino: a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race; 3. Asian American: a person having origins in any of the original peoples of the Far East, Southeast Asia or the Indian subcontinent; 4. American Indian and Alaskan Native: a person having origins in any of the original people of North America, South America (including Central America), and who maintains cultural identification through tribal affiliation or community recognition; OR 5. Native Hawaiian and Other Pacific Islander: a person having origins in any of the original peoples of Hawaii, Guam, Samoa or other Pacific Islands.
Low-Income Person	A person whose median household income is at or below the U.S. Department of Health and Human Services (DHHS) poverty guidelines. (Note – DHHS does not publish tabulations of the number of people below the DHHS poverty guidelines. The federal poverty thresholds are used for calculating all official poverty population statistics, and are updated annually by the Census Bureau. The best approximation for the number of people below the DHHS poverty guidelines in a particular area is the number of persons below the Census Bureau poverty thresholds in that area.)
Minority Population	Any readily identifiable group of minority persons who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed FHWA program, policy, or activity.
Low-Income Population	Any readily identifiable group of low-income persons who live in geographic proximity, and, if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed FHWA program, policy, or activity.

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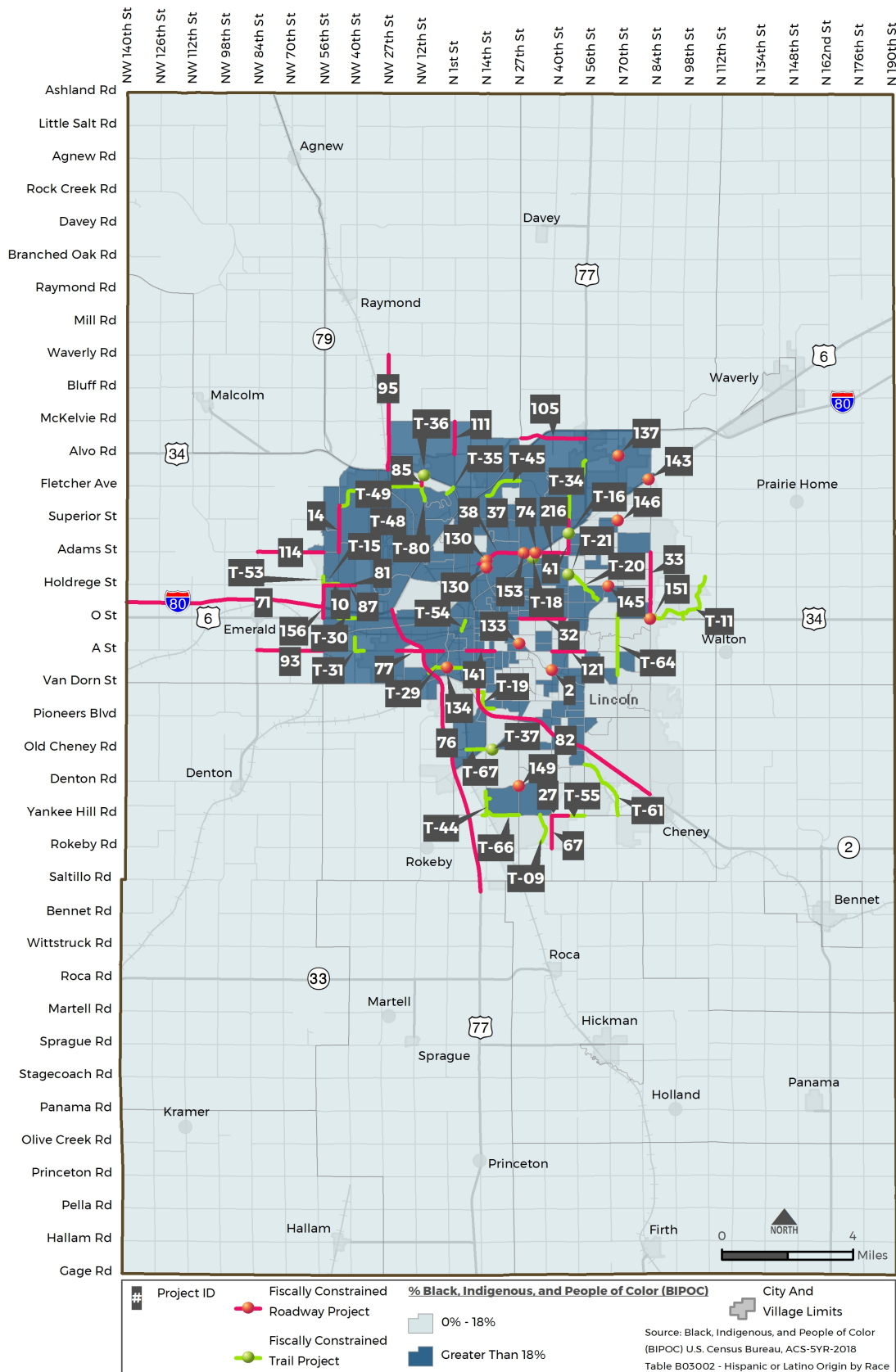
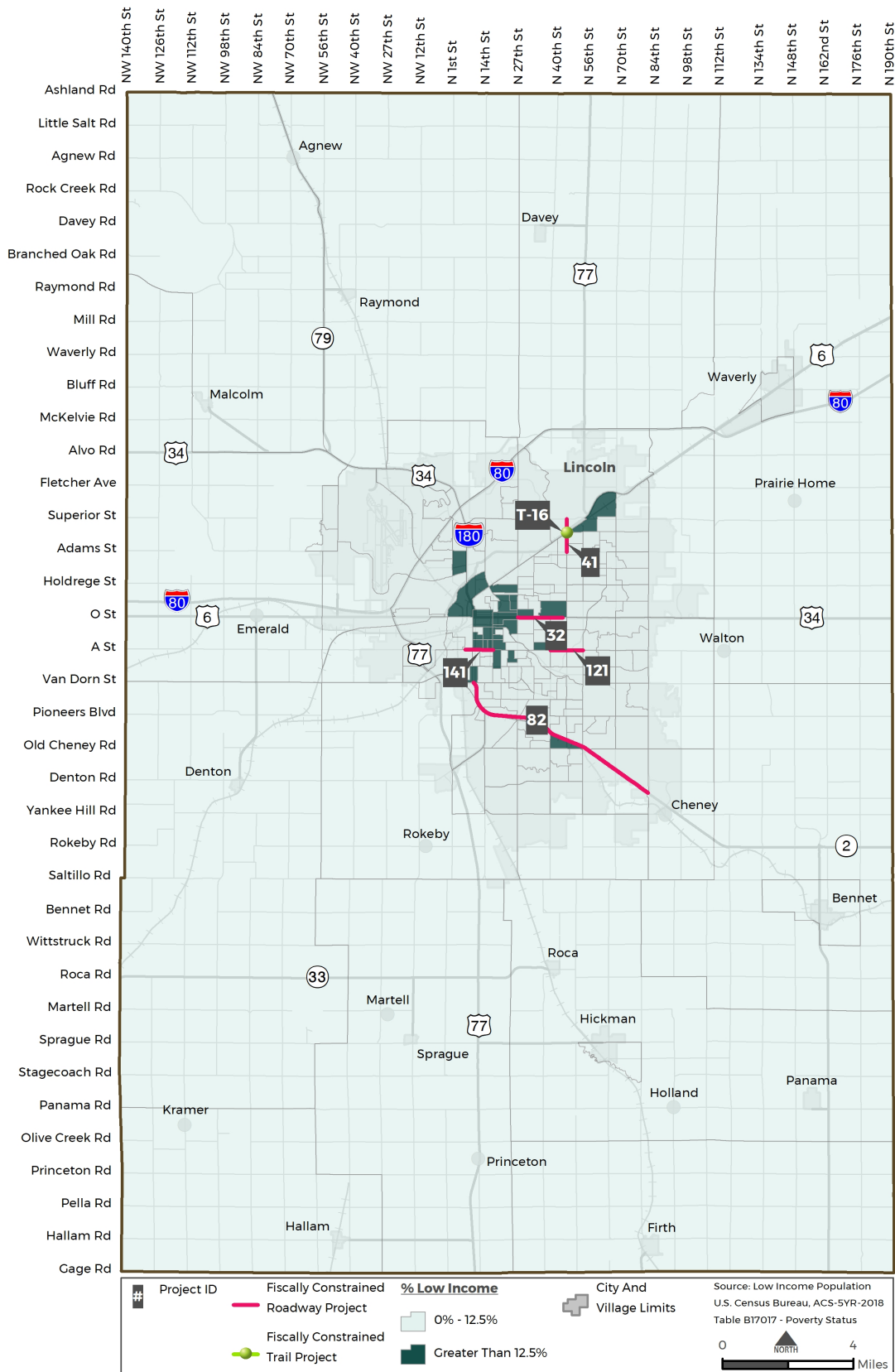


Figure H.14 Low Income Populations

On June 14, 2012, FHWA issued Order 6640.23A, Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which established policies and procedures for FHWA and state transportation agencies to use in complying with Executive Order 12898. The Order provided definitions for terms and concepts applicable to this type of analysis (**Table H.4**).

To comply with Title VI and Executive Order 12898, the demographic characteristics within the Metropolitan Planning Area (Lancaster County) were examined to determine if any of the proposed projects had the potential to disproportionately affect minority or low-income populations. The demographic and economic character of each Census Block Group was compared with that of Lancaster County and the City of Lincoln using the EPA's EJ Screening and Mapping (EJ Screen) Tool (EPA 2021), which utilizes data from the 2010 Census of Population and Housing and 5-year American Community Surveys (ACS) data from 2018.

Census Block Group data was used to determine whether or not roadway or trail projects occur within low-income, or minority population areas. A conservative threshold to identify both the Minority Populations and Low-Income Populations was established by determining the city and county thresholds and using the lower percentage of the two measures as the threshold for block groups. For example, the Minority Population threshold was based on the EJ Screen tool using (5-year ACS average values) and was determined to be 18% for Lancaster County and 20% for the City of Lincoln; therefore, the assessment threshold was 18%.

The US Census Bureau lists the median household income for Lancaster County and the City of Lincoln as \$60,527 and \$57,746, respectively (US Census Bureau 2019). These are both lower than the median income listed for Nebraska by the 2019 ACS 1-year estimates, which was \$63,229. The Low-Income

Population threshold was determined by the US Census (5-year ACS average values) poverty rate statistic, which was 12.5% for Lancaster County and 13.5% for the City of Lincoln; therefore, the assessment threshold was 12.5%. To put this into perspective, the US Census poverty threshold for a two adult and two children household was \$25,926 and a one adult household (under 65 years old) was \$13,300.

Based on the resource assessment, 37 roadway and 27 trail projects occur within a block group above the minority population threshold (**Table H.1** and **Figure H.13**). Five roadway and one trail projects occur within a block group above the low income population threshold (**Table H.1** and **Figure H.14**).

On federally funded projects, an EJ analysis would be completed by the NDOT EJ specialist during the design and NEPA phase. Requirements would vary based on funding for the projects (e.g., federal-aid or local funds). Projects located in areas that exceed the thresholds would likely need additional project specific coordination and require public outreach to determine potential adverse effects. If minority populations are present, then it may be likely that public outreach could involve the translation of materials into other languages to ensure communication is not a limiting factor. If low-income populations are present, then compensatory mitigation may be needed. For example, if a detour limits accessibility to essential services or resources, such as groceries, then conservation measures may need to provide affordable and/or alternative modes of transportation.

Transportation Equity

The EJ criteria for low income and minority populations help to frame the understanding of equity within the community, but EJ requirements and the Transportation Equity goal are measured differently. The Lincoln MPO established this as a new goal within

the 2050 LRTP. Federal requirements and executive orders are not yet established to direct the methods of measuring equity or defining the underserved and overburdened communities. The socioeconomic criteria used to measure Transportation Equity and define performance measures that will be used to evaluate progress toward the new goal are describe in **Chapter 4**.

The Lincoln MPO established seven socioeconomic indicators (**Table H.4**) to use as measures for the distribution of overburdened and underserved communities. The data associated with each of these indicators were represented individually and then combined to establish a visual representation of the Equity Index. **Figure H.15** displays fiscally constrained projects over the census blocks within the MPO represented as “low” to “highest” in four quartiles. The darkest blocks reflect the block groups with the highest aggregate of socioeconomic indicators present. Based on the resource assessment, 10 roadway and four trail projects occur within block groups designated as “high,” whereas seven roadway and four trail projects occur within block groups designated as “moderate to high” (**Table H.1** and **Figure H.15**). All but one rural area roadway projects was within block groups designated as “low” or “low to moderate.”

The method chosen to establish the Equity Index involved a sequence of step used to establish a composite score for each census block group within the planning area. The first step was to collect the socioeconomic data for seven criteria. Some data represents the number of households while other data represents population. Criteria data were aggregated into quartiles (**Table H.5**) representing one quarter of either the total households or total population. For each criteria, a census block was given a score of four if it was in the highest quartile and a score of one for the lowest quartile.

Once the seven criteria scores were measured for each block group, the scores were combined to create a composite score. Block group composite scores within the planning area ranged from nine to 26. The lowest possible score that a block group could receive was seven (one for each criteria), and the highest potential score would be 28 (four for each criteria). Block groups with scores approaching 28 are considered to have the greatest number of population/households that are underserved and overburdened.

Table H.5 Equity Index Quartile Scores

Equity Index Quartile	Composite Score Range	Initial Transportation Equity Points
Highest	21-26	1
High to Moderate	17-20	.66
Moderate to Low	14-16	.33
Lowest	9-13	0

The next step used composite scores to divide block groups into Equity Index quartiles. Populations represented by each block group were distributed evenly between the quartiles. This process accomplished the intended outcome of identifying census blocks that may benefit the greatest by transportation investments considered for the LRTP. It is important to recognize that the approach is not intended to replace or satisfying EJ requirements which may be more stringent and exceed the level of analysis required for establishing the Equity Index. One example of this difference is the socioeconomic criteria of Limited English Proficiency (LEP). While NDOT and FHWA standards may require LEP population to be accommodated for project planning if it exceeds 5% or 1,000 persons within the project study area, the LEP criteria for the LRTP Equity Index is broad and serves as a

range for scoring rather than a trigger for requiring specific actions.

The project prioritization process is documented in **Chapter 7**. It describes how each project was evaluated against the eight Transportation Goals of the LRTP and how the scoring committee used available and relevant data to review the project evaluation results. In most cases, the Transportation Equity scores shown in **Table H.5** were applied to the project's equity score. The scoring committee could use discretion and adjust the score if a project was perceived to have a cumulative or indirect negative or positive impact outside of the immediate census block group. An example of a negative impact could be adding new lanes to an existing roadway that would reduce the connectivity between housing and schools or essential services. An example of a positive impact could be a grade separated crossing in a block group with a lower Equity Index score that will improve network safety, access, and commute reliability for adjacent block groups with a higher Equity Index. The number of projects included in the fiscally constrained plan are organized by type and Equity Index Quartile in **Table H.1**. Roadway and Trail Project Scoring Results are included for review in **Appendix G**.

Cultural Environment

The cultural environment consists of historic resources, including historic standing structures, historic districts, and archeological sites. These resources are important because they add value to a community's sense of culture and provide a tangible link with the past.

Historic resources encompass man-made features and physical remains of past human activity. These resources are generally at least 50 years old (properties constructed in 1970 or earlier), and include buildings, bridges, railroads, roads, other structures, landmarks, and archeological sites. Section 106 of the National Historic Preservation Act of 1966

requires evaluation of project effects on historic properties that are on, or eligible for, the National Register of Historic Places (NRHP). Criteria for determinations of eligibility are set forth in 36 Code of Federal Regulations (CFR) Part 60.4 (70) and are described in National Register Bulletin How to Apply the National Register Criteria for Evaluation (36 CFR Part 60). For a property to be determined eligible, it must meet at least one of the NRHP criteria for historic significance and retain a high degree of historic integrity.

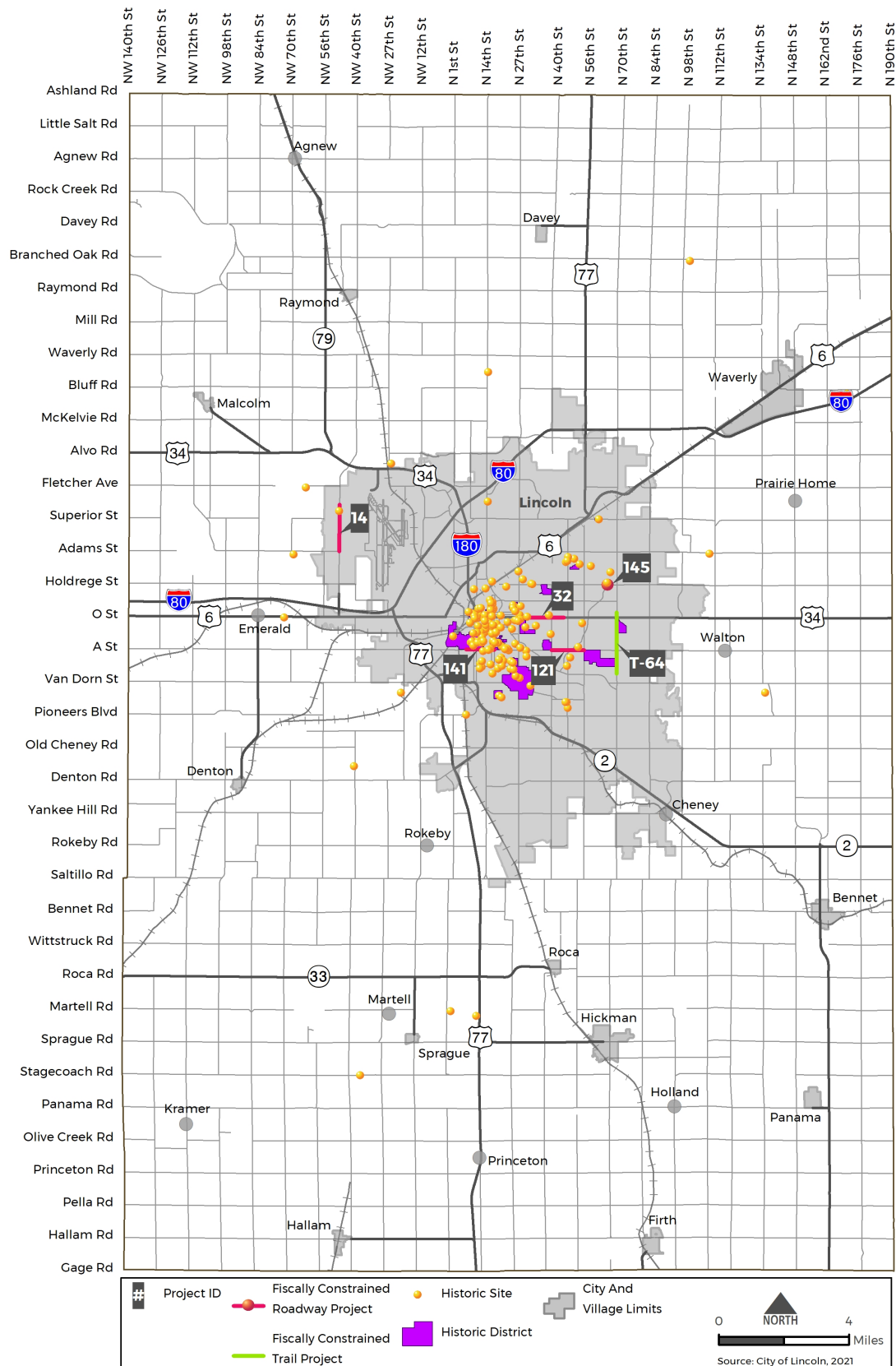
- Historic significance may be present in one of four categories: (1) important historic events; (2) significant people in history; (3) significant architecture, design, or property type; and (4) potential to yield important historic information.
- Historic integrity is characterized by one of seven aspects defined by the NRHP: (1) location, (2) design, (3) setting, (4) materials, (5) workmanship, (6) feeling, and (7) association. In general, a property will always possess several, and usually most, of these aspects.

Records searches were conducted with the City of Lincoln, Nebraska State Historic Preservation Office (SHPO), and Nebraska State Historical Society Highway Archeology Division to identify known historic sites, historic districts, and archeological sites previously surveyed, recommended NRHP eligible, listed in the NRHP, or listed as local landmarks.

Historic Sites and Districts

The records search identified 165 historic sites and 23 historic districts located within Lancaster County. Based on the resource assessment, four roadway and zero trail projects **Figure H.16**, and three roadway and one trail projects cross historic district areas. These sites would also be considered Section 4(f) properties (see **Socioeconomic Environment**).

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Archeological Sites

The locations of archeological sites are not readily available to the public and would be addressed when a specific project moves forward. Each project would require consultation with Nebraska SHPO during planning, including possible surveys for historic standing structures and archeological sites, and assessment of eligibility.

Avoidance and minimization of impacts, and mitigation if needed, would be situational and likely different for each project, but could consist of vibration restrictions or modifications to design plans to avoid specific structures or areas. Proximity alone does not constitute adverse impact, and well-designed improvements and especially system maintenance can benefit historic resources, especially neighborhood districts. Similarly, trails may have no adverse impact or even be beneficial to the livability of historic residential areas and revitalization of commercial areas.

Air Quality

The projects and decisions contained within the Lincoln MPO 2050 LRTP can influence local air quality. Estimated vehicle emissions of select air pollutants that are typically related to mobile transportation sources were assessed for the LRTP.

Because Lincoln/Lancaster County is currently in attainment or unclassifiable for the National Ambient Air Quality Standards (NAAQS) under the Clean Air Act, the air quality evaluation was primarily for informational, planning and stewardship purposes and not for regulatory compliance. For example, the City of Lincoln Climate Action Plan has an “80 by 50” goal to reduce net greenhouse gas (GHG) emissions 80 percent by year 2050—the LRTP can inform on the progress being made toward the goal in the transportation sector.

The air quality evaluation was based on traffic data developed through the MPO’s regional travel models. NDOT added one additional State project (ID 71) to the fiscally constrained project list after modeling for congestion had been completed and is therefore not included in air quality analysis. The current US Environmental Protection Agency Motor Vehicle Emission Simulator software (MOVES3) was used to develop pollutant emission data.

Evaluation Overview

The evaluation for air pollution emissions included five traffic situations covering the entire MPO area: 2020 current conditions, “existing plus committed” (without any new planned projects) conditions (E+C) for 2035 and 2050, and the future fiscally constrained road networks (FC) planned by the MPO for 2035 and 2050. Air pollutant emissions data for each of these situations for the entire traffic model network were calculated using MOVES3. Because of the potential atypical traffic volumes and patterns experienced in calendar year 2020 due to COVID, the 2020 emissions analysis used 2019 traffic data from the regional model (believed to be more typical) but calculated for calendar year 2020.

The evaluation examined four air pollutants of concern commonly associated with motor vehicles: particulate matter less than 2.5 microns in diameter ($PM_{2.5}$), two precursor pollutants for ozone (volatile organic compounds [VOC] and oxides of nitrogen [NOx]), and overall GHGs expressed as carbon dioxide (CO_2) equivalents. These pollutants are of concern for several reasons:

- Particulate Matter: $PM_{2.5}$, a complex mix of very small solid particles and liquid droplets, is a concern because it can be inhaled deeply into the lungs and can interfere with lung function or lead to other health effects. $PM_{2.5}$ can aggravate asthma, diminish lung

capacity, and cause lung or heart problems. Particulate matter can also cause haze. Sources of particulate matter include smoke, diesel engine exhaust and road dust. Particulate matter can be a localized concern near the sources or can cause regional concerns through dispersion. This evaluation included PM_{2.5} emissions from tailpipes, brake wear and tire wear.

- **Ozone and Precursors:** A strong oxidizing agent, ozone can damage cells in lungs and vegetation and can cause eye irritation and coughing. Ozone is not emitted directly; rather, it is formed by chemical reactions between other precursor pollutants in the atmosphere. VOC and NO_x in the presence of sunlight and certain weather conditions can form ground-level ozone. So, ozone concentrations can be affected through the concentrations of the precursor pollutants. Automotive sources of ozone precursors include vehicle exhaust, fuel evaporation, and vehicle refueling. Ozone is a regional concern because it takes time for ozone to form and the pollutants can drift some distance in that time. Ozone generally is most problematic in summer. Combined with GHG emissions and climate change, warmer temperatures in the future may lead to higher ozone concentrations.
- **Greenhouse gases:** CO₂ is the largest component of vehicle GHG emissions. Other prominent transportation-related GHGs include methane and nitrous oxide. Water vapor is the most abundant GHG and makes up approximately two-thirds of the natural greenhouse effect. GHGs are a concern in terms of global climate change. Human-generated GHG emissions can contribute to climate change through

the burning of fossil fuels and other activities. For this evaluation, overall GHG emissions from vehicles have been quantified in terms of an equivalent amount of CO₂ emissions.

MOVES3 Modeling

MOVES3 was the software used to develop two groups of vehicle air pollutant emission results for the four air pollutants described above. The first group of results was a representative set of average pollutant emission rates in grams per mile traveled for various vehicle speeds for years 2020, 2035 and 2050. A weekday in May was selected as an intermediate condition as a basis for comparison. The second group of results was a set of cumulative daily totals of emissions for a weekday in May for the five traffic situations described above.

MOVES3 requires a considerable amount of technical data for input to generate these results. Some of the needed data can be difficult and costly to develop specifically for a region/locality, so it is often not readily available. The MPO has developed data for vehicle miles of travel (VMT) and average vehicle speeds for the road networks through the traffic models, which were used in MOVES3 modeling. However, other input data were not available locally so the necessary inputs were derived from the MOVES3 national dataset. "National scale" MOVES3 runs for Lancaster County provided input data for the vehicle mix and some VMT distribution. MOVES3 national data were also used for inputs such as fuel types and weather conditions.

The air quality evaluation is intended to illustrate general trends for the MPO region. Changes to any of the inputs would affect the emission results to some extent.

Pollutant Emissions Results

For the first group of emission results, graphs of pollutant emission rates versus vehicle speeds were developed for the three years of interest (**Figure H.17**) to illustrate how emissions can vary with changes in traffic congestion levels. Note that **Figure H.17** represents averaged results for the entire vehicle fleet for a single set of weather conditions; other conditions may provide different rates but would be expected to show similar patterns. The graphs illustrate that traffic flow improvements (higher speeds) generally reduce emissions.

Future years are expected to see lower emission rates due to federal emission regulations and improvements in vehicle technologies (**Figure H.17**). As older vehicles are replaced with newer ones, lower emissions are expected. Because of this, total vehicle emission levels in future years may be lower even with more vehicles and VMT. The change in emission rates from 2020 to 2050 will be greatest for VOC and smallest for GHGs. The emission rates for 2035 and 2050 are very similar so the differences in total emissions between these years will be due mainly to differences in VMT.

For a simpler comparison of emission rates, a set of overall composite average rates were calculated. **Table H.6** results are condensed from a full day and include more weather conditions than the single hour shown in **Figure H.17**.

Table H.6 Composite Vehicle Pollutant Emission Rates

Pollutant	2020 (g/mile)	2035 (g/mile)	2050 (g/mile)
PM _{2.5}	0.018	0.0081	0.0075
NOx	0.63	0.24	0.21
VOC	0.076	0.018	0.015
GHGs as CO ₂	473	362	342

For the second group of emission results, total daily emissions from the MPO road network for an average May weekday was calculated (**Figure H.18**). Note that the emission amounts at other times would differ due to several factors—time of year, temperature, day of week, VMT, level of congestion, etc. The evaluation was intended to illustrate general trends (**Table H.7**).

For PM_{2.5}, NOx and VOC, total emissions in 2050 are calculated to be substantively lower than 2020 even with more VMT (**Table H.6**). Cleaner vehicles with lower emission factors will be important improvements in the near term (to 2035). Beyond 2035, the gains from cleaner traditional vehicles will lessen.

GHG emissions are expected to be higher in 2035 and 2050 than 2020 because the expected growth in VMT will more than overtake the expected reduction in GHG emission rates. Note that these results do not include widespread use of electric vehicles or other emerging technologies that currently are not well defined.

Table H.7 Composite Daily Pollutant Total Emissions (tons per day)

Pollutant	2020	2035 E+C	2035 FC	2050 E+C	2050 FC
PM _{2.5}	0.12	0.07	0.07	0.08	0.08
NOx	4.3	2.1	2.1	2.3	2.3
VOC	0.52	0.16	0.16	0.16	0.16
GHGs as CO ₂	3,241	3,264	3,263	3,718	3,700
LRTP Daily VMT (miles)	6,220,000	8,179,000	8,183,000	9,869,000	9,835,000

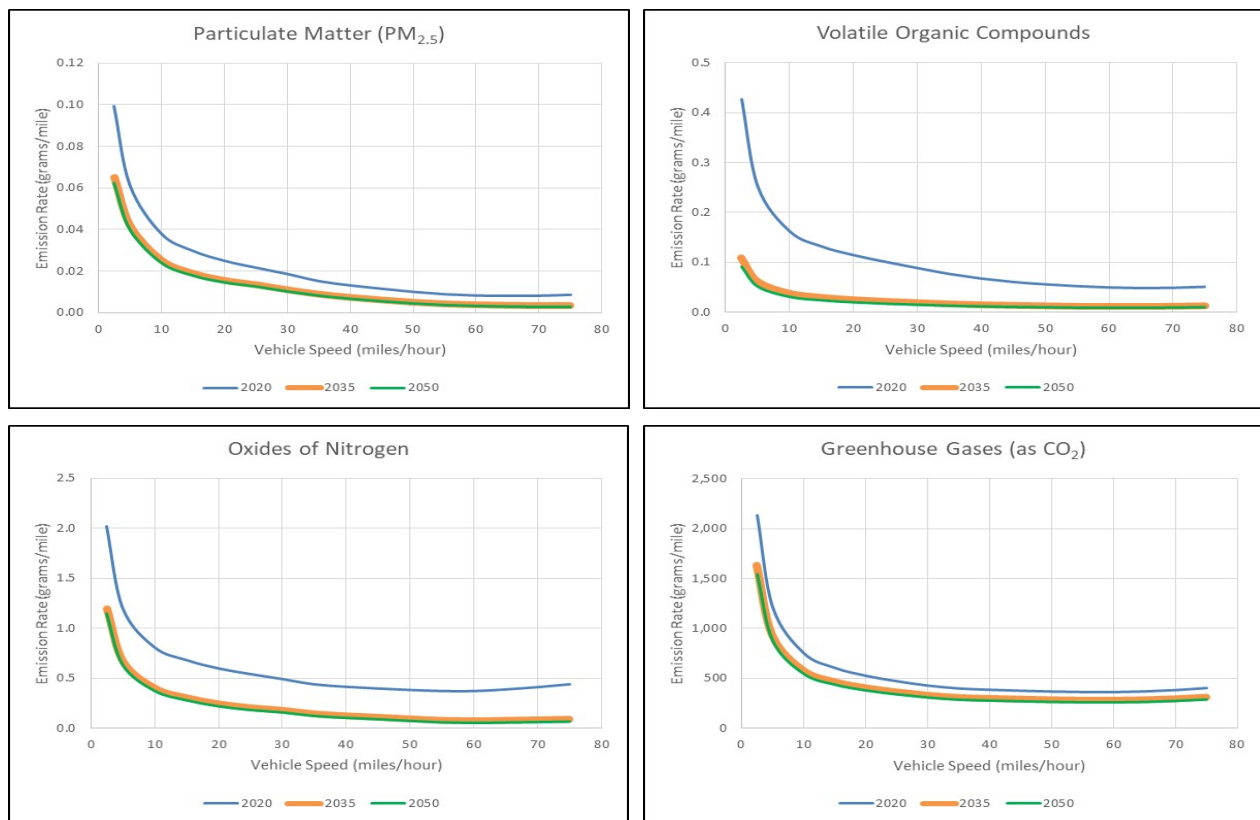
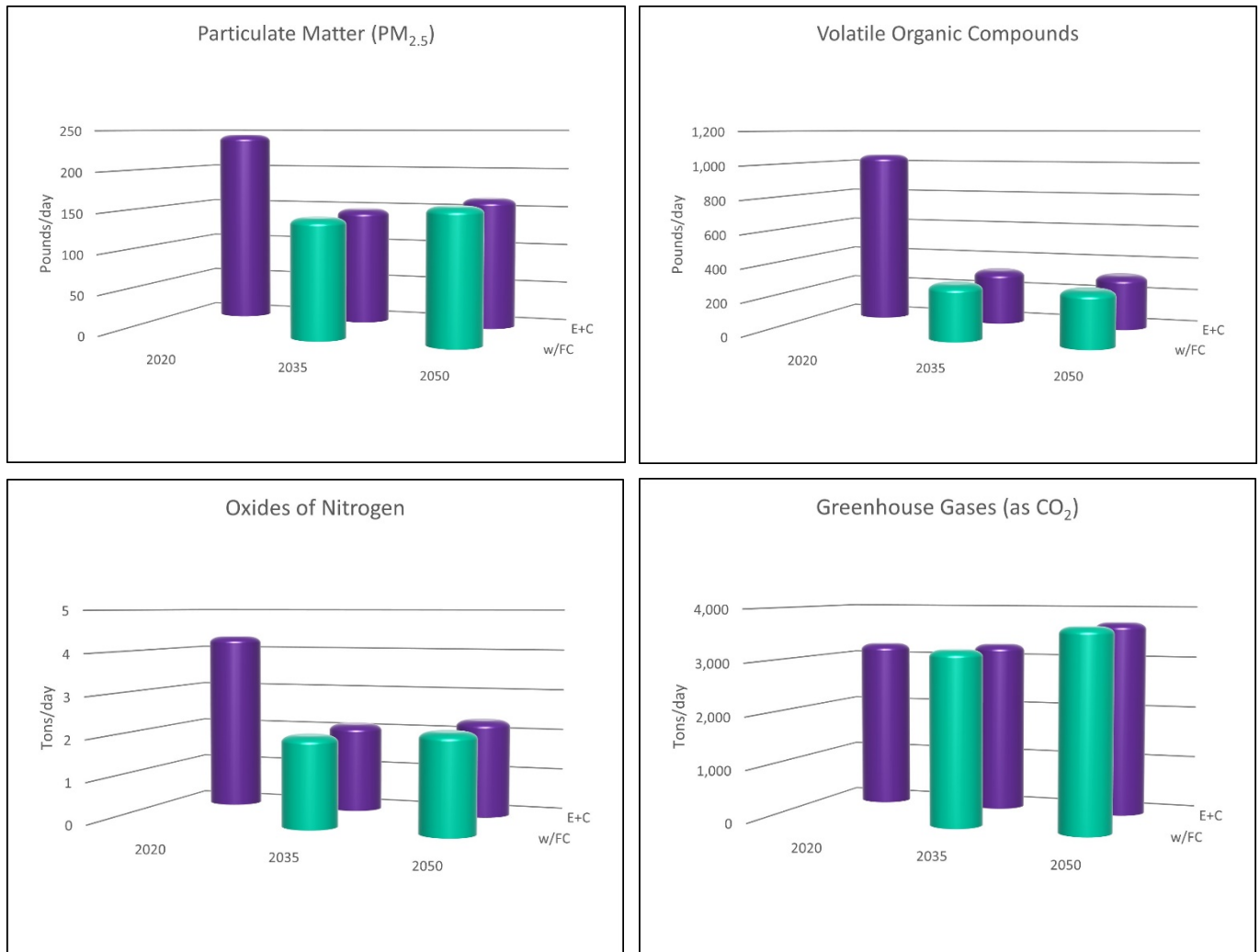
Figure H.17 Example Pollutant Emission Rates for Lincoln Arterial Streets (May weekday during 11 AM hour)

Figure H.18 Typical Weekday Pollutant Emission Totals for Fiscally Constrained Road Network



E+C is existing plus committed projects
w/FC is with Fiscally Constrained projects

Agency Coordination

This document will be provided to the following environmental, socioeconomic, and cultural agencies for review and comment to comply with SAFETEA-LU requirements. A summary of comments received is provided in **Table H.8**.

Environmental Agencies

1. Lower Platte South NRD
2. Lincoln Parks and Recreation Department
3. Sustainability and Compliance Administrator for City of Lincoln
4. Lincoln Watershed Management Division of Transportation and Utilities Department
5. Nebraska Game and Parks Commission
6. Nebraska Department of Environment and Energy
7. US Army Corps of Engineers
8. Nebraska Department of Natural Resources
9. US Fish and Wildlife Service
10. Natural Resource Conservation Service
11. Mayor's Environmental Task Force
12. Nebraska Land Trust
13. The Nature Conservancy Nebraska Field Office
14. University of Nebraska Foundation (Nine-Mile Prairie Director)
15. Lower Platte River Corridor Alliance
16. Nebraska Environmental Trust
17. Wachiska Audubon Society
18. Nebraska Audubon
19. Nebraska Chapter Sierra Club
20. Nebraska Chapter Bluestem Group
21. Nebraska League of Conservation Voters
22. Friends of Wilderness Park
23. Great Plains Trails Network

24. Joslyn Institute for Sustainable Communities
25. Lincoln Public Schools (Sustainability Coordinator)
26. Community Forestry Advisory Board

Socioeconomic and Cultural Agencies

1. Cause Collective Lincoln (previously Human Services Federation)
2. Lincoln Housing Authority
3. NE Commission for the Blind and Visually Impaired
4. Lincoln-Lancaster County Board of Health
5. Lancaster County Human Services
6. NeighborWorks Inc.
7. Malone Center
8. The Indian Center
9. Nebraska Commission on Latino-Americans (previously the Mexican American Commission)
10. The Asian Cultural and Community Center
11. El Centro de las Americas
12. Nebraska Commission on Indian Affairs
13. People's City Mission
14. Community Action Partnership
15. Center for People in Need
16. History Nebraska (State Historical Society)
17. Historic Preservation Planner, Lincoln-Lancaster County Planning Department
18. Aging Partners
19. Good Neighbor Community Center

Table H.8 Agency Review Comments and Responses

Author	Page Ref.	Comment	Response
Nebraska State Historic Preservation Office	N/A	Thank you for inviting us to participate in this long range plan. We tend to only get involved when plans come under development, and I think we will probably have to wait in this case too. We do appreciate you thinking of us.	No edit
Nebraska State Historic Preservation Office	N/A	Make sure that historic preservation review process is followed for federally and state assisted undertaking. Early coordination works best!	No edit
Aging Partners	N/A	Your use of the decision lens scale, which provides an equity index to older adults is much appreciate.	No edit
Aging Partners	N/A	One element that we see missing is accessibility and transportation time to major medical centers in our community.	No edit
Aging Partners	N/A	Creative transportation solutions such as door to door pick-up and delivery have been tested and we encourage additional investments in this service. At the current level of investment, we do not believe we are prepared for future aging growth.	No edit
U.S. Fish and Wildlife Service	N/A	Thank you for the opportunity to provide comments. If we have substantive input, we will respond by the Oct 6th deadline.	No edit
People's City Mission	N/A	Thanks for including me in this planning process! I think the LRTP looks fine and shows a lot of thought and care. My only advice would be to make sure you clearly communicate how all the feedback from agencies directly impacted and/or changed your final proposal.	No edit
Partnership for Healthy Lincoln	N/A	We at Partnership for a Healthy Lincoln would like to submit the attached letter of support regarding the Long Range Transportation Plan. I have also included a copy of our letter of support for the Lincoln Lancaster County 2050	No edit

		Comprehensive Plan that we also shared with the city. We are sending these letters to you as the online comment sections provided on each site does not have the ability to upload an attachment. Thank you for sharing our support for goals and policies to ensure transportation equity for all.	
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