2040 Long Range Transportation Plan

2016 Update

This plan considers a full complement of transportation components, including trails, pedestrian and bicycle facilities, transit, roads, railroads, airports and airfields. It describes a balanced local transportation system built upon LPlan 2040's vision.

1. Introduction

This plan is the 2040 Lincoln Metropolitan Planning Organization (MPO) Long Range Transportation Plan (LRTP), which provides the blueprint for the area's transportation planning process over the next 24 years. This plan also serves as the Transportation chapter of the 2040 Comprehensive Plan. The transportation planning process is a collaborative effort between the City of Lincoln, Lancaster County, the Nebraska Department of Roads (NDOR), StarTran transit and other agencies, where the multimodal transportation system was evaluated and a set of recommendations were made with extensive public input. This Long Range Transportation Plan meets all federal requirements and addresses the goals, objectives, and strategies to meet the community's vision for the future and was developed as an integrated part of LPlan 2040, the Lincoln-Lancaster Comprehensive Plan.

While the LRTP update is federally required for all MPOs every five years, the regular update also provides the community an opportunity to also update the Comprehensive Plan to identify what challenges and opportunities may lay ahead, to re-examine values as they relate to urban travel and development patterns and to communicate about what they

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think the transportation system should look like in the future. The Lincoln-Lancaster County LRTP, in accordance with federal requirements, addresses transportation system needs and provides a set of methods, strategies, and actions for developing an integrated, fiscally constrained multimodal transportation system that supports the efficient movement of people and goods.

The Lincoln-Lancaster County LRTP covers the transportation systems of the jurisdictions located within the Lincoln Metropolitan Planning Area (MPA). The LRTP considers the interdependent nature of the metropolitan area's multimodal transportation systems through addressing the region's roadway, transit, bicycle, and pedestrian modes in a combined effort. The study area is illustrated on Map 3: Existing Functional Classification in section 2.

Vision for Transportation

The Vision for Transportation in Lincoln and Lancaster County is a safe, efficient and sustainable transportation system that enhances the quality of life, livability, and economic vitality of the community. The following five principles guide the plan toward that goal:

One Community. In Lincoln and Lancaster County, the unifying qualities of transportation will be emphasized. Neighborhoods, activity and employment centers, rural communities, and open lands should be connected by a continuous network of public ways. The transportation network needs to sustain the One Community concept by linking neighborhoods and rural communities together.

A Balanced Transportation System. Transportation planning in Lincoln will be guided by the principle of balancing needs and expectations. It will recognize that transportation is a means to the goal of a unified, livable, and economically strong community. The system needs to effectively move people and goods around the community, while minimizing impacts on established neighborhoods and investments. The concept of balance also applies to modes of transportation. While the system must function well for motor vehicles, it should also promote public transportation, bicycling, and walking as viable alternatives now and into the future.

Transportation as a Formative System. Transportation and land use are linked systems that are subject to change by growth and development. The land use plan, which includes projections of future development, determines the character of the transportation plan. On the other hand, transportation has a major impact on the form of developing areas. Lincoln and Lancaster County will use transportation improvements to reinforce desirable land use development patterns.

Emphasis on Technology in Transportation. New transportation technologies are emerging to meet the challenges of increased demand on the transportation network. Connected and autonomous vehicles, alternative fuels, traffic analytics, on-road communications, Intelligent Transportation Systems (ITS) deployment, corridor signal optimization, among many other transportation technologies offer efficient and cost-effective solutions to enhance the regional transportation system.

Planning as a Process. Transportation planning is a dynamic process, responding to such factors as community growth, development directions, and social and lifestyle changes. Therefore, the Comprehensive Plan and LRTP employ an ongoing process that responds to these changes. While this plan is intended to guide future decisions regarding the city's transportation system's development, it is merely a guide and is subject to changes to meet future community needs.

Reason for Planning

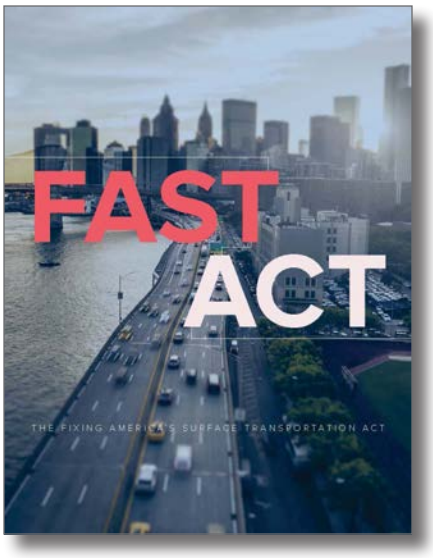
The Lincoln-Lancaster County LRTP anticipates many changes over the 24 year planning period. Changing demographics and employment patterns will create challenges for provision of transportation services and facilities. LPlan 2040 strengthens the connection between land use decisions and transportation needs. At the same time, Lincoln and Lancaster County face significant financial challenges in the construction of new transportation facilities and the care and maintenance of an expanding and aging system as well as changing demands for alternative transportation options.

LPlan 2040 proposes a new way of looking at growth and land use in the City and County. An emphasis on mixed use redevelopment and infill within the existing City will serve to increase the overall density of the City, concentrating it in areas along major transportation and utility corridors. While the density increases proposed in this plan are modest, developing a community that provides housing options in a variety of neighborhood settings, an array of well maintained transportation choices is a key goal and is anticipated to continue to be a focus as the plan is updated over the next several decades.

As Lincoln and Lancaster County's population continues to grow, traffic and population growth will continue to create demand for additional transportation infrastructure. With infrastructure continuing to age, funding for transportation is not meeting all the needs for repair, replacement, and growth. This is due to several factors including vehicle fuel efficiency, gas-tax rates not increasing with inflation, project cost inflation, and other federal and state resources not raising enough funds to meet the current and future demands of the network. LPlan 2040 recognizes that the needs of Lincoln and Lancaster County outweigh the capital resources that are available during the planning horizon. LPlan 2040 begins to address the funding issues by evaluating options to gain efficiencies in the system through technology and smarter growth of the transportation network. Continued discussion of the need for additional funding support for transportation needs is a priority for the community.

Compliance with Federal Guidance

It is the role of the Lincoln MPO as the transportation planning agency for Lincoln and Lancaster County to ensure that the planning process is consistent with Federal law. The current Federal surface transportation legislation is the Fixing America's Surface Transportation (FAST) Act



FAST Act is the most recent authorization for surface transportation investment in the United States. This builds upon previous national transportation bills, the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), the Transportation Equity Act for the 21st Century of 1998 (TEA-21), Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), and Moving Ahead for Progress in the 21st Century (MAP-21) which together established a new agenda for maintaining and investing in the nation's transportation infrastructure. FAST Act carries forward many of the principles and accomplishments of previous legislation and builds on and refines many existing efforts. This legislation also introduces new measures to meet the many challenges facing our transportation system which include improving safety, reducing traffic congestion, improving efficiency in freight movement, increasing intermodal connectivity, and protecting the environment. A list of the planning requirements the Lincoln MPO follows can be found in the Technical Report on page 57. In addition to

FAST Act, the Clean Air Act Amendment (CAAA) of 1990 requires communities to explore modes of travel other than single occupant vehicles to improve air quality while meeting the population's mobility needs.

There are seven key provisions included in FAST Act, which are specified areas that need to be considered for all metropolitan planning activities. The seven FAST Act provisions are incorporated in the LRTP goals and further detailed in the LRTP Technical Report. Other Federal Regulation emphasis areas that were addressed include:

Strategic Highway Safety Plan (SHSP). NDOR published the Strategic Highway Safety Plan, 2012-2016. It includes five Critical Emphasis Areas, most of which are outside of the scope of an LRTP. However, two particular emphasis areas are relevant to a metropolitan transportation plan, to "Improve the Design and Operation of Highway Intersections" and "Keeping Vehicles on the Roadway, Minimizing the Consequences of Leaving the Road, and Reducing Head-On and Across-Median Crashes ". The transportation planning process includes an on-going traffic safety evaluation, looking at the crash data available from the City of Lincoln and NDOR for the planning area. High crash rate locations were identified, the types of crashes were evaluated and then improvements were evaluated where feasible. The crash information was used as part of the 2040 LRTP project selection process.

Existing Transportation Facilities. It is now required that the LRTP include a discussion of strategies to improve the performance of existing facilities. In addition to including a planning goal and associated objectives dedicated to preserving the existing system, many of the recommendations in this plan include projects / programs focused on improving the current system, and providing new connections to the existing multimodal system that will improve its performance. Furthermore, maintenance of the current system was a key element addressed in the LRTP funding approach. This is discussed further in section 2.

Agency Consultation. Federal Regulation states that the MPO must document in the LRTP how the agencies in the following areas are consulted with in the transportation planning process: environmental protection, wildlife management, land management and historic preservation. The process for consulting with agencies is described in section 7 and further discussed in the Technical Report on page 169.

Environmental Mitigation. The LRTP must include discussion of potential environmental mitigation activities to be developed in consultation with federal, state and tribal wildlife, land management, and regulatory agencies. Potential environmental impacts and mitigation measures were included in the evaluation of multimodal alternatives. A more complete discussion is included in section 7 and further discussed in the Technical Report on page 139.

This transportation plan is to meet or exceed the principles of Federal Regulation planning provisions in addressing the changing transportation needs and many challenges facing the Lincoln Metropolitan Planning Area.

Lincoln Metropolitan Planning Organization

Transportation planning in Lincoln and Lancaster County is the responsibility of the Lincoln Metropolitan Planning Organization, or Lincoln MPO. This group is a policy-making board comprised of representatives from local government and transportation authorities that review transportation issues and develop transportation plans and programs for the

metropolitan area. The MPO works to ensure the directives of Federal Regulations are incorporated into transportation planning and operations in the County. This organization is a forum for cooperative decision making and provides for the involvement of principal elected officials from the City and County. Although these individuals come to the table with multiple, and sometimes conflicting perspectives, they work together to establish local and regional priorities for the transportation improvements that are eligible for state and federal funding.

To assist them in their decision-making process, the MPO Officials Committee relies upon other committees and support staff, such as the MPO Technical Committee, as well as active participation from interested citizens, concerned business representatives, interest groups and other voices in the community. Aside from the LRTP, the MPO also has responsibility for preparation of the Transportation Improvement Plan (TIP) and the Unified Planning Work Program (UPWP). These two documents are short term planning tools that help implement the goals of the LRTP.

While the Lincoln MPO plans and develops programs for the all of Lancaster County, separate and defined funding sources are used to fund the respective urban and rural transportation programs. Urban sources of funding are generally planned to be used within the "Urban Area Boundary" as shown on Map 3: Existing Functional Classification. Rural sources of funding are generally planned to be used outside of this identified boundary. There are, however, programs such as the Rural to Urban Transition for Streets (RUTS) program where both urban and rural programs are used to develop the transportation system in a more efficient manner within the Urban Area Boundary.

2. Existing Conditions and Issues

The City of Lincoln serves as both the capital for the State of Nebraska and the seat of government for Lancaster County. The County's 306,468 residents comprise the second largest metropolitan area in the State. The Lincoln Metropolitan Statistical Area includes Lancaster and Seward counties and 323,578 people. The broad southeastern Nebraska region is home to over one million people, including the greater Omaha urban area to the northeast.

As discussed in The Community chapter of LPlan 2040, the population over the next 24 years is expected to grow at an average annual rate of 1.2%. By the year 2040, the population of Lancaster County is anticipated to reach about 412,000, with about 90% of those people living in the City of Lincoln. Like much of the country, a large segment of Lancaster County's population was born during the "Baby Boom" of 1946 – 1964. These residents are now beginning to enter retirement years. At the same time, Lancaster County has experienced a change in racial and ethnic demographics, with the number of those indicating they are Hispanic or other than white quadrupling in the last 20 years. Household size in Lancaster County has continued to decline over the past 50 years, from 3.5 people per household in 1960 to 2.4 in 2010. These factors may cause a shift in demand of transportation choices.

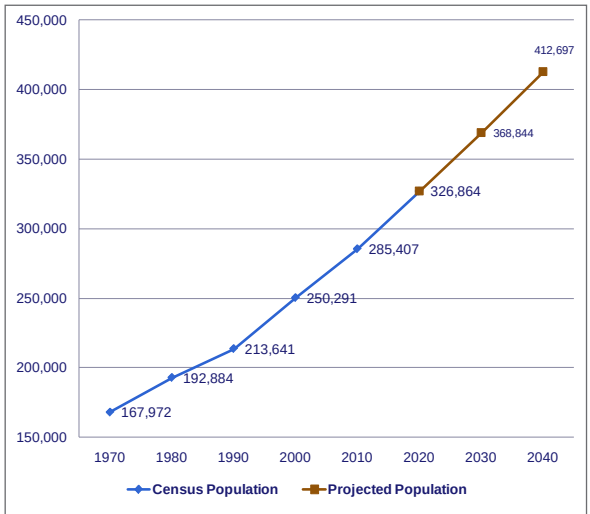


Figure 1: Lancaster County Population

Population density in Lincoln still tends to be rather low at about 3.0 dwelling units per acre in the City as a whole. There are, of course, parts of Lincoln, particularly in the downtown area and in the older neighborhoods, where this figure rises significantly, as there are areas on the edge where large lots

prevail. During the development of LPlan 2040 there was significant discussion of the benefits of an urban growth pattern with a higher degree of density than what is generally seen in Lincoln today. Some of Lincoln's most livable neighborhoods are in the older parts of the City where densities of seven or more units per acre are common. These neighborhoods often include parks, schools, small retail and service centers, and transit service within an easy walking distance of homes. Indeed, services such as transit are not viable when density is significantly lower. The public and the advisory committee have expressed support for development that reflects some of those more traditional neighborhoods.

Housing preference is one area that could be heavily influenced by these demographic factors. A desire for smaller homes, and homes with lower maintenance requirements, is commonly expressed among older adults and Millennials (born after 1995). The proximity to goods and services that are used on a daily basis is also important. New immigrants also often seek out neighborhoods where the language, retail items such as groceries, and services provided in their native language are available. These factors indicate a future need for neighborhoods that are able to serve the people that live within them. This type of neighborhood pattern would indicate greater need for pedestrian and bicycle facilities. It may also mean that some residents in those areas would choose public transit and other alternative modes over automobile ownership.

Since the 1950s the majority of development has been on the edges of the City, progressing multi-directionally with strong growth to the south and east. Suburban style development with separation of land uses prevails, although in recent years more creative development patterns have been seen in some new projects. Lincoln has a long tradition of a clear differentiation between the urban and rural areas and "leapfrog" development has not been seen in the community. The existing transportation system has focused on the personal vehicle since the mid-20th Century. The older part of Lincoln maintains a strong grid street system, which has been continued in the new growth areas along mile-line arterial streets. Newer local streets have developed in more curvilinear patterns with cul-de-sacs being common in some neighborhoods.

It is likely that the personal vehicle will continue to be the dominant form of transportation for the foreseeable future. However, if fuel costs rise, the option of using alternate modes such as transit, bicycles and walking for some trips become more important to some. Telecommuting is one concept that has been discussed over the years, and some cities in the U.S. have made progress toward policies and tools to make this work style possible.

At this time, most cities in the U.S. are concerned with the costs associated with the operation and maintenance of transportation facilities. Lincoln and Lancaster County have not escaped from this challenge. The cost of new construction also continues to rise at a rate that outpaces the increase in revenues. These financial challenges demand a closer look at the priorities of the community. Maintenance costs can be significantly reduced if maintenance is done when streets and other transportation infrastructure are in relatively good condition. As maintenance is deferred, condition continues to decline and the costs of repairs rise dramatically. Techniques for reducing traffic demands by deferring trips to alternate modes, minimizing peak demands and introducing emerging technologies to the transportation network can reduce the need for projects that increase capacity on roads, resulting in a reduction in the cost for new projects.

Environmental stewardship is a priority for LPlan 2040 and for the LRTP. As part of the transportation alternatives analysis, extensive effort was made to identify possible environmental impacts and to gather input from both public and private

environmental agencies and groups. Three primary areas of concern are closely tied to transportation: air quality, land conservation, and stormwater quality. All three of these areas can be best addressed by reducing the amount of paved area needed to serve transportation needs. If trips are shorter (i.e. destinations are closer) fewer miles are traveled and fewer emissions created. Shorter trips also make alternative modes such as bicycling and walking more attractive. Generally, shorter trips are accomplished by a more compact growth pattern which has the added benefits of fewer acres of land used for development, and more land, with the associated streams, trees, agricultural fields, and floodplains, left in a natural state.

Of primary importance in this and every plan is the equitable distribution of the community investment in transportation. It is important that no segment of the community receives less benefit or assumes a greater negative impact than any other. The LRTP process included an evaluation of the community according to the Environmental Justice Action Strategy. This strategy identified areas in the County that include a greater than average percentage of the population that identified themselves, through Census responses, as either belonging to a minority racial or ethnic group or meeting the definition of low income as defined by the U.S. Department of Housing and Urban Development. These areas were evaluated in a manner similar to that used for the environmental impact evaluation; impacts were identified and agencies and interest groups were contacted for their input. Responses were sent to agencies and groups that provided input and their comments were considered in the development of the plan. No adverse impacts were identified as a result of the proposed Plan during the Environmental Justice Analysis. A full report of the findings can be found in the Technical Report on page 131 as well as Appendix H.

Bicycle Facilities Planning Lingo

Multi-Use Trail: Bikeway or trail that is physically separated from motor vehicle traffic by open space or a barrier. May be within the road right-of-way or have its own right-of-way. Also referred to as a "shared use" or "multi-use path," "recreational trail," or Class I bikeway.

Cycle Track: An exclusive bicycle facility that combines the user experience of a separated path with the on-street infrastructure of a conventional bike lane.

Bicycle Lane: Bikeway on a street designated for preferential or exclusive use of bicycles by striping, signage, and pavement markings.

Bicycle Route: Streets with "Bike Route" signs installed along them. Intended for the shared use of automobiles and bicyclists without striping or pavement markings.

Trail Head: Major entry point onto a trail system often providing public facilities, such as parking, water fountains, bicycle racks, picnic facilities, and restrooms. A trail head is not necessarily at the beginning or end of a trail.

Existing Pedestrian and Bicycle Facilities

Walking is an essential part of our daily activities, whether it be trips to work, shop, or play. Lincoln's greatest pedestrian asset is the long standing policy of requiring sidewalks on both sides of all City streets and connectivity between subdivisions. Because of this policy, the vast majority of homes and businesses are served by Lincoln's 1,684 miles of sidewalks. However, rehabilitation of sidewalks, particularly in older residential and commercial areas, has proven to be a challenge. The responsibility for rehabilitation of sidewalks

was passed from the adjoining property owner to the City in two separate votes during the early 1990s. The sidewalk rehabilitation program has been underfunded in the past; however, the City has recently made a concerted effort to rehabilitate over 2,000 sections of sidewalks in poor condition, spending over $1 million on sidewalk repairs in recent last fiscal years. In order to continue this program at an appropriate level, serious consideration of increased funding must be taken.

There is currently not a single clearinghouse for pedestrian planning, design, and engineering in the Lincoln MPO. Instead, a number of departments address pedestrian mobility and sidewalks with varying perspectives as part of other job assignments. This results in pedestrian needs not being a primary focus of a coordinated program. Use of the Complete Streets interdepartmental committee should increase for review of projects that modify the sidewalks or other streetscape elements.

The current bike network for the Lincoln MPO is tied closely to the streets and trails network. It includes existing paved and unpaved routes, proposed trails and trail easements, on-street bike routes, dedicated bike lanes on 11th and 14th streets in the Downtown area and a separated bike lane on N Street from 23rd Street to Arena Drive. Riding bicycles is not allowed on the sidewalk in the following commercial areas because of the large number of pedestrians:

- Downtown
- Havelock
- College View
- Bethany

Bicycles can play an important role in the community by providing a healthy alternative to the automobile, reducing traffic congestion, improving air quality, and creating a more balanced transportation system.

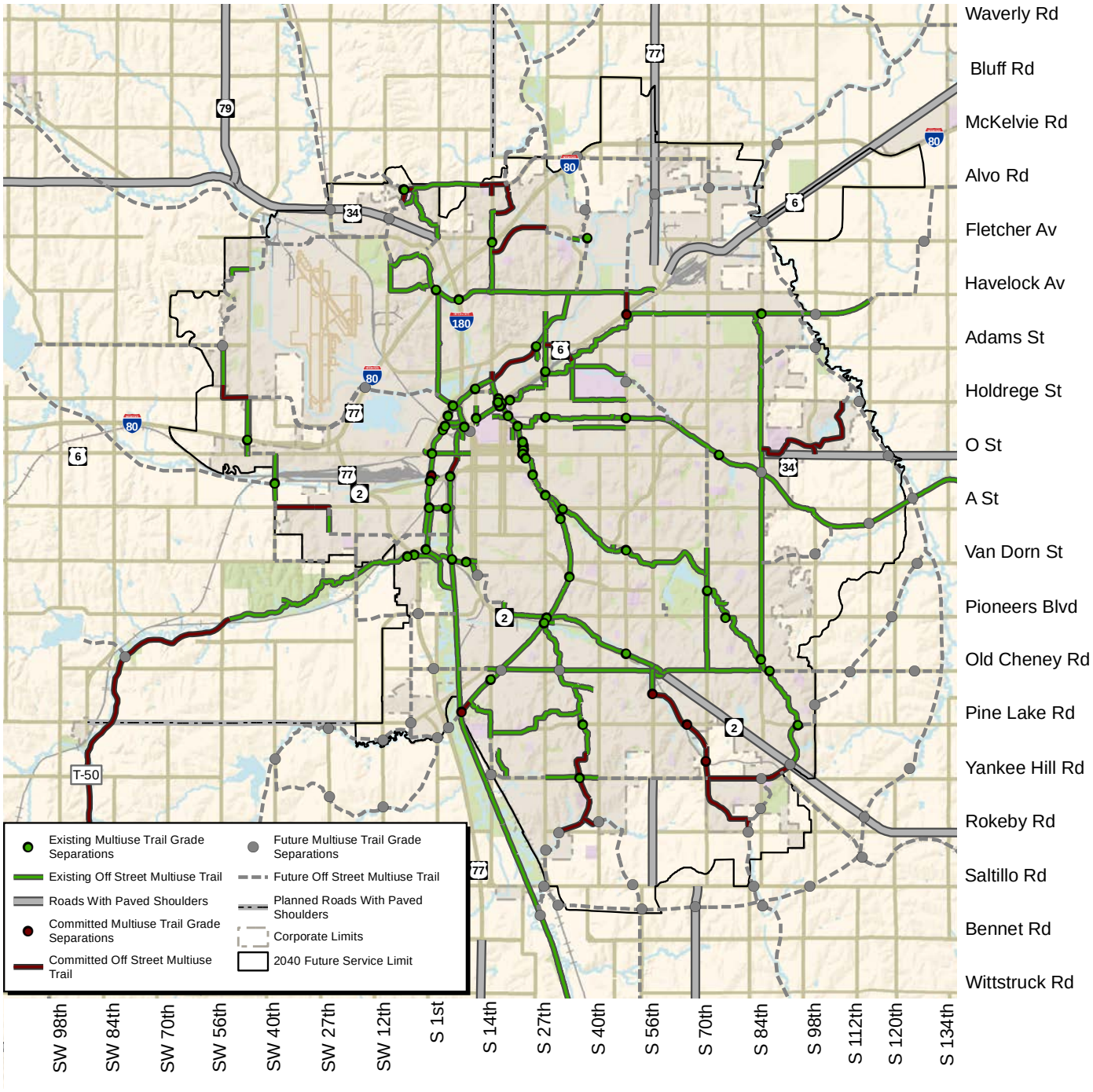
While Lincoln has some on-street bicycle facilities, there is desire from the public to expand the on-street system. The Lincoln Bike Plan outlines a citywide on-street bicycle facility system.

Improvement of existing street and trail facilities that are presently suitable for bicycles and other users, and the development of an expanded system of bicycle-friendly roads and trails for the City of Lincoln and Lancaster County's future have been expressed as strong community goals.

Existing Multi-Use Trails System

The community has an existing system of multi-use trails that currently provides a trail within one mile of 95% of dwelling units in the City. The system serves users such as bicyclists, pedestrians, roller-bladers, and parents with strollers and wagons. The present system serves both commuter bicyclists and pedestrians who use the trails daily for work and shopping trips and tend to travel from point to point, and recreational bicyclists and pedestrians who tend to use the trails on a more occasional basis, seeking attractive and safe routes, as shown on Map 1: Existing and Committed Trails.

Much of the current trail system is built in the right-of-way of abandoned railroad corridors. Others are built along streams in the floodplain, along one side of major arterial streets, or as part of residential development. Maintenance of the system includes litter pick-up, mowing, trail clearing and signage. The Lincoln Parks and Recreation Department, Public Works and Utilities Department, and the Lower Platte South Natural Resource District are primarily responsible for trail development in Lancaster County. Lincoln Parks and Recreation, along with Lincoln Public Works & Utilities, maintain trails in the City and all of Wilderness Park while the Lower Platte South NRD maintains County trails. Volunteer organizations also assist in maintenance as well as donating significant funds for trail development.



Map 1: Existing & Committed Trails

Most of the existing trail system has been built over the last 30 years and some of the oldest trails are beginning to require rehabilitation, either because of declining pavement condition or because use has risen to a level that a wider trail is required.

Existing Transit System

Public transit is an essential component of the transportation system and should be integrated with all other transportation modes. StarTran - the City operated transit system - provides fixed-route service, para-transit (Handi-Van), and brokerage or contracted transportation service that is a door-to-door demand-responsive disability service. These public services are critical to those persons that are dependent on public transit services, and the service is provided in compliance with the Federal Americans with Disabilities Act. In addition to providing services for the transit dependent, StarTran also offers services as an alternative to the automobile for the non-transit dependent or choice riders.

Most of the regular fixed route transit system runs Monday through Friday from 6:00 am to 8:00 pm while a few others operate late in the evening and Saturday from 7:00 am to 6:30 pm with 14 routes and a Downtown shuttle. In 2015, over 2.3 million trips were provided by this service. The fixed route system operates based upon a Downtown hub and is a coverage system, meaning it attempts to provide service to key areas of the City. In 2015, nearly 80% of Lincoln households were within ¼ mile of a StarTran bus stop.

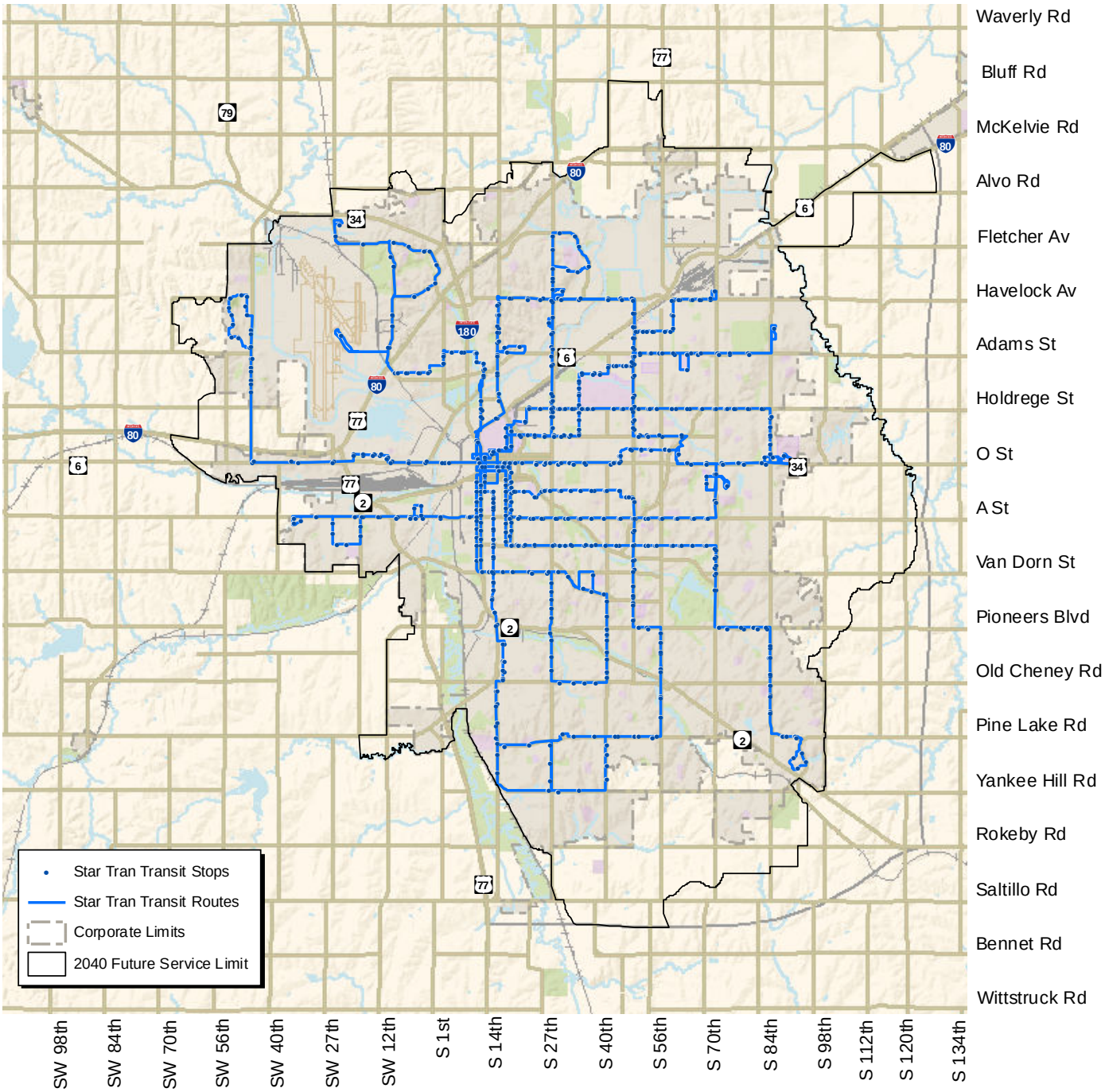
Lancaster County does provide transportation for individuals in rural Lancaster County that is wheelchair accessible through the Lancaster County Public Rural Transit program. Service is provided Monday through Friday, 7:30 a.m. to 5:30 p.m. The northern half of the County which includes Lincoln and communities and residences to the north of the capital city is served on Mondays and Wednesdays, and the southern half which includes Lincoln and communities and residences to the south of the capital city of the County is served on Tuesdays and Thursdays.

As a public service, StarTran transit should be funded and supported similar to any other public service. Transit service, whether a fixed-route or demand-responsive service, is linked to the larger transportation system and is affected by land use decisions. Providing fixed-route transit service relies on good pedestrian connections at the beginning and the end of the trip. Transit service is influenced by the density, community policy, transportation corridors and activity centers, as well as to the design of activities along those corridors and centers it serves. Other factors such as abundant supply and low cost parking, low travel time, gas prices and minimal congestion also affect transit demand. High travel corridors and activity centers with a mix of uses provide the demand that can effectively support higher levels of transit service.

Existing Roadway System

The Lincoln MPO is served today by an extensive system of streets and highways. This system ranges from roads capable of safely carrying thousands of vehicles each hour, down to local residential streets that help form the character of neighborhoods. The street system further plays a vital role in commerce by carrying products to all portions of the City and County. The rural road network also links the agricultural community to key transportation centers, allowing their commodities to be shipped around the world.

Section line roads form the basic layout for the City's and County's existing street system. Spaced approximately one mile apart, these roads create the underlying grid pattern found throughout the County. This roadway pattern was established nearly 150 years ago by the United States government. Surveyors were sent west to the Plains states to create a patchwork of one mile squares.



Map 2: Existing Transit Routes

These squares became the building blocks upon which the earliest settlements and agricultural communities were formed.

The section line roads are used today as Lincoln's main system of arterial streets. In the newer areas of the City, section line roads are planned to be built with four through lanes, with turning lanes added to improve safety and operations along these corridors. However, two lanes with some turn lanes or roundabouts where needed are often built to carry lower levels of traffic and then expanded to four lanes when growth occurs and as traffic warrants. The grid pattern has also been accentuated in the older areas of Lincoln through the use of arterial streets at the half section (or half mile) line. This has created a more extensive street grid pattern in the older areas of the community.

To aid in moving traffic through and across the community, other routes have been layered on top of the County's underlying one mile grid pattern. From the Federal Interstates (such as I-80 and I-180), to State highways (Highway 2, 33, 34, and 79), U.S. Highways 6, 34, and 77, and to local facilities (such as Capital Parkway, Cotner Boulevard, and Sheridan Boulevard), diagonal roads have helped expand the community's street capacity. These facilities often offer more direct movement between major centers of activity than are provided by the grid system.

Bridges and overpasses have also been added over the years to make travel safer and easier. Separating cars and trains reduces the potential for crashes, as well as reducing the time spent by motorists waiting for passing trains. Even the spanning of the region's numerous creeks and streams with permanent structures have allowed people and vehicles to move more easily.

Today there are an estimated 2,955 miles of streets and highways serving the Lincoln MPO. This includes approximately 30 miles of Interstate, 176 miles of U.S. and State Highways, 569 miles of major arterials and collector streets, and 2,180 miles of local streets.

Street Operations and Maintenance

The day to day requirements of the urban roadway system are met through the operations program. The street maintenance program includes a variety of services and functions, including street sweeping, snow removal, stormwater, mowing, crack sealing, and pothole repair. Monitoring the performance of the system is an important part of the operations program. Data is gathered on a regular basis to monitor traffic flow, crash rates, and intersection functionality. Engineering studies to identify future alignments and intersection design are also conducted through this program.

Rehabilitation Program

The Rehabilitation program includes the repair of arterial and residential roads when the pavement conditions deteriorate to an unacceptable level. A pavement condition rating system is used to determine which road surfaces are in most need of repair. Also included in the Rehabilitation program is bridge rehabilitation and signal replacements. It is important to note that money invested today in the ongoing maintenance and repair of the street system saves a significant amount of money in the future by avoiding the costs associated with full reconstruction of roadways. As described in the Maintenance Goals (Technical Report, page 59), the City's target is to rehabilitate five percent of the arterial street system each year and three percent of the residential street system. That is, each arterial street would be rehabilitated once every 20 years, and each residential street would be rehabilitated every 33 years. The costs associated with this goal will increase as the system ages, as the community grows and adds miles of streets to be maintained, and as construction costs increase over time.

Safety and Security

An important part of the Lincoln MPO's urban transportation planning process involves the collection of transportation related crash data. The City's Crash Study provides a source of information through which local and state officials examine and respond to changing transportation conditions. Crash data collected over the five-year time period between 2010 and 2014 show that there were over 38,600 crashes in Lincoln and Lancaster County, an average of roughly 7,700 crashes per year. Over the five-year period, there were 9,154 crashes resulting in injury (INJ) or fatality (FAT) – approximately 24 percent – and the remaining crashes involved property damage only (PDO). During that same five-year time period, there were 735 vehicle-bicycle crashes on Lincoln and Lancaster County roads, an average of 147 per year. There were 470 vehicle-pedestrian crashes, an average of 94 per year. This crash information was used as part of the 2040 LRTP project selection process.

The City's goal is to reduce the overall number of crashes, fatalities and injury crashes during and beyond the planning period. To achieve these fundamental goals, it is important that national, state and local standards along with education, enforcement, engineering and evaluations continue to be pursued. Nationally, the Federal Highway Administration (FHWA) continues to emphasize transportation safety. As a result, the primary focus of highway planning and investment is on improving the safety of the transportation system. In accordance with Federal Regulations, each state is required to develop, prepare, submit and implement a comprehensive safety plan. The Nebraska Strategic Highway Safety Plan, developed in collaboration with public and private agencies, has identified Critical Emphasis Areas that will require the continuation of existing or implementation of new programs.

Congestion Management

One of the main components of the LRTP is an analysis of congested roadways in the Urban Area and the Management Process to address these congested areas. The Lincoln MPO Congestion Management Process (September 2009) is a guideline for the identification and development of capacity improvement projects. Because of the limited financial resources available to Lincoln and Lancaster County to address roadway congestion, the MPO carefully reviews projects to determine their suitability for widening and selects only the most critical areas recommended by transportation agencies to become part of the list of capacity improvement projects in the Lincoln-Lancaster County LRTP. The Congestion Management Process is a tool used by local transportation agencies to determine what level of capacity improvement is most suitable for a corridor and uses data from the Lincoln MPO Travel Demand Model to analyze the submitted capacity improvement projects included in this Plan and was used as part of the 2040 LRTP project selection process. This is discussed in greater detail in the Technical Report Appendix E.

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Congestion management is one of the primary responsibilities of the Department of Public Works and Utilities Department. A combination of road and intersection design, road condition, Intelligent Transportation Systems, a well connected system and a strong tradition of linking transportation to land use serve to reduce traffic congestion within the urban area. The Congestion Management Process includes the use of congestion data to support transportation decision making and is reported on annually.

Transportation System Monitoring & Management

Effectively managing the metropolitan area's transportation system requires an ongoing program of monitoring and data collection. Over the past

several years, the measures used to monitor, evaluate, and manage the MPO's transportation system have been the subject of considerable dialogue within the community, beginning with the Congestion Management Task Force in the mid-1990s. A variety of parameters are used to judge system performance including travel time, average speed, intersection delay, vehicle occupancy, traffic volumes, crash rates and other relevant measures. These measures remain an important statistical foundation upon which to build a valid process to evaluate and manage the overall transportation system. New technology applications are being used for system monitoring and management, and are a subset of Intelligent Transportation Systems.

Intelligent Transportation Systems

Intelligent Transportation Systems, or ITS, can be simply defined as "people using technology in transportation to save lives, time and money." ITS integrates computers, electronics, sensors, communications, and management practices into the daily operations of a community's transportation system.

The Public Works and Utilities Department, Traffic Engineering Division currently manages a traffic management system that includes approximately:

- 420 traffic signals
- 15 flashing beacons
- Nearly 100 traffic monitoring cameras
- 26 portable and 15 permanent dynamic message signs (DMS)
- 170 intersections with emergency vehicle preemption devices
- 10 railroad crossing locations with preemption devices
- 2 active road weather information system sites (RWIS)

Most all of this is connected through a vast network of over 160 miles of communication lines – both fiber optic and copper - and a mix of wireless radios.

Green Light Lincoln is an initiative being undertaken by the City of Lincoln to improve traffic flow and traffic safety city wide. The focus of the effort will result in vast improvements to the overall traffic signal system, and numerous projects with high benefit/cost ratios. Key benefits of this initiative are:

- Reduce travel times, delays, and stops;
- Reduce vehicle emissions and pollutants;
- Reduce fuel consumption and savings at the pump;
- Reduce the number and severity of crashes;
- Smooth traffic flow and reduce driver frustration; and
- Delay the need for major street widening projects.

The City of Lincoln will continue to foster transportation projects that support technology and the many "Smart City" initiatives that will no doubt continue to increase in number and scope. Providing access to city data across all Departments and to the public is an important goal for Lincoln. Ensuring that systems are planned for and implemented that allow for growth in this area are vital to improve efficiencies, high benefit/cost, and environmental considerations. Being able to do more with less physical infrastructure, and being able to improve mobility and customer service now and in the future, will require the City of Lincoln to prioritize Smart City technologies and allow for improved connectivity to citizens and transportation opportunities.

Two Plus Center Turn Lane Program

One of the challenges of providing efficient transportation services to a growing community is the possibility of negative impacts to existing neighborhoods. Widening an older roadway in an established neighborhood can significantly impact the quality of life for those living there. At the same time, highly congested roads where traffic moves slowly during peak hours can cause noise, air quality and safety concerns. To help meet this challenge, Lincoln has implemented the Two Plus Center Turn Lane Program, often called the "2 Plus 1" program.

Under this concept, designated arterial streets in existing neighborhoods are improved with a street design that includes two through travel lanes and a single common center turn lane. This approach increases the street's efficiency to move traffic and improves safety, while minimizing the impacts on the adjacent neighborhood. This design can usually be accommodated within the existing right of way; however, small portions of right of way may need to be acquired in order to complete this program's objectives.

While all arterial rehabilitation projects should be done to a width that can accommodate two lanes plus a center turn lane, actual striping varies depending on the particular neighborhood circumstance.

Street and Highway System

The street and highway system is the primary backbone of the Lincoln-Lancaster transportation system. The street and highway system provides connections within the region, connections to other cities and regions and connections between various modes of travel within the metropolitan area. This section provides an overview of the various components of the street and highway system.

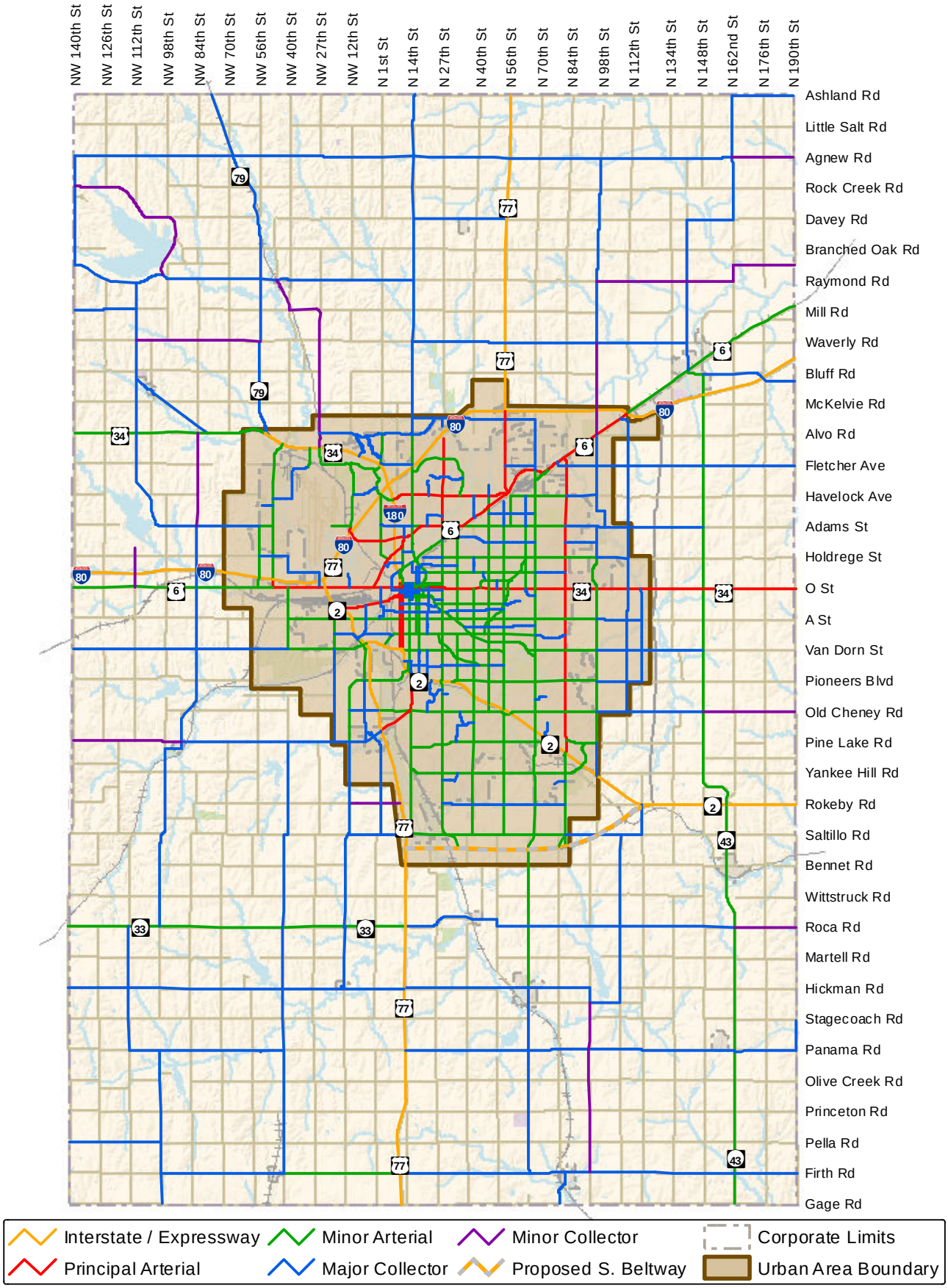
A significant change to the street system has been the installation of dozens of roundabouts in recent years throughout the community with many more planned with future projects. The Traffic Engineering Division of Lincoln Public Works and Utilities is currently undertaking a city wide feasibility study of 25 intersections that would be suited to roundabout implementation due to age and condition of signalized infrastructure and other safety and/or operational issues. Roundabouts are preferred over traditional intersections due to their safety, capacity, environmental and overall cost benefits. Roundabouts are now the preferred form of major intersection traffic control when planning for new intersection locations, or as part of street rehabilitation projects.

Functional Classification

Functional classification is a hierarchical grouping of roadways into various categories according to the level of traffic service that they are intended to provide. The MPO has developed a functional classification system for roadways within the transportation planning area that includes urban and rural categories. The various functional classifications define the roadway's general role, which can be summarized by the degree to which it provides access to adjacent properties or provides travel mobility from one part of the region to another. See Map 3: Existing Functional Classification.

Urban/Rural Interstates, Freeways and Expressways are at the top of the classification hierarchy. These are roads capable of carrying large numbers of vehicles at higher rates of speed over long distances. Access to these roadways is strictly controlled. Vehicles can only get on or off these facilities at a few designated locations — typically at an interchange.

Principal Arterials and **Minor Arterials** are at the next level of roadway classification. Arterials carry traffic between major activity and population centers. They may run for many miles across the City and County. Posted speed limits are generally in the 35 to 45 miles per hour range in urban areas, (higher in rural areas) with access provided at grade. Traffic signals as well as roundabouts are often used



Map 3: Existing Functional Classification

to regulate the flow of traffic at major intersections along arterials. Access is managed, although movement to and from adjacent property is sometimes allowed depending upon the character of the area and the uses being served.

Collector Streets offer motorists a safe and convenient way to move from a neighborhood to the arterial street system. This next level of street classification is intended to "collect" traffic from residential or other destinations and move it to the higher order streets. Speeds are generally lower than arterial streets with direct access more liberally granted.

Local or **residential** streets provide the greatest access. These streets provide very limited opportunities for through traffic; their primary function is to provide access to adjacent properties.

Rural Roadway System

There are 1,486 miles of rural roadways in Lancaster County that are managed by the State of Nebraska and Lancaster County. The state manages all Interstate, U.S. and State Highways which make up more than 170 miles of rural highways. The County Engineer manages approximately 1,304 miles of roads in the rural road system of which approximately 1,022 miles are gravel surfaced, 237 miles are paved or asphalt, and about 43 miles remain unimproved dirt roads.

Most County roads in Lancaster County are developed along section line corridors, giving the County a general 1-mile grid pattern of roadways. Safety is always a major concern. Population growth and increased recreational demands in the rural areas add to the volume of traffic. Grain trucks and other commercial vehicles are carrying heavier loads than ever before and create additional problems as roads experience greater transport weights.

These pressures lead to increased maintenance demands and demand for improved pavement and modifications to road foundations. This is also true of the rural bridge needs. The decision to make improvements to the road surface is based on several factors including:

- Role of the road in the overall system
- Number of vehicles traveling the road daily
- Increased maintenance or decreased driver safety
- Type of traffic and weight of vehicles on the roadway
- Spacing or proximity to other paved roads

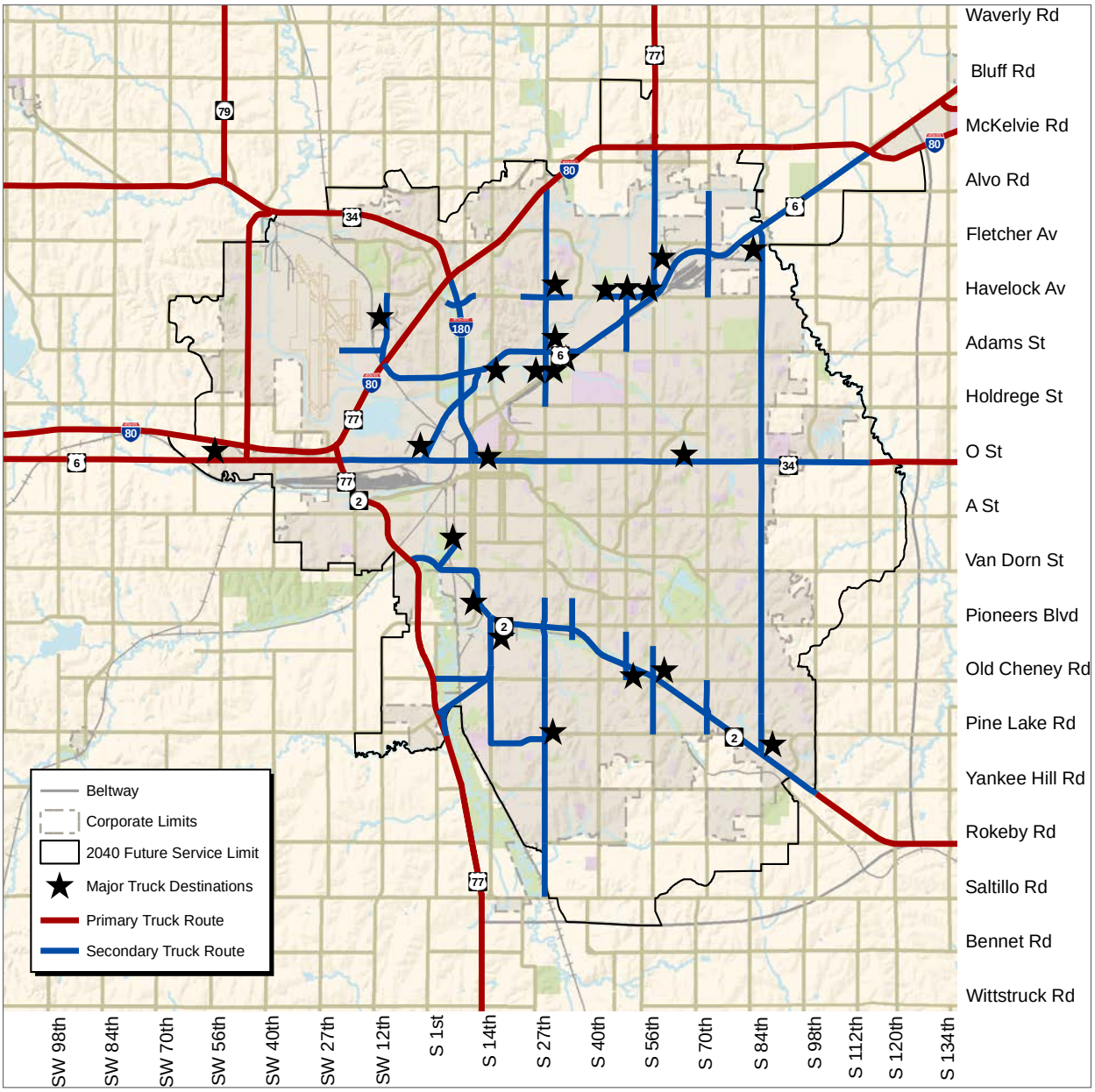
Existing Freight System

The movement of goods and freight into and out of the metropolitan area is critical to the economic health of the community. Goods and freight are currently transported throughout the City and County by road, rail, air, and pipeline. Trucking comprised the bulk of the freight movement services in the County in terms of employees, payroll, and number of establishments.

Truck Freight

Truck freight is the most visible, and most common, form of delivering goods to customers in Lincoln and Lancaster County. Activities generating high truck traffic— especially grain elevators and warehousing operations — were historically located on the periphery of the City. Many, if not most of these, have been absorbed into Lincoln as the City's corporate limits have been pushed out by growth. Today I-80, I-180, US-34, NE-2, NE-33, US-77, and US-6 all exhibit high commercial truck traffic.

A number of roadways have been designated as "Truck Routes." These roadways are built to a higher weight standard to accommodate heavy trucks. Turn radii and the heights of bridges and signs and other overhangs are designed to allow easy movement of large vehicles. They also provide identifying signage and direct routes through town or to commercial and/or industrial centers. Some truck routes may have special features, such as restricting trucks to the right lane to allow other

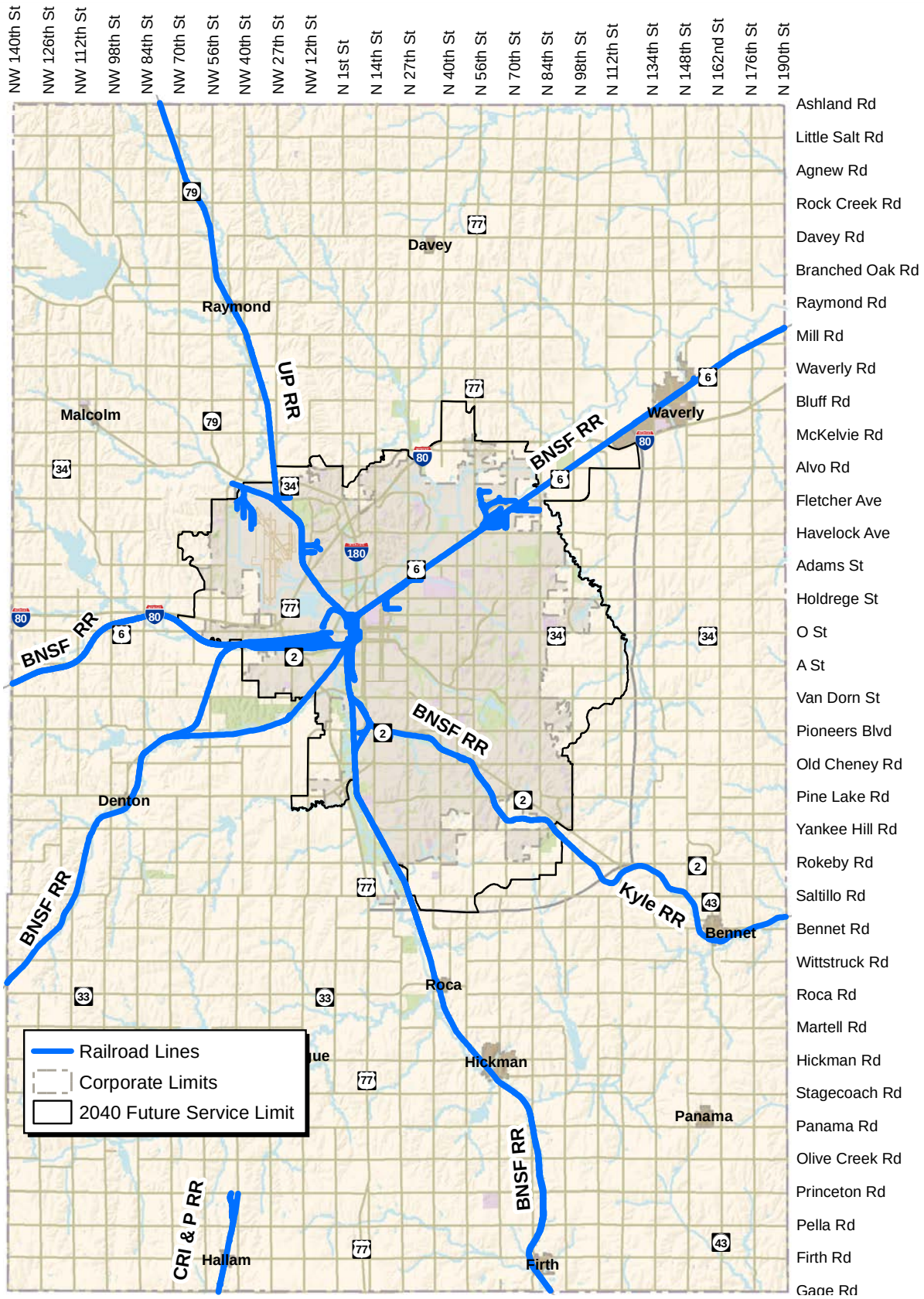


Map 4: Truck Routes

vehicles to use the left lane to accelerate from stop lights on Highway 2, that assists with the smooth flow of traffic and improve safety.

Rail Freight

The majority of rail freight originating in Lancaster County is heavy, bulky agricultural product. Grain elevators and mills within Lincoln and throughout Lancaster County serve as the primary customers of railroad transportation services. Nine grain elevators throughout Lancaster County and five in Lincoln are served by the BNSF Railway. Much of the other freight entering or passing through the County is coal headed for power plants.



Map 5: Existing Rail Lines

Air Freight

While the Lincoln Airport is the County's major air facility, Omaha's Eppley Airfield currently serves much of the air freight needs for Lincoln and Lancaster County. Air freight entering Lincoln Airport arrives through passenger service in small loads. United States Postal Service (USPS) mail is delivered to Lincoln through passenger service. USPS mail is not regularly shipped out of the Lincoln Airport, but rather it is trucked to Omaha's Eppley Airfield for processing. The majority of private parcel delivery service is also handled through Omaha's Eppley Airfield.

Pipeline Freight

There are 17 major pipelines in Lincoln and Lancaster County. The majority transport petroleum or natural gas products. One of the lines transports anhydrous ammonia, which is a product used in agricultural production. All of the pipelines are managed by four firms in Lancaster County.

Existing Rail System

The City and County are currently served by two Class I railroads and two Class III railroads - the mainline of BNSF Railway (Class I), a secondary branch line of the Union Pacific Railroad (Class I), Lincoln Lumber Railroad (Class III) and the Kyle Railroad (Class III) which operates a rail line in southeast Lancaster County via the Omaha Public Power District (OPPD) track from southeast Lincoln to Nebraska City. See Map 5: Existing Rail Lines.

Both freight and passenger rail services are offered in Lincoln and Lancaster County. Currently up to 80 trains a day travel east-west through the County. In recent years, railroads in Lincoln and Lancaster County have been affected by changes in the railroad industry and growth within the City.

The Railroad Transportation Safety District (RTSD), a countywide entity, was established in 1971 to fund transportation and safety improvements at railroad crossings. The funding mechanism provided by the RTSD allows for grade separation project to be built. Eliminating at-grade vehicular-train conflicts is a primary objective of LPlan 2040 through the RTSD. Removal of such conflicts will enhance safety, reduce delays, and improve emergency access to the surrounding neighborhoods. Current and recently completed safety projects include:

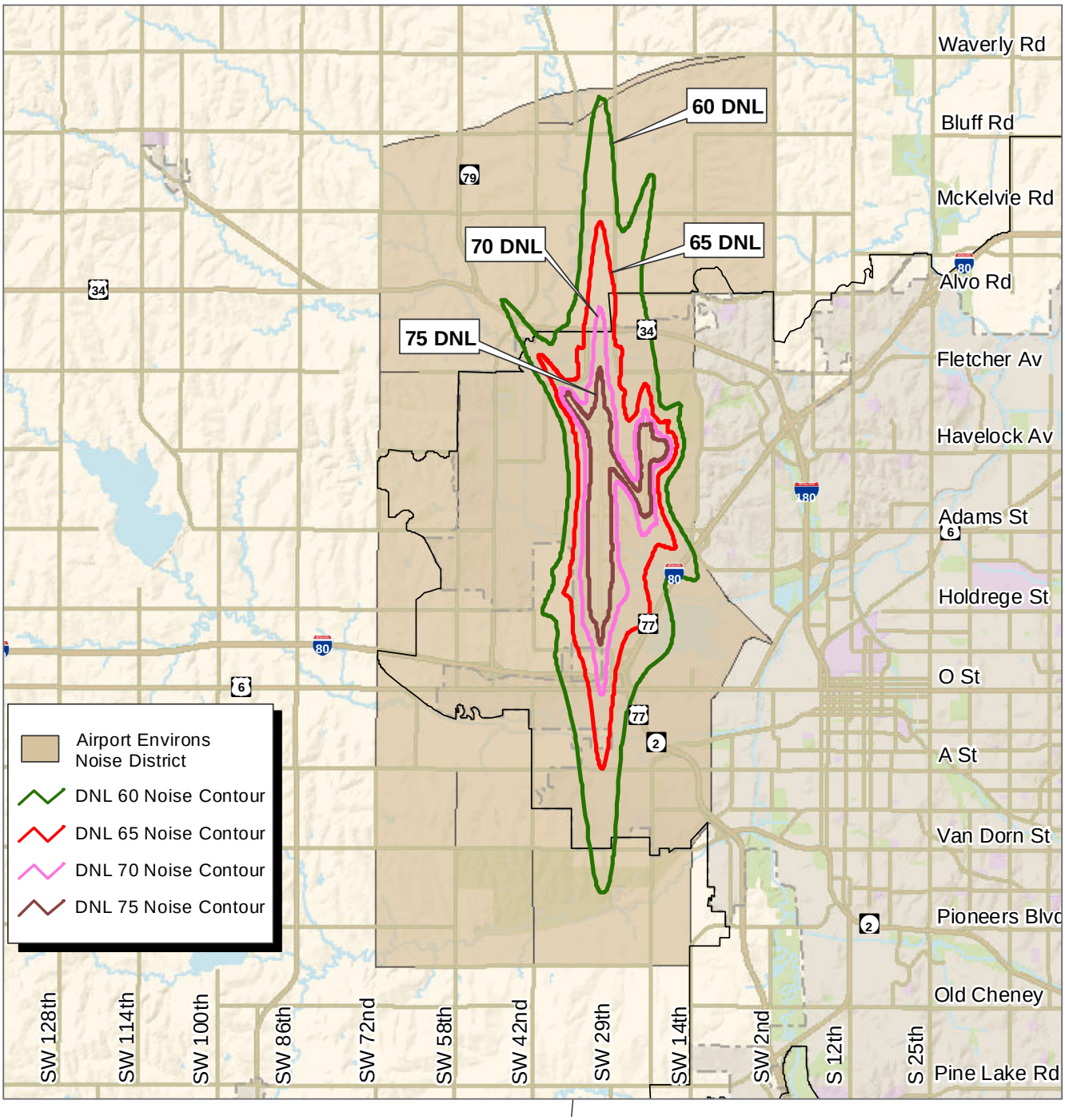
- The Antelope Valley roadway elevated intersection in the vicinity of N. 18th Street and State Fair Road (completed)
- SW 40th St Viaduct (completed)
- South 68th St, south of Hickman (completed)
- Quiet Zones in the South Salt Creek neighborhood from 1st and J St to 3rd and D St, and at 3rd and South St to 27th and Saltillo Rd.
- 33rd and Cornhusker Highway
- The City of Waverly is also designing a quiet zone from 141st St to 148th St.

Existing Airports and Airfields

The Lincoln Airport is the major air facility servicing Lincoln, Lancaster County and the region. It provides an important transportation link to national and international markets. It is located in the northwestern part of Lincoln, with access provided by Interstate and State highways.

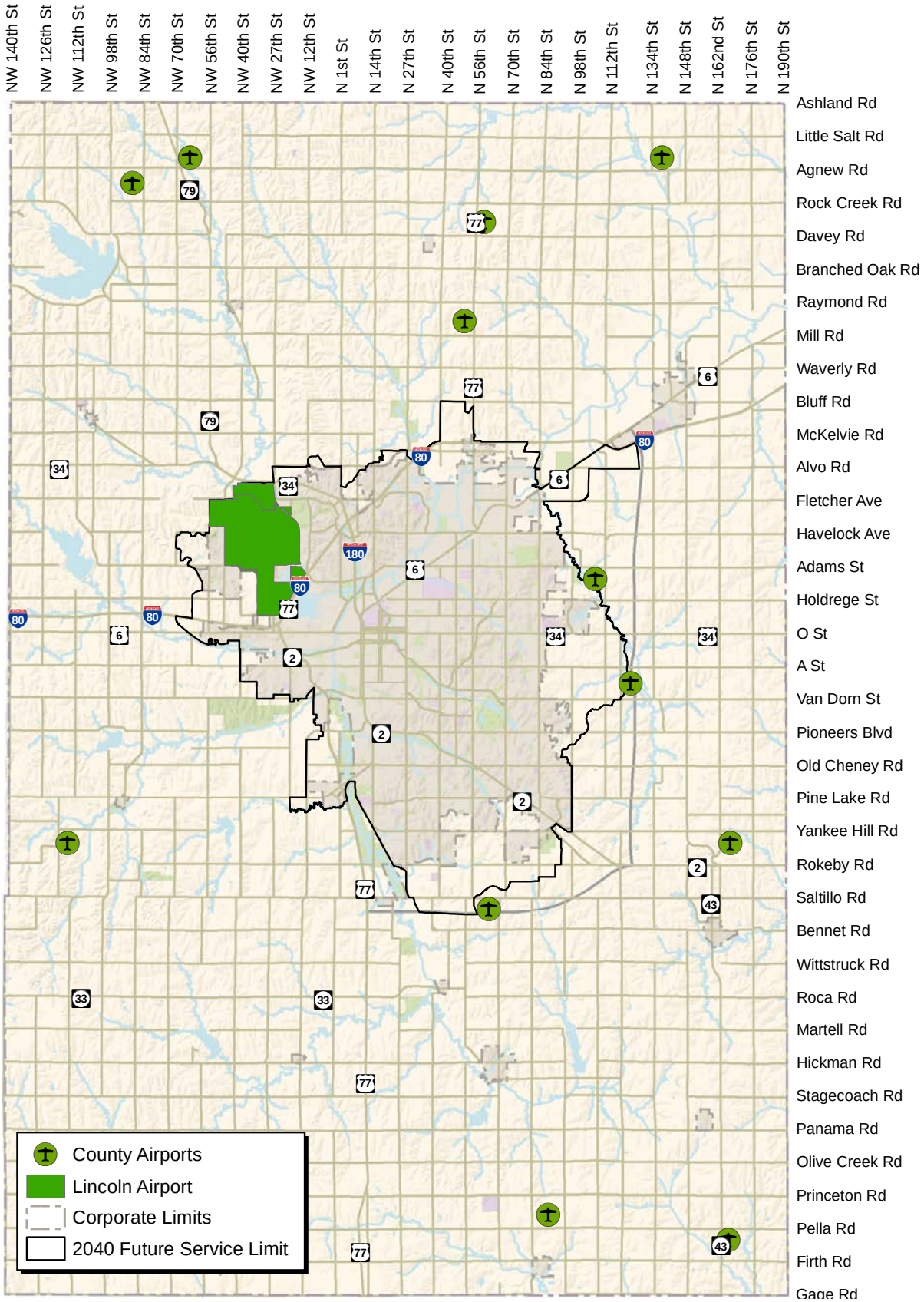
The City of Lincoln's Airport Environs Noise District (See Map 6: Airport Environs Noise District) and Airport Zoning Regulations have been established to ensure a balance between airport operations and the surrounding land uses. These regulations govern uses and structural characteristics compatible to the airport operations and minimize negative impacts on surrounding residents.

Smaller private airports and airfields are also located throughout the County. See Map 7: Airports & Airfields. The distinction between an airport and an airfield is generally the number of planes using the facility and who is allowed to use them. "Airfields" are limited to use by the residents of a single family home with not more than one plane. All other air facilities, including single family airfields which



Map 6: Airport Environs Noise District

accommodate guest planes or house more than one plane, are termed "airports." Within Lancaster County, airports and airfields are discouraged within close proximity to homes, schools, hospitals or other areas potentially sensitive to noise and restricted by zoning.



Map 7: Airports & Airfields

3. Outreach and Public Participation

As part of the 2040 Long Range Transportation Plan update, a public involvement and engagement effort was undertaken to guide the process of disseminating information and gathering input from the public. The public involvement process was developed from and consistent with the adopted MPO Public Participation Plan.

Many individuals and groups participated in the process through open houses, focus groups, websites, and surveys. The City of Lincoln and Lancaster County participated extensively in the development of the plan, as did the local transit agency (StarTran), NDOR, and many community-based organizations and advocacy groups representing the diverse interests of Lincoln and Lancaster County. Online tools proved to be the most effective in soliciting input in several different campaigns.

The Lincoln-Lancaster County Planning Commission operated under the Nebraska Open Meetings Law with posted agendas, public notice, open, accessible meetings, and minutes or other records of the discussions. The Planning Commission was an advisory body to the Director and the Planning Department as the Plan was drafted, supplementing but not supplanting the statutory duty of the Planning Commission to review and advise elected officials once the Plan was developed. The Planning Commission did vote early in the process on elements of the Plan regarding core assumptions, but the majority of the Planning Commission's role studied, analyzed, questioned and discussed the data, assumptions, and recommendations that make up the Plan. The Planning Commission met twelve times over a thirteen month time period to review information as it was developed.

The following is a list of groups and organizations to whom presentations were made or who were given information as part of their meetings: The Mayor's Pedestrian and Bicycle Advisory Committee (PBAC), Lincoln City Council, Lancaster County Board, StarTran Advisory Board, University of Nebraska-Lincoln (UNL) Campus Planning; the Mayor's Neighborhood Roundtable; Lincoln Public School's SPARKLY Committee; Lancaster County Ecological Advisory Committee; the Mayor's Environmental Task Force; International Facility Management Association (IFMA); Leadership Lincoln; and Lincoln Independent Business Association (LIBA).

Major Public Outreach Efforts

Throughout the planning process, materials were made available both in print and electronic format. The website created for the development of the 2040 LRTP was a major source of information for the public, with all materials from workshops, open houses, and advisory committee meetings posted. Public meeting flyers were distributed to participants of the January 2016 focus group meetings and were posted on the LRTP Update webpage. More than 1,800 email notifications were sent to individuals on the Lincoln Planning and Neighborhood email lists. The public meeting notices were posted in the local news section of the Lincoln Journal Star for five days before each meeting. A survey was open for two months to gather input on the public's transportation priorities. There were several points in the process where major effort was made to conduct specific public outreach activities.

Plan Launch

A Public Involvement Action Plan for the LRTP Update was drafted in October 2015, at the beginning of the update process. Public participation was integrated into the process to achieve two primary objectives: provide information and education for the general public on the need and components of the LRTP update process; and enable the public to inform the analysis,

prioritization and recommendation steps to create sustainable policy decisions. The goal of the Public Involvement Action Plan was to create public awareness, gain input for transportation system priorities, and build support for the recommended priority projects identified in the LRTP update. The Public Involvement Action Plan for the LRTP Update includes three phases of community outreach, each of which focuses on a key theme.

Phase 1: Transportation Needs

In January and February, 2016, eight focus group meetings with stakeholders representing various interests in the community were asked to identify current and future conditions, including deficiencies and problems, and solicit ideas for transportation improvements, goals, and objectives. A public meeting was held on February 18, 2016 asking the public similar questions that were posed to the focus groups and an online survey was made available to those that were unable to attend the public open house.

Phase 2: Understanding Priorities

During the second phase, input on investment priorities and project priorities was open to the public for input. A second open house was available on May 3, 2016, and an online survey was open for two months and completed by more than 820 community members. The input received during this community outreach phase was instrumental in understanding the community's transportation priorities and was integrated into the project prioritization process and the resource allocation scenarios.

Phase 3: Validating a Vision

The third phase of community outreach took place in fall 2016 and provided various opportunities for public feedback on the draft LRTP, including an online survey, public open house and public hearings.

4. Goals, Objectives, Performance Measures and Evaluation Criteria

Federal Planning Requirements

Several laws, regulations, and other documents at the federal level affect the development of the Long Range Transportation Plan by specifying regulations and guidance to be considered in the planning process or to be contained in the plan. These include FAST Act, existing and proposed metropolitan planning regulations, management and monitoring system regulations, Executive Order 12898 on Environmental Justice, the Americans with Disabilities Act, and a variety of others.

There are many environmental, funding, infrastructure, modal, safety, and other transportation-related provisions in this legislation. These provisions also require that the process for developing transportation plans provide for consideration of all modes, and is "continuing, cooperative, and comprehensive" to the degree appropriate.

Goals, Objectives, And Evaluation Criteria

The seven goals developed for the 2040 Long Range Transportation Plan are primarily aligned with national goals and federal planning factors. These goals were presented to the public for input regarding their relative importance. The Planning Commission and LRTP Oversight Committee then used that input and developed a weighting system for the goals, which were used as a multiplier in the initial evaluation of each project.

The correlation between these goals and the federal planning factors is further explained in the Technical Report on page 57. Under MAP-21 and FAST Act, performance-based planning was established.

Performance-based planning affords a structure for this LRTP to ensure that scarce resources are used effectively and equitably. The community values of transportation are woven into the goals, objectives, performance measures, and ultimately, evaluation criteria, used to identify high-priority transportation projects. The LRTP is based on a set of goals intended to implement the vision and support the transportation needs and community values.

Objectives, Performance Measures and Evaluation Criteria

The transportation goals listed below were used in the evaluation of projects during the prioritization process, which is explained in more detail in the section ahead on the Fiscally Constrained Transportation Plan. During the public process, in order to more fully explain the intention of each goal, more descriptive objectives were developed and provided. Evaluation criteria were then developed that defined parameters for a high (3), medium (2), or low (1) rating. Using these parameters, project evaluations were conducted by technical staff to develop evaluation scores for both roadway projects and trail projects. The goal weights described earlier were then multiplied by the evaluation score and a total project score was calculated. Projects were sorted from highest to lowest project score to form an initial list of prioritized projects for further analysis.

Below is a list of each Goal with an explanation of the intent. For a complete description of the seven goals, including objectives, performance measures and evaluation criteria used, see the Technical Report on page 57 and Appendix F.

Maintenance Goal: A well-maintained transportation system. (Weight : Roadway 18.8; Trail 14.8)

As the transportation system ages, increased funding is required for maintenance. There is often competition between funding for new projects and funding for the maintenance and operation of the existing system. Reductions in maintenance funding today lead to higher costs in the future. Constructing new roads increases future maintenance costs as the new facilities age.

Mobility and System Reliability Goal: An efficient, reliable, and well-connected transportation system for moving people and freight. (Weight: Roadway 17.7; Trail 21.7)

An efficient system allows people to move from place to place in as direct a route as possible, allowing them to reduce the amount of time spent in travel, the distance that must be traveled, and the amount of time spent in congested traffic. A transportation system that performs well allows users to choose multiple transportation modes and to move through those modes in an efficient and safe manner.

Livability and Travel Choice Goal: A multimodal system that provides travel options to support a more compact, livable urban environment. (Weight: Roadway 14.2; Trail 19.2)

The availability of a wide variety of mobility options, such as walking, biking, transit, and driving, is critical to maintaining or improving the quality of life for residents. Connectivity between travel modes is important to enable a seamless transition

Transportation Goals

Goal 1: Maintain the existing transportation system to maximize the value of these assets.

Goal 2: Improve the efficiency, performance and connectivity of a balanced transportation system.

Goal 3: Promote consistency between land use and transportation plans to enhance mobility and accessibility.

Goal 4: Provide a safe and secure transportation system.

Goal 5: Support economic vitality of the community.

Goal 6: Protect and enhance environmental sustainability, provide opportunities for active lifestyles, and conserve natural and cultural resources.

Goal 7: Maximize the cost effectiveness of transportation.

between modes. Higher densities that encourage alternative travel modes can also help to maximize use of existing infrastructure.

Safety and Security Goal: Provide a safe and secure transportation system. (Weight: Roadway 15.4; Trail 15.9)

The safety and security of our transportation system for motorized and non-motorized users are of critical importance. Visibility, access control, and separation of incompatible modes, either through buffers or grade separations, are some of the methods that can be employed to decrease conflicts and increase comfort. Security devices at key facilities, such as bus stops and trail head facilities, increase the safety and security of users.

Economic Vitality Goal: A transportation system that supports economic vitality for residents and businesses. (Weight : Roadway 11.2; Trail 7.4)

Economic vitality requires that many characteristics beyond transportation facilities be present, including a low cost of doing business, availability and access to technology, an educated and skilled workforce, choice of housing types, high quality schools, low municipal and state debt, and other less tangible qualities. A good transportation system, which includes transit, vehicle, freight, air, non-motorized and rail modes all integrated with land use, can help contribute to these factors.

Environmental Sustainability Goal: A transportation system that enhances the natural, cultural and built environment. (Weight: Roadway 11.3; Trail 12.4)

Environmental stewardship of the natural environment and the cultural and built environment is a priority in the Federal transportation legislation and for the Lincoln MPO. Fossil fuels are limited in supply, and their burning has many effects on the environment, including increased greenhouse gases, particulate matter, and effects on global warming. Transportation projects in new areas often cross water ways, disturb land, and cut through tree masses. It is important, whenever possible, to avoid these resources or to mitigate their disturbances. Preserving the value and character of existing neighborhoods is also an important consideration, and particular attention shall be paid where a large portion of the population belongs to traditionally under-represented groups.

Funding and Cost Effectiveness Goal: Collaboration in funding transportation projects that maximize user benefits. (Weight: Roadway 11.5; Trail 8.6)

Public funding, both locally and nationally, for transportation facilities is extremely tight. Public and private groups have expressed the desire to see funds spent in the most efficient way possible. A successful transportation network comes from public, private, and nonprofit entities working together to achieve mutually beneficial goals. The Lincoln MPO seeks to explore creative options to fund high-priority transportation projects.

5. Planning for the Transportation Needs of 2040

The Future Land Use Plan from LPlan 2040 is the basis for transportation planning in the County. This plan defines the extent of the urban area that is expected by the year 2040, and what land uses are anticipated with the new growth area. It also defines the number of expected new dwelling units and where those units will be located. The purpose of the LRTP, then, is to support these land uses and provide transportation alternatives that will increase the mobility, safety and livability of the community.

The 2040 Needs Based Plan

The Needs Based Plan identifies current and future programs and projects in the transportation system that would be necessary to address all the transportation needs of Lincoln and Lancaster

County through 2040. Current and future needs and candidate projects for the transportation system have been compiled from a variety of sources that include; 1) Current planning studies, 2) MPO planning committees, 3) MPO technical tools (i.e.; updated 2040 Travel Demand Model, GIS analysis and engineering studies), and 4) Community input through Focus Group meetings, public meetings, and online surveys.

The transportation needs cover all modes of surface transportation: roadway, transit, bicycling, walking, and rail (specifically the railroad crossing needs). The current and future needs help to define a Needs Based Plan for the Lincoln MPO. This includes the transportation projects that could be constructed and programs that could be implemented to realize the transportation vision, if funding limitations were not a consideration. The needs-based plan includes more than $1.2 billion in roadway capital projects and more than $40 million in trail projects, among other needs.

Cars and trucks will continue to be the primary mode of travel for Lincoln and Lancaster County residents throughout and beyond the planning period of this Plan. These vehicles depend upon the expansion and continued maintenance of a street and road network allowing ease of mobility throughout the region. Although investment in other modes of transportation may decrease reliance on the automobile, streets and highways will continue to form the backbone of the entire region's transportation system.

The primary responsibility of the Long Range Transportation Plan is the operation and maintenance of the new and existing street and roadway system. Maintenance was identified as the number one priority through the public input process. Without regular maintenance, monitoring the functionality of the existing system, and implementation of lower cost improvements designed to alleviate congestion, the addition of new roads would provide only localized improvements to the overall functionality of the system.

Urban Street Network — 2040 Needs

The long range program for improving the urban area street system is detailed below. This effort involves numerous projects and studies taking many years and costing millions of dollars to complete. Close planning and coordination among various Federal, State and local government agencies and departments will be needed. The planned future urban area street system is comprised of the following elements:

- Roadway Operations, Maintenance and Rehabilitation
- Urban Capital Roadway Projects
  - Developer Commitments
  - Committed Roadway Projects
  - Controlling Roadway Cost
  - South and East Beltways
  - Nebraska Highway 2
  - Intersection Capacity and Safety Projects
  - Two Plus Center Turn Lane Projects
  - Intelligent Transportation Systems and Technology
  - Railroad Crossing Improvements
  - Right-of-Way Considerations
  - Congestion Management Process
  - Alternative Transportation Modes and Complete Streets
  - Travel Demand Management Techniques

Roadway Operations, Maintenance and Rehabilitation

This category includes ongoing maintenance requirements (e.g., snow removal, street sweeping,

stormwater management, and pothole repair) to keep the transportation system functional. The City of Lincoln has pursued innovation and the use of technology advances to make efficient use of available resources.

The City of Lincoln's rehabilitation program includes residential streets, arterials, bridges, and traffic signals. Past funding for the rehabilitation program has not kept up with the need. Roadway rehabilitation is an important topic for Lincoln and Lancaster County. Rehabilitation of roadways is needed when the condition of the roadway requires attention beyond the routine maintenance provided through the Operations Program. There are varying levels of rehabilitation from pavement overlays to a complete rebuild of the roadway. In general, the former is less expensive and can delay the need for the latter. A regular system of sealing and minor repair results in fewer roads in need of major repair and a higher overall level of service. An investment in roadway rehabilitation when roads are still in good condition can mean significant savings and keeps facilities from falling into poor condition.

This program is challenged in many ways. Inflation of project costs over the last several years has outpaced the growth in revenue available. The lane-miles of roadway have been increasing much faster than the budget. State gas taxes, a major source of revenue, have not been growing to keep pace as people react to higher gas prices by reducing trips and purchasing more fuel efficient vehicles.

The City's target is to rehabilitate five percent of the arterial street system each year and three percent of the residential street system. That is, each arterial street would be rehabilitated once every 20 years, and each residential street would be rehabilitated once every 33 years. The costs associated with this goal will increase as the system ages, as the community grows and adds miles of streets to be maintained, and as construction costs increase over time.

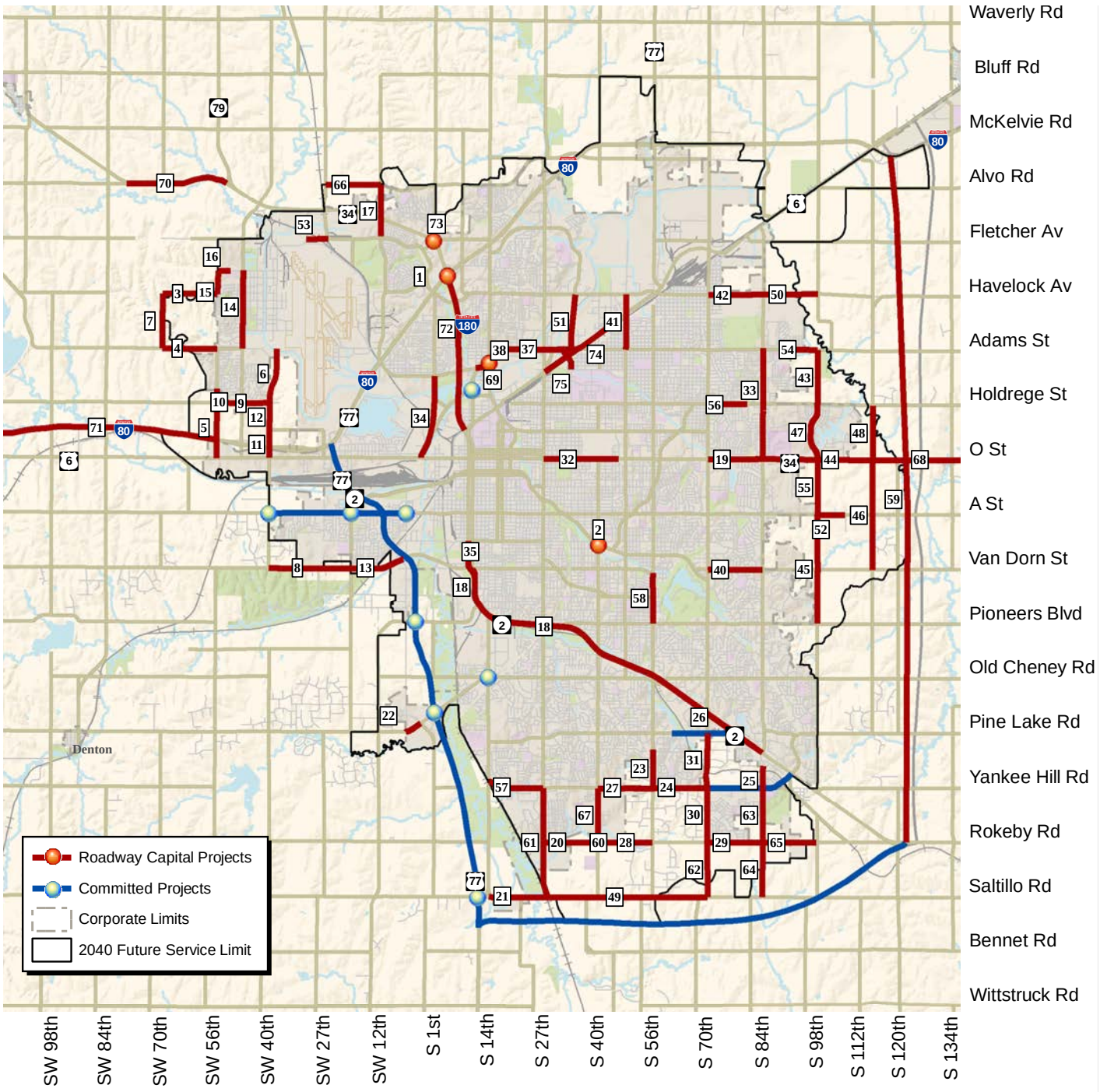
Urban Capital Roadway Projects

The capital roadway projects resulting from this evaluation are shown on Map 8: Candidate Roadway Capital Projects and listed in Table 1: Candidate Roadway Capital Projects. Each of these projects is considered a need by 2040, but not all of them can be funded given current funding constraints. The Fiscally Constrained Transportation Plan in Section 6 uses this list of projects to develop a prioritized list of capital roadway projects that can be afforded with current revenue sources. Those projects identified as Illustrative/Unfunded are those that cannot be constructed unless additional revenue is found.

These capital projects include major widening projects, new/reconstructed interchanges and major intersection projects, construction of the East Beltway, urban improvement projects (bringing rural roads to two lane urban standards), and other corridor improvements. These projects cumulatively would address the future congestion problems identified in the LRTP Technical Report (Chapter 3) and beyond.

Developer Commitments

As the City grows, new roads must be built to meet the projected needs of growing areas. In some cases new development is proposed that requires infrastructure not planned for at the time it was requested. In certain cases, special agreements have been entered into that commit the City to repay developers within a time period for funding the construction of road improvements. The City will honor these agreements and is committed to participation in the funding of those improvements that have been and are expected to be constructed in the early part of the planning period. In the future, the City will consider supporting new requests for repaying developers. Other future developer agreements may impact the timing and priority of roadway capital projects. Additional growth related improvements that are not covered yet will be a challenge to meet the needs for the transportation network.



Map 8: Candidate Roadway Capital Projects

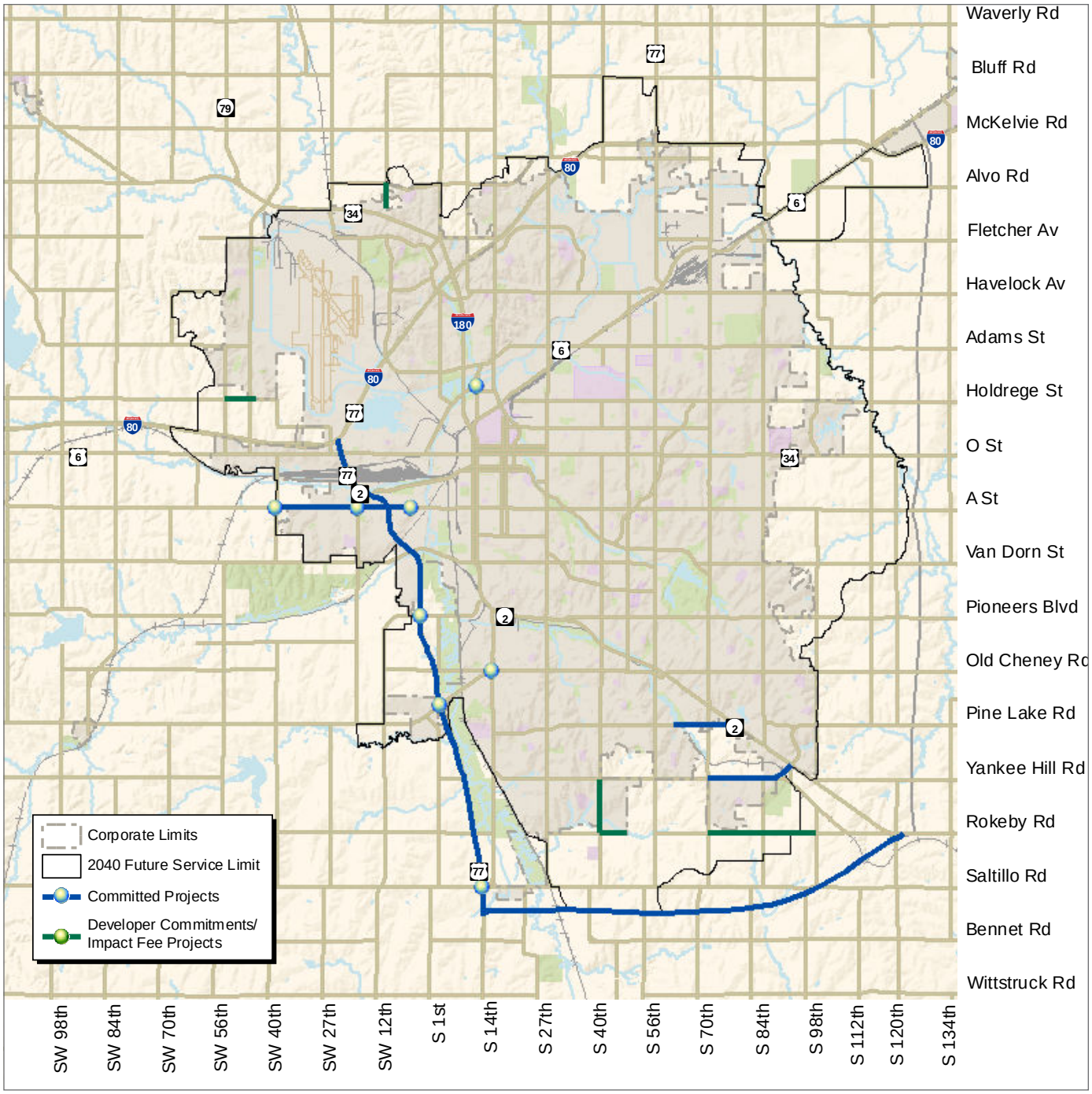
Table 1: Candidate Roadway Capital Projects

Project ID	Street Name	Limits	Description	Lead Agency	Project Cost (2016 $)
1	I-80	I-80 and I-180	Major interchange work	State	$41,000,000
2	S. 40th St	Normal Blvd and South St	Major intersection area work	Local	$8,600,000
3	W. SUPERIOR St	NW 70th Street to NW 56th Street	2 lanes + intersection improvements	Local	$7,400,000
4	W. ADAMS St	NW 70th Street to NW 56th Street	2 lanes + intersection improvements	Local	$7,000,000
5	NW 56TH St	W. Partridge Lane to W. "O" Street	2 lanes + intersection improvements	Local	$6,600,000
6	NW 38TH St	W. Adams Street to W. Holdrege Street	2 lanes + intersection improvements	Local	$6,000,000
7	NW 70TH St	W. Superior Street to W. Adams Street	2 lanes + intersection improvements	Local	$7,000,000
8	W. VAN DORN St	SW 40th Street to Coddington Avenue	2 lanes + intersection improvements	Local	$10,500,000
9	W. HOLDREGE St	NW 48th Street to NW 40th Street	2 lanes + intersection improvements	Local	$3,900,000
10	W. HOLDREGE St	NW 56th Street to NW 48th Street	2 lanes + intersection improvements	Local	$3,100,000
11	NW 40TH St	W. Vine Street to US-6, including I-80 Overpass	Overpass	Local	$11,500,000
12	NW 40TH St	W. Holdrege Street to W. Vine Street	2 lanes + intersection improvements	Local	$3,500,000
13	W. VAN DORN St	Coddington Avenue to US-77	2 lanes + intersection improvements	Local	$6,000,000
14	NW 48TH St	Adams Street to Cuming Street	2 lanes + intersection improvements	Local	$10,300,000
15	NW 56TH St	W. Cuming Street to W. Superior Street	2 lanes + intersection improvements	Local	$3,200,000
16	W. CUMING St	NW 56th Street to NW 52nd Street	2 lanes + intersection improvements	Local	$1,800,000
17	NW 12TH St	W. Alvo Road to Fletcher Avenue, US 34 Overpass	2 lanes + int. impr. + overpass	Local	$11,500,000
18	NEBRASKA HWY 2	Van Dorn Street to Old Cheney Road	6 lanes + intersection improvements	Local	$15,900,000
19	O St (US-34)	Wedgewood Drive to 98th Street	6 lanes + intersection improvements	Local	$28,000,000
20	ROKEBY Rd	S. 27th Street to S. 40th Street	2 lanes + intersection improvements	Local	$7,000,000
21	SALTILLO Rd	S. 14th St to S. 27th St	2 lanes + intersection improvements	Local	$8,200,000
22	DENTON Rd	Amaranth Ln to S. Folsom St	2 additional lanes	Local	$4,000,000
23	S. 56TH St	Thompson Creek Boulevard to Yankee Hill Road	4 lanes + intersection improvements	Local	$7,400,000
24	YANKEE HILL Rd	S. 56th Street to S. 70th Street	2 lanes + intersection improvements	Local	$7,000,000
25	S. 84TH St	Amber Hill Road to Yankee Hill Road	4 lanes + intersection improvements	Local	$4,300,000
26	NEBRASKA HWY 2	Old Cheney Road to S. 84th Street	6 lanes + intersection improvements	Local	$30,100,000
27	YANKEE HILL Rd	S. 40th Street to S. 56th Street	2/4 lanes + intersection improvements	Local	$10,200,000
28	ROKEBY Rd	S. 48th Street to S. 56th Street	2 lanes + intersection improvements	Local	$7,000,000
29	ROKEBY Rd	S. 70th Street to S. 84th Street	2 lanes + intersection improvements	Local	$7,400,000
30	S. 70TH St	Yankee Hill Rd to Rokeby Rd	2 lanes + intersection improvements	Local	$4,800,000
31	S. 70TH St	Pine Lake Road to Yankee Hill Road	4 lanes + intersection improvements	Local	$10,500,000
32	O St (US-34)	Antelope Valley N/S Rdwy. (19th St.) to 46th Street	6 lanes + intersection improvements	Local	$27,300,000

Continued on next page

Table 1: Candidate Roadway Capital Projects (cont'd)

Project ID	Street Name	Limits	Description	Lead Agency	Project Cost (2016 $)
33	N. 84TH St	O Street to Adams Street	6 lanes + intersection improvements	Local	$28,500,000
34	US-6 (SUN VALLEY)	Corn. Hwy (US-6) to W. O St.(US-6)	4 lanes + turn lanes	State	$16,000,000
35	S. 9TH St	Van Dorn St to South St	3 lanes + intersection improvements	Local	$3,500,000
37	CORNHUSKER (US-6)	N. 20th Street to N. 33rd Street	6 lanes + intersection improvements	Local	$16,800,000
38	CORNHUSKER (US-6)	N. 11th St to N. 20th St	6 lanes + intersection improvements	Local	$18,200,000
40	VAN DORN St	S. 70th Street to S. 84th Street	4 lanes + intersection improvements	Local	$10,200,000
41	N. 48TH St	Adams St to Superior St	4 lanes + intersection improvements	Local	$12,400,000
42	HAVELOCK Ave	N. 70th Street to N. 84th Street	2 lanes + intersection improvements	Local	$6,300,000
43	N. 98TH St	Adams Street to Holdrege Street	2 lanes + intersection improvements	Local	$8,000,000
44	O St (US-34)	84th Street to 120th Street	4 lanes + intersection improvements	State	$14,000,000
45	S. 98TH St	A Street to Pioneers Boulevard	4 lanes + intersection improvements	Local	$21,000,000
46	S. 112TH St	US-34 to Van Dorn Street	2 lanes + intersection improvements	Local	$14,000,000
47	N. 98TH St	Holdrege St to O St	Additional 2 lanes	Local	$5,400,000
48	N. 112TH St	Holdrege Street to US-34	2 lanes + intersection improvements	Local	$9,100,000
49	SALTILLO Rd	27th Street to 70th Street	2 lanes + intersection improvements	Local	$21,000,000
50	HAVELOCK Ave	N. 84th St to N. 98th St	2 lanes + intersection improvements	Local	$7,000,000
51	N. 33RD St	Cornhusker Hwy to Superior St	4 lanes + int. impr. & bridge	Local	$31,000,000
52	A STREET	S. 98th St to 105th St	2 lanes + intersection improvements	Local	$3,500,000
53	W. FLETCHER Ave	NW 31st St to NW 27th St	2 lanes + intersection improvements	Local	$3,200,000
54	ADAMS St	N. 90th St to N. 98th St	2 lanes + intersection improvements	Local	$4,200,000
55	S. 98TH St	US 34 (O St) to A St	4 lanes + intersection improvements	Local	$10,500,000
56	HOLDREGE St	N. 70th St to N. 80th St	4 lanes + intersection improvements	Local	$7,900,000
57	YANKEE HILL Rd	S. 14th St to S. 27th St	Additional 2 lanes	Local	$4,000,000
58	S. 56TH St	Van Dorn St to Pioneers Blvd	4 lanes + intersection improvements	Local	$10,500,000
59	EAST BELTWAY	Nebraska Hwy 2 to I-80	New 4 lane divided highway	Local	$247,000,000
60	ROKEBY Rd	S. 40th St to S. 48th St	2 lanes + intersection improvements	Local	$3,500,000
61	S. 27TH St	Yankee Hill Rd to Saltillo Rd	2 lane realignment + int. impr.	Local	$14,000,000
62	S. 70TH St	Rokeby Rd to Saltillo Rd	4 lanes + intersection improvements	Local	$10,500,000
63	S. 84TH St	Yankee Hill Rd to Rokeby Rd	4 lanes + intersection improvements	Local	$10,500,000
64	S. 84TH St	Rokeby Rd to Saltillo Rd	4 lanes + intersection improvements	Local	$10,500,000
65	ROKEBY Rd	84th St to 98th St	2 lanes + intersection improvements	Local	$5,000,000
66	W. ALVO Rd	NW 27th Street to Tallgrass	2 lanes + intersection improvements	Local	$8,400,000
67	S. 40TH St	Yankee Hill Rd to Rokeby Rd	2/4 lanes + intersection improvements	Local	$8,800,000
68	O St (US-34)	120th Street to east county line	4 lanes + intersection improvements	State	$29,000,000
69	N. 14TH St	US-6 Cornhusker Highway	Interchange	Local	$15,300,000
70	US 34	N79 to Malcolm Spur	4 lanes + intersection improvements	State	$12,000,000
71	I-80	Pleasant Dale to NW 56th Street	6 lanes + bridges	State	$76,000,000
72	I-180	I-80 to US-6	Reconstruction + bridges	State	$40,100,000
73	US 34	US 34 and Fletcher Ave	New interchange	State	$25,000,000
74	N. 33RD St	N. 33rd/Cornhusker/Adams/Fremont	Grade Separated RR Crossings	Local RTSD	$80,000,000
75	SALT CREEK RDWY	State Fair Park Dr to Cornhusker Hwy	6 lanes +intersection improvements	Local (City)	$26,000,000



Map 9: Committed Roadway Projects

Committed Roadway Projects

Committed roadway projects as shown on Map 9: Committed Roadway Projects include the road segments that are part of the Developer Commitment projects that have not yet been constructed, urban area rural paving projects that have been coordinated with the County Engineer's Office, and funded urban and State projects that are scheduled to be constructed or are underway.

Controlling Roadway Costs

In developing the remaining future roadway system, consideration of the limits of the capital budget and the needs of the future population were considered. A valuable tool in the development of the system

was the work of the Mayor's Road Design Task Force. This 14 member committee appointed by the Mayor of Lincoln was charged with developing a strategy for addressing the near term roadway funding challenges of the time. Among other findings, the Task Force recommended the City consider extended life for rural paved roadways, simplified road designs, and building roads initially to meet the demand of the immediate future, rather than traffic volumes that may not exist for decades. An updated look at this strategy would be useful to ensure the current development needs are being addressed with cost factors constrained.

In addition to the Highway 2 corridor, several roadway corridors were originally contemplated as six-lane (or four-lane) major widening projects. However, an alternative approach to major widening is recommended for these corridors. This approach would focus on traffic signal coordination and intersection improvements. By applying this alternative approach to these corridors, the limited funding available for roadway capital projects can be stretched to address the congestion needs on more corridors.

The Needs Based Plan reflects this philosophy by including roadway designs that are scaled back, compared to the 2030 LRTP, to the projected traffic demands of year 2040. In some cases this means that existing pavement, such as the asphalt paving on Saltillo Road in southwest Lincoln, would remain (and be maintained) to serve the future population through 2040 along with safety improvements. However, acquisition of right-of-way should still occur with development to plan for the full build-out of the roadway beyond 2040.

The result of this approach in planning for future roads is a system that attempts to provide paved roadways to all areas of the future service limit and minimizes the level of congestion in the road system while keeping costs as low as possible.

South and East Beltways

The South and East Beltways have long been projects included in the Lincoln and Lancaster County Comprehensive Plan. Together with the West Bypass/US Highway 77 and Interstate 80, they would form a beltway loop around the City of Lincoln. These roadways provide alternative routes for traffic traveling around the City of Lincoln, particularly interstate truck traffic. The safety benefits of removing this type of traffic from 84th Street, NE Highway 2, and 148th Street, which also serve as major intercity traffic routes, are very important. Protecting the beltway corridors, acquiring the right-of-way, and obtaining funding has begun for these routes. The South Beltway is a $297.315 million State project that is in the State's programmed budget. The State has completed preliminary engineering and done some level of work with landowners within the planned corridor. With the passage of the Build Nebraska Act (LB 84) during the 2011 State legislative session, road funding for the State's expressway system became available beginning in 2013.

The East Beltway remains a local project at this time with no state or federal funding available to assist. The price tag for construction of this project does not justify this being solely a local project. At this time, the City and County should continue to fund a program for protecting the corridor where the future East Beltway is planned. However, no funding is shown at this time for construction of this project. Continued evaluation of this corridor is important in order to identify any change in its priority.

Nebraska Highway 2

One of the largest roadway projects in the capital road program is the Highway 2 corridor project. A Planning and Environmental Linkages (PEL)

study from Van Dorn Street to Old Cheney Road is expected to be undertaken within the first five years of the plan to determine how best to improve this important facility. A study should be completed within five years of the adoption of this plan to determine the utility of implementing technological advancements concentrating improvements at the major intersections along Highway 2 (14th Street, 27th Street, 40th Street, 48th Street, 56th Street/ Old Cheney Road), or to construct the full widening to 6 lanes along the entire length of the corridor. Included in this study should be consideration of impacts to and conflicts with the rail line that runs along the south side of Highway 2. Also needed is a phasing plan based on the recommended improvements.

Intersection Capacity and Safety Projects

The roadway capital project list focuses on larger projects. Intersections are where much of current and future congestion and most vehicular crashes occur. The City of Lincoln Public Works and Utilities Department regularly works to identify intersection improvements to address high-priority congestion and safety needs. An intersection improvement project could include additional right or left turn lanes, intersection geometric modifications, and signal modifications or roundabout construction. Intersection capacity and safety improvements are an integral part of the region's ongoing Congestion Management Process.

Two Plus Center Turn Lane Projects

The Two Plus Center Turn Lane Program, or "2 + 1" program, has been a very successful strategy by increasing the capacity of a two-lane roadway by approximately 50 percent and minimizing traffic congestion while improving safety and preserving the character and viability of the established neighborhoods and other components of the built environment. The City of Lincoln has been adding a center left turn lane as part of programmed street rehabilitation along two-lane minor arterials and some collectors.

Table 8 in Section 6 lists the remaining 14 miles of two plus center turn lane projects estimated to cost approximately $45 million in 2016 dollars.

Intelligent Transportation Systems and Technology

A goal of the Lincoln MPO is to advance the development and application of Intelligent Transportation System (ITS) technologies across the region, which will increase highway safety, mobility, security, economic health and community development, while preserving the environment.

ITS technologies are cost effective and relatively quick to deploy. Solutions like synchronized or adaptive traffic signals, vehicle to infrastructure technologies, and vehicle to vehicle technologies are intended to avoid motor vehicle crashes and enable a wide range of other safety, mobility, and environmental benefits. The application of connected vehicles addressed the unique needs and properties of all vehicles, operations, institutions, and travelers.

Federal Regulations require local communities consider and include ITS applications in their transportation planning process. This mandate has been carried forward by the Lincoln MPO in the Long Range Transportation Plan, and continues to implement the Southeast Nebraska Regional ITS Architecture (2005). This is also a guide for ITS planning in the deployment new technologies in the Green Light Lincoln Program.

The new system operations technologies being implemented in the Green Light Lincoln Program is expected to result in significant improvements to the overall traffic signal system and several projects with high benefit/cost ratios. Benefits of

this initiative is expected to result in reduced travel times, delays, and stops, lower levels of vehicle emissions, reduced fuel consumption, fewer crashes and improved traffic flow. Additional cost savings are in reduced driver frustration and fewer major street widening projects.

Green Light Lincoln will require many upgrades to, or complete replacement of, the existing traffic signal system and equipment. Key components include:

- New signal system management software and hardware
- New intersection detection systems
- New signal displays and signal phasing alternatives
- ITS deployment
- Corridor signal optimization (re-timing) program
- Traffic monitoring and incident management capability improvements

To accomplish this, ITS technology can be used to assist in delivering and disseminating real time data on the conditions of traffic flow that can then be shared and used by motorists and the proper authorities to effectively address changing conditions on the streets. One of the greatest benefits is the safe, secure and continuous movement of people and goods during emergencies that depends upon well-coordinated system operations. Applicable ITS technologies is expected to be of enormous benefit, particularly when they are integrated with the information and communication systems of our public safety agencies.

Railroad Crossing Improvements

The City and County are served by both freight and passenger rail service. While the railroad lines through Lincoln and Lancaster County are critically important to the local economy, many of the railroad crossings with the street network are at-grade resulting in safety problems and travel delays. Continuous study and analysis of potential projects that will reduce rail/vehicular/pedestrian conflicts at street crossings should continue. The availability of Railroad Transportation Safety District (RTSD) and State Train Mile Tax revenue should allow for appropriate railroad related projects to be funded throughout the 2040 planning period. The needs based plan for railroad crossings analyzed the addition of crossing gates and flashers at at-grade railroad crossings, railroad crossing surface upgrades, pedestrian and bicycle crossings, as well as grade separations as listed on page 50 of the Technical Report.

The Lincoln/Lancaster County Railroad Transportation Safety District (RTSD) identifies railroad crossings in need of work, prioritizes projects, and conducts studies to plan future work. Currently, there are 12 at-grade crossings THAT qualify for construction of grade separated crossings, listed in Table 2.

Table 2: At-Grade Railroad Crossings

Street Crossing	BNSF Subdivision	Daily Exposure (Vehicles x Trains)
Adams Street	Creston	708,500
N. 33rd Street	Creston	604,500
Old Cheney Rd.	St. Joseph	558,140
N. 70th Street	Creston	385,450
Saltillo Road	St. Joseph	341,291
South Street	St. Joseph	215,000
Pioneers Blvd.	St. Joseph	136,310
S. 14th Street	St. Joseph	102,942
N. 44th Street	Creston	97,500
Hickman Rd.	St. Joseph	91,805
W. A Street	Hastings	91,000
N. 148th Street	Creston	87,750

N. 33rd & Cornhusker Subarea and Corridor Enhancement Plans

In 2017, following completion of the Planning and Environmental Linkages Study, the Lincoln/Lancaster County Railroad Transportation Safety District and City of Lincoln decided that prior to any major transportation investments, the subarea

around N. 33rd Street and Cornhusker Highway should be analyzed more comprehensively so that any transportation changes would align with the future vision of the subarea. To determine this vision, a community-consensus built subarea planning process was undertaken. The subarea planning process analyzed the following:

- land uses;
- zoning;
- utilities and infrastructure;
- transportation routes (transit, rail, bicycles, pedestrians, and automobiles);
- market-supported economic development opportunities;
- parks and open space enhancement opportunities; and,
- aesthetic, urban design, market, and environmental conditions

The Subarea Plan addresses the opportunities, constraints, and issues discovered through analysis of existing conditions and incorporates the visions, goals, and guiding principles as determined during the extensive online and in-person public engagement process. The plan sets forth land use and zoning, development and redevelopment, transportation, aesthetics and urban design, and sustainability recommendations for the subarea within Northeast Lincoln.

The Subarea Plan was created in conjunction with a Corridor Enhancement Plan to ensure Cornhusker Highway is both functional and aesthetically pleasing. The Corridor Enhancement Plan illustrates and describes Cornhusker Highway's preferred streetscape, touching on items such as site furnishings, landscaping, public art, lighting, and building setbacks. The Subarea Plan and the Corridor Enhancement Plan are considered part of this Long Range Transportation Plan.

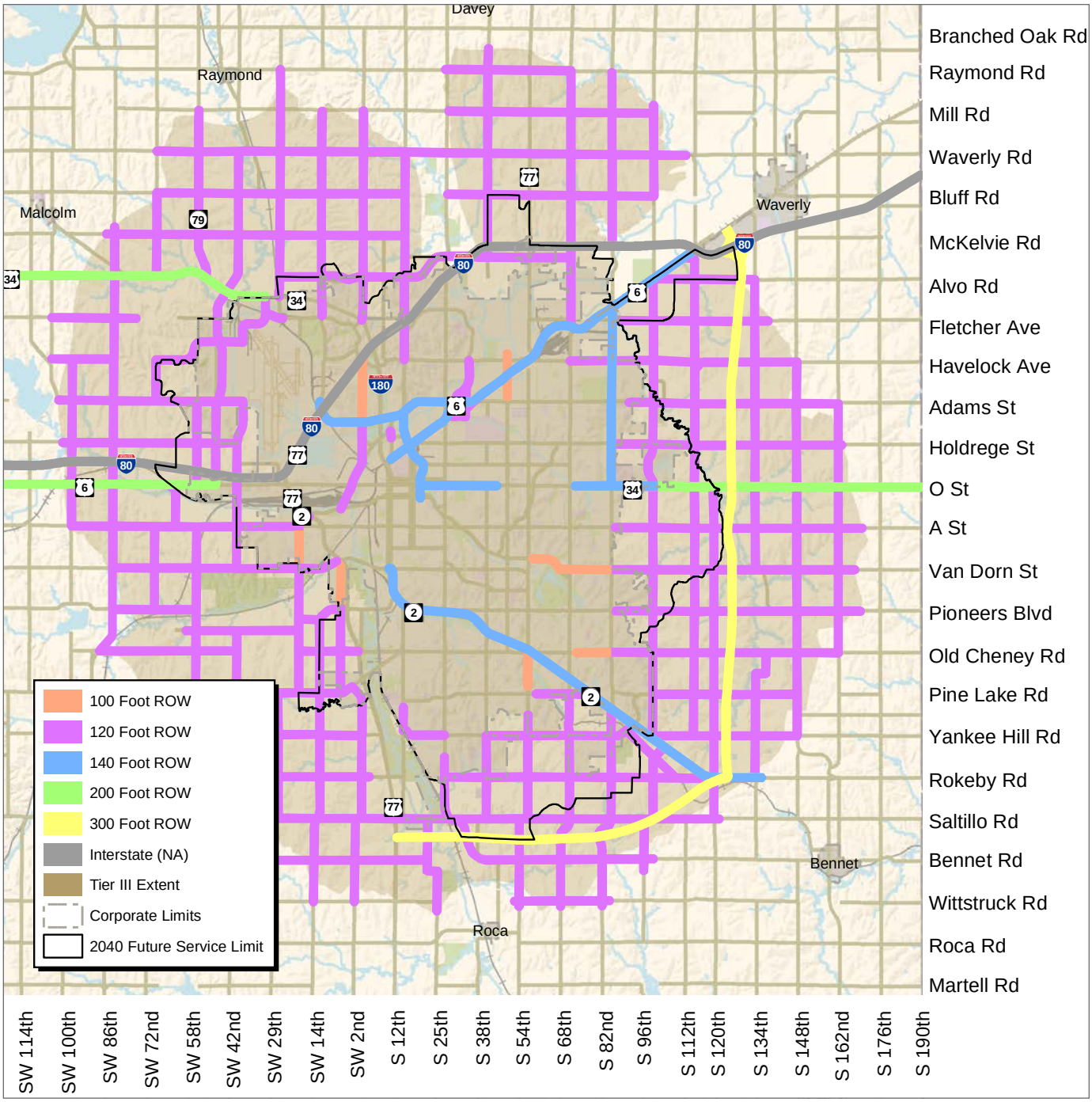
Right-of-Way Considerations

Right-of-Way (ROW) widths for projects on the Year 2040 Street and Highway Improvements Plan are displayed on Map 10: Right-of-Way Standards.

Projects occurring at the intersection of two arterial streets or at locations where right turn lanes are required will warrant the further dedication or acquisition of public right-of-way up to 130 feet in width for the "2+1 at 120 feet of ROW" and "4+1 at 120 feet of ROW" projects, and 150 feet in width for the "6+1 at 140 feet of ROW" projects, for a distance extending two blocks from the centerline (approximately 700 feet) of the intersection. The length of the intersection improvement should consider the existing and proposed land uses in the general area, traffic studies, and other pertinent information. Signalized intersections occurring along an arterial but not crossing another arterial may also fall under these ROW standards. The standard applies when land uses or other factors demonstrate the need for a wider ROW at that location.

Within Lincoln's future Growth Tiers I, II and III, a public ROW width of 120 feet for any potential future arterial street is considered the standard for this Plan. This may include, but is not necessarily limited to, the existing section and half-section line roads in these future Growth Tiers. Any ROW obtained to extend or otherwise complete the section line road system in the future growth area should also be done at this standard.

There are instances — mostly but not always in newer areas — where trails are to be placed along an arterial street. This may occur in order to provide trail connections and to allow safe trail crossings at arterial streets. When a future trail or bike lane is designated along an arterial roadway, the corridor should be expanded by six (6) additional feet on the side where the trail will be located. This additional ROW should be obtained in advance of development.



Map 10: Right-of-Way Standards

Modifications to existing or proposed right-of-way are typically noted with the implementation of roundabout intersections. In most cases, ROW needed for exclusive right-turn lanes at intersections can now be lessened on the approaches due to the less intrusive footprint of roundabout intersection approaches.

Additional considerations are needed at some intersection roundabout corners however due to the circular intersection characteristics which can

identify more ROW needs due to the offset nature of approaches to calm traffic speeds.

Congestion Management Process

The Congestion Management Process and mitigation efforts should remain flexible and ongoing. A regular process is in place to identify and respond to traffic congestion challenges. Many management and operational actions will be undertaken at the departmental level to provide the quickest possible resolution, while more serious issues may require a formal study process. Congestion management data is a primary source of information that shapes the decision making process for the Long Range Plan. Levels of delay, or congestion, were identified using the MPO traffic model to determine which roadway projects are most needed by the year 2040. Also, incident management is one of the major challenges of congestion management in Lincoln where much traffic congestion can be tied to crashes, incidents, and construction.

Additional studies may be desirable to identify specific congestion mitigation strategies that appear most reasonable for the particular location. Where deficiencies are identified, the MPO Technical Committee will suggest specific strategies for congestion mitigation. More general strategies include:

- Alternative transportation modes and Complete Streets policy development
- Continued monitoring and planning
- Intelligent Transportation System (ITS) improvements
- Transportation Demand Management (TDM) techniques
- Two Plus Center Turn Lane Program
- Intersection capacity improvements
- Road improvements

Alternative Transportation Modes and Complete Streets

Increased trips using alternative transportation modes, such as bicycles and transit, may theoretically reduce the number of single occupant vehicles on the road, and so might therefore reduce congestion.

The streets of our City and County are important parts of the livability of our community. It makes sense in select areas of the City to develop roadways that can serve all users, not just vehicular traffic. Complete Streets are designed and operated to enable safe access for all users. Pedestrians, bicyclists, motorists and transit riders of all ages and abilities should be able to safely move along and across a Complete Street. However, Complete Streets do not make sense in all cases. The City should selectively develop Complete Streets only in those areas where such development is both cost effective and likely to provide direct benefit to users who frequent the area where the Complete Street will be built.

The Executive Order 086476/Administrative Regulation 35 established a Complete Streets Committee to discuss how to implement Complete Streets within the community. The committee is an interdepartmental group composed of representatives from Planning, Public Works and Utilities, StarTran, Urban Development, Building and Safety, Parks and Recreation, Lincoln Police Department, and the Health Department. Complete Streets Committee members identify projects within their departments to be reviewed by the Complete Streets Committee and the committee focuses on projects that have a regional significance. Project plans are typically sent out to departments for review, and several Complete Streets Committee members review Public Works and Utilities projects for Complete Streets elements outside the regular meetings.

Travel Demand Management (TDM) Techniques

Travel Demand Management (TDM) is a strategy to reduce demand for single occupancy vehicle use on the transportation network. TDM can reduce congestion and traveler delay, improve air quality, and improve access to jobs, schools and other opportunities. Travel Demand Management Strategies can include the following:

- Flexible Work Schedules
- Traveler information
- Employer and Campus TDM
- Auxiliary Transit Service
- Market and Financial Incentives
- Parking Management
- Transit Use
- Walking and Cycling
- Teleworking or Telecommuting
- Car Share
- Van Pooling
- Bike Share
- Partnerships with Transportation Network Companies (TNC)

By comparison to road widening and other capital projects, TDM programs are very inexpensive and can be effective in decreasing demand on roadways, especially during peak travel times of the day.

The Lincoln MPO should continue to pursue a travel demand management program that is coordinated between various departments and identifies and works with large employers including the State of Nebraska, University of Nebraska-Lincoln, and various private businesses.

Rural Roads

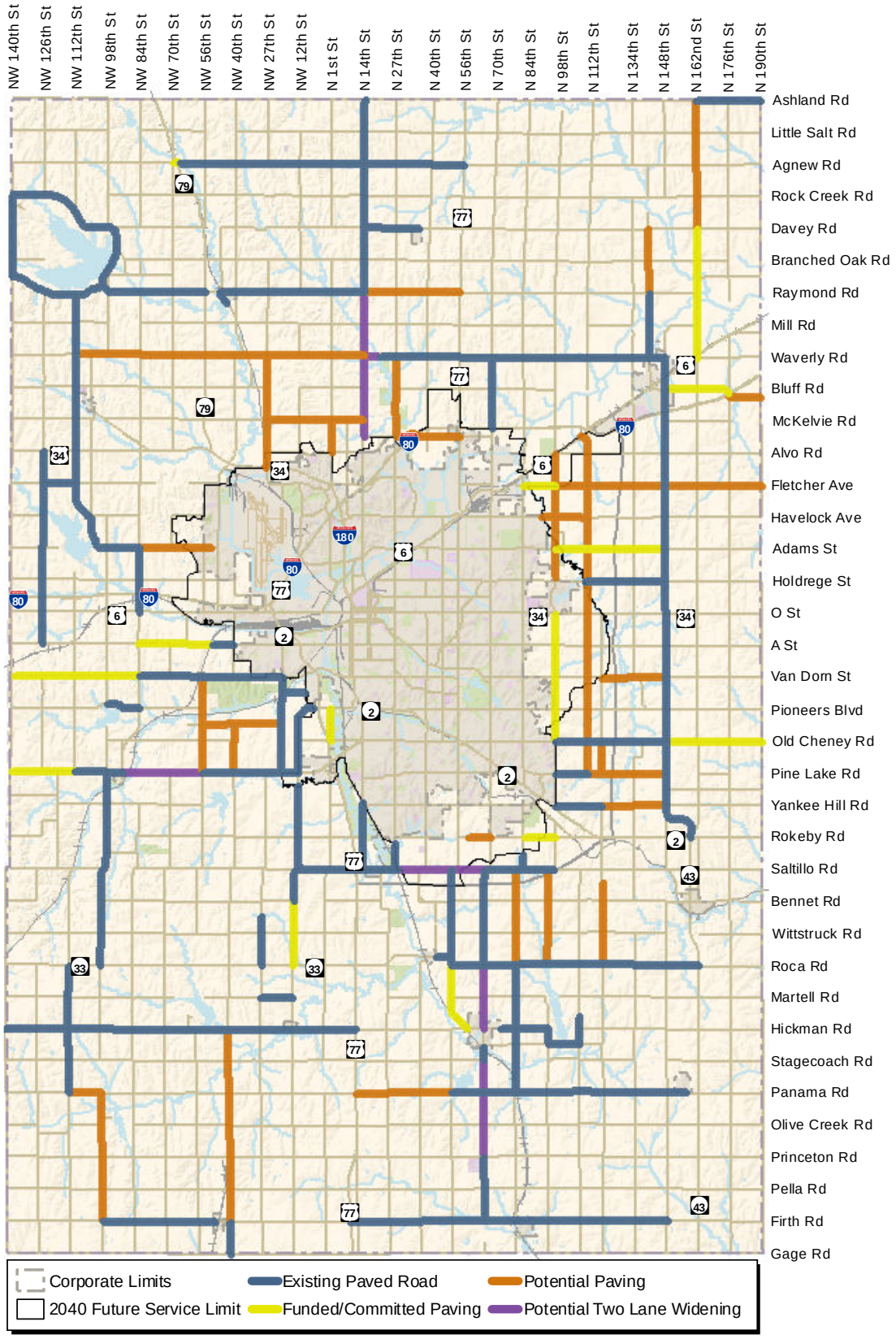
Improvements to the rural road system will occur throughout the County. The amount of new pavement installed will depend upon the growth in traffic and population, and the fiscal resources available in the future to make the improvements.

The future County Paved Road Network is subject to more impacts in areas closest to the City when compared to areas experiencing slower growth outside the urbanizing areas of Lincoln. These impacts and the resulting improvements vary from simply grading and graveling a road to a two-lane paved facility. (Map 11: Rural Road Project Needs)

Road improvement decisions in the County are triggered by daily traffic volumes with the amount of traffic dictating the type and degree of improvement necessary. When a road experiences traffic levels of 300 trips per day or more, a minimum of 100 feet of ROW may be acquired by the County and grading and drainage improvements may be made in anticipation of future improvement needs. At 400 trips per day, a roadway qualifies for paving, which should remain as an effective facility, with proper maintenance, until a level of 6,000 trips per day is reached. At that point a four-lane divided facility may be needed. The Future County Road Improvements Plan shows County roads which are likely candidates for two-lane paving in the future.

Often these traffic level increases are experienced as urban development approaches the roadway. It may be possible that as this happens the roadway will move from a County road to a City street as land is annexed into Lincoln or other surrounding towns. In order to make the best use of existing facilities, these rural roads may continue to be used until the demand reaches a level where an urban design is needed.

The County Road Plan indicates some road widenings for those existing two lane paved roads that are no longer adequate for current traffic volumes. These widening projects consist of



Map 11: Rural Road Project Needs

increasing the lane width and the addition of paved shoulders, not the construction of additional lanes. New roadways are included in this Plan to provide for continuity in the road system and better serve the adjacent areas. These segments include:

- 98th Street, A Street to "O" Street
- 98th Street, Adams Street to Fremont Street
- Alvo Road, NW 27th Street to NW 12th Street

This approach to County road improvements does, however, become threatened when acreage development is not focused on already paved roads and the needs exceed limited fiscal resources available for road improvements. New development should locate along those facilities that have already received improvements capable of supporting such development.

Close coordination between the Lancaster County Engineer's Office and MPO staff occurred during the development of the LRTP update to identify a needs based rural roads program. The rural roads program includes two basic project types:

1. Rehabilitation and two lane widening projects.
2. Paving gravel roads.

Rehabilitation and two-lane widening projects involve repairing or rebuilding currently paved roadways and, in some cases, widening these roads to include wider lanes and paved shoulders. Map 11 shows the rural road project needs.

In March 2006, the City of Lincoln and Lancaster County entered into an Interlocal Agreement to establish public street ROW and construction standards to be applied to the repair, maintenance, and construction of streets located within the 3-mile zoning jurisdiction of the City. The purpose of the agreement was to provide mutually beneficial guidelines for a more useful life of the public investments in the county roads while accommodating future growth with rural to urban transition street (RUTS) standards. The design and construction standards generally specify that rural principal arterial, rural minor arterial, rural major collector, and rural minor collector in the Lincoln-Lancaster County Comprehensive Plan be graded to future ultimate width, paved with an alignment shifted to one side of the centerline to accommodate two lanes of rural paving with urban culverts. This was to allow the addition of two urban lanes in the future without the need to close the roadway and detour traffic.

Ideas on the best method for making the transition from rural to urban sections continue to evolve as traffic needs and intersection design (roundabouts) change. The City of Lincoln Public Works and Utilities Department and Lancaster County Engineer's Office are currently reviewing the RUTS standards to evaluate whether there are adjustments that should be made to transition from rural to urban more efficiently.

Goods and Freight Movement — 2040 Needs

Air, rail and trucking are essential components in the local economy and play a key role in the Lincoln Metropolitan Area and Lancaster County transportation system. Efforts should be made to continue coordination with the freight community that will further integrate freight interests into the transportation planning process. Specific activities that are beneficial to the freight industry include ongoing information dissemination and dialogue through the MPO's Freight Carriers Working Group, enhanced efforts to inform the freight industry of upcoming projects and related impacts on detours and routing, and moving forward with projects like intersection improvements and improvements along major freight routes like Highway 2. The focus of discussion on freight bottlenecks with the freight community during the development of the 2040 Plan was on needed improvements to Highway

2 and the anticipated construction of the South Beltway as a major benefit to freight operations in the region. Freight considerations, including the locations of identified truck routes in the region, were part of the project selection process for the 2040 Needs assessment.

Airports and Airfields — 2040 Needs

The Lincoln Airport will continue to be the principal airport facility serving the Lincoln Metropolitan Area, Lancaster County, and a significant portion of the region in the southeast area of the State. As a member of the Lincoln MPO Technical Committee, the Lincoln Airport Authority will continue to be part of the metropolitan area transportation planning process. Specific strategies include:

- Ensure that future developments are aware of their proximity to the airport and noise issues are appropriately addressed through the Airport Environs Noise District ordinance and the recommendations of the Airport Noise Compatibility Study.
- The Airport West Subarea Plan was approved in 2005 and was amended into the Comprehensive Plan. Elements of the Plan should be pursued for implementation over time.
- Other future considerations include redevelopment of Lincoln Airpark West for a variety of uses including the development of sites for rail-accessible warehousing and seeking opportunities for air-rail-truck freight operations. While these potential developments can make the airport into an intermodal transportation hub, attention will need to be focused on mitigating conflicts between the different freight operations.

Pedestrian And Bicycle Facilities — 2040 Needs

Bicycle and pedestrian facilities are very highly valued by the citizens of Lancaster County. According to federal requirements these facilities should be considered in all transportation projects. In order for these facilities to be properly planned and for a full network to be integrated into the existing transportation network, active planning and coordination of projects should be a priority.

During the planning, engineering, maintenance, and rehabilitation of all streets and roads, bicyclists should be considered "design users," with most streets being considered a "bicycle facility." Education and enforcement of the rules of the road are keys to encourage bicycling as viable transportation and creating an environment that is safe and convenient for cyclists and motorists. The bicycle and pedestrian program should include education and promotional activities to encourage full and safe use of these facilities.

During the development of the LRTP, the community expressed a desire to continue expanding the network of on-street bike facilities to complement the trail system. Further study of the complete on-street bike network in Lincoln was assessed during the development of the Lincoln Bike Plan and includes various facility types, depending on street context, such as cycle tracks, road diets, striped bike lanes, and signed bike routes as seen in Map 12: Bicycle and Pedestrian Capital Plan. The Lincoln Bike Plan includes consideration of how bicycle improvements can be cost-effectively incorporated at the time of routine street maintenance.

A major element of the overall bicycle plan is the provision for adequate bicycle facilities as part of the existing urban area. For example, while parking for cars is routinely planned for, rarely is there a place where bicyclists can lock or store their bicycle. These facilities can be public facilities or part of private development. In addition to basic bicycle locking and storage facilities, many communities and larger mixed-use centers provide basic shower facilities for commuter bicyclists. The bicycle and pedestrian program should include subdivision and building codes that plan for the inclusion of appropriate bicycle facilities.

Lincoln currently has a well-developed sidewalk system, and the requirement of sidewalks on both sides of all streets should continue. However, this system is in need of rehabilitation in many areas. The sidewalk rehabilitation program should be funded at a level to replace a minimum of three (3) miles of sidewalk, or one percent of the sidewalk system annually. Pedestrian crossing signals should be updated and installed when warranted at appropriate sites along with other visual cues to alert drivers to pedestrian crossing points and to increase the safety and security of pedestrians. Some policies that should remain in place to support pedestrian facilities include the policy stating sidewalks should not be placed adjacent to the curb but separated by a landscaped parkway consistent with the City's Design Standards for street trees, parking screening, and landscaping. This policy, in conjunction with others, will benefit the pedestrian environment.

Other pedestrian improvements should be made, such as completing missing gaps, increasing amenities at and around transit stops, and other projects like mid-block crossing improvements, pedestrian countdown signal heads, and a wayfinding system.

Multi-Use Trails — 2040 Needs

The grid pattern of roadways and the use of the Rails-to-Trails program have provided a strong foundation for a quality trail system. This system should be completed and new growth areas should be connected to it as they develop. Opportunities to develop trails (See Map 13: Countywide Trails Plan) in the County should be identified as they are presented and efforts to complete these projects should be made as funding opportunities allow.

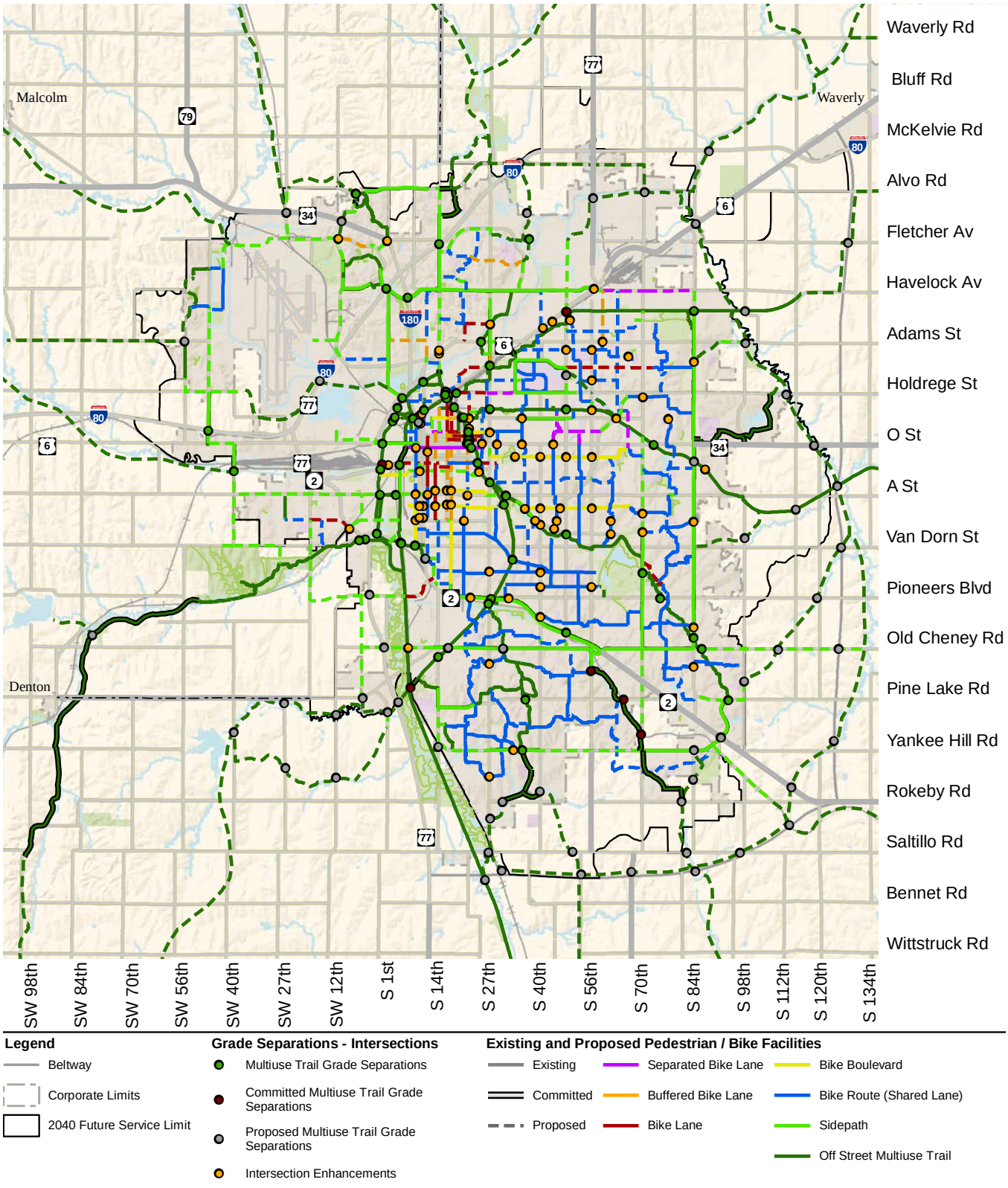
As the trail system begins to age, rehabilitation of trails will become a larger issue. A rehabilitation program should be developed and funded adequately in order to complete projects as they are needed. Additionally, some trail segments have already begun to see more use than was originally anticipated. New trails should be built to a ten foot width and in some areas existing trails should be widened to 10 or 12 feet as they are rehabilitated.

Rails-to-Trails has been a popular method for expanding the trails system as rail corridors have been abandoned and are no longer operational. Two currently active rail corridors within the City are identified as potential future trail expansion opportunities if the rail lines are ever abandoned. These rail lines can been seen in Map 5. A listing of Trail projects can be found in Table 3 and are shown on Map 14: Candidate Trail Projects

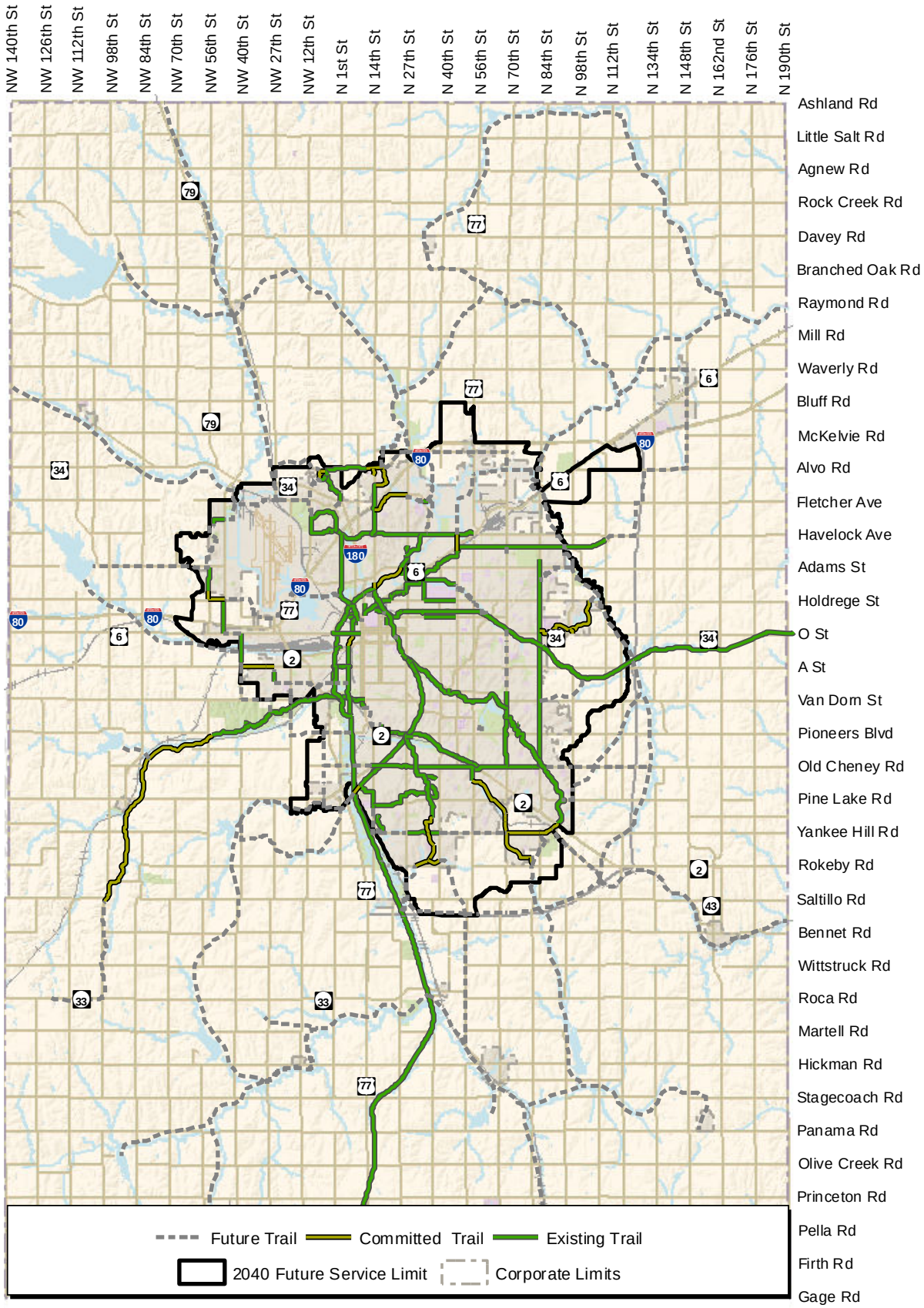
Transit System — 2040 Needs

Providing transit services throughout the City requires careful consideration of the number of routes, the frequency of service, and the hours of service. The Transit Development Plan (TDP) adopted in 2016 provides a framework for monitoring and modifying transit services in response to changes in development patterns and user needs, and is based on adopted service standards and policies. The TDP is developed by Public Works and Utilities – StarTran under the guidance of the StarTran Advisory Board and the public. The TDP is the main planning document for transit services in Lincoln and was last updated in 2016.

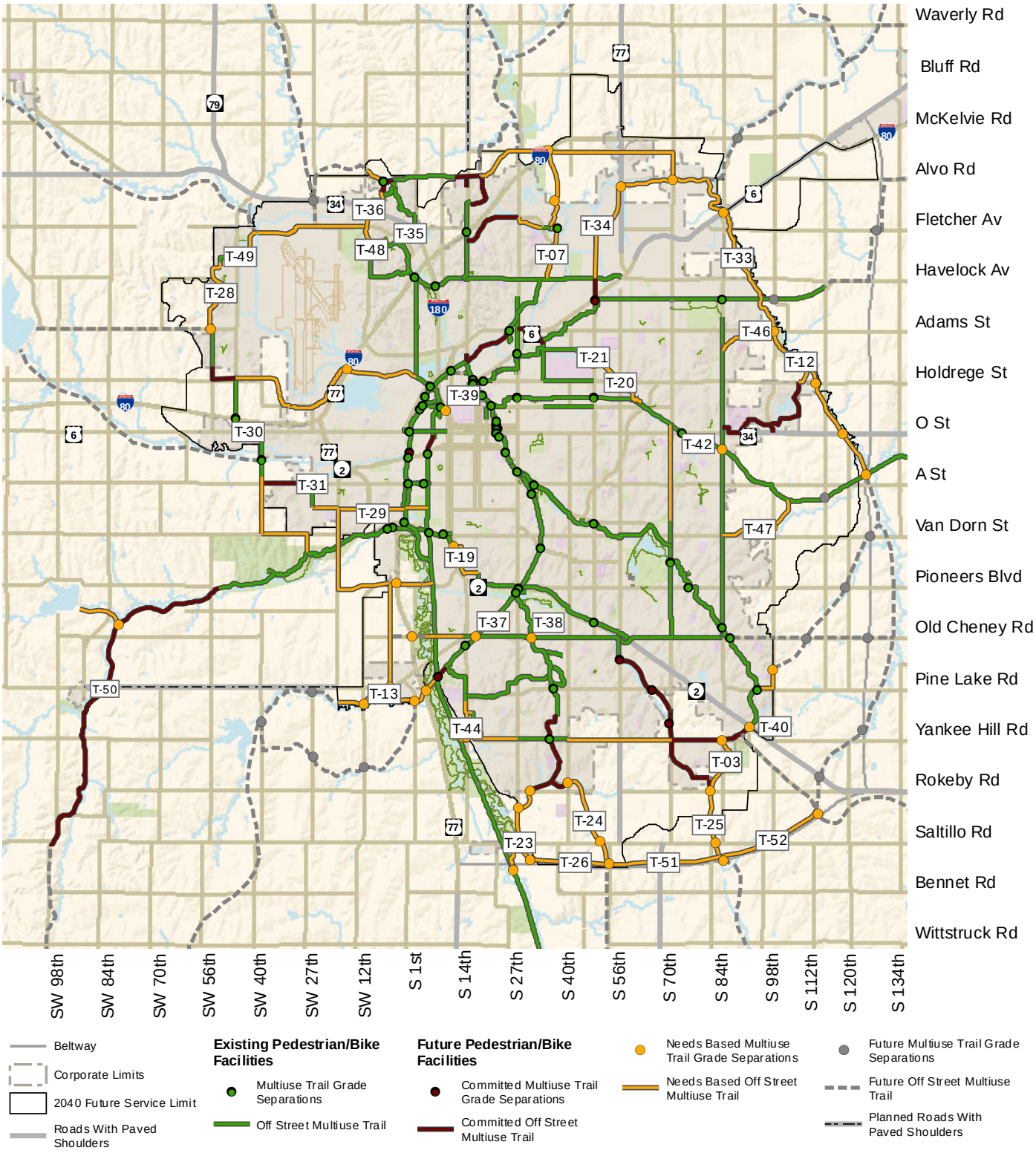
The current transit pattern in Lincoln attempts to provide some level of service as many households as possible while consolidating or eliminating services in unproductive areas. However, in the future, consideration of a change to the pattern of transit delivery needs to be made in order to maximize the productivity of the system. With the update of the TDP and implementation of the new transit routes, corridors with higher ridership have been enhanced with shorter wait times and longer service hours. Service to major employment centers have been and should continue to be considered for



Map 12: Bicycle and Pedestrian Capital Plan



Map 13: Countywide Trails Plan



Map 14: Candidate Trail Projects

Table 3: Candidate Trail Projects

Project ID	Trail Name	Limits	Project Cost (2016 $)
T-03	Woodlands	Jensen Park to Rokeby Rd	$470,000
T-04	Woodlands	Rokeby Rd to 70th St to Yankee Hill Rd	$900,000
T-07	Landmark Fletcher	33rd St & Superior St to 27th St	$600,000
T-08	Rock Island Connection	Viaduct over BNSF to Jamaica	$900,000
T-09	Wilderness Hills	Yankee Hill Rd to Rokeby Rd	$1,150,000
T-11	Waterford	84th to Stevens Creek	$850,000
T-12	Stevens Creek	Murdock Trail to Mo Pac Trail	$2,300,000
T-13	Cardwell Branch Trail	Hwy 77 to Prairie Creek	$700,000
T-14	Air Park Connector - Fletcher Ave	NW 27th St to NW 31st St	$90,000
T-15	W. Holdrege Street Trail	NW 48th St to NW 56th St	$140,000
T-16	N. 48th St Trail	Murdock Trail to Superior St	$170,000
T-18	N. 33rd St and Adams Trails	Murdock Trail to Cornhusker Hwy	$200,000
T-19	10th Street Trail	Van Dorn St to 17th St/Burnam St	$300,000
T-20	Deadmans Run Trail	48th St to Mo Pac Trail	$410,000
T-21	East Campus Trail	Leighton St to Holdrege St	$150,000
T-23	27th St Connector	Rokeby Rd to South Beltway	$460,000
T-24	56th Connector	Rokeby Rd to South Beltway	$1,200,000
T-25	84th Connector	Rokeby Rd to South Beltway	$450,000
T-26	South Beltway Trail - Phase I	27th St to 56th St	$1,500,000
T-27	Greenway Corridor Trail/Haines Branch - Phase I	SW 56th St to Saltillo Rd	$3,000,000
T-28	NW 56th	W. Adams to NW 56th to W. Superior	$550,000
T-29	South Street	SW 27th to Jamaica	$730,000
T-30	O Street	SW 40th St to SW 48th St	$240,000
T-31	A Street Connectors	SW 40th - A Street to F St & SW 27th - Shane Dr to A St	$90,000
T-33	Stevens Creek	Murdock Trail to Hwy 6	$610,000
T-34	N. 48th St/Bike Park Trail	Superior St to N. 56th St	$680,000
T-35	N. 1st St	N. 1st St crossing of Hwy 34	$400,000
T-36	NW 12th St	NW 10th St to crossing of Hwy 34 to Aster	$850,000
T-37	Rock Island	Grade separated crossing of Old Cheney	$1,200,000
T-38	Tierra Williamsburg	Grade separated crossing of Old Cheney	$1,200,000
T-39	10th Street	Grade separated crossing	$2,000,000
T-40	Hwy 2 & Yankee Hill Rd	Grade separated crossing	$2,000,000
T-41	Mo Pac Trail	Grade separated crossing of 112th	$1,100,000
T-42	Mo Pac Trail	Grade separated crossing of 84th	$1,500,000
T-43	Yankee Hill Rd	S. 56th St to S. 70th St	$310,000
T-44	14th & Yankee Hill Connector (w/RTSD proj)	S. 14th St - South LPS Property Line to Yankee Hill Rd	$320,000
T-45	Landmark Fletcher	Fletcher Ave from N. 27th St to N. 14th St	$950,000
T-46	Prairie Village Trail	84th St. to Stevens Creek, South of Adams	$450,000
T-47	Van Dorn Trail	84th and Van Dorn to 106th and MoPac Trail	$725,000
T-48	Air Park Connector - Phase I	NW 12th to Flectcher to NW 27th	$530,000
T-49	Air Park Connector - Phase II	NW 48th to NW 31st	$550,000
T-50	Greenway Corridor Trail/Haines Branch - Phase II	SW 56th to Saltillo Rd	$1,000,000
T-51	South Beltway Trail - Phase II	56th to 84th	$2,500,000
T-52	South Beltway Trail – Phase III	84th Street to Hwy 2	$3,500,000
T-53	NW 56th Street Trail	W. Holdrege to W Partridge	$80,000
T-54	Jamaica North – Arena Trail	J Street to N Street	$150,000
T-55	Yankee Hill Road	S. 40th Street to S. 56th Street	$310,000

enhancement as well as areas of current and future anticipated density. The Mixed Use Redevelopment Nodes and Corridors discussed in the Mixed Use Redevelopment chapter provide an opportunity to direct redevelopment and transit services in a coordinated fashion.

To be comparable to other cities of Lincoln's projected 2040 size, funding for transit should be increased to provide similar levels of service. Future phases identified in the 2016 TDP should receive the necessary funding for implementation. Areas of the City that are not along the transit corridors above can be served to a more modest level. Neighborhood feeder routes that direct transit riders to the major corridors could be provided with smaller, more fuel efficient, and automated vehicles. Continued enhancement of the bike-and-bus feature would also allow those in areas with lower service to access and use transit. Establishing park-and-ride locations along outlying areas of the community could support transit connections to the Downtown and other mixed use centers. The use of Intelligent Transportation System (ITS) and other emerging technologies to provide route information, fare payment systems, travel data, real-time bus location information and potentially driverless vehicle service will allow those who ride by choice to participate at a higher level and riders of necessity to plan their routes and be better served.

Effective public transportation service requires good pedestrian connections to and from transit stops, density of activities, and development designs supportive of transit riders. Pedestrian connections to transit must be direct and the sidewalk system must have continuity. Street crossings to transit stops must be safe. Productive transit service requires higher-density land development patterns that link residential areas and employment, retail, and service centers. Development design needs to be transit-friendly, providing convenient access to transit services.

Although Lincoln may not reach the density and demand needed to justify a bus rapid transit (BRT) system within the planning period, efforts should be made to identify potential routes and to concentrate efforts to increase density along those routes. Careful design and right of way preservation along these routes may also allow a conversion to street car or light rail in the distant future. The "O" Street and N. 27th Street corridors are likely candidates for planning and identification as long term BRT routes.

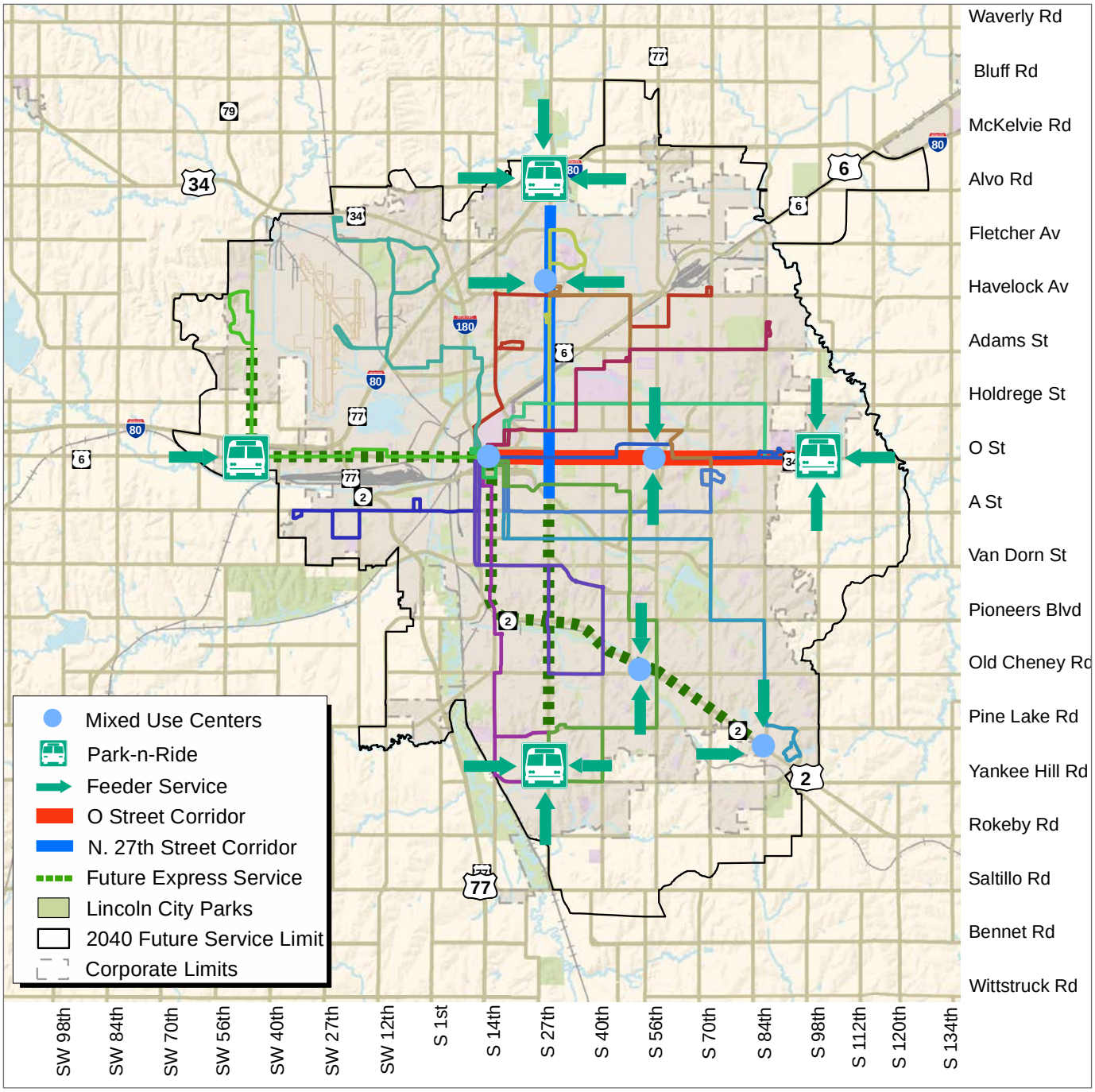
The projected increase in the 65 and over population creates challenges in service provision. This population increase will create a greater usage of demand-responsive public transportation. Based on current funding levels, such increase in usage could create funding challenges. While all fixed-route services are, and will continue to be, accessible, the need for increased complementary paratransit services (HandiVan/Brokerage) will continue. Such services are very expensive, due to vehicle load constraints and operating policies and therefore, innovative variations of such services will be essential.

Expanded transit service within the rural areas of the County or between Lincoln and other larger cities is not currently practical; however, data should continue to be collected and analyzed to monitor travel patterns in the hopes of identifying opportunities for regional transit. The Nebraska Innovation Zone Commission and several other interest groups have advocated regional planning for just such an opportunity. The Lincoln MPO should continue to be involved in these conversations.

6. Fiscally Constrained Transportation Plan

Revenue Summary

The previous sections and policy direction presented the 2040 transportation needs for the Lincoln MPO including roadway operations, maintenance and capital, pedestrian and bicycle, trails and transit. Section 6 describes in detail the Fiscally Constrained Transportation Plan



Map 15: 2040 Transit System Concept Map

including the revenue sources, anticipated revenues, and potential additional revenues to maintain, operate, and expand the transportation system in the City of Lincoln and Lancaster County from 2016 until 2040.

The financial analysis presented in this section meets the requirements stated in federal transportation regulations. This detailed information should be referenced to guide project implementation for all modes of travel. The project costs and potential funding are estimates and will be revisited several times before the years they represent come to pass. The intent of the Fiscally Constrained Transportation Plan is to prepare an approximate, but realistic, estimate of both the total funds available and total program cost by year of expenditure.

Satisfying the Lincoln MPO region's transportation financial needs during the next 24 years is a major undertaking. The infrastructure demands associated with building and maintaining the roadway, non-motorized, and public transportation systems will be challenged by the region's projected population growth and by the aging of the existing infrastructure already in use. The limited availability of federal, state, and local moneys will also have a significant impact on the ability to fund proposed projects. Demands on the transportation system have grown significantly in the past and the increase in costs of this demand is expected to accelerate faster than the growth in funding.

Federal rules require that LRTPs be fiscally constrained. That is, planned expenditures shall not exceed the revenue estimates to support the operations, maintenance, and new construction during the 24 years covered by the Long Range Transportation Plan.

> Code of Federal Regulations: "… the financial plan shall contain system-level estimates of costs and revenue sources that are reasonably expected to be available to adequately operate and maintain Federal-aid highways and public transportation."

The Lincoln MPO region, like the rest of the United States, has and will continue to have additional transportation needs beyond those improvements listed within the fiscally constrained portion of the plan. Therefore, the Lincoln MPO LRTP is a Fiscally Constrained Plan as it only includes a portion of the region's Needs Based Plan identified in the preceding section, constrained to the projected funding available. Projects that are in the Needs Based Plan but not in the Fiscally Constrained Plan are illustrative and could be constructed if a new source of funding were to become available or if priorities change.

This plan acknowledges that projected funding levels are not sufficient to adequately maintain forecast needs or serve projected increases from regional population and employment growth. Meeting the region's full transportation needs identified in the preceding section will require new revenues from as yet unidentified revenue sources. Without additional revenues, regional accessibility and mobility will be impacted, which will constrain the movement of goods and people throughout the region. The gap between needs and resources is not new, and simply reallocating resources will not resolve the funding limitation. Expectations contained within the LRTP Technical Report do not in any way compel members of future City government to raise revenues to meet said expectations.

Requirements for a Financial Plan

The Code of Federal Regulations describes the elements of a Transportation Financial Plan. The requirements of SAFETEA-LU and Fixing America's Surface Transportation (FAST) Act (2015) are that the plan must include the revenues and costs to operate and maintain the roads and associated systems (signals, signage, snow removal, etc.) to allow MPOs to estimate future transportation conditions and promote good stewardship of available funds by using existing infrastructure to the fullest. However, the Fiscally Constrained Transportation Plan provided in this section does serve the MPO Planning Area as best as possible over the next 24 years and is based on the prioritization process of the LRTP planning effort.

Another requirement of federal transportation regulations is to use "year of expenditure" dollars for planning purposes. This requirement accents the reduction in the buying power of the transportation revenues that had not been previously accounted for during the preparation of long range transportation plans.

While the Lincoln MPO plans and develops programs for the all of Lancaster County, separate and defined funding sources are used to fund the respective urban and rural transportation programs. Urban sources of funding are generally planned to be used within the "Urban Area Boundary" as shown on the Existing Functional Classification

map. Rural sources of funding are generally planned to be used outside of this identified boundary. This Fiscally Constrained Transportation Plan provides detailed funding and programmatic information for the Urban Area programs and related projects. Also provided is a fiscally constrained plan for the rural road network. There are projects included in this Plan where rural projects are planned inside the Urban Area Boundary.

Overview of Funding Sources

In general, there are three major funding categories for transportation in the Lincoln MPO Long Range Transportation Plan. The first is for roadway improvements which includes 1) roadway operations, maintenance, and rehabilitation projects and 2) roadway capital projects. This category would also include pedestrian and bicycle improvements within the street right-of-way. The second funding category is for alternative travel modes which includes pedestrian, biking and trails projects, which includes the construction of new trails, the maintenance of existing trails and the development of on-street bike facilities. The third funding category would be for transit. This includes operations, maintenance and capital. In general, revenue assumptions were established through coordination with the City of Lincoln Public Works & Utilities Department, the Lincoln Parks & Recreation Department, and StarTran to identify all current and expected revenue sources, and to establish a trend in those funding amounts. The details for the LRTP funding projections and analysis is located in the LRTP Technical Report-Chapter 6. The general finding is that the transportation revenues expected over the 24-year time horizon of the LRTP will not be enough to cover the cost of the transportation needs in Lincoln and Lancaster County. Compounding the funding shortfall is the increasing cost to construct transportation projects; costs have inflated by approximately 5 percent per year in recent years and revenues are projected to increase by approximately 2.5 percent per year. Careful consideration of investment strategies is needed, along with an understanding of the associated tradeoffs.

Roadway Transportation Funding

In general, there are two major funding sources available to the Lincoln MPO for roadway operations, maintenance and capital improvements: State and Federal funds and local City and County funds. The following section presents the funding sources and reasonable forecast revenues. It should be noted this funding revenue would also include pedestrian and bicycle improvements within the street right-of-way. These funds are presented in the LRTP Technical Report, Chapter 6 - Funding Outlook by source and year of expenditure. Combined they comprise the total amount of funding that is available for the urban roadway program and include local, state, and federal sources. The use of the federal funding source of funds will be for the purpose of funding projects related to the arterial street network and facilities of regional significance. A 20% local funding match is assumed for those projects using federal funds, and the federal process will be followed for all regionally significant projects. The appropriate use of local, state, and federal funding will be determined on a project by project basis.

City Wheel Tax

The City Wheel Tax is a revenue source that is generated by a City tax on all vehicles registered within the corporate limits. This revenue helps fund four street related programs:

Snow Removal: This portion of the City Wheel Tax is specifically dedicated to only fund the removal of snow and ice from streets and roads within the City limits.

Residual Fund: This portion of the City Wheel Tax is specifically dedicated to be used generally for street improvements in the City of Lincoln.

Residential Rehabilitation Fund: This portion of the City Wheel Tax is specifically dedicated to be used only for the purpose of rehabilitating existing residential streets.

New Construction: This portion of the City Wheel Tax is dedicated to fund the construction, design, and right-of-way acquisition of streets, roads, alleys, public ways, or parts thereof, or for the amortization of bonded indebtedness when created for such purposes.

General Fund Revenue

The City of Lincoln's general fund provides resources from sources such as property tax and sales tax for general operating functions of City departments, including transportation.

Impact Fees

This local funding source is levied against new development to generate revenue to support specific public projects for arterial streets. The fees can generally be used on public projects within the district that it is collected.

Railroad Transportation Safety District

The Railroad Transportation Safety District is a local funding source generated by a countywide property tax. These funds are specifically designated for projects throughout the City and County to reduce or eliminate automobile/pedestrian and railroad conflicts.

State Train Mile Tax

The State Train Mile Tax is a state tax on rail traffic passing through the City and used specifically for constructing, rehabilitating, and relocating or modifying railroad grade separation facilities.

Highway Allocation Funds (State Fuel Tax)

State fuel tax collections are allocated to the City via a State funding formula. These funds are designated for projects throughout the City to rehabilitate, construct and improve streets, intersections/interchanges, sidewalks, bikeways and trails, safety projects, intelligent transportation infrastructure, and landscaping in connection with street improvement projects. A portion of this revenue amounting to approximately $5 million annually is used to pay off City of Lincoln road improvement bonds that will be paid off in 2024 and 2027 respectively.

Build Nebraska Act State Revenue (LB 84)

This state revenue commits 0.25 cents of the state's existing 5.5-cent sales tax to high priority highway projects. A minimum amount of this funding annually will be required to go toward construction of the State's expressway system. The revenue will be split between the state (83%) and cities and counties (17%). Local governments will be required to use their allotment of the revenue for road and street purposes. This allocation of revenue to Lincoln has been incorporated into the revenue assumptions for the 2040 Plan.

Federal Aid Surface Transportation Program (STP)

This federal funding source is designated by formula for urbanized areas with over 200,000 populations and provides resources for a variety of eligible transportation projects. A total STP funding amount of $5.3 million in 2017 is assumed for the Fiscally Constrained Plan. A minimum of 20% non-Federal match is required (80% Federal funding).

Federal Safety/Bridge

STPP Hazard Elimination: This federal funding source provides resources for safety improvements on any public road for activities including railroad crossings, public transportation facilities and public pedestrian and bicycle pathways, and trails. A total STPP Hazard Elimination funding amount of $0.5 million in 2017 is assumed for the Fiscally Constrained Plan.

Bridge Replacement: This federal funding source provides resources to assist the City to replace or rehabilitate deficient highway bridges. A total Bridge Replacement funding amount of $1.5 million in 2017 is assumed for the Fiscally Constrained Plan.

Trails Funding

Funding for trails has historically been provided through Federal Transportation Enhancements, Federal Recreational Trails, the Lower Platte Natural Resources District (NRD), and local sources. Each of the federal sources of revenue requires a 20% match that has been provided through a number of sources including private contributions, Trail Impact Fees and the City's General Fund.

Transit Funding

StarTran transit funding includes a combination of transit funding through the Federal Transit Administration, state revenue/aid, the City's General Fund and transit revenues. These funds are presented in LRTP Technical Report, Chapter 6 by source and year of expenditure.

Fiscally Constrained Transportation Plan

The funding outlook analysis in the LRTP Technical Report-Chapter 6 presents an overview of the revenue forecasts, describes the resource allocation process, and establishes a strategy to maintain the transportation system and to make the system function as efficiently as possible, given transportation funding limitations. The Fiscally Constrained Transportation Plan presents a strategy based on the revenue forecasts and resource allocation process to maintain the transportation system and goal of making the system function as efficiently as possible, given transportation funding limitations.

Transportation needs and opportunities in Lincoln and Lancaster County are great. Chapter 5 of the LRTP Technical Report presented a compilation of current and future needs to improve the region's transportation system. Current funding realities indicate that not all desired projects will be built within this plan's 24-year time horizon. In total, an estimated $2.4 billion in transportation revenues can reasonably be expected for the urban area roadway, transit, and trails programs, as summarized in Table 4.

Table 4: Total Revenue Forecasts

Program	Revenue Forecasts (2017 - 2040)
Urban Roads Program	$1,948,650,000
Transit Program	$452,820,000
Trails Program	$36,350,000
TOTAL	**$2,437,820,000**

The total estimated revenues for the Lincoln MPO Long Range Transportation Plan by category and year of expenditure are presented in Table 5, LRTP Resource Allocation. This table includes various Federal, State and City funding programs. There are numerous additional federal programs, such as Interstate Maintenance that might be available and used by the Nebraska Department of Roads or the Transportation Alternative Program (TAP) may provide additional funding but were not included.

This LRTP builds from the funding plan established in the Technical Report, Chapter 6 - Funding Outlook and forms the basis for decisions about how best to prioritize and phase transportation improvement projects and programs. The resource allocation detailed in Table 5, LRTP Resource Allocation was used to develop the Fiscally

Table 5: LRTP Resource Allocation

Program	Resource Allocation in Millions (2017 - 2040)
System Operations & Maintenance	$586.00
Road & Bridge Rehabilitation	$398.13
Trail Rehabilitation	$8.29
Transit	$452.82
Committed Trail Projects	$7.75
Trail Projects	$20.31
Other Bike/Ped and TDM	$33.51
RTSD Projects	$177.06
State Train Mile Tax Projects	$11.05
Two Plus Center Turn Lane	$43.29
Intersection Safety and Capacity	$104.68
Committed Capital Projects	$66.82
Developer Commitments	$25.55
Roadway Capital Projects	$274.01
ITS and Technology	$151.85
East Beltway Preservation	$6.00
Studies, P.E., ROW & Statutorily Required Records	$70.70
TOTAL	**$2,437.82**

Constrained Plan as shown on Figure 2, LRTP Resources Allocation.

While the Lincoln MPO plans and develops programs for all of Lancaster County, separate and defined funding sources are used to fund the respective urban and rural transportation programs. Urban sources of funding are generally planned to be used within the Urban Area Boundary. Rural sources of funding are generally planned to be used outside this identified boundary. The Fiscally Constrained Plan provides detailed funding and programmatic information for the Urban Area programs and related projects.

Project Prioritization Process

Although the LRTP addresses funding for various project types, only Roadway Capital Projects and Trail Projects are prioritized within the LRTP. All other project categories, including Transit, RTSD, System Operations and Maintenance, Rehabilitation, etc., are provided a fiscally constrained funding allotment and are prioritized outside the LRTP. These other programs are funded through a "pool" of funding as established in the Resource Allocation step (LRTP Technical Report -Chapter 6). The Fiscally Constrained Plan includes the top ranked Roadway Capital Projects and Trail Projects, and a pool of funding for the various other transportation programs and project categories.

With limited funding available, the process of prioritizing projects must be comprehensive and strive to identify those projects that will most effectively move the region's transportation system toward fulfilling the vision and achieving the transportation goals. In compliance with federal requirements for performance-based planning, the project prioritization process is structured to identify those projects that will provide the greatest contributions toward meeting the seven transportation goals and associated performance targets. The evaluation criteria used to compare projects are directly related to the goals.

Maintenance Activities

System Operations & Maintenance

This category includes ongoing maintenance requirements (e.g., snow removal, street sweeping, stormwater management, and pothole repair) to keep the transportation system functional. The $586 million allocation to this category will provide continuation of the current operations and maintenance activities. The City of Lincoln has pursued innovation and the use of technology advances to make efficient use of available resources.

Road and Bridge Rehabilitation

The Rehabilitation program includes the repair of arterial and residential streets and bridges. A pavement condition rating system is used to help determine which road surfaces are in most need of repair. It is important to note that money invested

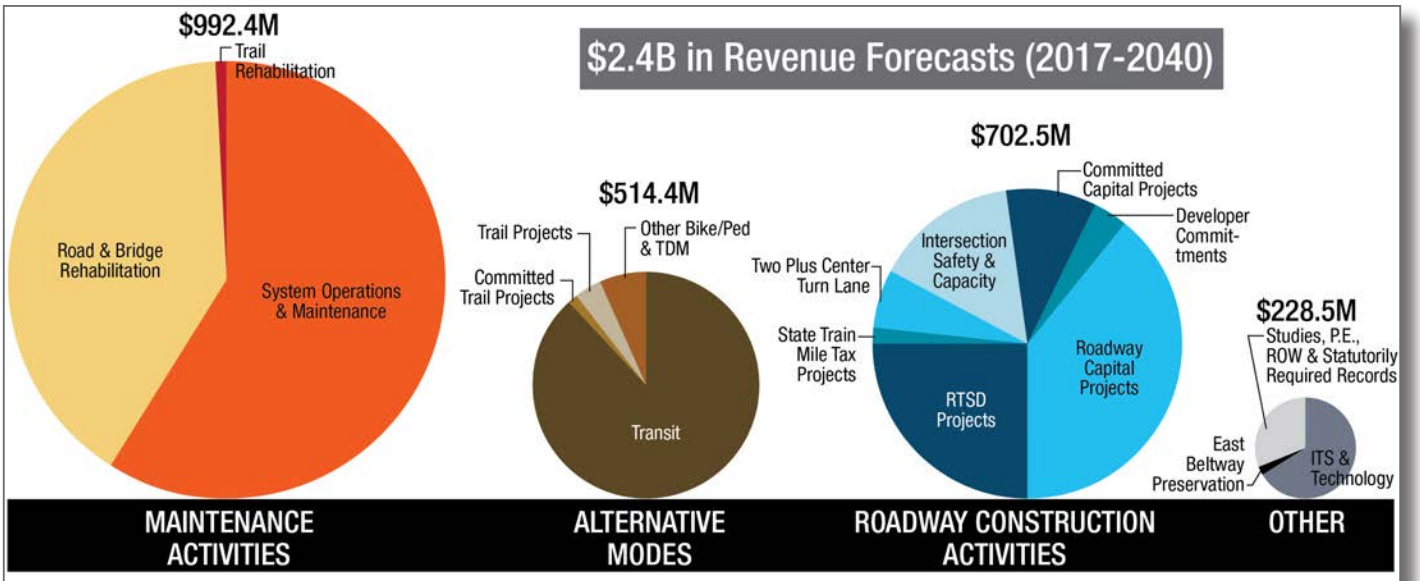


Figure 2: LRTP Resource Allocation

today in the ongoing maintenance and repair of the street system saves a significant amount of money in the future by avoiding the expanded costs associated with full reconstruction of roadways.

Routine and preventative maintenance activities will be performed, such as localized repairs, crack and joint sealing, and various surface treatments (slurries, sealing, and micro-surfacing). As pavement ages, thin to thick overlays, panel replacements, base stabilization, and repairs will be used in an effort to avoid more costly reconstruction if possible.

Currently, the Rehabilitation program is funded at increased levels—a 58 percent increase since 2010—resulting in 72.2 miles of arterials and 487 blocks of residential street improvements. These targeted investments in the rehabilitation program over the past six years have resulted in measurable improvements in the condition of our streets.

Community members identified maintaining the existing transportation infrastructure as the top priority; the LRTP resource allocation increases funding for Road and Bridge Rehabilitation compared to the 2011 LRTP. However, the $398 million allocation to the Road and Bridge Rehabilitation Program is not adequate to meet the future demands of the program – rehabilitation needs continue to outpace investment as the current system ages and expands with City growth, and as construction costs increase.

The Public Works and Utilities Department is committed to using the available rehabilitation funds efficiently by using data from the pavement management system to identify the most effective maintenance treatments. Several additional strategies are recommended to help offset the shortfall in funding for the rehabilitation program:

- Continue experimentation and innovation to maximize return from available resources.
- Encourage the use of alternative travel modes (biking, walking, and transit) to lessen the demand on the streets.
- Implement the Green Light Lincoln program to maximize the operational efficiency of the existing system, thereby reducing the pace of lane-miles being added to the street network.
- Streets that are neglected over time require costlier reconstruction. Continue to advance preventative maintenance strategies (e.g.,

pothole repairs and crack sealing) to extend the life of Lincoln's streets and minimize the life-cycle costs.

- Investigate opportunities for increased rehabilitation funding.

Trail Rehabilitation

The $8.29 million allocated to trail rehabilitation is composed of Keno funds, Park and Recreation Repair and Replacement funds, and other trail-specific funding sources. This allocation will allow the continuation of the current trail rehabilitation program.

Alternative Modes

Transit

The allocation to Transit will allow StarTran to operate the Transit Development Plan (TDP) Preferred Alternative Phase I routes and services and to maintain the fleet of 67 fixed-route buses and 13 paratransit vehicles. Table 6 identifies the funded and priority transit projects. These projects are expected to be funded within the Fiscally Constrained 2040 Plan. Additional transit enhancements (such as next bus information and transit signal priority) will be addressed in the ITS and Technology Program.

Committed Trail Projects

The 2016–2022 CIP includes six Trail Projects that are assumed to be fully funded and completed within the first six years of the plan. These committed Trail Projects total $7.75 million and include the Rock Island Connection, the Waterford Trail, the Fletcher Landmark Trail, the Wilderness Hills Trail, the Woodland Trail, and the Salt Creek Greenway Corridor Trails. There are several additional Trail Projects with committed funding (outside the LRTP future funding revenues) that will be constructed in the near future. These projects are listed on Map 16.

Trail Projects

The Trails Scoring Committee evaluated more than 40 Trail Projects using evaluation criteria that align with the seven goals, as described previously. Based on annual revenues and year of expenditure project costs (assuming a 3 percent annual inflation rate, which is consistent with recent trends in trail construction cost inflation), approximately 21 new Trail Projects (36 miles of trail) could be added by 2040 using the $20.31 million allocation. In addition, five of the Trail Projects are part of street projects in

Table 6: Priority Transit Projects

Project Description	Project Cost (2016 $)
Funded/Committed Transit Projects	
Purchase Replacement Buses	$1,983,200
Purchase Replacement Handivans	$0
Transit Enhancements	
(bus shelters, passenger stops)	$40,000
Security Enhancements	
(upgrade buildings/shelters)	$40,000
Purchase Replacement Supervisor Vehicles	$0
Computer Replacements and Upgrades	$320,000
Shop Equipment Replacements and Upgrades	$15,000
Purchase Replacement Service Vehicles	$20,000
Building Renovations and Improvements	$200,000
Priority Transit Projects	
Purchase Replacement Buses	$52,596,200
Purchase Replacement Handivans	$5,250,000
Transit Enhancements	
(bus shelters, passenger stops)	$1,035,000
Security Enhancements	
(upgrade buildings/shelters)	$1,035,000
Purchase Replacement Supervisor Vehicles	$305,000
Computer Replacements and Upgrades	$3,600,000
Shop Equipment Replacements and Upgrades	$1,165,000
Purchase Replacement Service Vehicles	$290,000
Building Renovations and Improvements	$2,400,000

the Fiscally Constrained Plan. A total of 55 miles of new trails (including the Committed Trail projects) are expected to be constructed by 2040. Table 7 lists the Priority Trail Projects that are expected to be funded within the time horizon of the LRTP. The order of projects may change depending on opportunities for funding.

Trail Projects that improve trail crossings of a railroad may be funded with RTSD funds, as described in the RTSD Projects section of this chapter.

Appendix G of the Technical Report includes the Trails Project scoring results.

Other Bike/Ped and Travel Demand Management (TDM)

This program includes sidewalk repairs, ADA compliant ramps, restriping and road diets to improve safety and to add bike lanes, and the travel options program. The allocation of $33.51 million would cover roughly 3 miles of sidewalk repairs per year.

On-Street Bike Facilities

The public comments received through the LRTP have included much praise for the N Street Cycle Track. During the development of the LRTP, the community expressed a desire to continue expanding the network of on-street bike facilities to complement the trail system. Further study of the complete on-street bike network in Lincoln was assessed during the development of the Lincoln Bike Plan and includes various facility types, depending on street context, such as cycle tracks, striped bike lanes, and signed bike routes (shared lanes). The Bikeshare program will further increase the demand for on-street facilities in the core area of Lincoln.

The future on-street bike facilities identified in the LRTP Technical Report, Chapter 4 (Figure 29), are assumed to be funded, to the extent possible, through the existing street improvement programs. Further study of these on-street facilities were assessed during the development of the Lincoln Bike Plan and include consideration of how they can be cost-effectively incorporated at the time of routine street maintenance.

With the success of the N Street Cycle Track, the City of Lincoln is considering a future north-south separated bike lane on 13th Street as bicycle demand increases and funding is available in the downtown area. Further study will be required to assess the feasibility of a separated bike lane along 13th Street or another north/south Downtown street. Private funding and/or grants should be pursued to help fund bike projects such as this.

Where traffic volumes allow, the City of Lincoln has considered painted bike lanes as part of the Complete Streets initiative. In some cases, four-lane roadways may be considered for "road diets," in which they would be converted to two through lanes, a center left turn lane, and bike lanes. Example streets where this type of treatment has been implemented include:

- S. 13th Street from K Street to South Street
- Vine Street from 16th Street to Antelope Valley Road and to the east
- 16th Street from P Street to Vine Street through the UNL Campus

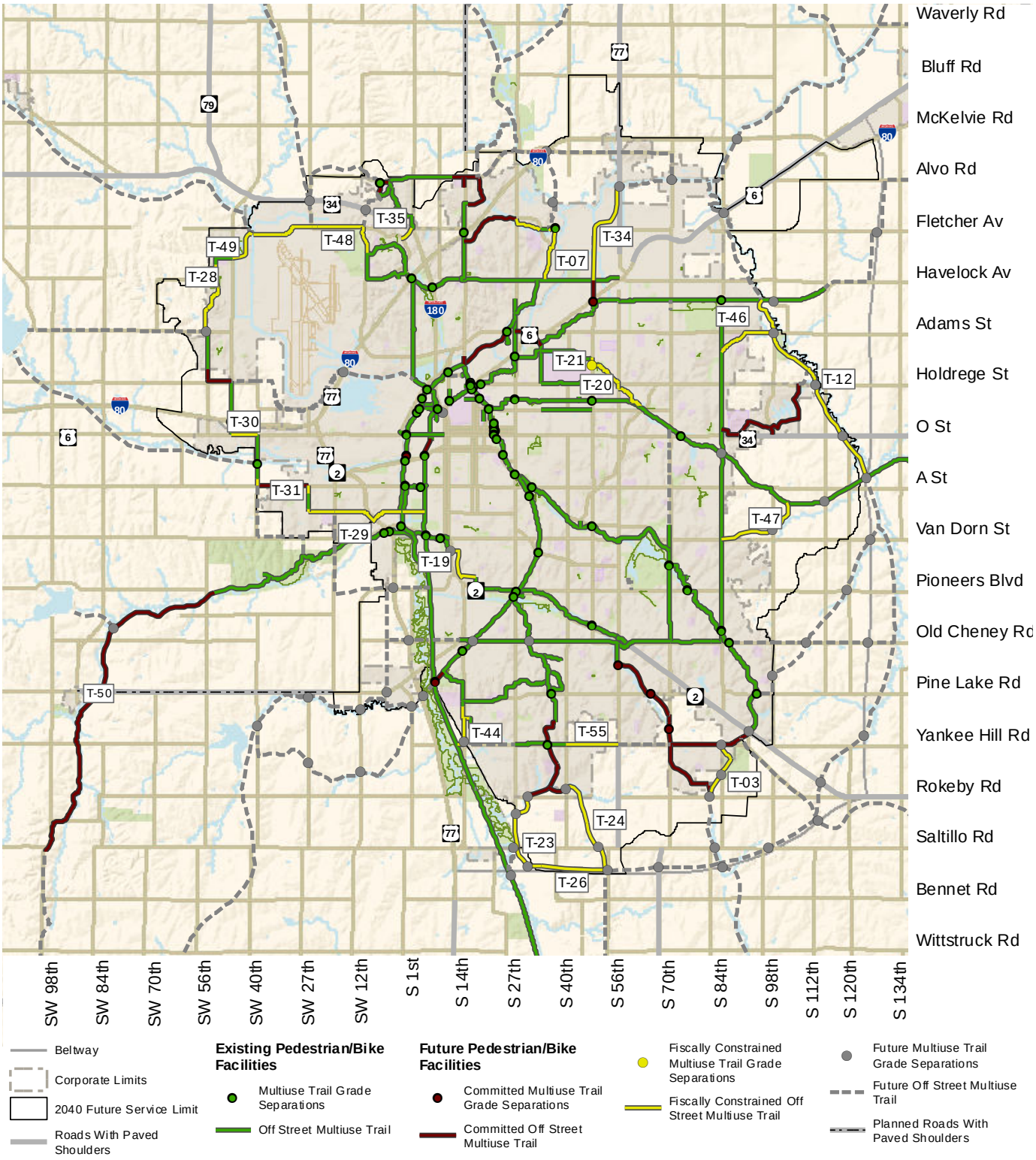
This type of treatment could be done very cost-effectively, particularly if it is paired with a planned street overlay or rehabilitation projects.

While the allocation to this program is not sufficient to fund major on-street bike facilities such as a cycle track, funds for these types of projects could be pursued through Tax Increment Financing (TIF) with commercial redevelopment in the downtown area (similar to funding for the N Street Cycle Track).

With the South Beltway funded and planned for construction in the near future, it is important to plan for bicycle connectivity across the Beltway. Bicycle connectivity will be accommodated through the Highway 77 and Highway 2 system

Table 7: Priority Trail Projects

Project ID	Trail Name	Limits	Project Cost (2016 $)
Funded/Committed Trail Projects			
T-54	Jamaica North – Arena Connector Trail	J Street to N Street	Funded
T-57	Stonebridge Trail	N 14th and Humphrey to N 11th and Alvo Rd.	Funded
T-58	Salt Creek Levee Trail	14th and Salt Creek to 27th and Salt Creek	Funded
T-59	A Street Trail	SW 40th to SW 27th	Funded
T-60	Salt Creek Levee Trail Underpass	RR Underpass at J Street	Funded
T-61	Beal Slough Trail	S 56th and London Rd to S 70th and Yankee Hill	Funded
T-62	Yankee Hill Rd Trail	S 70th to Highway 2	
T-08	Rock Island Connection	Viaduct over BNSF to Jamaica	$900,000
T-27	Greenway Corridor Trail/Haines Branch - Phase I	SW 56th St to Saltillo Rd	$3,000,000
T-04	Woodlands	Rokeby Rd to 70th St to Yankee Hill Rd	$900,000
T-11	Waterford	84th to Stevens Creek	$850,000
T-09	Wilderness Hills	Yankee Hill Rd to Rokeby Rd	$1,150,000
T-45	Landmark Fletcher	Fletcher Ave from N. 27th St to N. 14th St	$950,000
Trail Projects Within Fiscally Constrained Roadway Capital Projects			
T-16	N. 48th St Trail	Murdock Trail to Superior St	$170,000
T-18	N. 33rd St and Adams Trails	Murdock Trail to Cornhusker Hwy	$200,000
T-15	W. Holdrege Street Trail	NW 48th St to NW 56th St	$140,000
T-53	NW 56th Street Trail	W Holdrege to W Partridge	$80,000
T-55	Yankee Hill Road	S. 40th St to S. 56th St	$310,000
Priority Trail Projects			
T-19	10th Street Trail	Van Dorn St to 17th St/Burnam St	$300,000
T-35	N. 1st St	N. 1st St crossing of Hwy 34	$400,000
T-21	East Campus Trail	Leighton St to Holdrege St	$150,000
T-31	A Street Connectors	SW 40th: A St to F St, SW 27th: Shane Dr to A St	$90,000
T-07	Landmark Fletcher	33rd St & Superior St to 27th St	$600,000
T-29	South Street	SW 27th to Jamaica	$730,000
T-30	O Street	SW 40th St to SW 48th St	$240,000
T-20	Deadmans Run Trail	48th St to Mo Pac Trail	$410,000
T-46	Prairie Village Trail	84th St. to Stevens Creek, South of Adams	$450,000
T-47	Van Dorn Trail	84th and Van Dorn to 106th and MoPac Trail	$725,000
T-50	Greenway Corridor Trail/Haines Branch – Phase II	SW 56th to Saltillo Rd	$1,000,000
T-44	14th & Yankee Hill Connector (w/RTSD project)	South LPS Property Line to Yankee Hill	$320,000
T-23	27th St Connector	Rokeby Rd to South Beltway	$460,000
T-24	56th Connector	Rokeby Rd to South Beltway	$1,200,000
T-26	South Beltway Trail - Phase I	27th St to 56th St	$1,500,000
T-28	NW 56th	W. Adams to NW 56th to W. Superior	$550,000
T-03	Woodlands	Jensen Park to Rokeby Rd	$470,000
T-34	N. 48th St/Bike Park Trail	Superior St to N. 56th St	$680,000
T-48	Air Park Connector - Phase I	NW 12th to Fletcher to NW 27th	$530,000
T-49	Air Park Connector - Phase II	NW 48th to NW 31st	$550,000
T-12	Stevens Creek	Murdock Trail to MoPac Trail	$2,300,000



Map 16: Priority Trail Projects

interchanges. The City of Lincoln and NDOR are coordinating to identify opportunities to accommodate planned trails in south Lincoln.

Travel Demand Management (TDM) Program

The TDM portion of this program may include partnerships with employers to support biking, walking, and transit commuting; flexible work hours; and remote work options. The program could also consider partnerships with Transportation Network Companies (TNC) such as Uber or Lyft, as well as car share and bike share options, to support shared mobility options in Lincoln.

Roadway Construction Activities

RTSD and State Train Mile Tax Projects

The $188.11 million allocated to RTSD and State Train Mile Tax Projects is directly from the two highly restrictive funding sources. This amount is estimated to cover major railroad grade separation projects at 33rd and Adams and the South Beltway, along with railroad crossing gates and flashers at two crossings per year, and six railroad crossing surface upgrades per year.

Trail projects that improve trail crossings of a railroad may be constructed as a part of larger RTSD Projects or constructed as stand-alone projects with RTSD funds. Examples of such trail projects include the 33rd and Cornhusker project, the Rock Island Trail bridge in Densmore Park, and a South 14th and Yankee Hill Road trail crossing.

Two Plus Center Turn Lane Projects

The City of Lincoln has been adding a center left turn lane as part of programmed street rehabilitation along two lane minor arterials and some collectors for many years. This program has successfully increased the capacity and safety of a two-lane roadway and minimized traffic congestion, while preserving the character and viability of the established neighborhoods and other components of the built environment.

Approximately 14 miles of Two Plus Center Turn Lane (2+1) projects remain in Lincoln. The allocation of $43.29 million will allow construction of approximately 7.5 miles of 2+1 projects. This estimate accounts for the increasing cost of construction projects using a 5 percent annual inflation rate. The candidate list of projects are identified in Table 8.

Intersection Safety and Capacity

Much of the current and future congestion on the street network occurs at existing intersections. The LRTP resource allocation includes an increased allocation to this program over historic funding levels, totaling $104.68 million, which would allow construction of one intersection project per year in addition to critical safety improvements. This increased emphasis on intersection improvements aligns with the alternative approach to transportation corridor investments described in the LRTP Technical Report, Chapter 6, and would allow expanded geographic coverage of this approach by addressing critical bottlenecks in the system through intersection improvements.

Committed Capital Projects

Eight Roadway Capital Projects included in the 2016–2022 CIP and/or current Transportation Improvement Program (TIP) are assumed to be fully funded and are most likely to be completed within the first six years of the plan. These committed capital projects include:

- West Beltway (US-77) interchanges from I-80 to Saltillo Road (NDOR project)
- N. 10th Street and Military Bridge over Salt Creek
- Rokeby Road from 84th Street to 98th Street
- Yankee Hill Road from 70th Street to Hwy 2
- West "A" Street from SW 40th to Folsom
- South Beltway (NDOR Project)
- 14th/Warlick/Old Cheney
- Pine Lake Road from 61st to Hwy 2

Table 8: Two Plus Center Turn Lane Projects

Street Name	Limits	Length (miles)	Project Cost (2016 $)
S. 40th Street	Pioneers Boulevard to Gertie Avenue	0.40	$1,400,000
Adams Street	39th Street to 46th Street	0.50	$1,750,000
Havelock Avenue	60th Street to 63rd Street	0.25	$50,000
A Street	6th Street to 17th Street	0.85	$2,975,000
A Street	17th Street to 27th Street	0.75	$1,500,000
A Street	40th Street to 48th Street	0.44	$1,540,000
Van Dorn Street	11th Street to 27th Street	1.25	$2,500,000
Cotner Boulevard	48th Street to South Street	0.46	$1,610,000
S. 40th Street	L Street to C Street	0.50	$1,750,000
Fremont Street	48th Street to 70th Street	1.50	$5,400,000
S. 33rd Street	South Street to High Street	0.72	$1,440,000
Military Road	10th Street to 14th Street	0.16	$1,120,000
S. Folsom Street	A Street to South Street	0.50	$1,000,000
Leighton Avenue	48th Street to 70th Street	1.50	$5,400,000
Y Street	17th Street to 27th Street	0.66	$1,320,000
W. Adams Street	1st Street to 14th Street	0.90	$1,800,000
W. South Street	Coddington Avenue to Park Boulevard	1.55	$10,850,000
Calvert Street	48th Street to 56th Street	0.50	$1,000,000
N. 40th Street	Cornhusker Highway to Superior Street	0.58	$1,160,000

Developer Commitments

The City has made commitments to developers to contribute a portion of the construction cost for some roadway projects. The timing of these projects is uncertain and depends on when the associated development occurs. For the purpose of the LRTP, the City's contributions to these projects are treated similar to the Committed Capital Projects; that is, they are assumed to be complete before funding is allocated to any new Roadway Capital Projects. The plan includes a total of $25.55 million in developer commitments. Projects with current commitments are listed in Table 9. Funding for some of these projects will come from Impact Fees, while funding for others may come from various local funding sources. Other future developer agreements may impact the timing and priority of roadway capital projects.

Roadway Capital Projects

The Roadway Scoring Committee evaluated more than 70 Roadway Capital Projects based on evaluation criteria that align with the seven goals of the Plan. The resulting ranked projects were compared with the available funding for Roadway Capital Projects. The Fiscally Constrained Plan must consider the year of expenditure (YOE) cost of projects—a 5 percent annual inflation has been applied to the 2016 project costs. This inflation rate is consistent with construction cost increases over the past five years. Table 9 lists the ranked projects that can be funded within the Fiscally Constrained Plan, including the committed projects and developer commitments. Map 17 shows the fiscally constrained roadway projects.

In total, the funding allocation for Roadway Capital Projects is $366.38 million, including $66.82 million for Committed Projects, $25.55 million for Developer Commitments, and $274.01 million for other Roadway Capital Projects. As shown in Table 9, this would allow construction of 27 high priority Roadway Capital Projects.

Highway 2 Projects

As described in Chapter 6 of the Technical Report, Highway 2 was used as a case study to better understand the benefits of six-lane widening

compared to a considerably less expensive approach of improving traffic signal coordination and key intersections to eliminate bottlenecks. The LRTP includes a Highway 2 Corridor Study, which could be a Planning and Environmental Linkages (PEL) study, to evaluate alternative improvements for the corridor. This Corridor Study (Project "A") is listed as the top priority and is scheduled for 2019. A $20 million placeholder for construction of priority improvements is included as a high priority (Project "B"); the specific improvements will be identified through the Corridor Study.

Alternative Approach Corridors

In addition to the Highway 2 corridor, several roadway corridors were originally contemplated as six-lane (or four-lane) major widening projects. However, an alternative approach to major widening is recommended for these corridors. This approach would focus on traffic signal coordination and intersection improvements along with significant technology improvements to increase the efficiency of traffic flow along these corridors. This alternative approach is recommended for five corridors within the Fiscally Constrained Plan:

- N. 84th Street between O Street and Adams Street
- O Street between Antelope Valley and 46th Street
- O Street between Wedgewood Drive and 98th Street
- Cornhusker Hwy between N. 20th Street and N. 33rd Street
- Van Dorn Street between S. 70th Street and S. 84th Street

By applying this alternative approach to these corridors, the limited funding available for Roadway Capital Projects can be stretched to address the congestion needs on more corridors. The LRTP Oversight Committee identified intersections that could benefit from capacity improvements along each of these corridors and developed planning level cost estimates accordingly. Costs are shown in Table 9.

Other Programs

Intelligent Transportation System (ITS) and Technology

The Green Light Lincoln initiative uses smart technologies to improve traffic flow and reduce travel times. By using the next generation of traffic management systems, Lincoln travelers can expect less time waiting at red lights, fewer vehicle emissions, and a reduction in crashes. By maximizing the existing capacity of the City's streets through signal timing improvements, the need for major capacity expansions could be postponed or eliminated. The LRTP resource allocation includes a total of $151.85 million in funding for this program, which would allow full implementation of the City's Traffic Management Plan and Green Light Lincoln initiative. Travel delay reductions in the range of 20 percent may be expected with full implementation of Green Light Lincoln.

Technology could also help to improve transit service through applications such as transit signal priority treatments and next bus rider information. As transportation technologies advance, it will be important to stay abreast of how connected vehicles and driverless cars change the travel needs in Lincoln.

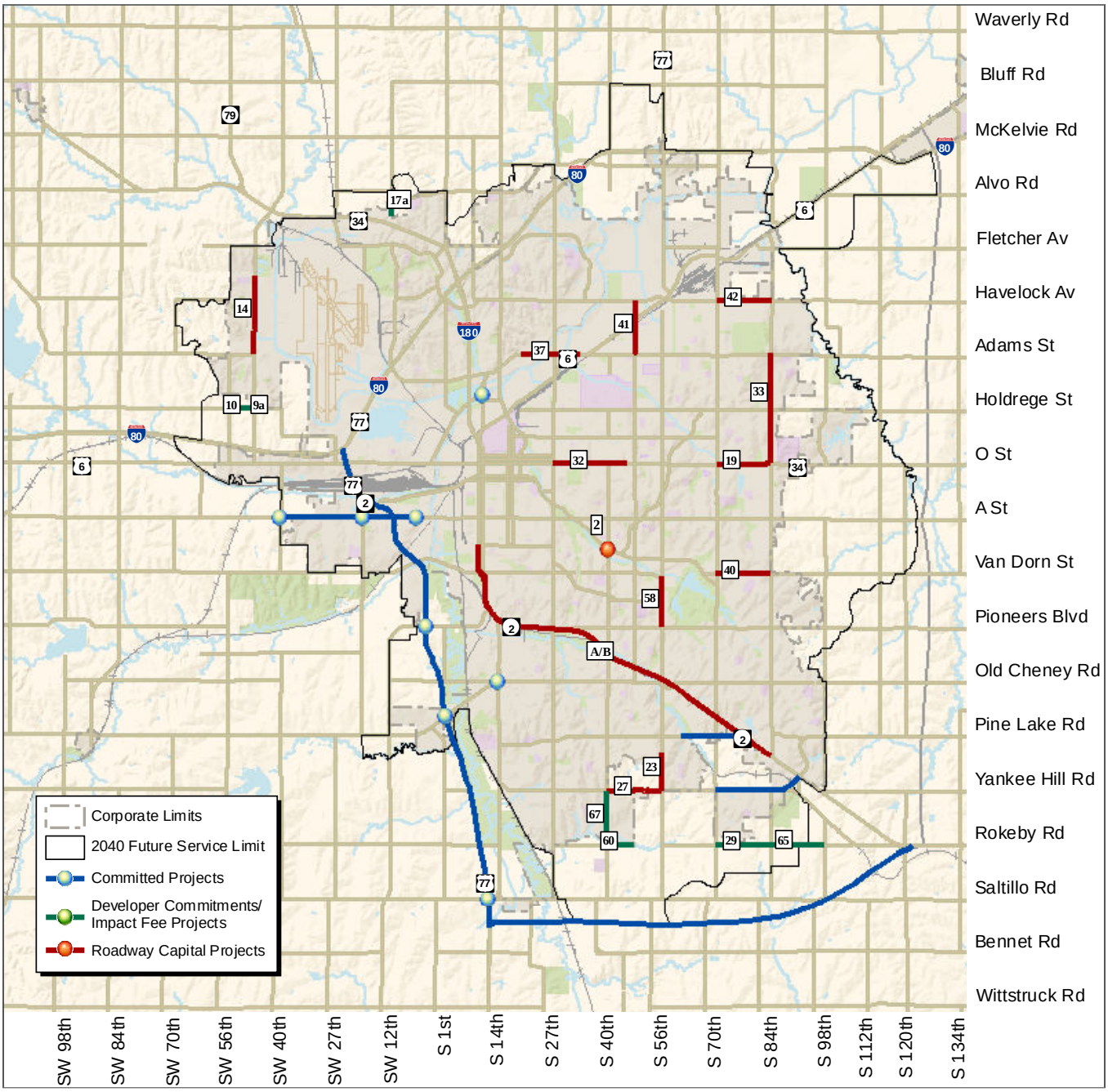
East Beltway Preservation

The allocation of $250,000 per year ($6 million over the 24-year time horizon) should be used to preserve approximately 170 acres of land along the East Beltway corridor, which is approximately 20 percent of the total land needed for the future corridor. The East Beltway was identified as the highest priority Roadway Capital Project by the public; proceeding with full corridor preservation and construction of a project this size depends on additional funding from the State and/or Federal government.

Table 10.9: Fiscally Constrained Roadway Capital Projects

RANK	Project ID	Street Name	Limits	Description	Lead Agency	Project Cost (2016 $)	Local Portion (2016 $)	Year of Expenditure (YOE)			Refer to Notes Below Table
								YOE	YOE Project Cost	Cumulative Cost (YOE	
Committed		West Beltway (US 77)	I-80 to Saltillo Rd	Freeway with new interchanges	State	$15,700,000					1
Committed		N. 10th Street	N. 10th St and Military Bridge over Salt Creek	Bridge replacement	Local	$3,500,000					1
Committed		Yankee Hill Road	70th Street to Hwy 2	2 lanes + roundabouts	Local	$14,790,000	$9,980,000				1
Committed		West A Street	SW 40th to Folsom	2 lanes + intersection improvements	Local	$16,980,000	$16,980,000				1
Committed		South Beltway	US 77 to Hwy 2	4 lane freeway	State	$200,000,000	$15,400,000				1, 6
Committed		14th / Warlick	14th/Warlick/Old Cheney	Intersection improvements and grade separation	Local	$24,930,000	$15,020,000				1
Committed		Pine Lake Road	61st St to Hwy 2	4 lanes + turn lanes	Local	$10,850,000	$9,450,000				1
Impact Fee/LES	65	Rokeby Road	84th St to 98th St	2 lanes + intersection improvements	Local	$5,000,000	$1,500,000	2017	$1,575,000	$1,575,000	2, 5
Impact Fee	29	Rokeby Road	S. 70th Street to S. 84th Street	2 lanes + intersection improvements	Local	$7,400,000	$7,400,000	2018	$8,158,500	$9,733,500	2
	A	Nebraska Hwy 2	84th Street to South Street	Corridor Study	Local	$1,500,000	$1,500,000	2019	$1,736,438	$11,469,938	3
Impact Fee	60	Rokeby Road	S. 40th St to S. 48th St	2 lanes + intersection improvements	Local	$3,500,000	$3,500,000	2023	$4,924,851	$16,394,789	2
Impact Fee	9a	W. Holdrege Street	NW 48th St to Chitwood (east ¼ mile)	2 lanes + intersection improvements	Local	$925,000	$925,000	2023	$1,301,568	$17,696,357	
Developer Commitment	67	S. 40th Street	Yankee Hill Rd to Rokeby Rd	2/4 lanes + intersection improvements	Local	$8,800,000	$8,800,000	2024	$13,001,608	$30,697,965	2
Developer Commitment	17a	NW. 12th Street	W. Alvo Road to Aster	2 lanes + turn lanes	Local	$2,800,000	$2,800,000	2024	$4,136,875	$34,834,840	2
Developer Commitment	10	W. Holdrege Street	NW 56th Street to NW 48th Street	2 lanes + intersection improvements	Local	$3,100,000	$3,100,000	2025	$4,809,117	$39,643,957	2
1	41	N. 48th Street	Adams St to Superior St	4 lanes + intersection improvements	Local	$12,400,000	$12,400,000	2026	$20,198,293	$59,842,251	
	B	Nebraska Hwy 2	84th Street to South Street	Priority improvements (TBD by Corridor Study)	Local	$20,000,000	$20,000,000	2028	$35,917,127	$95,759,377	3
3	2	S. 40th Street	Normal Blvd and South St	Major intersection area work	Local	$8,600,000	$8,600,000	2029	$16,216,583	$111,975,960	
4	27	Yankee Hill Road	S. 40th Street to S. 56th Street	2/4 lanes + intersection improvements	Local	$10,200,000	$10,200,000	2030	$20,195,302	$132,171,262	
6	58	S. 56th Street	Van Dorn St to Pioneers Blvd	4 lanes + intersection improvements	Local	$10,500,000	$10,500,000	2032	$22,920,183	$155,091,445	
7	33	N. 84th Street	O Street to Adams Street	Intersection improvements	Local	$4,125,000	$4,125,000	2032	$9,004,358	$164,095,803	4
8	32	O Street (US-34)	Antelope Valley N/S Rdwy (19th St) to 46th St	Intersection improvements	Local	$14,000,000	$14,000,000	2034	$33,692,669	$197,788,472	4
11	19	O Street (US-34)	Wedgewood Drive to 98th Street	Intersection Improvements	Local	$4,100,000	$4,100,000	2035	$10,360,496	$208,148,968	4
12	37	Cornhusker (US-6)	N. 20th Street to N. 33rd Street	Intersection Improvements	Local	$4,500,000	$4,500,000	2036	$11,939,840	$220,088,808	4
13	14	NW. 48th Street	Adams Street to Cuming Street	2 lanes + intersection improvements	Local	$10,300,000	$10,300,000	2037	$28,695,415	$248,784,223	
14	40	Van Dorn Street	S. 70th Street to S. 84th Street	Intersection improvements	Local	$2,900,000	$2,900,000	2038	$8,483,256	$257,267,479	4
16	42	Havelock Avenue	N. 70th Street to N. 84th Street	2 lanes + intersection improvements	Local	$6,300,000	$6,300,000	2039	$19,350,600	$276,618,078	
17	23	S. 56th Street	Thompson Creek Blvd to Yankee Hill Rd	4 lanes + intersection improvements	Local	$7,400,000	$7,400,000	2040	$23,865,740	$300,483,818	

1. *Committed projects are included in the 2016–2022 CIP and/or the current TIP and are assumed to be fully funded and constructed prior to allocation of resources to other Roadway Capital Projects.*
2. *The timing of the Impact Fee/Developer Commitment projects depends on development; for the purpose of the LRTP, they are assumed to be complete prior to allocation of resources to other Roadway Capital Projects.*
3. *Rather than assuming the widening of Hwy 2 to six lanes, a Corridor Study is recommended to evaluate alternative improvements for the corridor. A $20 M placeholder for construction of priority improvements is included as a high priority; the specific improvements will be identified in the Corridor Study.*
4. *These corridor projects include the alternative approach to six-lane widening (or four-lane widening in the case of Van Dorn) – traffic signal coordination and key intersection improvements to address bottlenecks.*
5. *The Rokeby Road project (84th St to 98th St) is being partially funded by Lincoln Electric System (LES) ($3.5 M) and partially by directed impact fees ($1.5M).*
6. *The $15.4 M local portion for the South Beltway project is the Wheel Tax funding only.*



Map 17: Fiscally Constrained Roadway Plan

Studies, PE, ROW, & Statutorily Required Records

This program category covers pre-project level engineering studies, responses to non-project-specific public inquiries, engineering standards and guidelines, staff coordination with private sector growth proposals, and legal requirements for record keeping. The $70.7 million allocation will allow continuation of these essential staff functions.

County Projects

The LRTP Project Team has coordinated closely with the Lancaster County Engineer's Office throughout the development of the LRTP Update. The County's Rural Roads Program identifies priority paving projects that are most likely to receive funding for paving improvement during the 2040 planning period. The order and priority of the paving projects may vary as traffic conditions warrant. Funding for

the Rural Roads Program is separate from the MPO funding described in the preceding sections. Most of the budget for the rural roadway network is devoted to maintenance of the network including grading, spreading gravel, snow removal and bridge and ROW maintenance. About $1 million per year is devoted to the programmed paving projects. Map 18 shows the rural roads projects, which are also listed in Table 10. Some of the County projects shown on Map 18 are located within Lincoln's 2040 Future Service Limit. The City and County will closely coordinate these projects to determine appropriate phased rural to urban roadway cross sections and drainage improvements at the time of construction. The objectives in phasing construction of the first two lanes of paving on these segments are to maximize pavement life, minimize pavement reconstruction, and reduce traffic disruption when traffic volumes warrant additional lanes. The pace of adjacent land development, rate of traffic growth, the need for sidewalk and trails, together with funding availability, will determine the initial and ultimate design.

Ideas on the best method for making the transition from rural to urban sections continue to evolve as traffic needs and intersection design (roundabouts) change. The City of Lincoln Public Works and Utilities Department and Lancaster County Engineer's Office are currently reviewing the rural to urban transition street (RUTS) standards to evaluate whether adjustments should be made to transition from rural to urban more efficiently.

Illustrative Plan

Roadways

All remaining Roadway Capital Projects (including an additional 52 lower ranked projects that are not included in the Fiscally Constrained Plan) are included as Illustrative (unfunded) projects in the LRTP. These projects are depicted on Figure 40 and detailed in Table 27 of the Technical Report. Other projects may consider additional 2 plus center turn lane facilities, increased rehabilitation efforts, and on-street bike facilities.

State Projects

Several State projects are included in the candidate Roadway Capital Projects list and were ranked by the Scoring Committee. The rankings of these projects reflect where they fall within the Lincoln MPO's priorities. However, it is recognized that the timing of these projects will depend on the statewide priorities and funding availability. Therefore, all State projects, other than the West and South Beltway projects, are shown in the Illustrative Plan.

Trails

The remaining trail projects that are not expected to be funded within the 2040 Fiscally Constrained Plan are included as Illustrative projects in the LRTP, as depicted on Figure 41 in the Technical Report. The timing and priority of these projects may change depending on opportunities for funding.

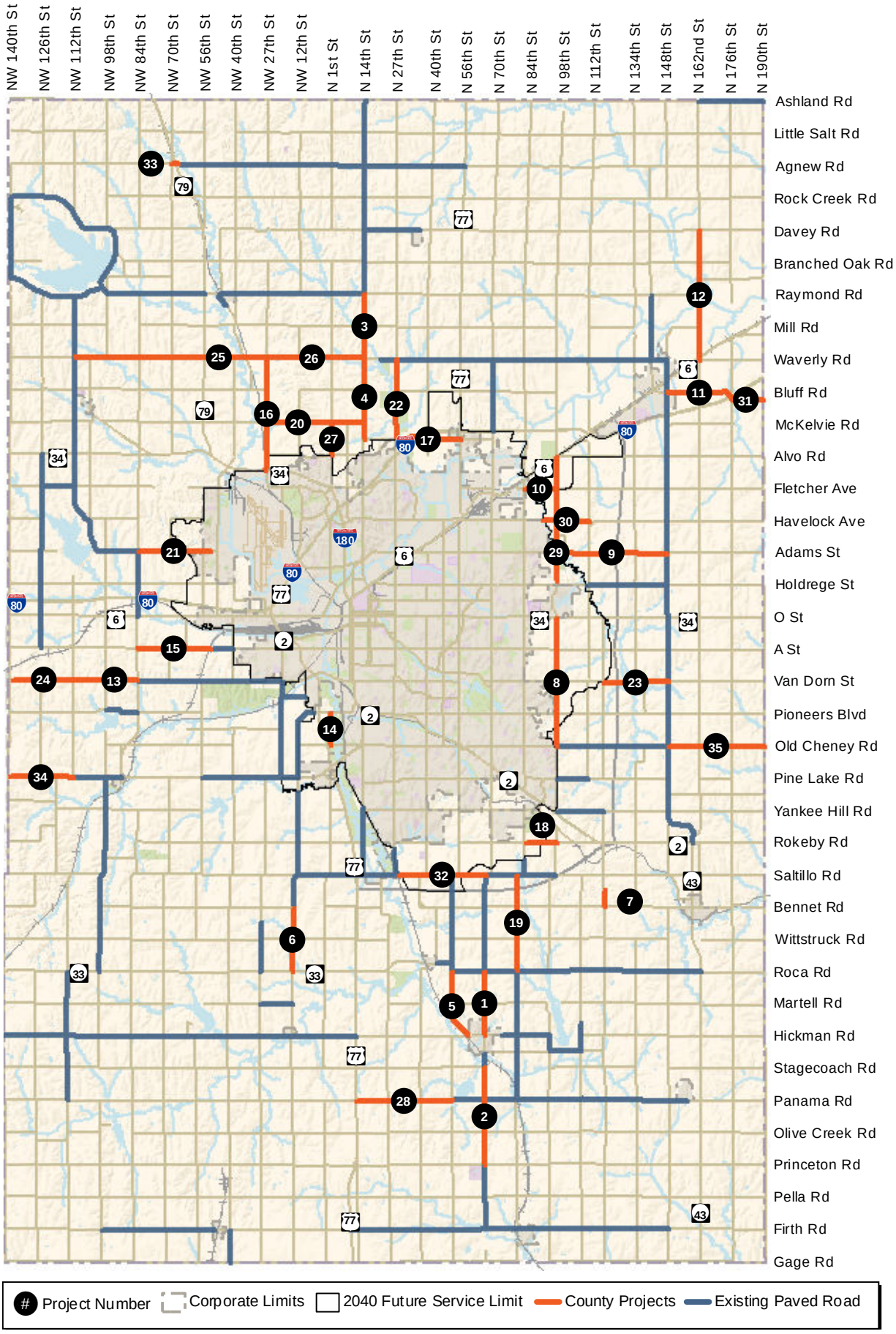
Transit

The Illustrative Plan includes full implementation of the future phases of improvements identified in the 2016 TDP. The following transit projects and services are included as Illustrative (unfunded) projects.

Multi-Modal Transportation Center

A Multi-Modal Transportation Center will provide a high level amenity for StarTran bus riders, bicyclists who desire to use transit when they travel, pedestrians as an information center and travel hub, and other transportation providers. A Multi-Modal Transportation Center (MMTC) would also provide a strong and permanent statement of intent on the part of Lincoln to become a multi-modal friendly community.

The MMTC would function as a bus transfer center, StarTran administrative office, bicycle storage



Map 18: Rural Roads Projects

Table 10: Rural Roads Projects

Priority	Project ID	Street	Location	Length (Miles)	Project Type
2016	11	Bluff Road	Waverly City Limits to I-80	2.10	County Project
2016	18	Rokeby Road	S. 84th Street to 98th St	1.00	County Project
2016	33	W. Agnew Road	Hwy. 79 west 0.2 miles	0.20	County Project
2016	34	W. Denton Rd.	SW 112th St. to SW 140th St.	2.00	County Project
2016	35	Old Cheney Rd.	148th St. to 190th St.	3.00	County Project
1	9	Adams Street	Steven's Creek to N. 148th St	3.50	County Project
2	5	S. 54th Street	Hickman Rd to Roca Rd	2.00	County Project
3	1	S. 68th Street	Hickman to Roca Rd	1.30	Federal-Aid County Project
4	32	Saltillo Road	S. 27th St to S. 68th St	3.00	County Project
5	15	W. A Street	SW 84th St to SW 52nd St	2.20	County Project
6	30	Havelock Avenue	Stevens Creek to N. 112th St	1.40	County Project
7	16	NW 27th St	Hwy 34 to W. Waverly Rd	3.50	County Project
8	2	S. 68th Street	Princeton Rd to Stagecoach Rd	3.00	Federal-Aid County Project
9	3	N. 14th Street	Waverly Rd to Raymond Rd	2.00	Federal-Aid County Project
10	8	S. 98th Street	Old Cheney Rd to Hwy 34	4.00	County Project
11	4	N. 14th Street	Arbor Rd to Waverly Rd	2.50	Federal-Aid County Project
12	6	SW 14th Street	Highway N-33 to W. Bennet Rd	2.00	County Project
13	10	Fletcher Avenue	N. 84th St to N. 98th St	2.00	County Project
14	29	N. 98th Street	Holdrege St to Highway US-6	4.30	County Project
15	13	W. Van Dorn Street	SW 112th St to SW 84th St	2.00	County Project
16	7	S. 120th Street	Bennet Rd North 0.5 Miles	0.50	County Project
17	17	Arbor Road	N. 27th St to Highway US-77	2.00	County Project
18	12	N. 162nd Street	Highway US-6 to Davey Rd	3.80	County Project
19	24	W. Van Dorn Street	SW 140th St to SW 112th St	2.00	County Project
20	14	S. 1st Street	Old Cheney Rd to Pioneers Blvd	1.00	County Project
21	25	W. Waverly Road	NW 112th St to Highway N-79	4.00	County Project
22	26	W. Waverly Road	Highway N-79 to N. 14th St	5.00	County Project
23	27	N. 1st Street	Alvo Rd to McKelvie Rd	1.00	County Project
24	22	N. 27th Street	Arbor Rd to Waverly Rd	2.50	County Project
25	19	S. 82nd Street	Roca Rd to Saltillo Rd	3.00	County Project
26	21	W. Adams Street	NW 84th St to NW 56th St	2.00	County Project
27	23	Van Dorn Street	S. 120th St to S. 148th St	2.00	County Project
28	28	Panama Road	Highway US-77 to S. 54th St	3.00	County Project
29	20	McKelvie Road	NW 27th St to N. 14th St	3.00	County Project
30	31	Bluff Road	I-80 to N. 190th St	1.10	County Project

facility, bike share facility, and likely offer space for supportive retail, taxi stands, and downtown parking, benefitting all of the City of Lincoln. The proposed location for a Multi-Modal Transportation Center would be in downtown Lincoln in order to improve connections between people and centers of employment, education, and services. Such a center would allow for convenient, safe and easy bus passenger transfers. Having a transfer facility would also reduce the criminal activity at the bus stop by making the area more transparent and the presence of continued administrative staff in the area.

Maintenance Facility and Bio-Gas Fueling Station

StarTran will be in need of a new Bus Maintenance and Storage Facility. The current bus maintenance and a significant portion of the bus storage facility is well beyond its reasonable building life. The facility was built in the 1930s. Additionally, the facility is located within the South Haymarket Neighborhood Plan, approved by the City Council, December 2015, redeveloping the area into a mixed residential/ commercial district. The facility will need to relocate to allow for redevelopment in the future.

StarTran has applied for $16,294,395 under the Federal Transit Administration's Grants for Buses and Bus Facilities Program to fund design and construction of a new bus maintenance and storage facility to be located on Theresa Street, adjacent to the Lincoln Wastewater System sewage treatment plant to help facilitate the proposed Renewable Natural Gas (RNG) project that will be located there. The RNG project employs an innovative methane gas recovery conversion to vehicle fuel process, utilizing methane from the sewage treatment plant. The plan is to locate the RNG fueling station adjacent to the StarTran bus maintenance and storage facility, allowing buses to be fueled on site.

Implement TDP Expansion Plan

The approved 2016 Transit Development Plan included an expansion plan for increasing service on key routes and adding vehicles. Below is the expansion plan from the TDP.

Bus Rapid Transit

Consider BRT in high use corridors such as "O" Street and 27th street.

Technology Improvements

Enhance customer knowledge and trip planning with passenger information systems.

Consider private transportation options such as UBER or Lyft to enhance customer travel. Such applications could be used to transport customers at the end of the bus line to their final destination.

Alternative Fueled Vehicles

Consider different fuel types and propulsion systems such as Electric buses as a means of reducing green house gas emissions and lowering fuel costs.

Explore use of Rail Corridors for passenger use

Study the potential of using existing rail corridors such as Highway 2 and Cornhusker Highway for light rail.

Consideration of inter-city transportation between Lincoln and Omaha

Consideration of technology applications outlined in the City of Lincoln's Smart City Challenge application.

7. Implementation

The Lincoln MPO is committed to moving forward with the implementation of this plan's goals and in helping to implement the programs and high priority projects identified in the plan. The Implementation Plan provides a series of strategies that will guide the MPO's implementation of the Long Range Transportation Plan over the next five years.

Land use and transportation are interdependent in that one relies on and is influenced by the other. LPlan 2040 envisions a City and County that provides an ample supply of land for future edge growth, but is also more compact with a wider range of housing options, which will support and require a wider range of transportation options. The impacts of the new land use plan will need to be closely watched to gauge and best plan for impacts on the transportation system.

It should also be noted that by federal regulation the Long Range Transportation Plan is to be

updated every five years. This is considered a more substantial review of the plan than the periodic review process or a standalone amendment process. During these five-year updates the assumptions and identified needs and priorities of the transportation plan will be reexamined to best reflect any changes that occurred since the previous five-year update.

The vision for transportation in Lincoln and Lancaster County is a safe, efficient and sustainable transportation system that enhances the quality of life, livability and economic vitality of the community. The following guiding principles should be applied to the major modes of transportation in order to implement this vision.

Guiding Principles

Land Use

- Promote consistency between land use and transportation plans to enhance mobility and accessibility.
- Reduce the demand for single occupant vehicle (SOV) travel through coordinated land use and transportation decisions.
- Support mixed use development.
- Support affordable housing and higher densities.
- Encourage higher density infill development to reduce demand for travel.

Alternative Fuels

- Encourage the provision of electric charging stations.
- Convert City and County fleet to alternatively fueled vehicles.

Environmental Considerations

- Incorporate sustainable design elements into transportation projects by using low-impact development (LID) techniques to reduce runoff, alternative street designs, and permeable pavement.
- Minimize impacts of transportation projects on the natural environment.
- Reduce the impacts of transportation projects on neighborhoods and cultural and historic resources.

Funding

- Continue discussions with the community about how more of the transportation needs can be met.
- Maximize the cost effectiveness of transportation investments.
- Continue to work with NDOR to pursue funding options for construction of the East Beltway.
- Continue funding the Railroad Transportation Safety District (RTSD).
- Consider creative alternative funding sources, such as public-private partnerships.
- Consider indexing the Wheel Tax.
- Improve communication to the public about the need for increased transportation funding.

Pedestrian and Bicycle Facilities

Dedicated funding for an ongoing pedestrian and bicycle capital program is identified as a priority in the 2040 Long Range Transportation Plan. Ongoing study of the system should identify projects that are most needed, including but not limited to assessment of the existing bike route system, signing the bike route system, the development of bike parking standards, locations of potential on-street bike facilities, wayfinding and signage needs, pedestrian crossing locations, pedestrian and bike amenities needs, identification of needed local and state law adjustments, and education and promotional strategies.

Strategies

- Identify possible amendments to state law that protect the status of bicyclists as equal users of transportation facilities.
- Consider the establishment of a bicycle licensing fee, the proceeds of which would be dedicated to bicycle improvements and programs.
- Projects should be coordinated through a continuing program of data collection, interagency cooperation and public input and participation.
- Develop and implement a coordinated system of well-connected pedestrian and bicycle facilities that serve both new and older neighborhoods and provide access to activity centers such as schools, parks, employment areas and shopping.

- Consider on-street bicycle facilities that are designed to meet the capacity and the opportunity of new and retrofitted roadways. These facilities may vary from bike routes with signage to dedicated on-street bicycle lanes to protected bicycle lanes.
- Develop a program of standards and incentives to include bicycle amenities in employment, commercial, educational and office centers such as lockers, showers, and bicycle parking.
- Develop design standards for a variety of on and off street bicycle facilities that may be appropriate for roadways of different traffic levels.
- Implement the Lincoln Bike Plan inprovements as funding is available.
- Include bicycle and pedestrian amenities as part of all City and County facilities to serve as a model for private investment.
- Cooperate with public and private organizations to develop and deliver educational programs for pedestrians, bicyclists and motorists on the rules, regulations, and benefits of alternative transportation.
- Continue to examine funding options that more closely match the identified needs in the sidewalk rehabilitation program.
- Rehabilitate one percent of sidewalks annually.
- Implement Complete Streets projects and expand the on-street bike network for community purposes.
- Add bike lanes in conjunction with street rehabilitation "road-diet" projects.
- Implement and fully support the bike share program.
- Consider installation of protected bikeways to provide a physical separation between bicyclists and motorists.
- Make adequate maintenance of bicycle and pedestrian facilities a priority.
- Add bicycle parking where appropriate.
- Elevate the status of pedestrians and bicyclists in the community to be an integral part of the transportation network in Lincoln.
- A dedicated funding source for pedestrian and bicycle projects and programs should be established.

Multi-Use Trails

Lincoln's multi-use trail system should continue to be a priority for the community. A well connected multi-use trail system provides recreational and health benefits, acts as an alternative transportation network, and promotes economic development in the community. Plans for this system in the Fiscally Constrained Transportation Plan identify prioritized trail segments for construction within the 24-year planning period as well as connections

to be made after 2040, or as funding is available. A countywide trail system is also planned and should be considered in future development.

Strategies

- Continue the development of the multi-use trail network according to the priorities as shown on the Fiscally Constrained Transportation Plan trails map. Maintain existing route maps for all trails, lanes, and routes.
- Implement a useful and visually pleasing wayfinding signage program along the trail system.
- Increase trail safety for all users.
- Consider the location and alignment of multi-use trails and bike lanes in reviewing development applications; request that the platform for trails be graded in conjunction with the associated development.
- Consider grade separated crossings in conjunction with all new construction and reconstruction of transportation projects.
- In rural areas of the County, identify potential bicycle corridors that serve existing and planned activity centers and link to existing and planned City bicycle facilities.
- Continue to expand the trail counting system for data tracking and development.
- Expand and enhance public information and education programs.
- Continue the practice of widening and paving the shoulders of County roads. This should occur when reconstruction or resurfacing of the road is planned, with safety of users as a primary consideration.
- Increase direct access to the trail system from adjacent neighborhoods.
- Take advantage of abandoned railroad corridors and drainage ways, when possible, to expand the multi-use trail system.
- Adequately maintain existing and proposed trails.
- Develop a methodology to monitor trail conditions.

Transit

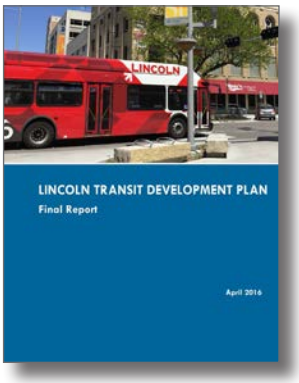
To achieve viable long range transit service for the City of Lincoln and Lancaster County in the year 2040, a number of broad policies and actions are needed to guide successful implementation and expansion of public transit. These policies and action items are to be guided by the results of the updated Transit Development Plan (TDP). The TDP is the guide for near and mid-term transit planning for the 2040 Long Range Transportation Plan. Included in a Transit Development Plan is a comprehensive operations analysis, near and long term transit service alternatives, updated service standards and policies, and management and funding options.

Strategies

- Implement the recommendations in the Transit Development Plan (TDP). Extend evening service hours per the recommendations in the TDP.

- Examine alternatives to change from a coverage based transit system to a productivity based transit system.
- Consider Mixed Use Redevelopment Nodes and Corridors in developing transit corridors.
- Pursue funding for construction of a downtown Multimodal Transportation Center.
- Continue to have discussions regarding technology advances and how they can be implemented for enhanced transit.

- Evaluate opportunities for public/private relationships for funding transit services.
- Provide amenities at transit stops that encourage multi-modal use.
- Work with the Public Works and Utilities Department on implementing a new Biogas Facility and update bus fleet to utilize this system.
- Identify opportunities to improve the connectivity between travel modes such as pedestrian access and bike parking at bus stops.



- Develop a well-functioning transit system that provides options to both riders by choice and those who ride out of necessity.

Streets and Roads

Although investment in other modes of transportation may decrease reliance on the automobile, streets and highways will continue to form the backbone of the entire region's transportation system. The streets and roads programs are integral to a well-functioning system and are responsible for meeting the day to day demands of the system, providing routine maintenance of the roadways, utilizing technology to improve efficiencies in the system and supporting alternative modes of transportation.

Strategies: General

- Implement the recommendations of the Mayor's Road Design Task Force to maximize cost-effectiveness in roadways, build roads to serve the traffic projected in the near term, and ensure all roadways within the future service limit are served by an appropriately paved surface. Consider updating these recommendations to best reflect current needs and conditions.
- Collaborate to refine the Rural to Urban Transition for Streets (RUTS) program standards to identify efficient transitions from rural to urban conditions.
- Encourage the use of alternative travel modes (biking, walking and transit) to lessen the demand on the streets.
- Continue advancing preventative maintenance strategies (i.e. pothole repairs and crack sealing) to extend the life of Lincoln's streets and minimize the life-cycle costs.
- Implement the funding program and construct the committed and priority Roadway Capital Projects per the Fiscally Constrained Plan.
- Rehabilitate 5% of major streets and 3% of residential streets each year.
- Continue to discuss strategies to more fully fund the roadway rehabilitation program to more closely match identified needs.
- Implement an alternative approach to major widening projects through technology and intersection improvements.
- Continue to analyze railroad crossings and recommend grade separations when warranted.
- Continue to develop crash data focusing on identifying significant crash patterns and implement countermeasures.
- Continue to fund the sidewalk repair program.
- Consider the travel needs of the aging population.
- Improve the efficiency, performance and connectivity of a balanced transportation system.
- Promote consistency between land use and transportation plans to enhance mobility and accessibility.
- Provide a safe and secure transportation system.
- Support economic vitality of the community.

- Protect and enhance environmental sustainability, provide opportunities for active lifestyles, and conserve natural and cultural resources.
- Maximize the cost effectiveness of transportation.
- Design arterial streets in developing areas to meet the foreseeable demand instead of designing and constructing them for full future capacity.
- Review and evaluate all Streets and Roads projects for conformance with Complete Streets elements.

Strategies: Roadway Studies

Alternative approach corridor studies focus on the use of technology, such as traffic signal coordination, and strategic intersection improvements versus major widening projects. By applying this alternative approach to these corridors, the limited funding available for Roadway Capital Projects can be stretched to address the congestion needs on more corridors. Alternative corridor studies are recommended for the following corridors:

- Highway 2 from South Street to S. 84th Street
- N. 84th St between O St and Adams St
- O St between Antelope Valley and 46th St
- O St between Wedgewood Drive and 98th St
- Cornhusker Hwy between N. 20th St and N. 33rd St
- Van Dorn St between S. 70th St and S. 84th St

Additional roadway corridor and intersection projects should be evaluated for their impacts on surrounding properties as well as to the transportation system overall. Roadway corridor studies are recommended for the following projects:

- 33rd and Cornhusker – Complete the Planning and Environmental Linkages (PEL) Study to identify and evaluate potential railroad grade separated structures in the vicinity of N. 33rd and Cornhusker Highway. This project should aim to eliminate train conflicts with vehicles, bicyclists and pedestrians.
- Continue RTSD at-grade crossing studies to reduce or eliminate automobile/pedestrian and railroad conflicts.
- As part of the US-77/West Beltway freeway project, study a potential overpass at US-77 and Old Cheney Road and Rokeby Road. The study is to be a joint State/County/City feasibility study, including a traffic analysis, a citizen participation element, an appropriate environmental review, and will be started no later than one year prior to the contract letting of the West Bypass freeway upgrade. The study will comply with FHWA procedures for Federal Aid projects and will attempt to maintain an Old Cheney connection to 1st Street. (Study for a potential overpass at Rokeby Road has been approved by the County Board only.)

Strategies: Congestion Management Process

One area of ongoing emphasis is the Congestion Management Process. Congestion mitigation efforts should continue and remain flexible. There should be a regular process in place to identify and respond to traffic congestion challenges. Many management and operational actions will be undertaken at the departmental level to provide the quickest possible resolution, while more serious issues may require a formal study process. Additional studies may be desirable to identify specific congestion mitigation strategies that appear most reasonable for a particular location. Where deficiencies are identified, the MPO Technical Committee may suggest strategies for congestion mitigation. Studies or recommendations for congestion mitigation should address as a minimum the impacts on the following:

- Projects should be evaluated against the recommendations and guiding principles of the Alternative Transportation Modes, Complete Streets Committee, Travel Demand Management Techniques, Two-Plus Center Turn Lane Program, Intersection Capacity Improvements as well as the Congestion Management Process adopted in 2009. Specific projects to address congestion management include but are not limited to implementation of the Green Light Lincoln initiative and strategic intersection improvements and signal coordination.
- Implement the Green Light Lincoln program.
- Improve intersection operations and coordinate signal timing.
- Replace 15 signals each year (3 percent).
- Implement intelligent transportation systems (ITS).
- Consider the impacts that emerging technologies in transportation (e.g., autonomous cars and online goods delivery) may have on travel behaviors and the future capacity needs of the system.
- Implement transportation demand management (TDM) tools such as van-sharing.
- Help the transportation system recover swiftly from incidents.

Congestion Management Process: Congestion mitigation efforts should continue and remain flexible and ongoing. There should be a regular process in place to identify and respond to traffic congestion challenges.

Airports and Airfields

Lincoln Municipal Airport is governed by the Lincoln Airport Authority (LAA). The LAA is part of the MPO and participates in its activities; however, planning for airport facilities is done in a separate process. Private airports and airfields must abide by the rules of the Nebraska Department of Aeronautics as well as County and City zoning code.

Strategies

- Maintain compatible land uses and zoning within the 60 DNL and 75 DNL noise contour lines.
- Continue to enforce zoning restrictions for building and structure height in the approach and turning zones.

Freight

A network of railroad tracks and the highway system in Lincoln and Lancaster County play an important role in freight movement. Land with highway and/or rail accessibility may be desirable for employment center development and should be sited according to Lincoln/Lancaster County Future Land Use Plan.

Strategies

- Continue coordinated efforts with representatives from all appropriate modes to ensure that projects proposed by the private sector are incorporated into the planning and programming process. The focus of discussion on freight bottlenecks with the freight community during the development of the 2040 Plan was on needed improvements to Highway 2 and the anticipated construction of the South Beltway as a major benefit to freight operations in the region.
- Coordinate with the State's efforts to develop a state-wide freight plan.
- Review existing policies concerning separation between conflicting land uses and continue the assessment of risk concerning hazardous materials and impact on nearby land uses.
- Enhance access to external transportation connectors (e.g., Interstate system) in order to minimize impact on existing land uses.
- Enhance the internal transportation routes (e.g. State highways and City arterials) in order minimize impact on existing land uses.

- Encourage and support the development of individual inter-modal projects by private industry. Opportunities for expanding the intermodal facility should be encouraged in the Lincoln Airport and Airpark areas where rail access exists.
- To the extent possible, eliminate conflicts between highway traffic and railroads in Lincoln and Lancaster County.
- Expand the use of technology to improve the efficiency of freight trucking routes.
- Implement adaptive signal control with emphasis on major truck routes.

Mitigating Impacts on Environmental, Social and Cultural Resources

As part of the planning process to develop the 2040 Long Range Transportation Plan, environmental impacts of proposed transportation projects were analyzed by a group of state and local government representatives, non-profit organizations and interest groups in a process which is fully described in the Technical Report, beginning on page 110. The purpose of this effort was to provide an opportunity to identify any conflicts between environmental, social and cultural resources and potential transportation projects, and to use this information to help determine which projects to include in the transportation plan. The following is an explanation of these reviews by topic area. This information will be considered as transportation projects from the plan are implemented.

In summary, GIS mapping was used to represent proposed roadway and trail projects and to analyze their relationship to identified environmental, social, cultural and historic resources. Possible conflict points and areas were identified and information and maps were sent to a group of 27 different contact persons. These individuals were asked to consult with their group or agency and report back on 1) any possible conflict points that were missed in the analysis, 2) issues that may be raised by the conflict points, and 3) possible mitigation strategies to address these issues. Responses are included in Appendix I of the Technical Report.

The list of projects analyzed includes projects that were ultimately removed from the final list through the prioritization process. Therefore, the list of projects in the Technical Report on page 121, Alternative Transportation Analysis, is longer than that found in the 2040 Financially Constrained Transportation Plan and the 2040 Needs Based Plan.

In general, transportation projects shown did not represent the construction of an entirely new roadway, but rather the widening of existing right of way. An exception to this would be the South and East Beltways, which have both had some level of environmental analysis as part of their preliminary planning to date. Trails also follow railway or roadway right of ways. Environmental impacts are fairly limited because the area has already been impacted to some extent with the establishment of the existing right of way. Because of this, comments received, particularly from the environmental groups, were fairly general and limited. Social and cultural groups commented more generally with concerns of inadequate transit service, linkages between modes, and maintenance of streets in older parts of the City.

Mitigation Strategies

In general, adherence to the overall mitigation sequence of "avoid, minimize impacts, and compensate for unavoidable impacts" should be applied for all projects that are implemented. Detailed mitigation strategies should be developed during the engineering of all transportation projects. Cooperation and collaboration with environmental agencies early and throughout the construction process will insure the best result.

Wetlands and Saline Wetlands

Freshwater wetlands should be avoided as much as possible. When avoidance is not possible,

mitigation can be done on site or through a wetland mitigation bank. Generally, mitigation on a 2:1 basis with five years of monitoring is required, but this ratio varies depending on the type and quality of wetland impacted.

The Growth Tiers Map in the Vision and Plan chapter of LPlan 2040 indicates an emphasis on directing growth away from saline wetlands and urban growth outside the Little Salt corridor for the very long term.

Endangered Species

Projects that are planned in areas identified as known or possible threatened and endangered species habitat must comply with all state and federal regulations. In general, these areas have a higher imperative to avoid when engineering roadway projects. Trail projects, when carefully designed, should not be detrimental to endangered species and may in fact provide opportunities to educate and increase awareness.

Tree Mass

Tree masses may be affected by construction even when the trees are left in place. Changes in grading can change runoff flows and subsurface water available to roots. Compaction of soil by heavy equipment can decrease soil permeability. Root zones should be protected from compaction by avoiding the area or by placement of non compacting materials over equipment travel lanes during construction. Retaining walls may be used when site distances require dramatic changes in grade, rather than grading back beyond the right of way. When trees must be removed they should be replaced with similar species at an appropriate ratio.

Floodplain

When grading must be done in floodplain areas the surface hydrology must be carefully considered. While compensatory storage mitigation addresses the floodwater quantity issue, the flow of surface water during a flood event must also be addressed in order to mitigate any possible effects to downstream, or upstream, properties. Lincoln and the three mile extraterritorial jurisdiction are governed by a "No Adverse Impact" policy for new growth areas. This ensures that construction activity on one piece of property will not negatively impact another. The floodway should remain open for the conveyance of flood water; stream crossings must generally be constructed so as to cause no rise in the flood level.

Often trails are constructed in floodplain areas. These structures, if properly constructed, should not cause adverse impact. However, care should be taken when grading for trail construction, and the trails themselves may require a higher level of maintenance due to sediment and debris deposit during flood events, movement of the base material due to high water table, and increase vegetative growth.

Native Prairie

Native prairies can be negatively impacted by runoff from impermeable surfaces which can often carry pollutants. Runoff detention and retention areas where pollutants can settle and runoff can be slowed and infiltrate are useful mitigation strategies. Issues can also arise when prairies are burned as part of regular management practices causing smoke and reduced visibility. Proper management techniques include selection of burning event dates to ensure favorable winds, or use of mowing when burning is not feasible.

Stream Corridors

Stream corridors, or riparian areas, provide important habitat and connections for wildlife. These corridors are often associated with floodplains and so similar mitigation efforts are effective. Lincoln ordinances define buffer areas that must be kept in place to provide a functional riparian area. When roadways must cross streams it is important that proper design allows a sufficiently wide riparian corridor to pass underneath the structure. The use of culverts on significant streams

should be avoided as these stretches interrupt the continuous stream corridor.

The process for analysis of social, cultural and historic resources was similar to that described for environmental resources above. Census data was used to identify Census tracts with a higher than average percentage of low income, racial, and ethnic minorities. Projects were then mapped and data was provided on the number of lane miles of roadway proposed in these high population areas. Eighteen different agencies and non-profit organizations were asked for input. Responses are included in Appendix I of the Technical Report.

There were very few roadway projects that crossed through or were adjacent to these population concentrations. There were only 1.53 miles of trail proposed in these areas. Most of the identified Census tracts are located in the older parts of the City, where very few new transportation projects are proposed.

The majority of comments received from these groups were in reference to transit issues, particularly concerns regarding the lack of evening bus service and the proposed reallocation of service to higher density and higher ridership areas.. Major issues identified are in the Technical Report on page 123.

Transit Service

The most frequent comment was in regard to the lack of evening bus service. It is difficult for those who are transit dependent to find transportation to and from work if their jobs require them to work before 6:00 a.m. or after 6:00 p.m. This is one of the goals of the proposed update of the Transit Development Plan and was also a common issue in other surveys and open house commentaries.

There was also discussion about the proposed reallocation of transit service to higher density and higher ridership areas, providing more frequent or perhaps longer service hours on those routes. Some identified this as a desirable change which would allow these areas, identified as higher in low to moderate income and racial and ethnic minority populations, to benefit from a higher level of service. Others expressed concerns that the very service provided would discourage low income populations from moving out of the areas and inadvertently cause poverty to remain concentrated in these areas of the City. In order to avoid this unintended circumstance, careful evaluation of service and Census data will need to be made on a regular basis and as future transit plans are developed.

Historical Impacts

There was a specific comment from the historic impact review of the proposed plan regarding the mapping of Pioneers Park as a single site (point). The park should be considered as a district (polygon) as it encompasses 500 acres, putting it in proximity to Coddington and West Van Dorn trails and street projects. Another mapping information comment during this review was the fact that the Woodsshire Historic District is not mapped, but there were no streets or trails projects in proximity to this area.

For the broad-brush level of planning, mapping to identify designated cultural resources in proximity to potential projects is appropriate, mostly to serve as an early reminder to potential historic impacts. It is noted that the actual project planning should consider both designated cultural resources and those eligible for the National Register of Historic Places, but not yet identified; that projects that are federal undertakings (federal funding or approvals) require review under Section 106 of the National Historic Preservation Act; that early planning, once actual projects are programmed, helps avoid, minimize, or mitigate adverse impacts on cultural resources.

It also bears mentioning that proximity alone does not constitute adverse impact, and in fact 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.

Roadway Maintenance in Existing Neighborhoods

Another area of concern expressed was the apparent lack of new road projects in the existing neighborhoods. While the mapping and tabular tools shared with the evaluating groups did include all new projects, they did not include existing and committed projects which include the Two Plus Center Turn Lane program. These projects are explained more fully in an earlier section, but generally improve traffic flow without requiring additional right of way and are designed to alleviate traffic congestion and all of the negative associated impacts (noise, air quality impacts, etc…) without significantly impacting the profile of the roadway.

The question was asked whether there would be increased efforts to improve roadway quality in existing neighborhoods. As explained in the 2040 Financially Constrained Transportation Plan section, roadway rehabilitation projects are an emphasis with the rehabilitation budgets for roads, trails and sidewalks proposed to roughly double for all modes.

Connectivity between Modes

The ability of people to move around by various modes was listed as a concern by some groups. Connection of trail systems to the pedestrian and street system, ability to move from bike to transit, and transit service to major employment centers were some of the topics discussed. The City recently added bike racks to all City buses to improve the bike-to-transit connection; this is anticipated to continue.

Connection of the trail network to the pedestrian and street system is a major goal of the trails plan as described in the Multi-Use Trails Guiding Principles and Strategies section. The on-street bicycle system will also be a major area of concentration for the new pedestrian and bicycle program.

Performance Measures

Under MAP-21 and FAST Act, performance-based planning was established. Therefore, this Long Range Transportation Plan incorporates performance measures (detailed in Section 4, Goals) that relate to local and national goals. Performance-based planning affords a structure for this LRTP to ensure that scarce resources are used effectively and equitably. The community values of transportation are woven into the goals, objectives, performance measures, and ultimately, evaluation criteria, used to identify high-priority transportation projects. The LRTP is based on a set of goals intended to implement the vision and support the transportation needs and community values, while aligning with national goals and federal planning factors. Individual performance measures have been identified and included in the Implementation Section found in the strategies of each applicable mode of transportation

Performance Tracking Strategies

- Develop a methodology for and begin tracking those performance measures (in Section 4) that are not currently being tracked
- Track the progress in each performance measure annually and provide an annual performance report
- Update the City's Asset Management Plan to include improved tracking and reporting

National Performance Management Measures

The Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA)

have issued Final Rules that include National Performance Management Measures at the system level that the State DOTs and MPOs are required to incorporate into their planning process. The National Performance Management Measures were developed to address the National Goals established under MAP-21 and the MPO is required to incorporate the National Performance Management Measures and the National Goals [23 CFR 134 (I)] in their Long Range Transportation Plans (LRTP). The Federal Rules that establish the National Performance Management Measures applicable to MPOs are:

Safety (PM-1). Highway Safety Improvement Program/Safety Performance Management Measures [23 CFR §924, 23 CFR § 490]

Infrastructure (PM-2). Assessing Pavement Condition for the National Highway Performance Program and Bridge Condition for the National Highway Performance Program [23 CFR § 490]

System Performance (PM-3). Assessing Performance of the National Highway system, Freight Movement on the Interstate System, and Congestion Mitigation and Air Quality Improvement Program [23 CFR § 490]

MPOs are to report baseline condition/performance and progress toward the achievement of their targets in the system performance report in their LRTP [23 CFR § 490]. The National Performance Management Measures applicable to MPOs are listed below.

Safety [23 CFR §924, 23 CFR § 490]

The Highway Safety Improvement Program/ Safety Performance Management Measures (PM-1) require State DOTs to set targets by August 31, 2017 as part of the State's annual submission of its Highway Safety Improvement Program (HSIP). MPOs are required to set targets by February 27, 2018 and incorporate them into their Long Range Transportation Plans (LRTP). In the LRTP, performance measures are to be used to aid in making informed decisions about strategic investments and to evaluate projects included in their Needs Plan for Cost Feasible analysis.

Working in partnership with local agencies, the NDOT safety investments are to be identified and programmed to construct effective countermeasures that will reduce traffic fatalities and serious injuries. The Lincoln MPO has agreed to support the Nebraska Department of Transportation targets for Safety Performance Measures as identified for HSIP investment which will be based on crash history, roadway characteristics, and the existence of infrastructure countermeasures that can address the types of crashes present.

Infrastructure [23 CFR § 490]

Assessing Pavement Condition for the National Highway Performance Program and Bridge Condition for the National Highway Performance Program (PM-2) was identified in the FHWA Final Rule of 2016 entitled "National Performance Management Measures." Assessing Pavement Condition and Bridge Condition for the National Highway Performance Program requires measures to evaluate the pavement and bridge conditions on the National Highway System (NHS).

State DOTs and MPOs are required to establish 2-year and 4-year targets, and MPOs must establish targets by either supporting the statewide target, or defining a target unique to the MPO. MPOs are not required to provide a separate report to FHWA, however, State DOTs and MPOs will need to coordinate and mutually agree to an established reporting process. Coordination will be required between State DOTs and MPOs if a State DOT adjusts its 4-year target at the midpoint of the performance period.

This Rule was effective as of May 20, 2017. State DOTs are required to set targets by May 20, 2018, and MPOs are required to set targets by November 16, 2018. The Lincoln MPO has agreed to support the NDOT Statewide Performance Measure Targets to maintain Pavement Condition and Bridge Condition for the National Highway Performance Program (PM-2).

System Performance [23 CFR § 490]

Assessing Performance of the National Highway system, Freight Movement on the Interstate System, and Congestion Mitigation and Air Quality Improvement Program (PM-3) was issued by the FHWA in 2017 as a Final Rule for system performance/freight/Congestion Mitigation Air Quality (CMAQ), entitled "National Performance Management Measures. The Rule went into effect on May 20, 2017. State DOTs and MPOs are required to establish 2-year and 4-year targets, and MPOs must establish targets by either supporting the statewide target, or defining a target unique to the MPO. MPOs are not required to provide a separate report to FHWA. Coordination will be required between State DOTs and MPOs if a State adjusts its 4-year target at the midpoint of the performance period.

The State DOTs are required to set targets by May 20, 2018, and MPOs are required to set targets by November 16, 2018. The Lincoln MPO Has agreed to support the NDOT Statewide Performance Measure Targets for System Performance to reduce traffic congestion and improve system efficiency and freight movement for the National Highway Performance Program (PM-3).

Transit Asset Management [49 CFR § 625, 630]

FTA issued a Final Rule on Transit Asset Management Plans (TAMP) to evaluate the "state of good repair of transit agency vehicles, facilities, and equipment." Recipients of public transit funds—which include states, local authorities, and public transportation operators—are required to establish performance targets for safety and state of good repair; to develop transit asset management and transit safety plans; and to report on their progress toward achieving targets. Public transportation operators are directed to share information with MPOs and states so that all plans and performance reports are coordinated. MPOs are to consider the State Asset Management Plan and the Transit Asset Management Plan for their respective jurisdiction during the LRTP planning process.

The Rule,"Transit Asset Management; National Transit Database," went into effect on July 26, 2016 with the TAMP due for transit by October 1, 2018. Transit target setting repeats annually and plans are updated every 4 years. MPOs must establish targets specific to the MPO planning area for the same performance measures for all public transit providers in the MPO planning area within 180 days of when the transit provider establishes its targets. The Lincoln MPO has agreed to support the Lincoln StarTran TAM Plan and is amending the Lincoln StarTran TAM to the LRTP by reference.

Process for Amending the MPO LRTP Financially Constrained Transportation Plan

With the adoption of the MPO LRTP Financially Constrained Transportation Plan, there is a need to explain how the plan will be amended in the future when needed. As with all long range plans, conditions in the community likely will change over time and related shifts in priorities will occur. A change such as an increase in the amount of growth in one direction of the urbanizing area with a corresponding decrease in expected growth in another direction will shift the needs and priorities of the transportation system. Some projects that were expected to be needed farther out in the planning period may become needed sooner. Likewise, a project that is no longer needed as soon as expected could be delayed.

Changes in the basic assumptions or goals and policies of the 2040 Lincoln/Lancaster County

Comprehensive Plan and the MPO LRTP may require formal amendments to both documents. More likely will be more specific shifts in needs and priorities that will need to be reflected in the MPO LRTP in order to continue to have a financially constrained plan that meets the needs of the community over time. Changes to the Financially Constrained Transportation Plan are to be made by a formal plan amendment through the MPO planning process. These may take the form of a standalone amendment or as a package of amendments during the established annual review process discussed in the Plan Realization chapter of LPlan 2040.

For example, when a project is identified as needed sooner than expected and that need is in the first ten years of the MPO LRTP Financially Constrained Transportation Plan, a project(s) of similar cost will need to be dropped lower in the priority list to keep the plan financially constrained.

Close adherence to the amendment process will be of particular importance if a project is desired to be placed in the first four years of the plan. The first four years of the MPO LRTP Financially Constrained Transportation Plan plan should closely reflect the MPO Transportation Improvement Program (TIP) for projects of regional significance and those using the federal planning process and federal funding. Close coordination and consistency between the TIP and the Long Range Transportation Plan should be an ongoing effort.

All amendments to the Financially Constrained Transportation Plan will need to be reviewed and approved by the Technical Committee of the Metropolitan Planning Organization (MPO) that includes local, state, and federal representation, the Lincoln-Lancaster County Planning Commission, and the MPO Officials Committee. The amendment process will also need to adhere to the MPO's Public Participation Plan to ensure opportunities for public engagement and information dissemination.