

8 COMMUNITY FACILITIES

This chapter reviews the projected status of community facilities during the planning period, including libraries, fire services, law enforcement, health care, schools, and public buildings.



INTRODUCTION

The availability and service levels of community facilities affect the quality of life in the City and County, and as the community grows, it should be prepared to adapt to change. This chapter addresses a series of principles and strategies to be pursued in meeting the community's future health, safety and educational needs. It takes into consideration an increasing population, changing demographics and evolving technology in planning high quality and efficient delivery of services. It also continues to emphasize the importance of collaboration and shared resources among agencies to realize the greatest benefit to the community.

GUIDING PRINCIPLES

OVERALL GUIDING PRINCIPLES

- Promote a functional balance between community facilities and growth.
- Encourage adequate facilities and services which provide diverse educational, cultural, environmental, and social opportunities.

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- Promote adequate facilities and services to assure the health, safety and welfare of all citizens.
- Promote cooperation and coordination among both the public and private sectors in the development and maintenance of community facilities.

LIBRARIES

- Libraries are important centers of activity and education, and should grow along with the community while keeping their center in downtown.



- Balanced and accessible service should be provided to all.
- Location and layout of new facilities should attract and serve the maximum population within a reasonable distance.
- Changes in technology should be considered while planning for the physical layout of libraries and for the addition of services to those traditionally supplied by the libraries.

FIRE AND RESCUE

- Provide timely and effective emergency response services.
- As the community grows, fire and rescue services must be able to respond to changing needs in order to provide public safety services.

LAW ENFORCEMENT

- As the community grows, law enforcement must be able to respond to changing needs in order to provide public safety services.
- Continue to promote the cooperation exhibited by the city, county, University of Nebraska

police and State Patrol in furthering the efficient delivery of public safety services to the community.

HEALTH CARE

- Develop Lincoln as a major network of quality regional health care services at reasonable costs.
- Encourage health care service facilities to meet the demand of the community's growing and aging population base.
- Medical services, including physical and mental health care services, should be integrated and accessible throughout the community.
- Many of the existing medical facilities are located near existing residential neighborhoods and are expected to remain the vital core of health care services in the county and region.

EDUCATION

- Encourage cooperative planning and site development between the City and public and private educational institutions.
- Continue to coordinate development proposals with all the school districts in the County.
- Lincoln Public Schools is the only public school district within the City of Lincoln, and the Lincoln Public School boundary will continue to expand as the city limits of Lincoln expand.
- Elementary and middle schools should be sized and located to enable children to walk or bicycle to them. Child care centers should be located within neighborhoods and near schools and parks when possible.

OTHER PUBLIC BUILDINGS AND FACILITIES

- Public buildings and structures should be well built, functional, energy efficient and designed to blend attractively within the context of surrounding development or to serve as a guide for future development or redevelopment.

- Future public buildings should be designed, built, and maintained to ensure good indoor air quality to help protect the public’s health.

LINCOLN CITY LIBRARIES

Library services, similar to many other public services, must be provided regardless of how the community grows. Lincoln City Libraries currently operates the following nine facilities: the headquarters library in Downtown — Bennett Martin Public Library; four quadrant branch libraries — Victor E. Anderson, Charles H. Gere, Loren Corey Eiseley and Bess Dodson Walt; three neighborhood libraries — Bethany, Dan A. Williams and South; and the bookmobile.

Lincoln City Libraries has a branch library in each quadrant of its operational service area. The intent is to provide balanced and accessible library service to the entire community. Through contractual arrangement, residents living outside Lincoln, but within Lancaster County, have access to all services of Lincoln City Libraries.

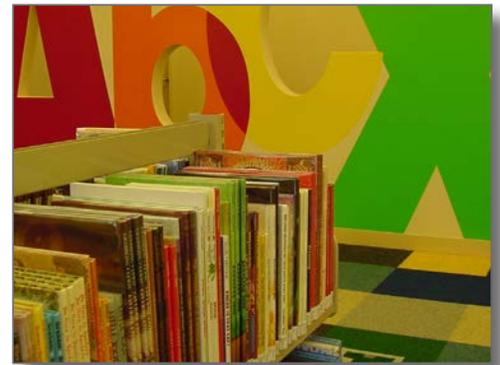
Downtown is the heart of our community, and strong community facilities are essential to maintaining downtown vitality. The Downtown Master Plan has identified the importance of maintaining the location of the main library in downtown.

In addition to Lincoln City Libraries, there are private and other publicly supported libraries in the community. These libraries are associated with colleges and universities, and access is determined by each institution’s governing body. There is also a network of numerous “Little Free Libraries” hosted in the front yards of private residences.

STRATEGIES

- Continue through contractual arrangement to provide residents living outside Lincoln, but within Lancaster County, access to all services of Lincoln City Libraries.

- Future renovation and/or relocation plans of the main library must consider sites that maintain or augment access, including pedestrian and mass transit accessibility, and continue the main library’s role as a core community facility in downtown.



- While planning for new libraries or renovating and reusing existing facilities, Lincoln City Libraries should consider neighborhood and Downtown development, transportation corridors, public school patterns, and agencies and services that complement the public library system.

- With changing demographics of the community and changes in technology, the libraries should explore the possibility of providing additional services to the traditional role such as:

- Provide more resources for community meetings and gatherings.
- Innovate and use creative planning to make spaces flexible and responsive to customer and community priorities.

- Innovate new ways for the library to meet the needs of people living in poverty.

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FIRE AND RESCUE

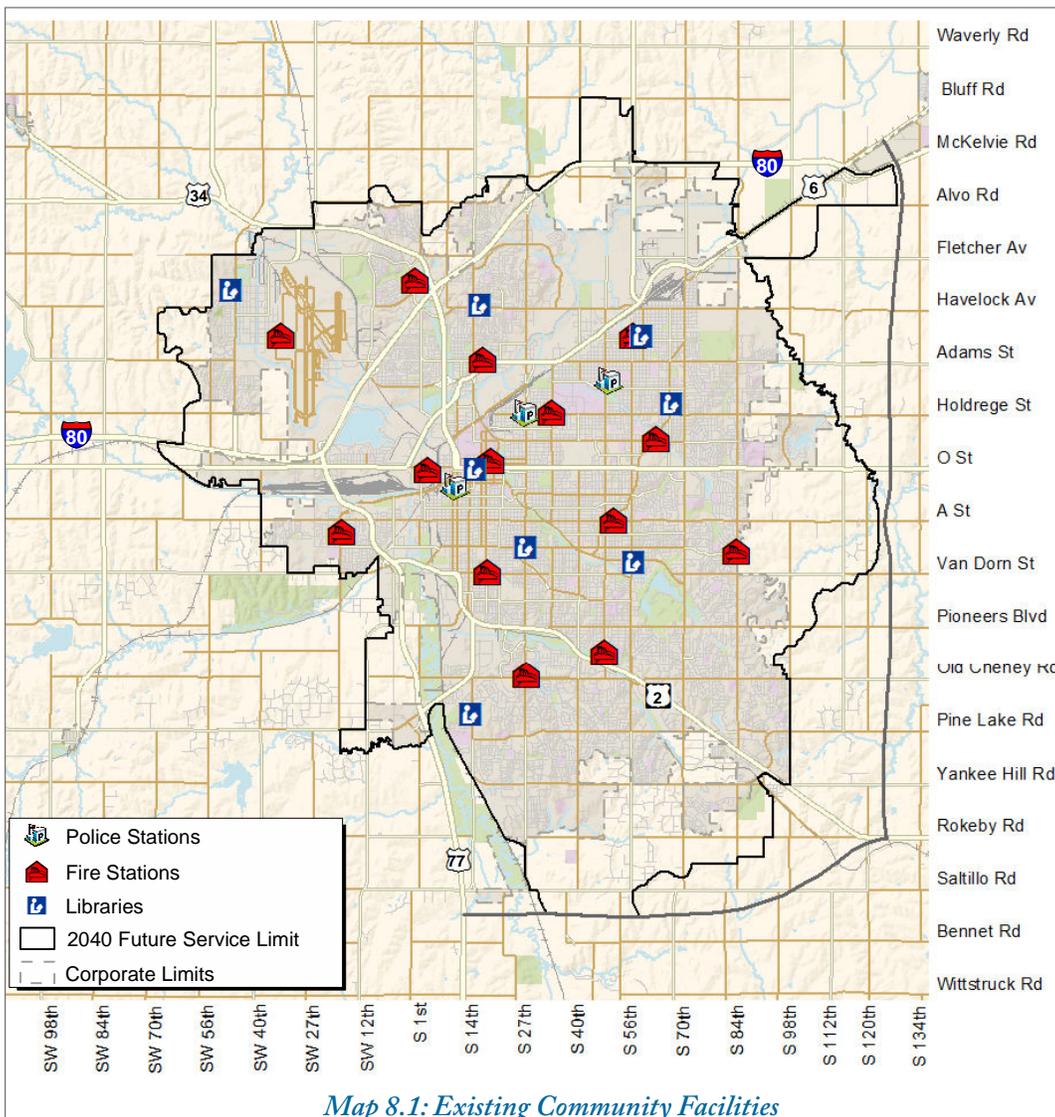
LINCOLN FIRE AND RESCUE

Lincoln Fire and Rescue anticipates the relocation of fire stations, reconstruction of existing fire stations, and the need for additional fire stations to service the City's projected expansion during the 24 year planning period. Fire stations to be built or relocated with the approved ¼ cent sales tax. These new stations would house a variety of Fire and Rescue apparatus and Emergency Medical units. In general, the new facilities would be placed in areas to the north, east, southeast, south, and southwest of the City's growth areas. No specific locations for new fire stations have been identified. Lincoln

Fire and Rescue routinely monitors response times, population growth, city growth, and call volumes in evaluating possible relocation and building new fire facilities. Changing development patterns, financial concerns, service expectations, availability of resources, environmental issues, traffic flow, or other conditions will warrant changes to provide effective emergency response. The utmost priority of Lincoln Fire and Rescue is the ability to provide the highest level of emergency service within the shortest period of time.

Lincoln Fire and Rescue currently operates from 14 stations located throughout the City. These stations are geographically located in the community to be able to meet the National Fire Protection

Association (NFPA-1770) Standards concerning response times. However, Lincoln Fire and Rescue has repeatedly stated that maintaining desirable response times is becoming increasingly difficult in areas that have experienced urban growth further and further away from existing fire stations. Lincoln Fire and Rescue routinely reviews the strategic deployment of station, (existing and new) in order to improve response times and anticipate future growth. Mutual aid requests for Lincoln Fire and Rescue service occur on occasion for incidents outside Lincoln. Several stations are to be built or relocated with the approved ¼ cent sales tax, which will improve response times and anticipate future growth.



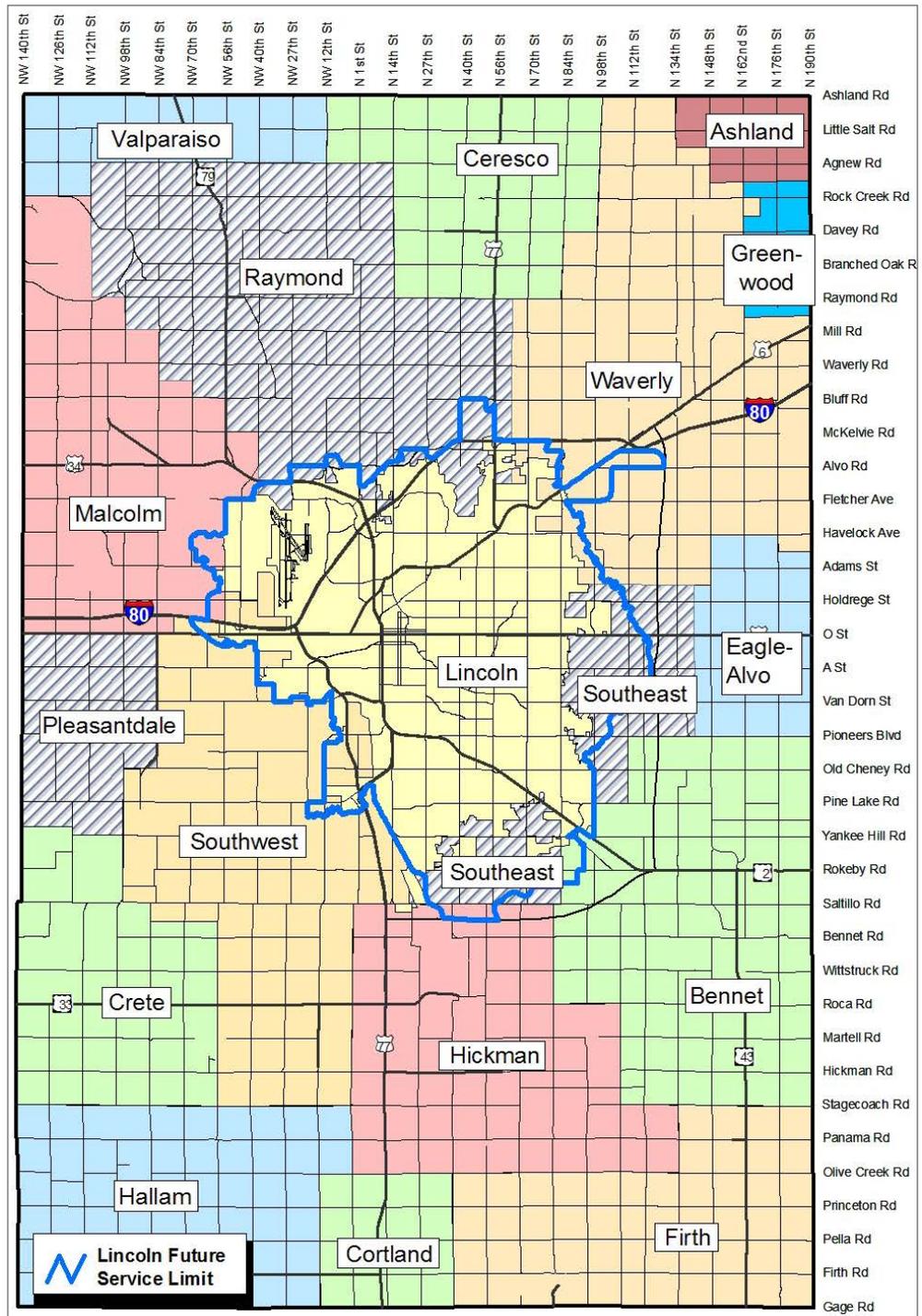
Lincoln Fire and Rescue's equipment is designed for use with a public water supply capable of generating 1,500 gallons of water per minute at a residual pressure of 50 pounds per square inch.

Lincoln Fire and Rescue provides emergency ambulance transport services in the City of Lincoln and Lancaster County. Inter-facility (hospital-to-hospital) non-emergency services are provided by the private sector.

RURAL FIRE DISTRICTS

The 17 rural volunteer fire departments will continue to see increasing challenges. All rural fire district personnel are volunteers. Rural fire districts can provide fire protection, rescue, and emergency ambulance transport. Fire departments are distributed throughout most of the towns and villages, while some are located in the unincorporated areas of the county. Mutual aid requests between fire districts are common for incidents outside Lincoln. Each rural fire district has unique challenges, including response times and water availability.

A growing population in the small towns, villages, and rural areas, as well as increased traffic, will continue to create demands for fire and emergency services. The physical growth of the City of Lincoln will cause changes to the character of some areas and to the tax base of many districts.



Map 8.2: Existing Rural Fire Districts

STRATEGIES

- Continue to routinely monitor the response time of all existing stations.
- Lincoln Fire and Rescue should continue to identify needed fire facilities that will allow them

to meet or exceed the National Fire Protection Association standards with a response time of 6.20 minutes for fire suppression, 6 minutes for medical calls, 90 percent of the time, and to meet the City Ordinance standard of 8 minutes or less for ambulance response, 90 percent of the time.

- Explore the possibility of relocating fire stations to meet the community’s needs of changing development patterns.
- An expansion of the requirements to meet the evolving fire needs in the rural areas, such as fire ponds and dry hydrants, should be investigated.

LAW ENFORCEMENT

The Lincoln Police Department and Lancaster County Sheriff’s Office are anticipated to remain as the sole providers of law enforcement services to



the City and County during the planning period. The Sheriff’s Office will continue to provide contract law enforcement support to the various incorporated towns of the county. The overall increase in

population in the City and County will increase the demand for police and sheriff services in the urban, small town, and rural areas.

The Hall of Justice and Law Enforcement Center accommodates both the operations of the Lincoln Police Department and the Lancaster County Sheriff within a single facility. This facility is an example of the cooperation exhibited by the City and County in furthering the efficient delivery of governmental services to the community. Another example of cooperation includes the plan for a joint station with Lincoln Fire and Rescue from the approved ¼ cent sales tax. A radio system upgrade was also funded with the approved ¼ cent sales tax. The Lancaster County Department of Corrections

opened a new Adult Detention Facility in 2013 near SW 40th and West O Street. The former jail is being renovated and will be reused to consolidate various County offices.

In addition to the Lincoln Police Department, the City of Lincoln also has police presence by the University of Nebraska Police on the UNL campus as well as the State Patrol. The Capitol Security Division of the State Patrol Division monitors 48 buildings and eight parking facilities in the greater Lincoln area.

STRATEGIES

- The Lincoln Police Department will experience a need for additional full service assembly stations and other facilities located within the community. The Capital Improvement Program will be used to plan and finance projects needed to meet this growing need.
- An increase in population and dwelling units may lead to more crime and building code violations, which are part of police activities; more neighborhood watch initiatives with police involvement are anticipated.
- Continue the cooperation among the City of Lincoln Police Department, County Sheriff’s Office, UNL Police and State Patrol in providing services that make the community safe.

HEALTH CARE

Hospitals represent one of the highest and most important community service land uses. Lincoln has a growing number of medical campuses such as Bryan LGH East and West, St. Elizabeth’s Regional Medical Center, Madonna Rehabilitation hospital, Veterans Medical Center, Lincoln Surgical Hospital and the Nebraska Heart Institute. Minor emergency medical services are also provided at several private facilities dispersed throughout the community. A number of private non-profit organizations provide targeted health services to residents throughout Lincoln and Lancaster County.

Multiple public and private service sites around Lincoln serve mental health needs of persons in Lancaster County. Continued population increases in Lancaster County and southeast Nebraska have meant increased demand for mental health services.

The Lincoln/Lancaster County Health Department also provides a wide range of health related services to the residents of Lincoln and Lancaster County.

New medical office buildings have been constructed in many areas of the city. This trend is likely to continue into the immediate future as the demand for health care services increases as a result of the community's growing and aging population.

STRATEGIES

- Provide for accessible physical and mental health care services in appropriate areas in and around residential neighborhoods.
- Any hospital expansion will need to take into consideration the impact on adjacent neighborhoods.
- Hospitals should plan on using parking garages and multi-story construction in order to maximize use of the land.
- Plan for further construction on medical campuses.

EDUCATION

LINCOLN PUBLIC SCHOOLS

The Lincoln Public School (LPS) district provides pre-kindergarten through 12th grade education to roughly 40,000 students within the City of Lincoln and surrounding area. By 2017, the district will operate 39 elementary schools, 12 middle schools, six high schools, and eight other alternative and special focus program sites. In addition to schools, LPS facilities include administrative, food service, maintenance, sports facilities and transportation centers.

The past fifteen years have seen changes in the students enrolled at LPS. In 2000, about 14 percent of students were racially diverse; in 2015 this rose to over 32 percent, with students representing 50 different countries. Economic changes are also affecting the school system. In 2000, 26 percent of students received free or reduced price lunches. That figure has risen to over 43 percent over the past fifteen years. Over those fifteen years LPS has seen an increase from 31,000 to 40,000 students overall.

In 2000, about 14% of students were racially diverse; in 2015 this rose to over 32%, with students representing 50 different countries.

Lincoln Public Schools has made a substantial investment in renovating and improving existing schools throughout the Lincoln area. A \$153 million school bond issue passed in 2014 allowed construction and renovation of new schools and facilities.

Lincoln Public Schools and the City of Lincoln actively coordinate planning activities. Projected growth of residential development is crucial information used to identify future school sites. As LPlan 2040 was developed, LPS was consulted and informed at each step. This relationship is ongoing and expected to continue into the future.

The Student Housing Task Force Report and the LPS Master Plan are adopted as approved components of the Comprehensive Plan and can be viewed on the LPS website at lps.org.



One relationship between city government and LPS that has particular potential for improving future efficiencies is the relationship between LPS and the Lincoln Parks and Recreation Department. In some locations, such as Lefler Middle School and Piedmont Park, Humann Elementary and Cripple Creek Park, Fredstrom Elementary and Highlands

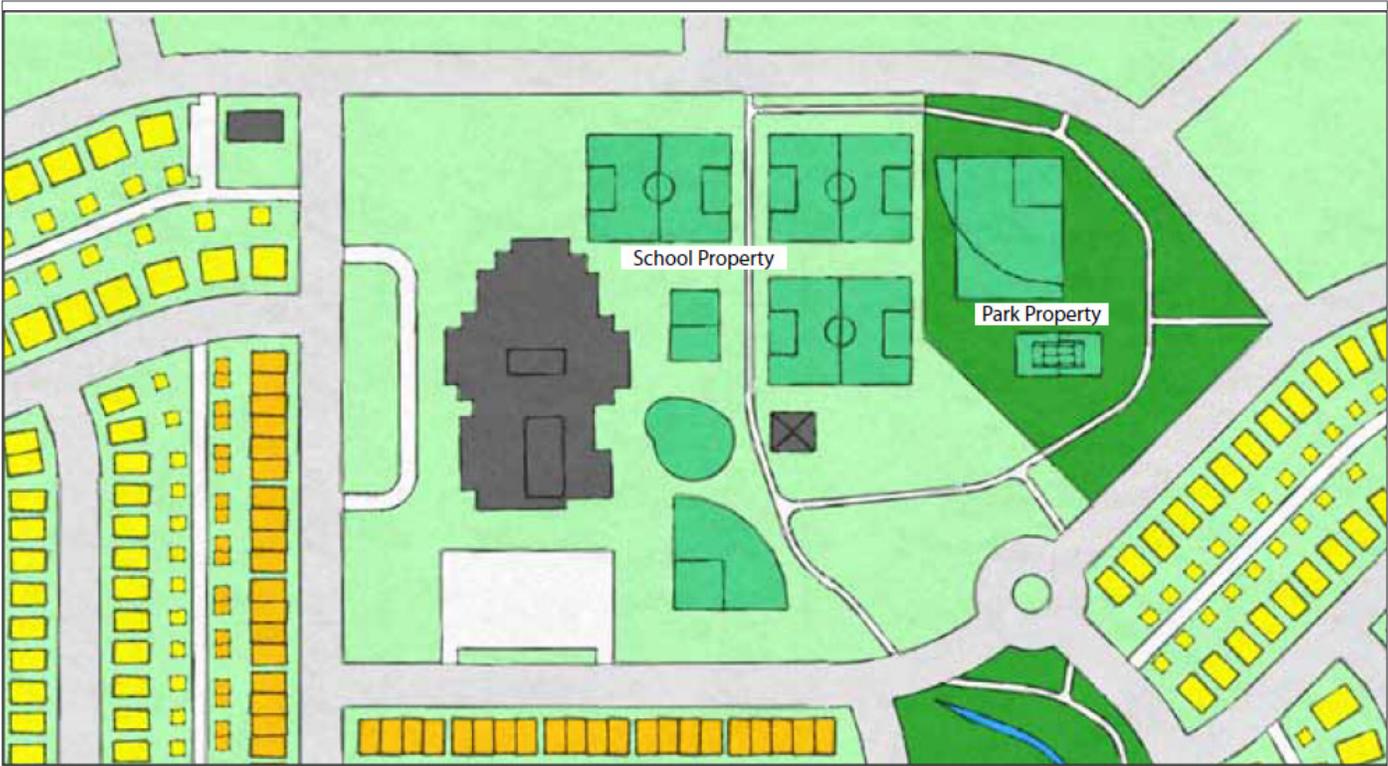


Figure 8.1: Joint School and Park Site ("Spark") Image

Park, and Adams Elementary and Folsom Park, park and school facilities are already located on adjoining properties. School Middle School, which also has an adjoining YMCA, is the site of a planned neighborhood park. Wysong Elementary, being built between S. 56th and S. 70th Streets, north of Yankee Hill Road, will include a neighborhood park. Moore Middle School is being built adjacent to Jensen Park and will also include a YMCA. There are opportunities to reduce costs for both parks, schools and the YMCA by sharing playgrounds, playfields and even using picnic shelters as outdoor classrooms. This relationship has not yet been formalized but shows great potential benefit for all organizations. The image displays how the joint school and park site ("spark") principles can work together in future neighborhoods.

RURAL SCHOOL DISTRICTS

There are nine public rural school districts serving residents of Lancaster County. Several school facilities are located outside of Lancaster County. All of the remaining public school facilities are

located within incorporated and unincorporated communities, except for the Norris Public School and Raymond Central Public School (Junior and Senior High).

Several school districts, most notably Waverly School district, will be impacted by expansion of the Lincoln city limits. The City, LPS and each school district impacted will need to coordinate efforts in the future.

Rural school districts also need to plan to accommodate areas designated for acreage residential development. Acreage residential areas provide additional tax revenue, but also create the need for more financial resources in order to provide additional transportation services and educational facilities. Grouping acreage residential areas in pre-designated locations allows rural school districts to plan for adequate transportation and educational services in advance of development.

PRIVATE AND PAROCHIAL SCHOOLS

There are currently 27 private and parochial elementary schools in Lincoln, serving almost 7,000 students. In addition, there are four private and parochial high schools: Lincoln Christian, Lincoln Lutheran, Parkview Christian, and Pius X.

Additional private and parochial schools are anticipated during the planning period. The Catholic Diocese has several sites for potential future schools, including a potential future high school site. The City should work with private entities to coordinate development and infrastructure plans around new school sites.

COMMUNITY COLLEGES AND TRADE SCHOOLS AND UNIVERSITIES

Lincoln is home to a community college and several technical and trade schools providing a comprehensive array of higher education and vocational opportunities. These public and private facilities are dispersed throughout the community.

Lincoln has multiple institutions of higher learning, with campuses located throughout the city. These include the University of Nebraska-Lincoln (UNL) campuses: Downtown and East), Nebraska Wesleyan University, Union College, Kaplan University and Southeast Community College. There are a number of satellite campuses of surrounding colleges and universities located in Lincoln such as Doane College (Crete) and Bellevue University (Bellevue).

These colleges and universities are actively involved with surrounding neighborhoods and business districts. UNL has been a major partner in the Antelope Valley Project, the West Haymarket Arena development, and the Innovation Campus project on the former State Fair Park site. Wesleyan University was part of the North 48th Street/ University Place project approved in 2004. Union College took a lead role in efforts to increase mobility and improve streetscapes in the South 48th Street College View neighborhood in 2007. These

institutions and others should be actively engaged in future planning efforts.

STRATEGIES

- Promote the development, design, and use of public and private facilities to assure cooperative planning and maximum utilization, when appropriate. Schools are vital to the preservation of existing neighborhoods and every effort should be made to enhance and retain 'neighborhood schools.'
- Support the necessary expansion of education facilities while remaining sensitive to surrounding neighborhoods.
- Provide universities, colleges, and the community with a means by which university research findings can move easily into the commercial world for economic development.
- Coordinate school site selection with subarea plans, community open space, and trails system development. Develop new schools on sites where they serve as the heart of the neighborhood.
- Plan for joint school/park facilities with all new schools and renovation projects when feasible.
- Coordinate plans for Southeast Community College with future land development immediately to the east of its campus to ensure that new development is compatible and provides employment and housing opportunities for students.
- Coordinate neighborhood revitalization and transportation plans for the surrounding areas with Nebraska Wesleyan University, Union College and Kaplan University.



OTHER PUBLIC BUILDINGS AND FACILITIES

As general purpose governments, the City of Lincoln and Lancaster County own, operate and manage numerous buildings, structures, and facilities.

During the time period covered by this Plan, there will likely be a need to construct, renovate, or abandon certain public buildings and facilities not already discussed in this document. At such time as these events may occur, care should be taken by public officials making decisions that the vision of this Plan is recognized and respected. This may apply to the siting of a new facility, the abandonment of an existing one, the way renovations are undertaken, the manner of financing used to complete the work, the arrangements made



for the facility's operation, the process followed in making the decision, and the timing of the action.

Of particular note to local government operations is the Lincoln-Lancaster County Public Building Commission. The Public

Building Commission is responsible for facilities jointly used by City and County agencies, such as the County-City Building. This entity was established in 1991 to oversee any buildings, structures, or facilities used jointly by the City and County for a public purpose.

The new Municipal Service Center is an example of consolidating City services to find efficiencies. The Center houses the Engineering Services and Watershed Management divisions of Public Works and Utilities and has potential to accommodate divisions or operations of other departments.

Lincoln and Lancaster County is a community made up of public-private partnerships that make our community stronger. Such public-private partnerships include but are not limited to YMCAs,

the Lincoln Children's Museum and the Lincoln Children's Zoo.

STRATEGIES

- The location of public buildings should support the policies of the Comprehensive Plan and adopted subarea plans.
- The City's government center must remain Downtown. All efforts should be made to locate local, state, and federal offices Downtown when expansions and relocations are considered.
- Lincoln and Lancaster County should seek to integrate concepts that result in more energy-efficient, lower-cost, less environmentally damaging, and more occupant-friendly facilities.

9 PARKS, RECREATION & OPEN SPACE

This chapter describes principles and strategies for acquiring and managing parks, recreation and activity centers, open space, greenways, and other recreational facilities in the community.



INTRODUCTION

The Lincoln Parks and Recreation Department is the primary public sector provider of recreational services to city residents. The Department manages 165 different sites on 7,413 acres of parks and open space land. These sites include Traditional Parks (i.e. Regional, Community, and Neighborhood Parks) as well as other land or facilities that are owned and maintained by the City, detailed in the following table.

Table 9.1: Sites Managed by the Parks & Recreation Dept.

Site Type	Count	Acres
Traditional Parks	108	2,186
Trails**/Trailheads*	2	580
Gardens/Plazas/Boulevards	9	16
Pools*/Golf Courses/Dog Runs*	9	839
Conservancy/Undeveloped	33	3,767
Other	4	26
TOTAL	165	7,413

*Data reflects facilities not counted as part of another park

** Trails are not included in the Count

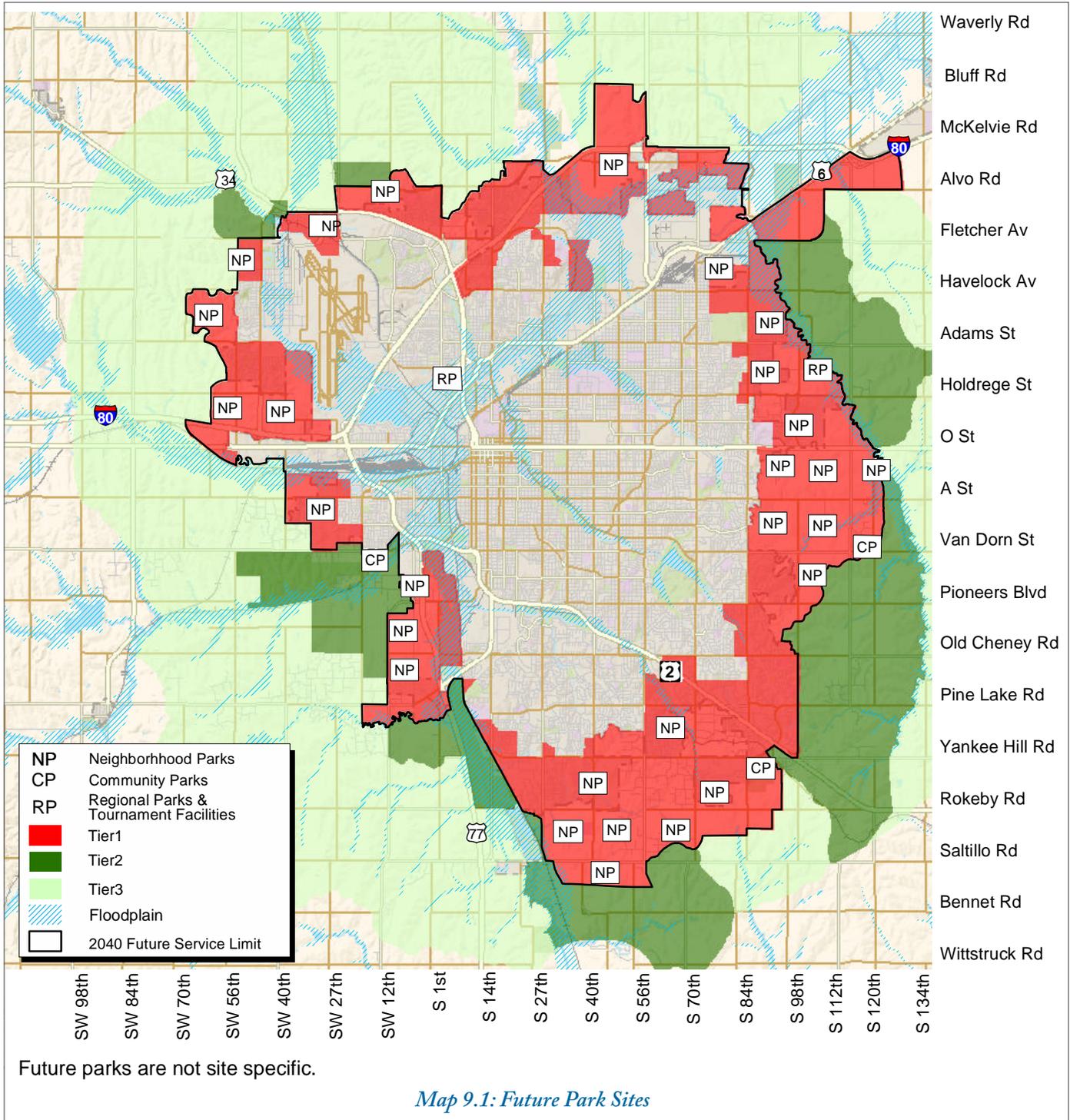
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The principles and strategies in this chapter will help guide the further enhancement of Regional, Community, and Neighborhood Parks, Community and Recreation Centers, swimming pools, an ice center, open space and greenway linkages, and the urban forest.

GUIDING PRINCIPLES

Parks and open space enhance the quality of life of the community's residents and are central to the community's economic development strategy—the community's ability to attract and retain viable businesses, industries, and employees is directly



linked to quality of life issues, including indoor and outdoor recreational opportunities.

Signature landscapes are defined as those areas and natural features that are unique to Lincoln and Lancaster County and contribute to the identity of the community; acquisition and development of parks and open space areas should conserve and enhance these areas and features.

It is important that the community continue to acquire parkland and conserve open space areas commensurate with expanding development and population growth, with the responsibilities for acquisition and development of parkland and conservation of open space shared among many cooperating partner agencies and organizations.

Comprehensive and adaptive urban forestry management approaches should be applied to sustain the city's urban forest; it is essential that adequate human and financial resources be allocated and specifically dedicated to sustaining our community's expanding public green infrastructure in conjunction with increasing development and population growth.

Public and private partnerships are important in the development of recreational opportunities and the preservation of environmental resources that bring a high quality of life to the City and County.

REGIONAL PARKS & TOURNAMENT SPORTS FACILITIES

DESCRIPTION

Regional Parks and Tournament Sports Facilities are tracts of land that encompass special or unique facilities and features that are of interest to diverse groups throughout the community. Regional Parks primarily provide opportunities for day use activities that may include community festival/gathering spaces, picnicking, hiking, sports, fishing, canoeing, boating, and environmental interpretation/appreciation. Fields and courts for

organized sports activities may be secondary or primary uses. One new Regional Park is anticipated for the Stevens Creek area during the plan period; one new Tournament Sports Facility is anticipated as an upgrade to the existing Oak Lake Park.

LEVEL OF SERVICE

The current citywide Level of Service (LOS) is 2.8 acres of Regional Park land per 1,000 Lincoln residents. No set LOS goal is stated in LPlan 2040 since the size may vary depending on the feature or facility. In addition, Regional Parks may attract visitors from outside the immediate area and thus do not have a defined service area.

STRATEGIES FOR REGIONAL PARKS & TOURNAMENT FACILITIES

- The City should work with the [Nebraska Game and Parks Commission](#) and the [Lower Platte South Natural Resources District \(NRD\)](#) to provide recreation facilities around the Salt Valley Lakes and other natural resource sites.
- Anticipate the transition of sites from management by the Lower Platte South Natural Resources District to the City as surrounding areas urbanize.
- Provide trail access over time to the Salt Valley Lakes and other natural resources via connections to the Salt Valley Greenway and associated tributary stream corridors.
- Continue to enhance opportunities for interpretation of native landscapes and ecosystems indigenous to eastern Nebraska through acquisition of additional parcels for buffering and enhancement of visitor facilities at the Pioneers Park Nature Center.



- Formalize a strategy for the development, marketing, and management of a tournament sports complex at Oak Lake Park.



- Explore opportunities to provide enhanced water recreation activities at Holmes Lake in Holmes Park.

• Continue to develop a cooperative relationship with the Nebraska Game and Parks Commission and the Lower Platte South Natural Resource District to provide recreation facilities within rural areas of the community.

- Acquire additional land adjacent to parkland at N 98th and Adams. This property is currently adequate for a Community Park but it is desirable to increase the size to serve a Regional Park function.

COMMUNITY PARKS

DESCRIPTION

Community Parks are typically 30 to 50 acre sites that are readily accessible from arterial streets and the commuter/recreational trail system. Community Parks may include play fields and play courts for organized sports, a playground with an accessible fall surface, facilities for day use activities including a picnic shelter and restroom, seating, walking paths, and off-street parking. They may also include a swimming pool and/or a recreation center. Community Parks often include areas left in a natural state with meadows, prairies, forest, wetlands and other natural features as part of Parks and Recreation's FUNctional Landscapes program. Community Parks often include activity areas consistent with those located in neighborhood parks and as a result, Community Parks may serve as the Neighborhood Park for surrounding residential areas. LPlan 2040 recognizes the need for about 150 acres of new Community Park land. Three new Community Park sites are anticipated.

LEVEL OF SERVICE

The level of service (LOS) goal for Community Parks is based on both the financial resources anticipated to be available for park development and programmatic objectives. It is anticipated that development of future Community Parks will be financed primarily through voter-approved general obligation bonds. There are currently 20 Community Parks encompassing roughly 976 acres, with an average size of 49 acres. The current citywide LOS is 3.5 acres of Community Park land per 1,000 Lincoln residents. This LOS is calculated by dividing the total acres in such parks by the city's total population in thousands. LPlan 2040 establishes an LOS goal of 1.3 acres per 1,000 new Lincoln residents in new growth areas and a service

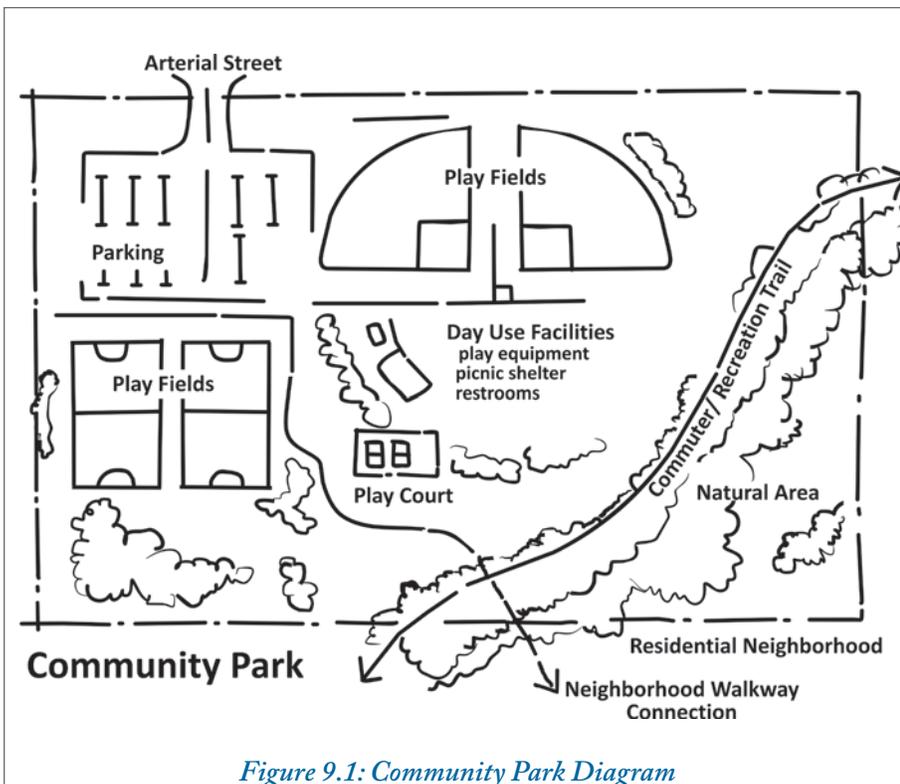


Figure 9.1: Community Park Diagram

area radius of approximately 2 miles in the urban area. Given the new Community Parks developed in growth areas, the city-wide measure by the end of the plan period, 2040, is projected to be 2.4 acres of Community Park land per 1,000 Lincoln residents. While this goal is lower than the current LOS, it recognizes the financial resources projected to be available and plans for the development of three 50-acre sites during the planning period of a size that will meet the programmatic objectives for Community Parks.

STRATEGIES FOR COMMUNITY PARKS

- Locate Community Parks on a collector or arterial street to accommodate automobile access and parking; park sites should also be readily accessible by pedestrians and bicyclists from a commuter/recreation trail.
- Locate Community Parks adjacent to middle schools where possible.
- Community Parks should be adjacent to greenway linkages.
- Provide buffering between Community Park activities and adjacent residential areas to minimize traffic and noise impacts.
- Enact design standards for field and parking lot lighting that seek to minimize glare, light spill-over onto adjacent properties, and impacts on the dark night sky.
- Select sites for Community Parks that allow for multiple functions, such as stormwater management or habitat conservation.
- Focus on the development and maintenance of sports fields and associated day use facilities.
- Establish Youth Baseball/Softball complexes as part of Community Parks throughout the city; form partnerships with youth baseball organizations and Lincoln Public Schools for maintenance and utilization strategies.

- Create pedestrian connections between surrounding residential development and neighborhood-related park features such as playgrounds and park shelters.
- Development of Community Park sites should be accomplished through regularly scheduled “quality of life” bond issue initiatives and capital improvement program allocations.
- Develop Jensen Park, southeast of Yankee Hill Road and South 84th Street as a Community Park as funding becomes available.
- Develop Bison Park, located southeast of West Van Dorn and South Coddington Avenue as a Community Park as funding becomes available.
- Acquire and develop a Community Park in the Stevens Creek basin in the vicinity of A Street and South 120th Street as funding becomes available.

Community Parks are typically 30 to 50 acre sites that are readily accessible from arterial streets and the commuter/recreational trail system.

NEIGHBORHOOD PARKS

DESCRIPTION

Neighborhood parks are approximately four to six acre sites that are centrally located within areas of residential development. Typical activity areas include playground equipment, open lawn areas for informal games and activities or play courts with a single basketball goal for informal games, shaded seating, and walking paths. The “Sparks” concept envisions an expansion of the current co-location of schools and parks and sharing of some facilities.



LEVEL OF SERVICE

The level of service (LOS) goal for Neighborhood Parks is based on both the financial resources anticipated to be available for park development and on programmatic objectives. It is anticipated that development of Neighborhood Parks will be

Neighborhood parks are approximately four to six acre sites that are centrally located within areas of residential development.

financed primarily through impact fees. There are currently 53 Neighborhood Parks encompassing roughly 404 acres, with an average size of 7.6 acres. The current citywide LOS is 1.5 acres of Neighborhood Park land per 1,000 Lincoln residents. This

LOS is calculated by dividing the total acres in such parks by the city's total population in thousands. LPlan 2040 establishes an LOS goal of one acre per 1,000 new Lincoln residents in new growth areas. Neighborhood Parks should generally be located within the center of each mile section with a service area radius of approximately ½ mile in the urban area. Given the new Neighborhood Parks developed in growth areas, the city-wide measure by the

end of the plan period, 2040, is projected to be 1.3 acres of Neighborhood Park land per 1,000 Lincoln residents. While this goal is slightly lower than the current LOS, it recognizes the financial resources projected to be available. Projected funding is based upon the current level of impact fees for Neighborhood Parks, which supports the acquisition and development of about four acres of Neighborhood Park land per square mile of residential development. Four acres are adequate to accommodate the programmatic objectives for a Neighborhood Park.

STRATEGIES FOR NEIGHBORHOOD PARKS

- Locate Neighborhood Parks close to the center of residential areas and within walking distance of a majority of residents; park sites should be readily accessible by pedestrians and bicyclists.
- Develop “Sparks” such that site planning and development is coordinated, anticipating that the primary use of the Spark will be school students during the school day and related after school programming; Sparks will be available for use of neighborhood and community residents during the evening, weekend, and summer hours.
- Locate Neighborhood Parks adjacent to greenway linkages where possible.
- Locate park sites where residents living in surrounding homes, people in passing vehicles, or pedestrians can view activities in the park to provide for informal supervision.
- Where possible, select sites for Neighborhood Parks that allow for multiple functions, such as stormwater management or habitat conservation.
- Identify opportunities to acquire and develop Neighborhood Parks in

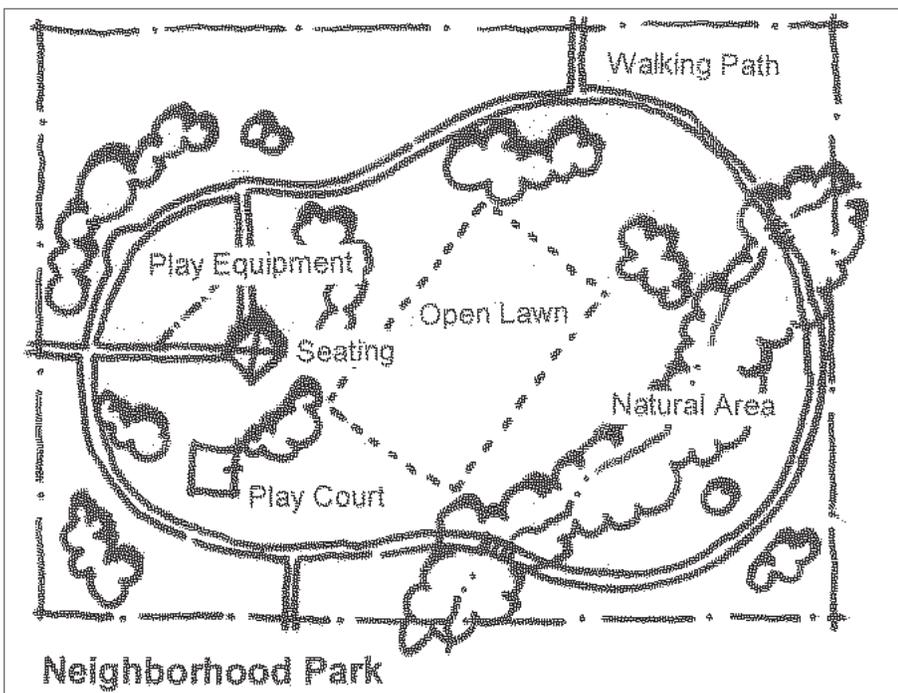


Figure 9.2: Neighborhood Park Diagram

established neighborhoods that are deficient in Neighborhood Park resources.

- Continue joint planning activities between the City of Lincoln and Lincoln Public Schools for selection and acquisition of future school/park sites.
- Establish an interlocal agreement for the development of Sparks that addresses funding for initial construction, repair and replacement, liability, play equipment inspections, mowing, and maintenance.

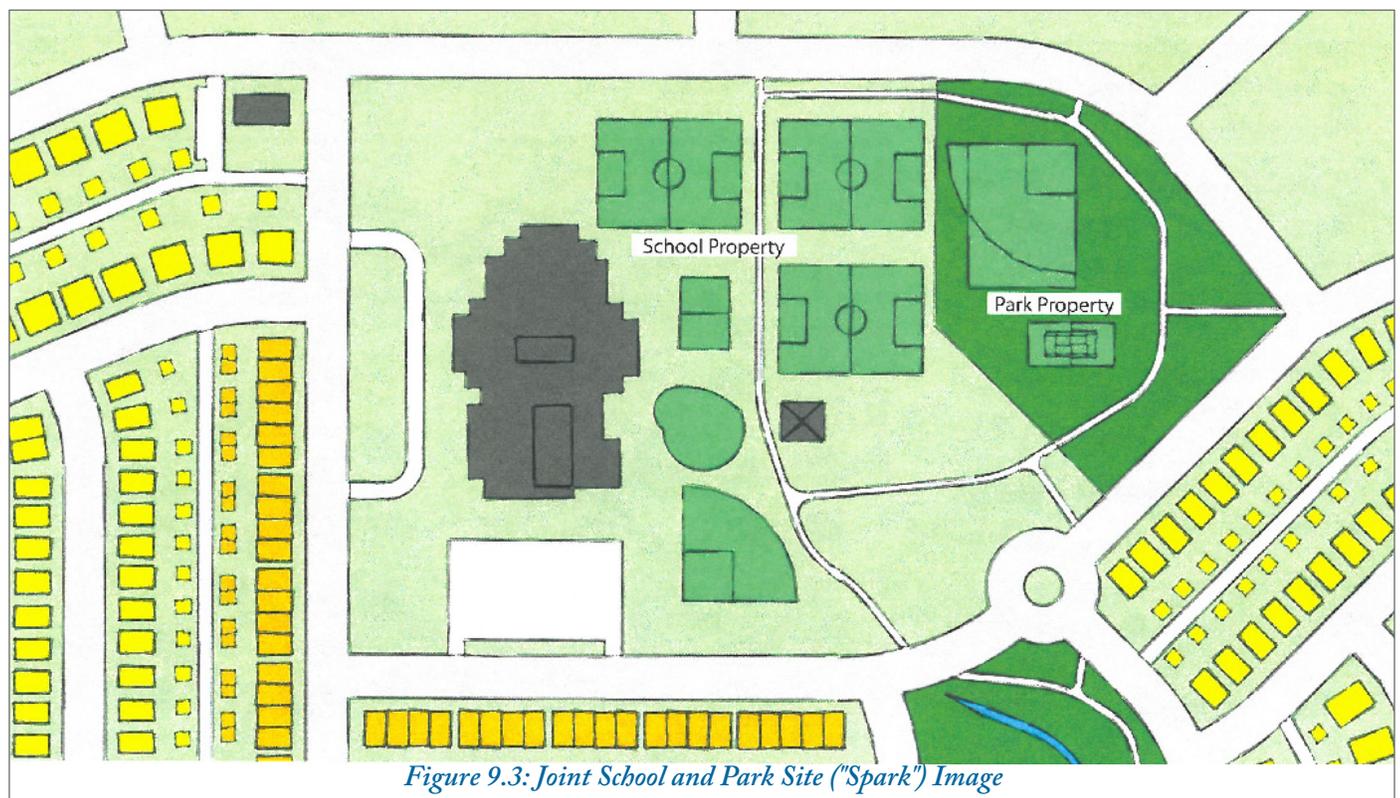
COMMUNITY CENTERS, RECREATION CENTERS & ACTIVITY CENTERS

DESCRIPTION

Public school buildings, particularly elementary schools, can serve as centers of neighborhood life if the buildings are designed to maximize flexibility and opportunities for community use during non-school hours. The addition of multi-purpose

space described as an “activity center” allows for community activities such as programs for older adults during the school day, and supports youth programs before and after school.

The City of Lincoln through its [Parks and Recreation Department](#) currently operates seven facilities as recreation/community centers. Three of these facilities are co-located with schools (Belmont, Calvert, and Irving) and incorporate youth recreation programming, before and after school programming, and summer day camps. Air Park Recreation Center operates out of a former Air Force Base recreation center building, with an emphasis on youth programs at Arnold Elementary School. Therapeutic and adaptive recreation programs are a primary emphasis of programming at Easterday Recreation Center. The Ager Play Center provides facilities and activities focused primarily on pre-school children and their families. F Street Community Center provides a broad range of human service and recreation activities. The programs and facilities offered by Parks and



Recreation are part of a network of recreation and human service programs offered in the community.

LEVEL OF SERVICE

There should be a center integrated with each new elementary school and middle school. These centers should have a service area radius of approximately two miles in the urban area.

STRATEGIES FOR COMMUNITY CENTERS, RECREATION CENTERS & ACTIVITY CENTERS

- An activity center should include a large multi-purpose space, public restrooms and shared office and storage space for community agencies and organizations offering programs in the center.
- Access to the activity center should be designed so that it can be restricted to the school during



Figure 9.4: Activity Center Concept Diagram

school hours and accessed via a separate entrance after hours.

- Activity centers should also be designed so that they can be used in combination with the school gym, media center, cafeteria and entry lobby to support youth programs before and after school, as well as a variety of other community activities.

- Replace the aging Air Park Recreation Center with a new facility co-located with Arnold Elementary School, which was designed to provide for future opportunities to attach a recreation center or activity center.
- Explore opportunities to work with the [Lincoln YMCA](#) and [Lincoln Public Schools](#) to develop new community recreation center facilities in southeast and possibly northeast Lincoln similar to the school/recreation center/park

model of Schoo Middle School/Fallbrook YMCA/ neighborhood park.

- Explore opportunities with Lincoln Public Schools to develop multi-purpose community space (activity centers) with new school facilities, allowing for expanded community programs and activities at school sites.

AQUATIC FACILITIES

DESCRIPTION

Aquatic Facilities are developed to provide opportunities for water recreation activities. The City of Lincoln owns and manages ten Aquatic Facilities. The most recently constructed outdoor swimming pools (Highlands Pool and University Place Pool) are designed as “pool in a park” facilities. These pools feature zero depth entry, interactive water features and a deep well for diving activities. There are currently nine outdoor public pools in Lincoln, and one free-standing sprayground in Trago Park. Four of these facilities are classified as Community Pools (Highlands, Star City Shores, University Place, and Woods) and five are classified as Neighborhood Pools (Air Park, Ballard, Belmont, Eden, and Irvingdale). The City should maintain its commitment to outdoor water recreation activities; however no additional Neighborhood Pools should be constructed in the future. New Aquatic Facilities should be located and designed to serve quadrant areas of the community and should be readily accessible by pedestrians and bicyclists.

LEVEL OF SERVICE

The current citywide LOS is 3.2 outdoor public pools per 100,000 Lincoln residents. The range of LOS for benchmark cities is 1.1 to 6.0 outdoor public pools per 100,000 residents, with an average LOS of 3.7 outdoor public pools per 100,000 residents. No new neighborhood pools are proposed during the planning period because of the low cost-recovery and the level of ongoing tax support required for annual operations and maintenance. Thus, the City is not intending to maintain the current LOS, but

will continue to provide opportunities for aquatic recreation as described in the strategies that follow.

STRATEGIES FOR AQUATIC FACILITIES

- Continue to maintain and upgrade mechanical systems of existing outdoor swimming pools; regularly add features to Neighborhood Pools to make them inviting and attractive to visitors.
- Complete a major renovation of Star City Shores, adding new features.
- Construct a new Community Pool facility similar to Star City Shores at Mahoney Park.
- Renovate three existing Community Pools (Highlands, University Place, and Woods) over time as needed.
- Renovate the five Neighborhood Pools (Air Park, Ballard, Belmont, Eden and Irvingdale) to bring the pool basins and bathhouses into compliance with accessibility guidelines, contingent upon adequate funding for annual operations and for repair/renovation costs.
- Consider public-private partnerships with organizations such as the YMCA to provide access to outdoor pools in Lincoln that are outside of the service area of City operated pools on a non-membership, fee-for-use basis.
- Explore opportunities as they emerge to promote development of an indoor aquatics center with competition facilities as an emphasis; potential partners include UNL and one or more private partners.

OPEN SPACE AND GREENWAY LINKAGES

DESCRIPTION

Open space and greenway linkages are a system or network of areas preserved in an undeveloped state due to unique natural attributes, such as floodplains and associated riparian areas, saline and freshwater wetlands, and native prairies. Some areas may be

protected through conservation easements that allow for compatible land use activities such as row crop farming or pasturing. Fee simple title may be acquired for other areas that are best maintained in a natural state due to particularly sensitive features (e.g., rare or sensitive habitat areas), or that have value for resource-based recreation activities (e.g., hiking, interpretive activities, wildlife viewing). The local and regional commuter/recreation trail system should be integrated with the greenway linkages.

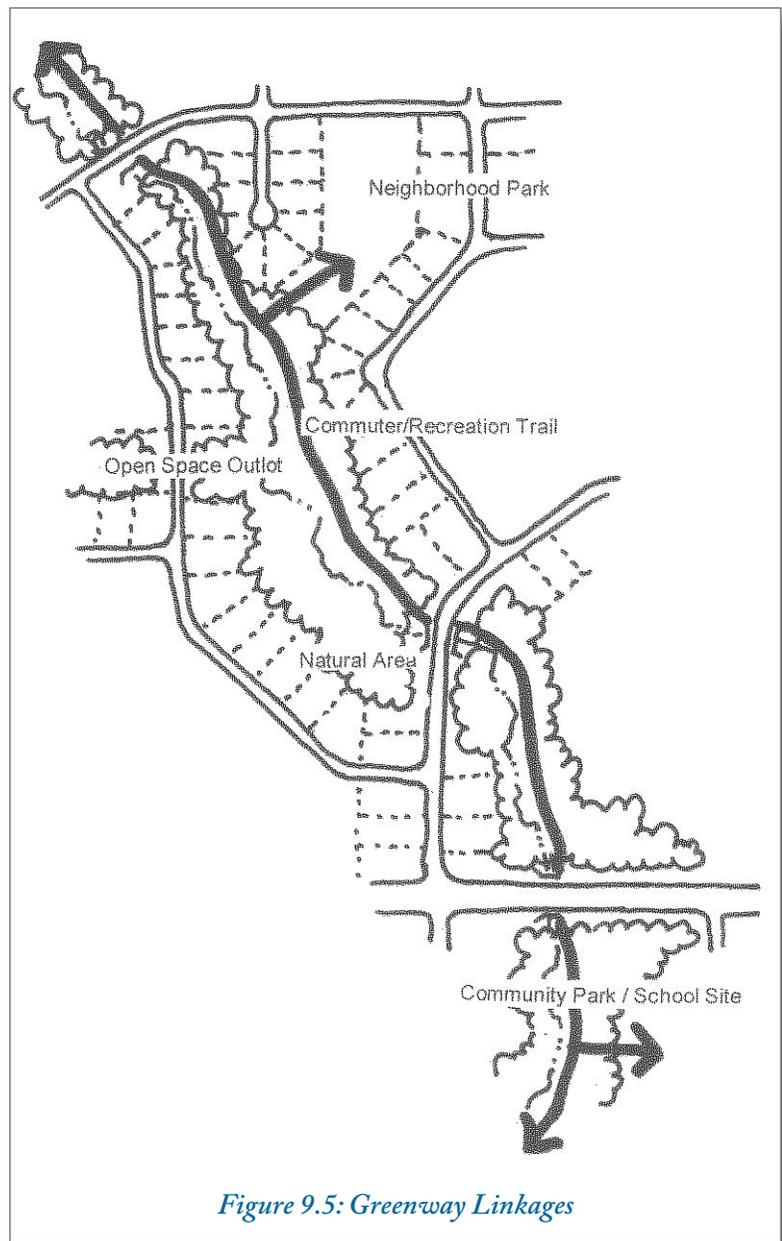


Figure 9.5: Greenway Linkages

STRATEGIES FOR OPEN SPACE AND GREENWAY LINKAGES

- Develop criteria and priorities to determine land areas that are most appropriately acquired and managed by a public agency.
- Implement the Salt Valley Greenway concept as identified in the [Environmental Resources](#) chapter.
- Continue the cooperative efforts of the City of Lincoln, Lancaster County, Nebraska Game and Parks Commission, and the Lower Platte South Natural Resources District on various efforts including land assembly, maintenance, flood control, wildlife and habitat preservation, recreation, and game management.
- Formalize cooperative agreements between the City of Lincoln, Lancaster County and the Lower



Platte South Natural Resources District regarding planning, acquisition and management of open space and greenway areas.

- Utilize a “Rain to Recreation” approach to open space and greenway linkages that is coordinated with the City’s watershed management program and the Lower Platte South Natural Resources District to reduce flood damages, protect water quality and natural areas, while providing for recreational and educational opportunities so as to realize multiple benefits.

- Establish an organizational structure for coordination of open space conservation activities between public agencies and private organizations.
- Encourage development of a private land trust organization, or expand the role of an existing organization to include land trust activities in Lancaster County.

- Identify open space areas that are particularly valued by community residents for rare or unique attributes and establish development regulations utilizing a balance of incentive and mandatory measures.
- Utilize greenway linkages for commuter/ recreation trails.
- Pursue additional strategies as identified in the [Environmental Resources](#) chapter.

URBAN FOREST

DESCRIPTION

The native landscape of the region surrounding Lincoln is tall grass prairie. Urban trees shelter homes from the elements, reduce reflective heat gain, slow down stormwater runoff, provide wildlife habitat, and stabilize the soil. It is recognized that trees, both those occurring naturally and those planted and managed, are essential to the quality of life of residents and the character of the community. Research indicates that street trees have public health and environmental benefits, enhance the values of adjoining residences and enhance the economic vitality of commercial districts.

OTHER LOCATION AND DESIGN CRITERIA

Continue to promote planting and management of street trees along all public streets within the corporate limits, and planting and management of trees in park areas.

STRATEGIES

- Promote a diverse mix of tree species and ages in public tree plantings.
- Systematically and proactively manage trees on public property.
- Continue to plant and replant public trees through City tax funds, grants, and public/private partnerships.

- In anticipation of the arrival of the Emerald Ash Borer, work with public and private partners to develop and implement a response plan and funding strategy that would involve phased removal and replacement of ash trees and preservation of some high value ash trees.
- Replace public ash trees on a one-to-one bases with a diverse mix of tree species.
- Monitor other emergent insect infestations and diseases that threaten the vitality of public trees; develop readiness plans.
- Promote public education regarding the planting and care of trees, and opportunities for volunteer involvement in planting and maintaining public trees.
- Street trees require ongoing, regular management to assure adequate clearance over sidewalks and over streets, and to maintain visibility of traffic safety signage. Increasing resources for staffing and contractual work are needed commensurate with the increasing number of street trees associated with new development in the community.
- Consider development of regulations that promote preservation of significant trees within new commercial and residential subdivisions.
- Continue to require that parking lot trees be planted with new construction and consider increasing the number of required trees.

OTHER RECREATIONAL FACILITIES & ACTIVITIES

INDOOR ICE CENTER

In collaboration with the University of Nebraska, the City participated in the development of the Breslow Ice Center in the West Haymarket area as part of a concentration of sporting facilities near downtown Lincoln and the University of Nebraska City Campus.

The Breslow Ice Center is operated by UNL and includes a single ice surface, with the opportunity

to add a second ice surface in the future. The facility should be operated in cooperation and coordination with the Ice Box. The Ice Box is operated by a private organization in a building on Innovation Campus through a long-term lease agreement that expires during the Plan period. Opportunities for the integration of functions associated with the Ice Box should be explored and may include the addition of spectator seating.



GOLF COURSES

The Parks and Recreation Department operates five public golf courses, including Ager Junior, Highlands, Holmes, Mahoney and Pioneers. In addition, there are several private golf courses in Lincoln and Lancaster County.



LPlan 2040 assumes continued operation of five public golf courses, but no additional courses are proposed.

OTHER PUBLIC, SEMIPUBLIC, AND PRIVATE FACILITIES

Additional recreational facilities available to local residents include those under the control of public schools, private and parochial schools, the State of Nebraska, other units of local government, and private interests. It is anticipated that fitness and wellness facilities will continue to be developed and managed by private organizations in the future. Therefore, development of new City-owned and managed recreation centers with an emphasis on fitness and wellness is not anticipated. The Lincoln YMCA has indoor recreation facilities in the downtown and each quadrant of the community

– Cooper YMCA in southwest Lincoln, Copple Family YMCA in southeast Lincoln, Fallbrook YMCA in northwest Lincoln and Northeast Family YMCA in northeast Lincoln. The YMCA has interest in the development of a new facility in southeast Lincoln in the future, and possibly a replacement facility in northeast Lincoln.

PRIMARY AND SECONDARY SCHOOLS

Lincoln Public Schools, various private and parochial schools, and other school districts in Lancaster County play a key role in the overall system of recreational facilities and services. Schools are focal points for surrounding neighborhoods.



School playgrounds and facilities may be the most significant recreation resource at the neighborhood level.

UNIVERSITIES AND COLLEGES

Local colleges and universities also provide a wide range of participant activities and spectator sports available to both students and the community. Major sports, music, and entertainment programs often are held in facilities owned by colleges and universities.

NON-PROFITS/PRIVATE ORGANIZATIONS

There is a diverse range of facilities and programs available to community residents from privately operated fitness facilities to community centers offering human service programs operated by non-profit organizations. Programs and activities range from food distribution and adaptive recreation programs for individuals with intellectual disabilities to weight rooms and aerobics classes. The YMCA, YWCA, and other private organizations sponsor programs in swimming, athletics, arts and crafts, camping, and various club activities, and provide

facilities for more casual recreational activities. Some examples of private sector recreation facilities include bowling alleys, sport courts, soccer complexes, gyms, athletic clubs and fitness facilities and privately owned golf and miniature golf courses.

LINCOLN CHILDREN'S ZOO

The [Lincoln Children's Zoo](#) is one of only five zoos in the nation dedicated to educating our youth. The Zoo's design is tailored specifically for children. The zoo is located on city-owned land near South 27th Street and A Street, but is managed by a nonprofit organization. The zoo plans to expand its facilities and attractions to the west along A Street and also has plans for additional parking south of A Street.

LINCOLN CHILDREN'S MUSEUM

The [Lincoln Children's Museum](#) is a nonprofit organization located in Downtown. The Lincoln Children's Museum is an indoor facility that includes exhibits to encourage children and parents to learn and play together. The museum is located on city-owned land near Centennial Mall and P Street, but is managed by a nonprofit organization.

COMMUNITY GARDENS

Community gardens have been established at a number of privately owned locations across Lincoln. Community gardens also can be an appropriate land management approach for areas of parkland not committed to active recreation uses. In 2013, the Parks and Recreation Department developed standards and procedures to support development and operation of community gardens in appropriate park and public locations.

PLANT CONSERVATORY

The City should cooperate with other organizations to explore the potential for establishing an indoor plant conservatory as a year-round attraction for visitors and local residents. A plant conservatory could include a variety of species ranging from

local to exotic, and could serve a dual function as research/educational facility.

PUBLIC GARDENS

Public gardens provide a rich variety of display gardens, landscape styles and plant materials for the enjoyment and education of residents and visitors. They also provide the opportunity to learn about the significant historical, cultural, and ecological roles such landscapes play in the community, i.e. Sunken Gardens.

SPECIAL PURPOSE FACILITIES

The City owns and operates three special purpose facilities — the Pioneers Park Nature Center (an interpretive facility for native prairie, plants, animals and landscapes), the Hyde Observatory near Holmes Lake, and a recreational shooting sports complex at Boosalis Park in cooperation with the Nebraska Game and Parks Commission, which operates the facility.

MAJOR SPECTATOR EVENT FACILITIES

In collaboration with the University of Nebraska and Lincoln Pro Baseball, the City of Lincoln participated in the development of Haymarket Park adjacent to Downtown's historic Haymarket District. The complex includes a 4,500 seat baseball stadium operated by the Lincoln Saltdogs and a 750 seat softball stadium operated by the University of Nebraska-Lincoln.

In collaboration with the University of Nebraska, the City of Lincoln participated in the development of the Pinnacle Bank Arena adjacent to Downtown's historic Haymarket District. The facility includes a 16,000 seat indoor arena and adjacent plaza and public gathering areas.

EMERGING RECREATION ACTIVITIES

It is likely that there will be a generational shift in recreation interests and activities due to increasing experience with technology as a recreational activity. The Parks and Recreation Department

should monitor and be responsive to emerging interests, and seek opportunities for partnerships and collaborations with user groups to support activities and to develop facilities. Current examples of emerging recreation activities include: Skate Parks, BMX Cycling, Cyclo-Cross, Mountain Biking, Geocaching, Adventure Racing, Pickle Ball, Foot Golf, Flying Disk Golf and Bike Parks. The City plans to establish a bike park at the N. 48th Street Landfill and the tennis courts at Petersen Park were recently converted to pickle ball courts.

DOG PARKS/RUNS

The Parks and Recreation Department currently manages two dog run facilities – Rickman's Run in southeast Lincoln and the Oak Creek Dog Run in northwest Lincoln. These facilities are heavily utilized and there is regular and continuing interest in development of additional facilities for dog-related activities.

The Parks and Recreation Department developed a [Dog Use Facilities Master Plan](#) in 2016. This master plan explores the development and management of a dog run in each quadrant of the city, a dog park near downtown, operations

and capital funding needs, and opportunities for partnerships for the development and management of dog facilities. The City plans to relocate the existing Oak Creek dog park to Roper Park and to add two new dog parks. Mahoney Park in northeast Lincoln and Peterson Park in southwest Lincoln have been identified as sites for future dog parks. Other planned dog park improvements include reorienting entrances at Rickman's Run dog park.



ADDITIONAL COUNTY RECREATION AMENITIES

Lancaster County accommodates many other outdoor activities including hunting, nature

viewing, fishing, boating, swimming, picnicking, camping, and hiking. The [Nebraska Game and Parks Commission](#) manages seven State Recreation Area lakes (Bluestem, Branched Oak, Conestoga, Olive Creek, Pawnee, Stagecoach, and Wagon Train) and seven Wildlife Management Areas (Jack Sinn, Little Salt Creek West, Little Salt Creek, Yankee Hill, Killdeer, Teel Lake, and Hedgefield) and one public access area (Helmuth Marsh). In addition, the [Lower Platte South Natural Resources District](#) manages five public lakes (Cottontail, Merganser, Tanglewood, Wild Plum, and Wildwood), two wildlife management areas (Little Salt Fork Marsh Preserve and Little Salt Springs) and three community wetlands with public access (Lincoln Saline Wetland Nature Center, Marsh Wren and Whitehead Saline Wetland). Other cities and villages in the county maintain their own public parks, recreation centers, and camping areas.

10 TRANSPORTATION

This chapter 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.



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 10.3: 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.

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

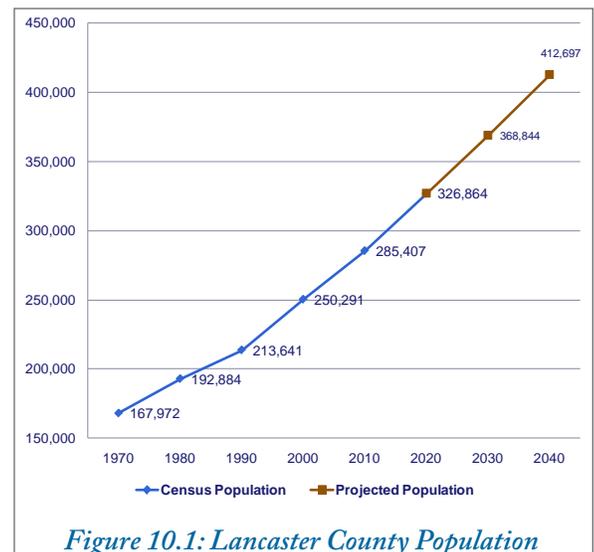


Figure 10.1: Lancaster County Population



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.

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.

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.



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.

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.

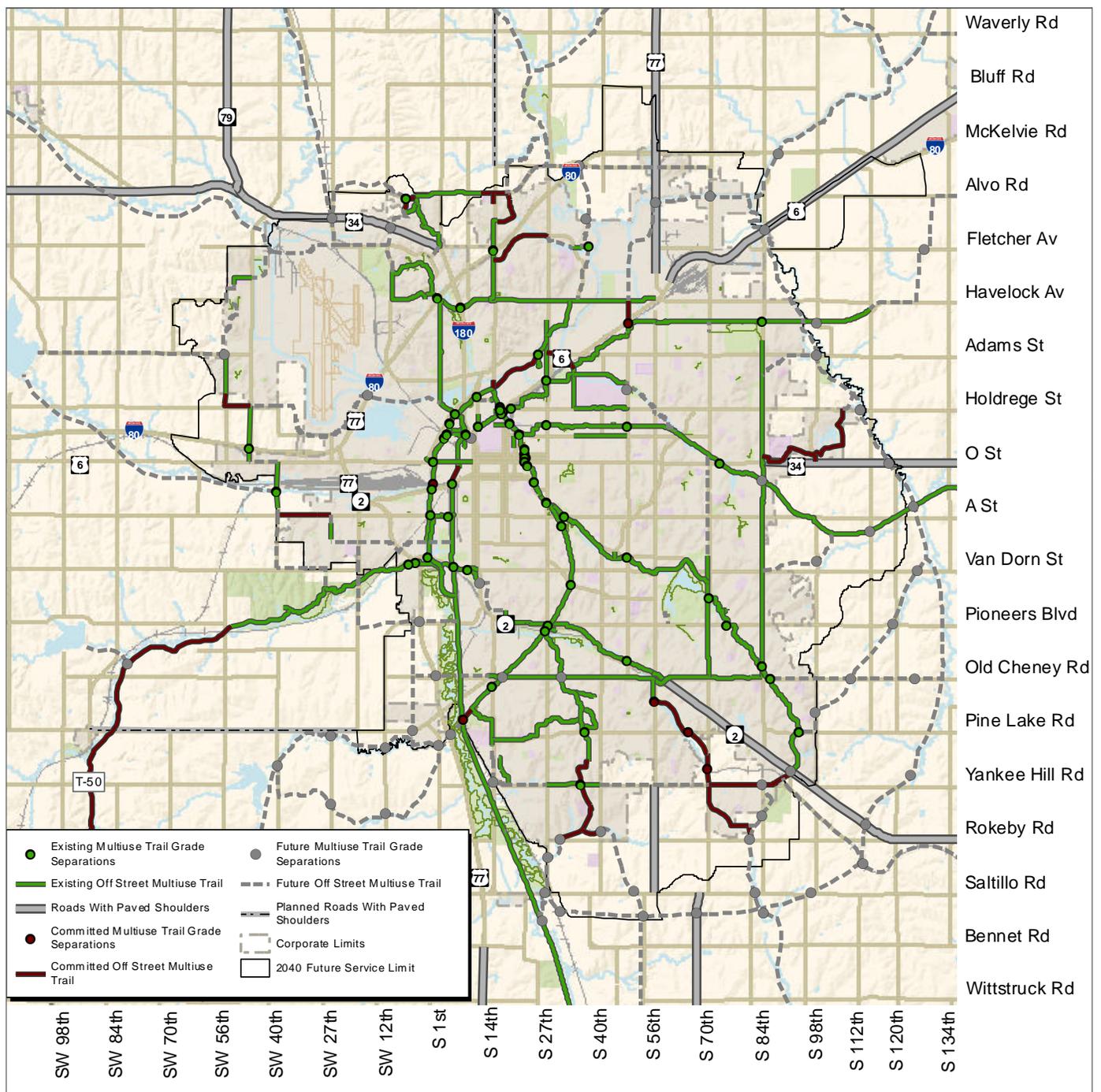
While Lincoln has some on-street bicycle facilities, there is desire from the public to expand the on-street system. The Lincoln Bike Plan outlines a city-wide on-street bicycle facility system.

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 10.1: 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,



Map 10.1: Existing & Committed Trails

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.

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

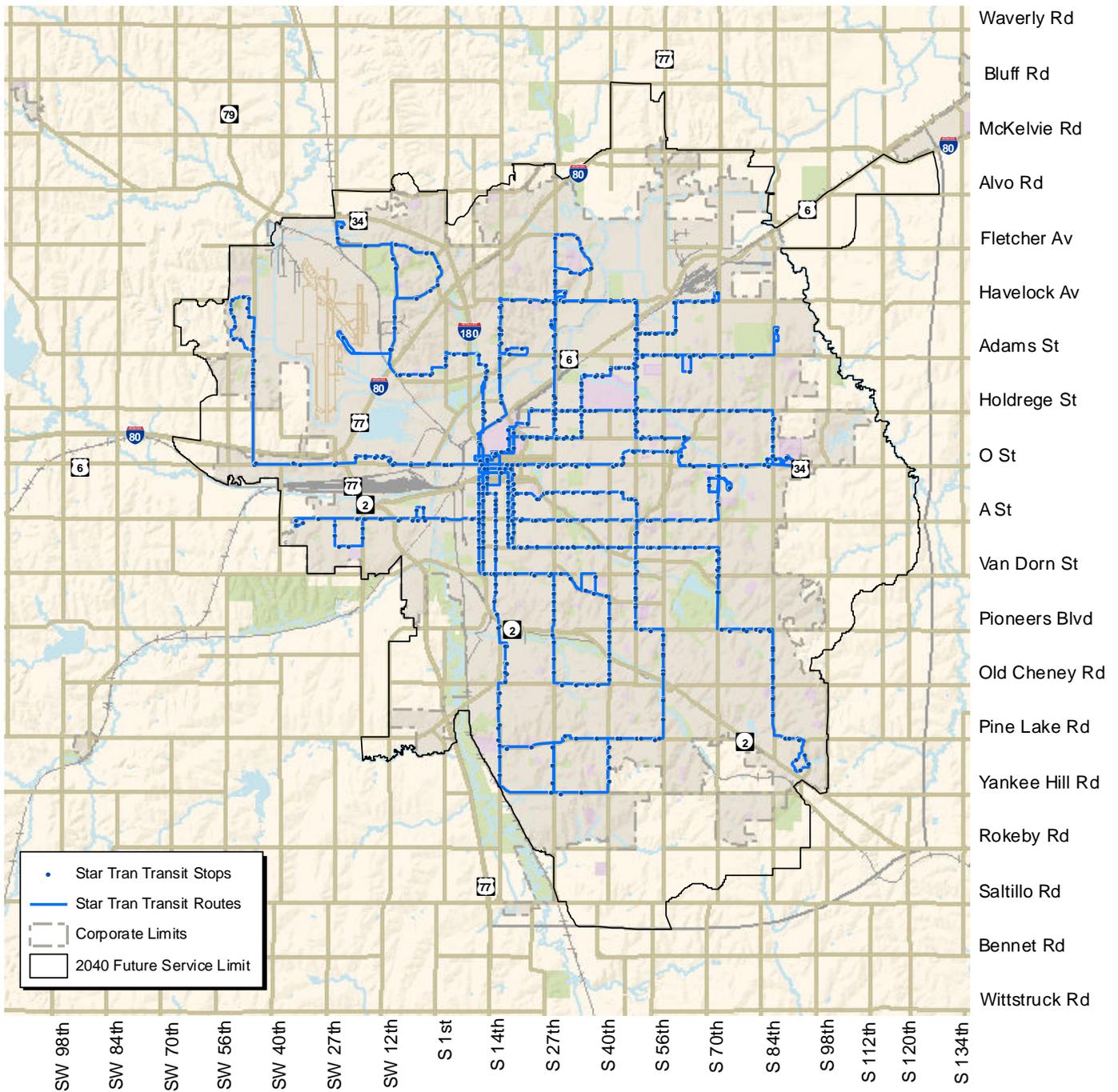
capital city of the County is served on Tuesdays and Thursdays.

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



Map 10.2: Existing Transit Routes



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.

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.

The City's goal is to reduce the overall number of crashes, fatalities and injury crashes during and beyond the planning period.

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 10.3: Existing Functional Classification.

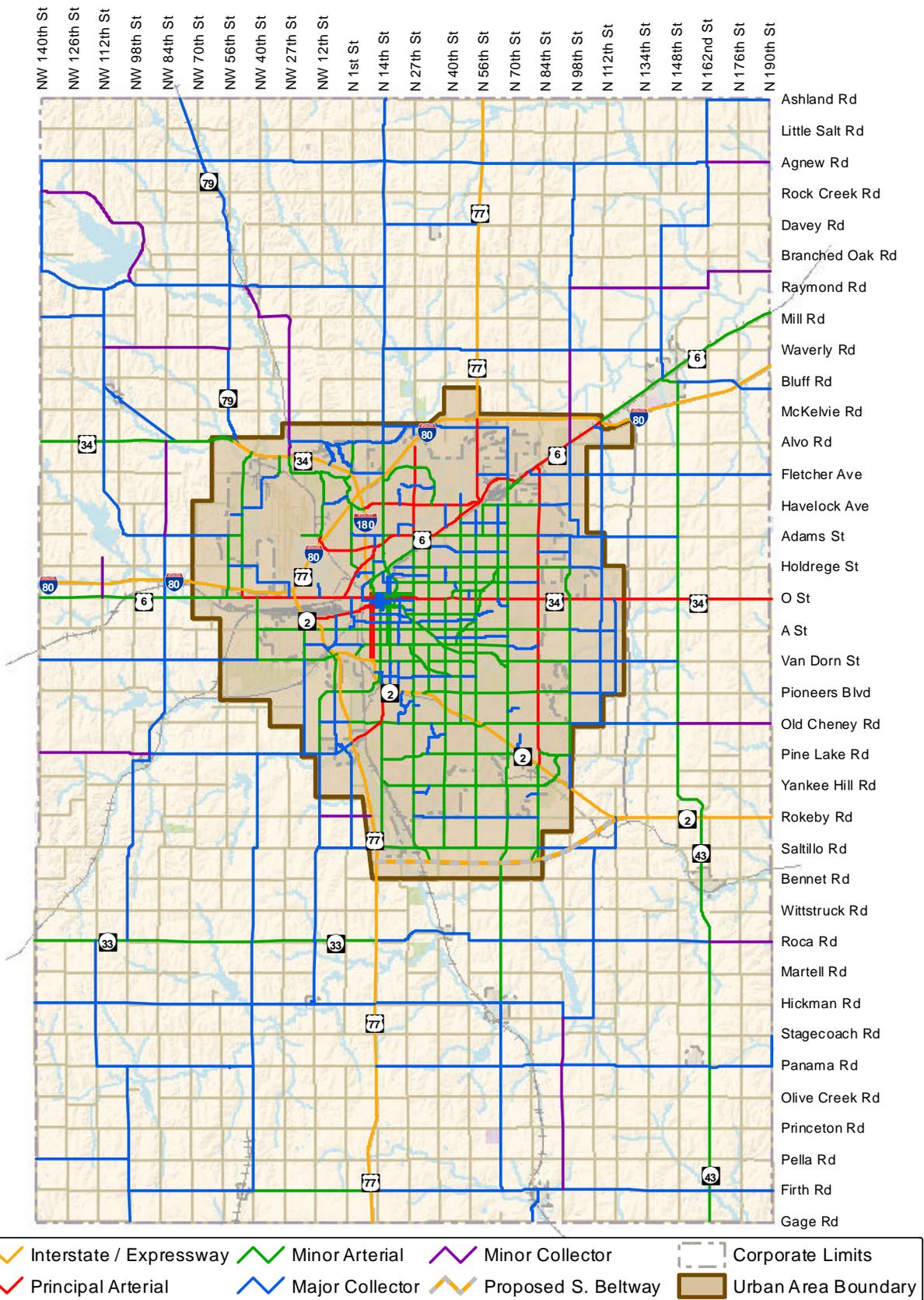
Urban/Rural Interstates, Freeways and

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 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





Map 10.3: Existing Functional Classification

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

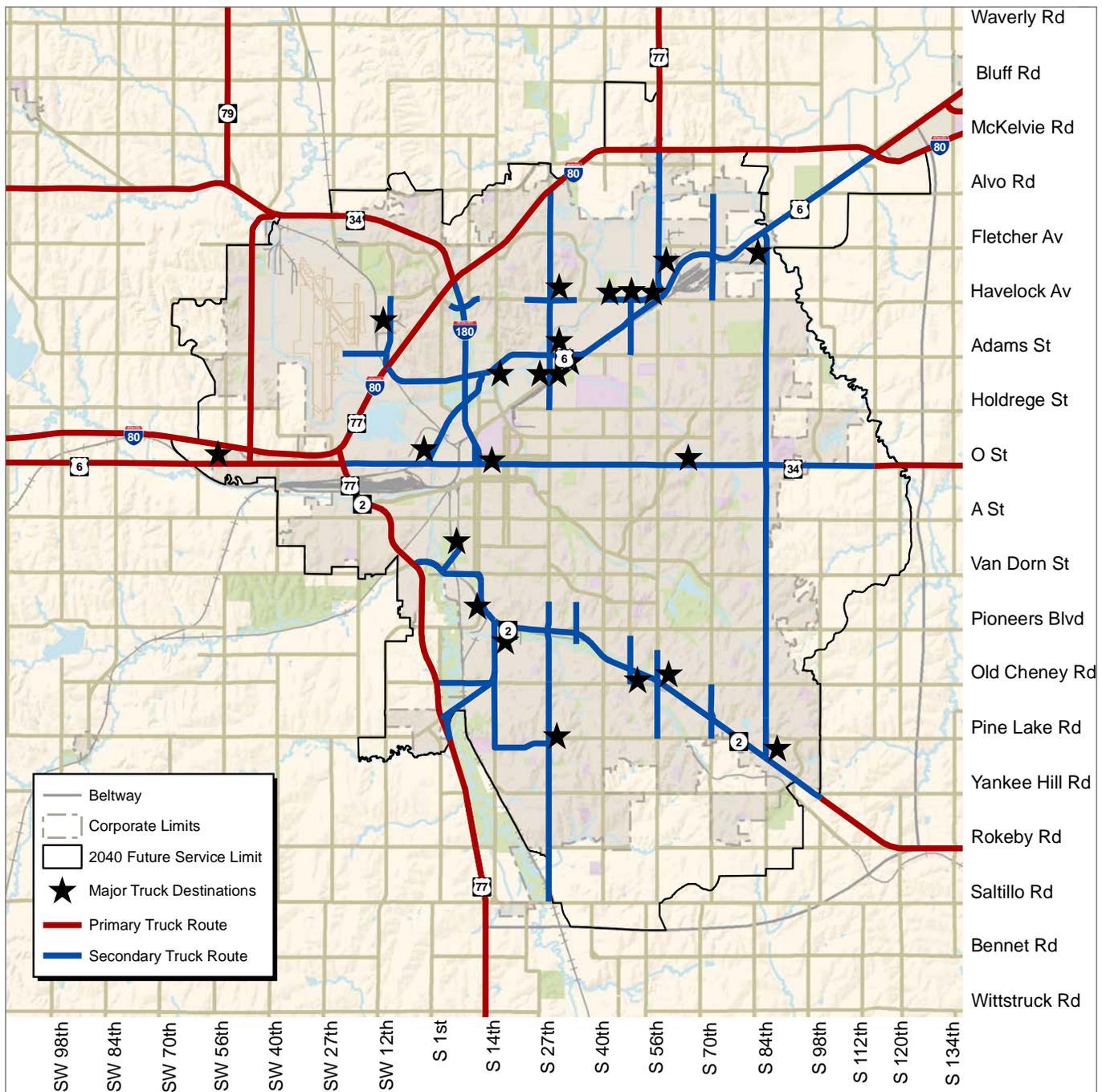
Truck freight is the most visible, and most common, form of delivering goods to customers in Lincoln and Lancaster County. Activities generating high truck traffic— especially grain elevators and warehousing operations — were historically located on the periphery of the City. Many, if not most of these, 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 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



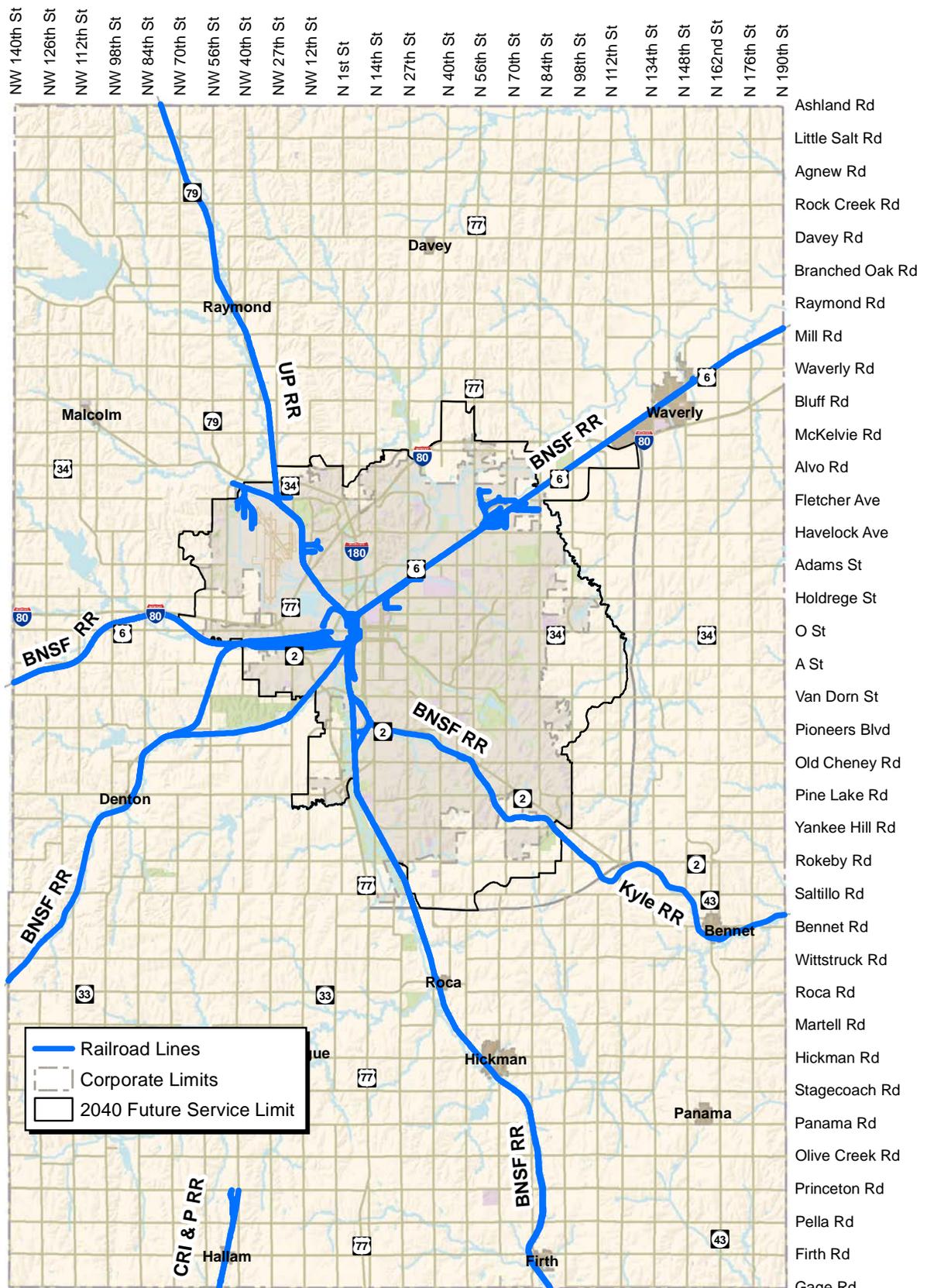


Map 10.4: Truck Routes

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.

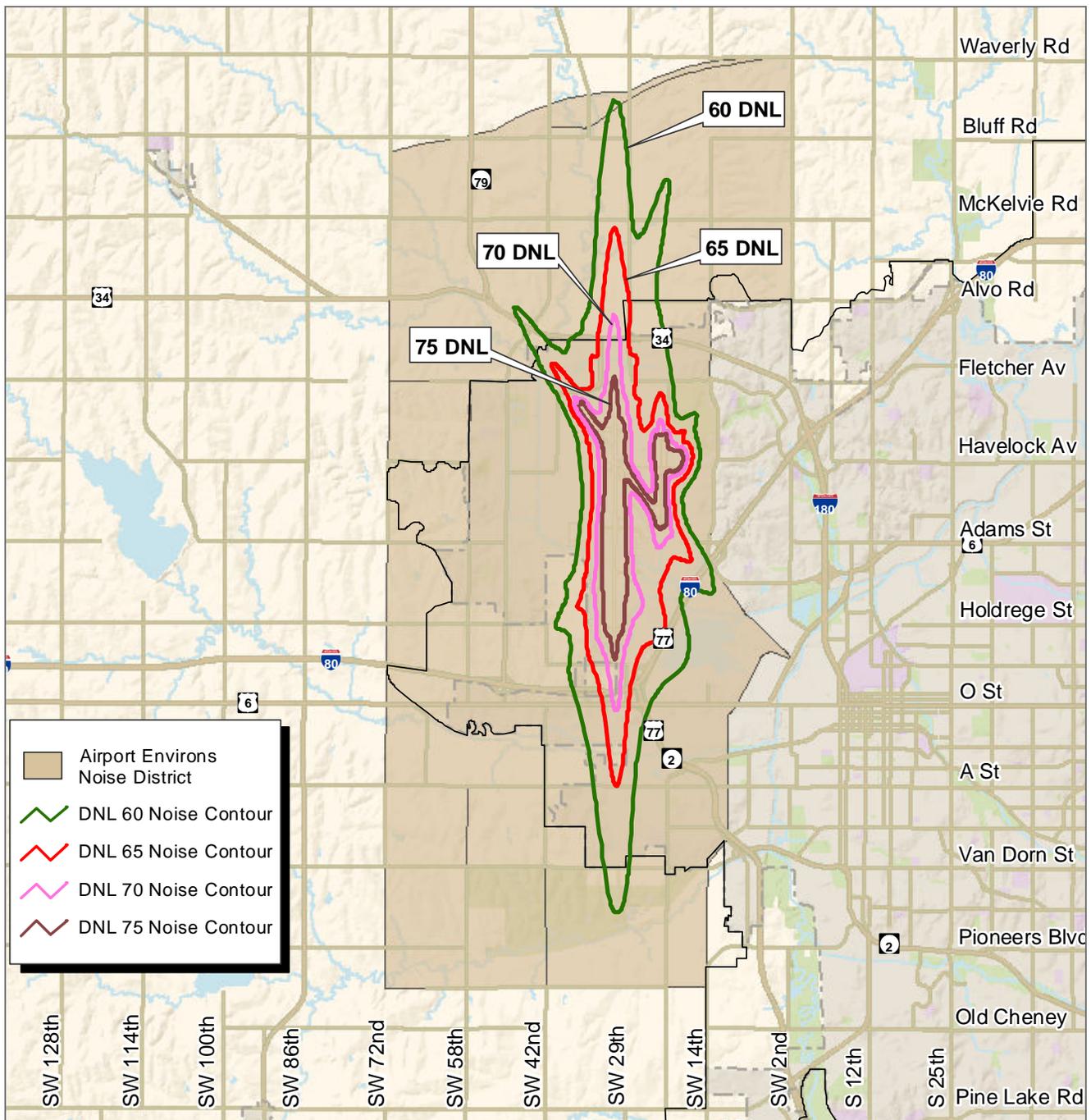
AIR FREIGHT

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



Map 10.5: Existing Rail Lines





Map 10.6: Airport Environs Noise District

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 10.5: 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.

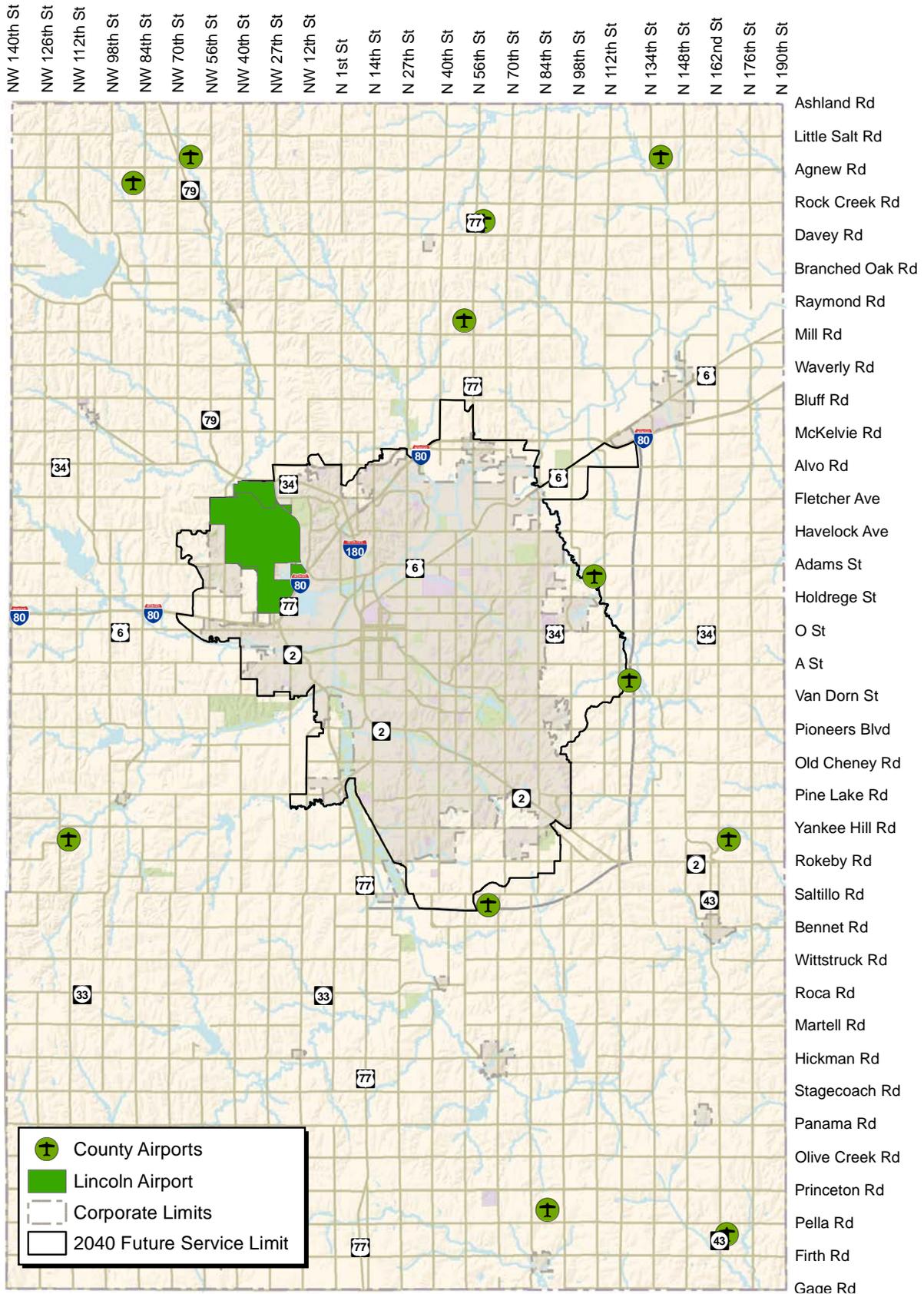
EXISTING AIRPORTS AND AIRFIELDS

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 10.6: 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 10.7: 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 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 10.7: Airports & Airfields

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.

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)

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.



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 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.

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.

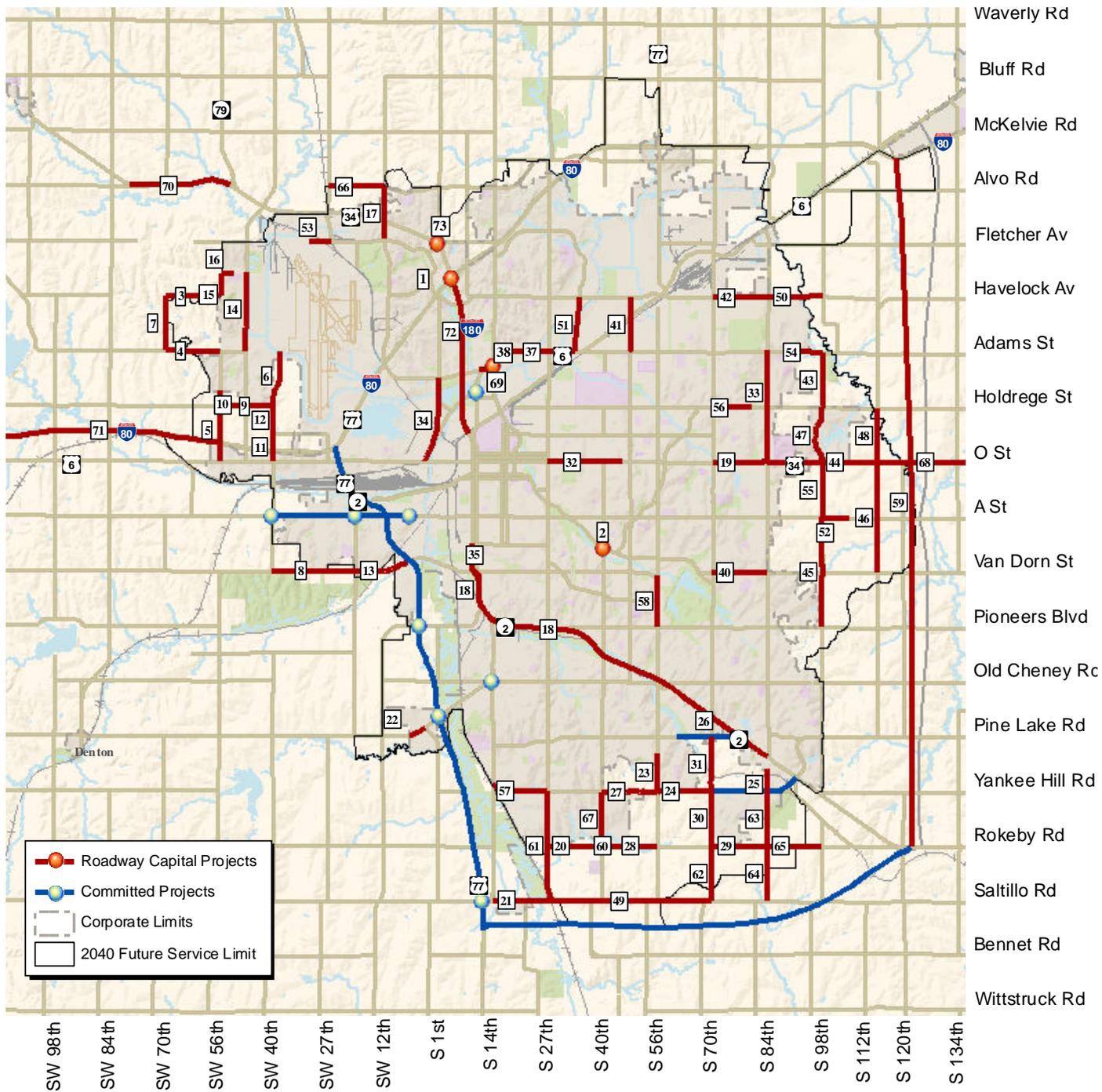
URBAN CAPITAL ROADWAY PROJECTS

The capital roadway projects resulting from this evaluation are shown on Map 10.8: Candidate Roadway Capital Projects and listed in Table 10.1: 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



Map 10.8: Candidate Roadway Capital Projects



Table 10.1: Candidate Roadway Capital Projects

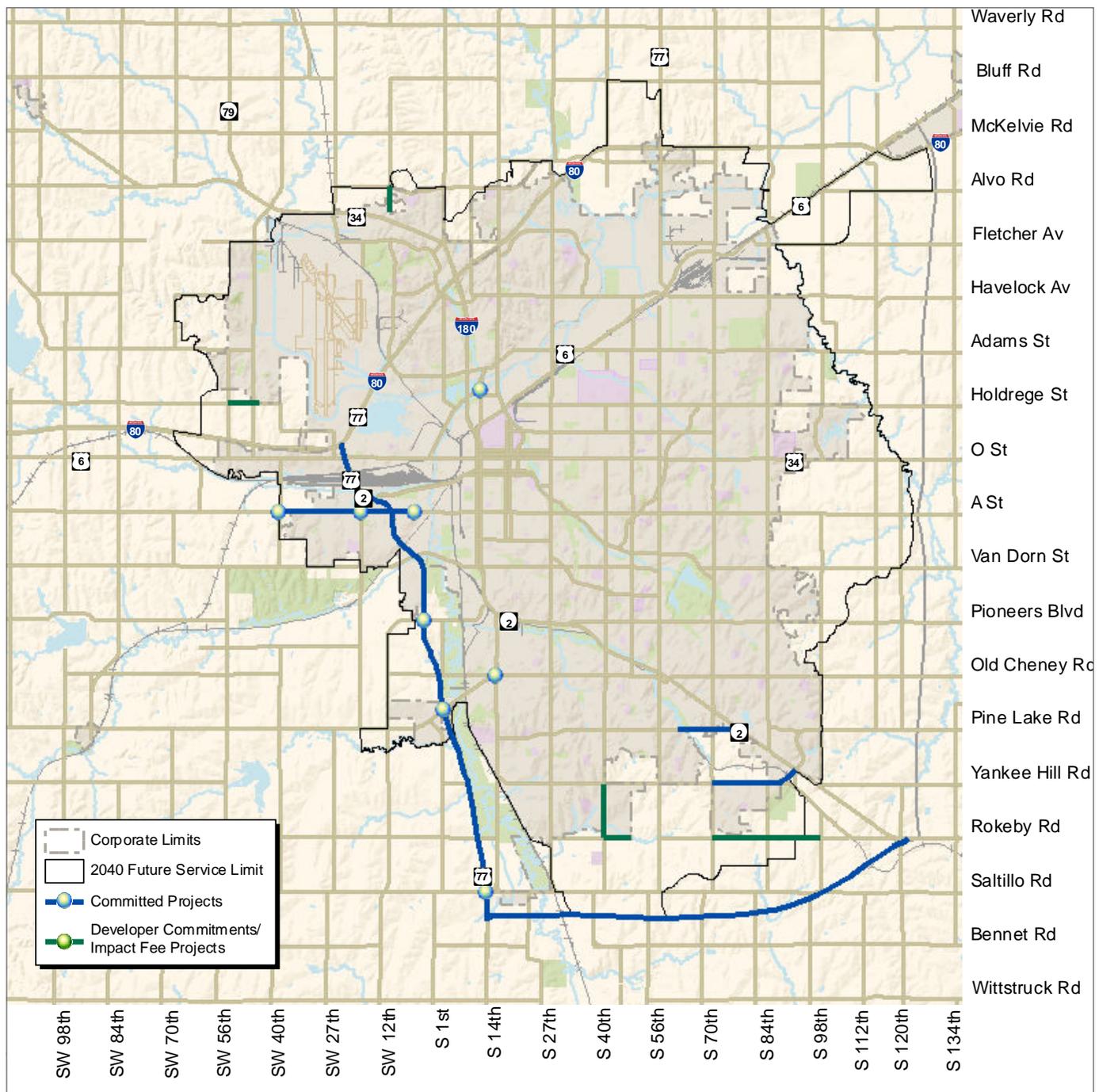
Project ID	Street Name	Limits	Description	Lead Agency	Project Cost (2016 \$)
1	I-80	I-80 and I-180	Major interchange work	State	\$41,000,000
2	S. 40th St	Normal Blvd and South St	Major intersection area work	Local	\$8,600,000
3	W. SUPERIOR St	NW 70th Street to NW 56th Street	2 lanes + intersection improvements	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 10.1: 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	\$15,000,000
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





Map 10.9: Committed Roadway Projects

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.

Committed Roadway Projects

Committed roadway projects as shown on Map 10.9: 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 \$200 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 10.8 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

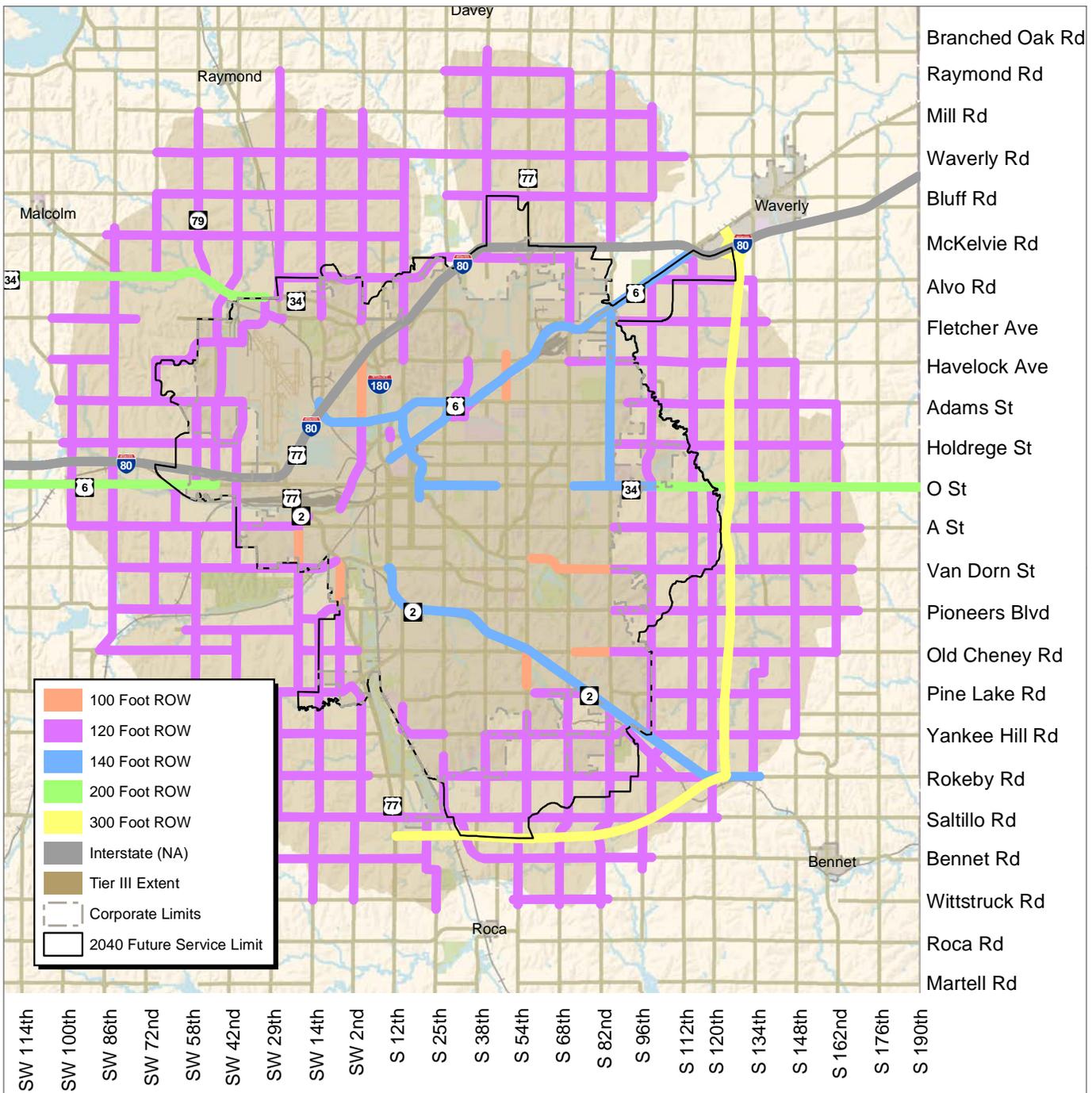
The City and County are served by both freight and passenger rail service. While the railroad lines through Lincoln and Lancaster County are critically important to the local economy, many of the railroad crossings with the street network are at-grade resulting in safety problems and travel delays. Continuous 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 10.2.

Table 10.2: 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





Map 10.10: Right-of-Way Standards

Right-of-Way Considerations

Right-of-Way (ROW) widths for projects on the Year 2040 Street and Highway Improvements Plan are displayed on Map 10.10: 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.

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 10.11: 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 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.



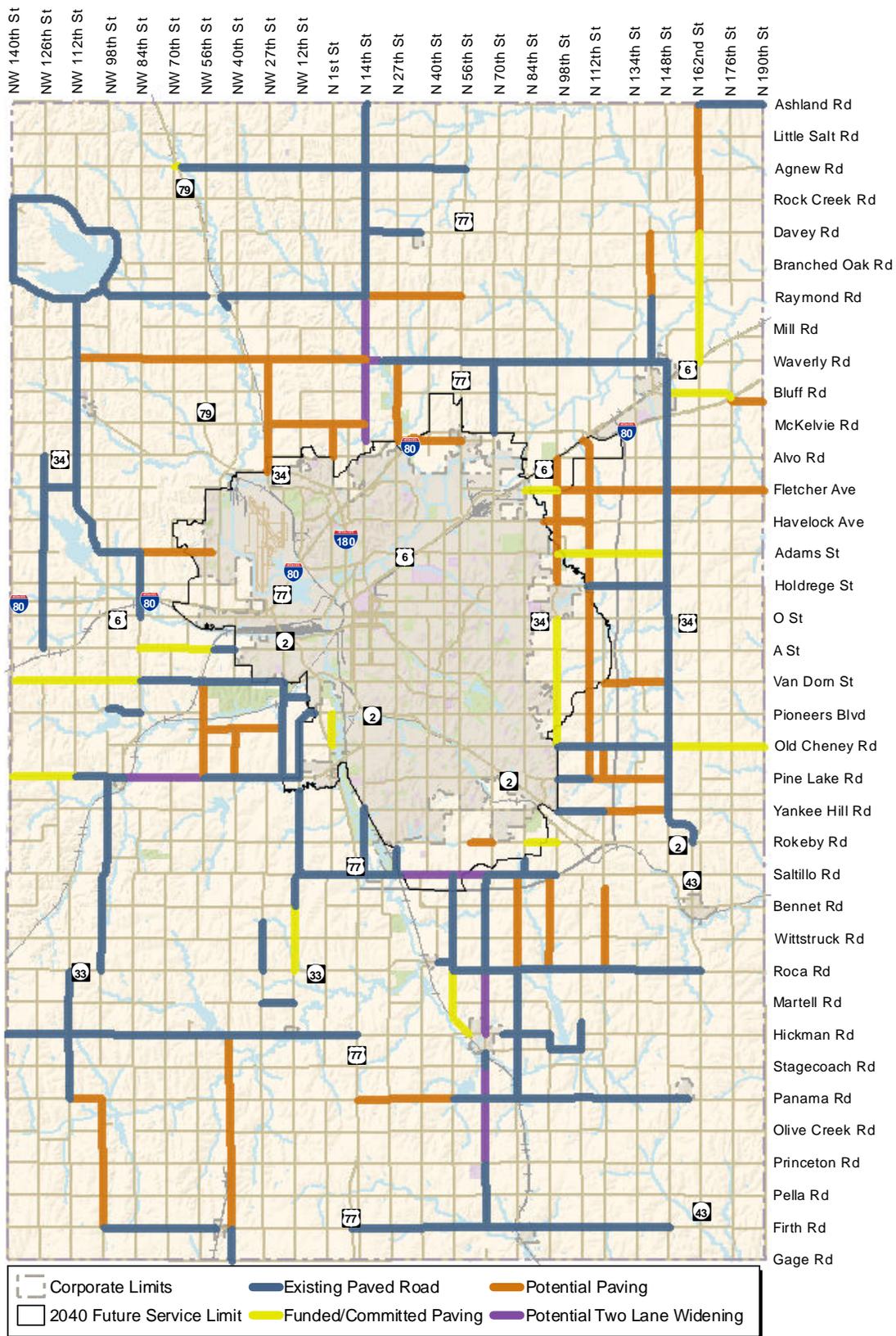
Close coordination between the Lancaster County Engineer's Office and MPO staff occurred during the development of the LRTP update to identify a needs based rural roads program. The rural roads program includes two basic project types:

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 10.11 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





Map 10.11: Rural Road Project Needs

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 10.12: Bicycle and Pedestrian Capital Plan. The Bicycle and Pedestrian Capital Plan should be updated and advanced in the near future and should include 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

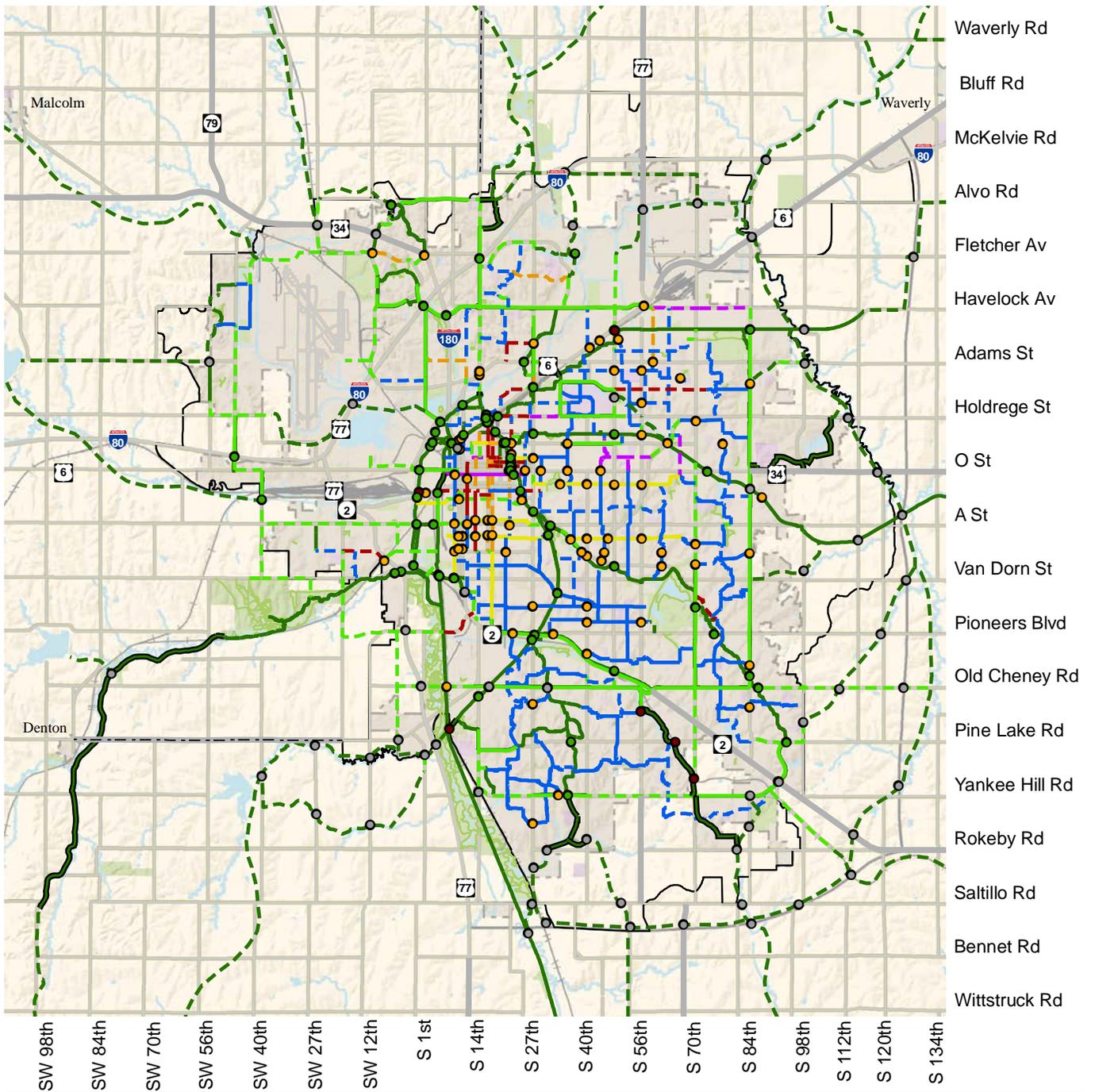
system is in need of rehabilitation in many areas. The sidewalk rehabilitation program should be funded at a level to replace a minimum of three (3) miles of sidewalk, or one percent of the sidewalk system annually. Pedestrian crossing signals should be updated and installed when warranted at appropriate 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 10.13: 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.



Legend

- Beltway
- - - Corporate Limits
- 2040 Future Service Limit

Grade Separations - Intersections

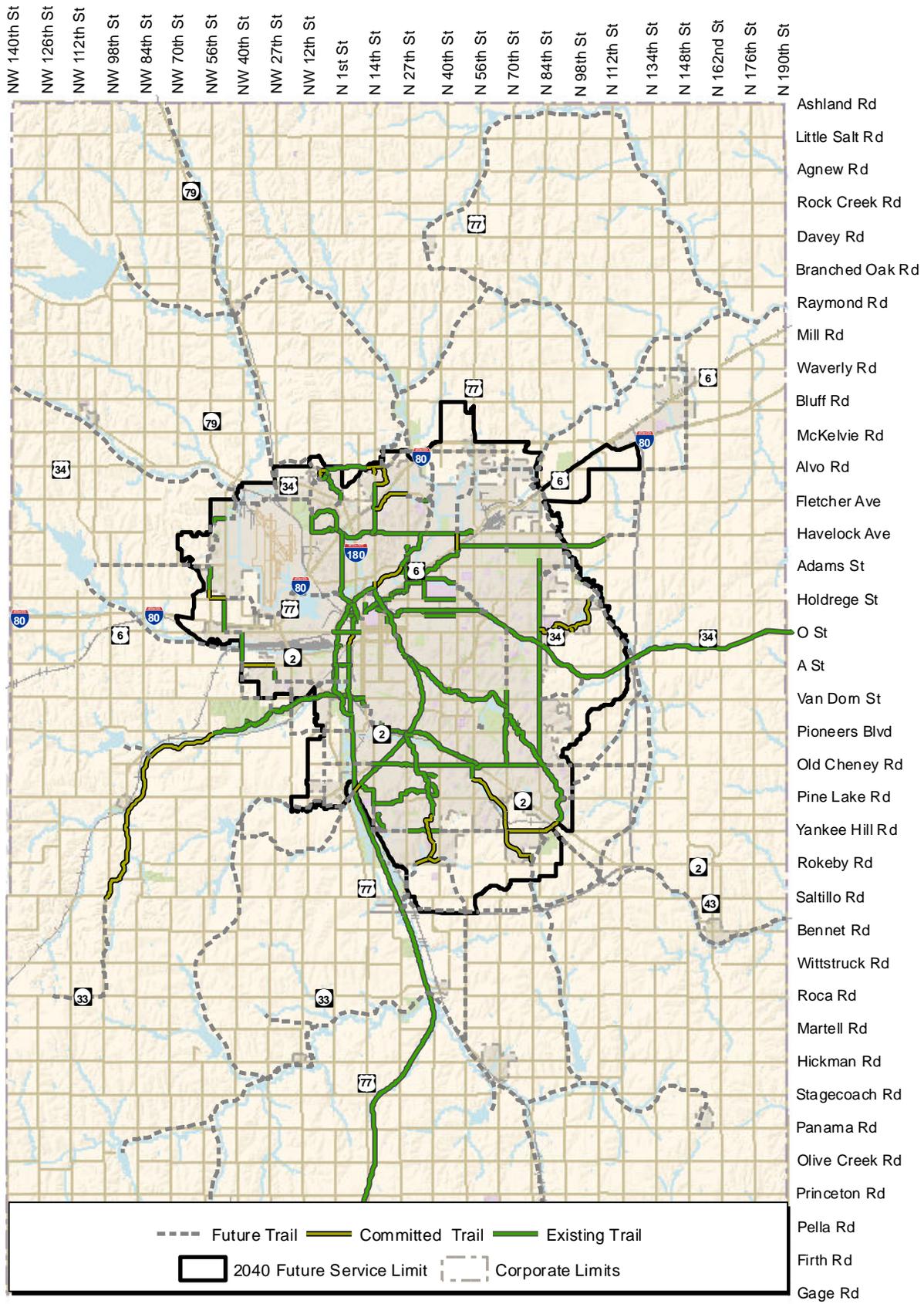
- Multiuse Trail Grade Separations
- Committed Multiuse Trail Grade Separations
- Proposed Multiuse Trail Grade Separations
- Intersection Enhancements

Existing and Proposed Pedestrian / Bike Facilities

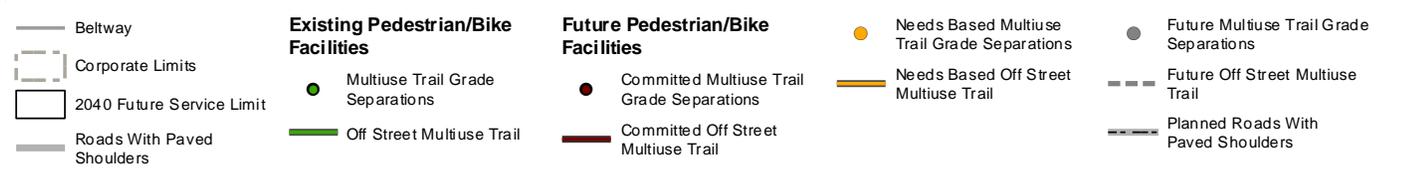
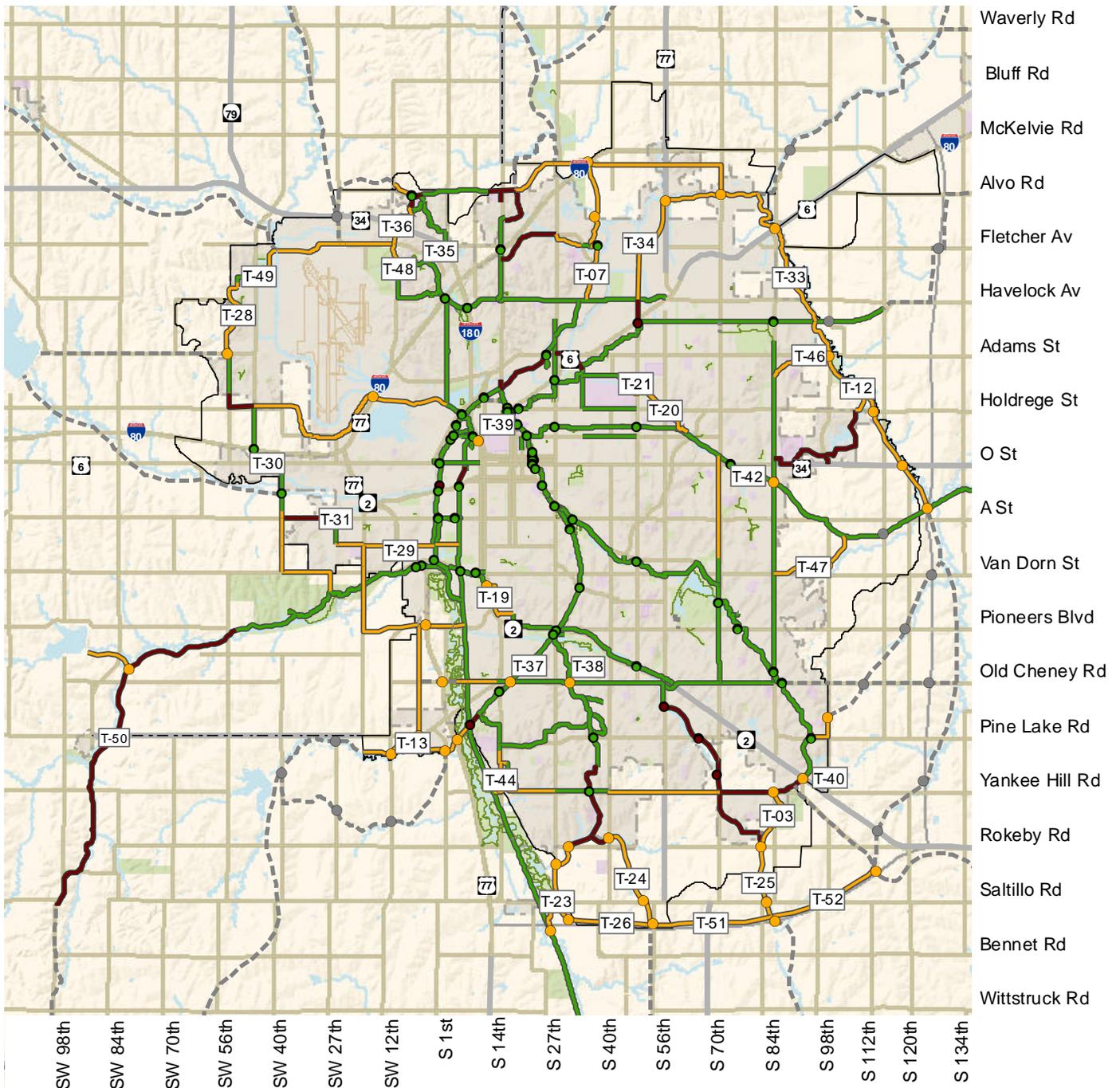
- | | | |
|----------------|-----------------------|-----------------------------|
| — Existing | — Separated Bike Lane | — Bike Boulevard |
| — Committed | — Buffered Bike Lane | — Bike Route (Shared Lane) |
| - - - Proposed | — Bike Lane | — Sidepath |
| | | — Off Street Multiuse Trail |

Map 10.12: Bicycle and Pedestrian Capital Plan





Map 10.13: Countywide Trails Plan



Map 10.14: Candidate Trail Projects

Table 10.3: 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 Fletcher 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

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 be seen in Map 10.5. A listing of Trail projects can be found in Table 10.3 and are shown on Map 10.14: 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.

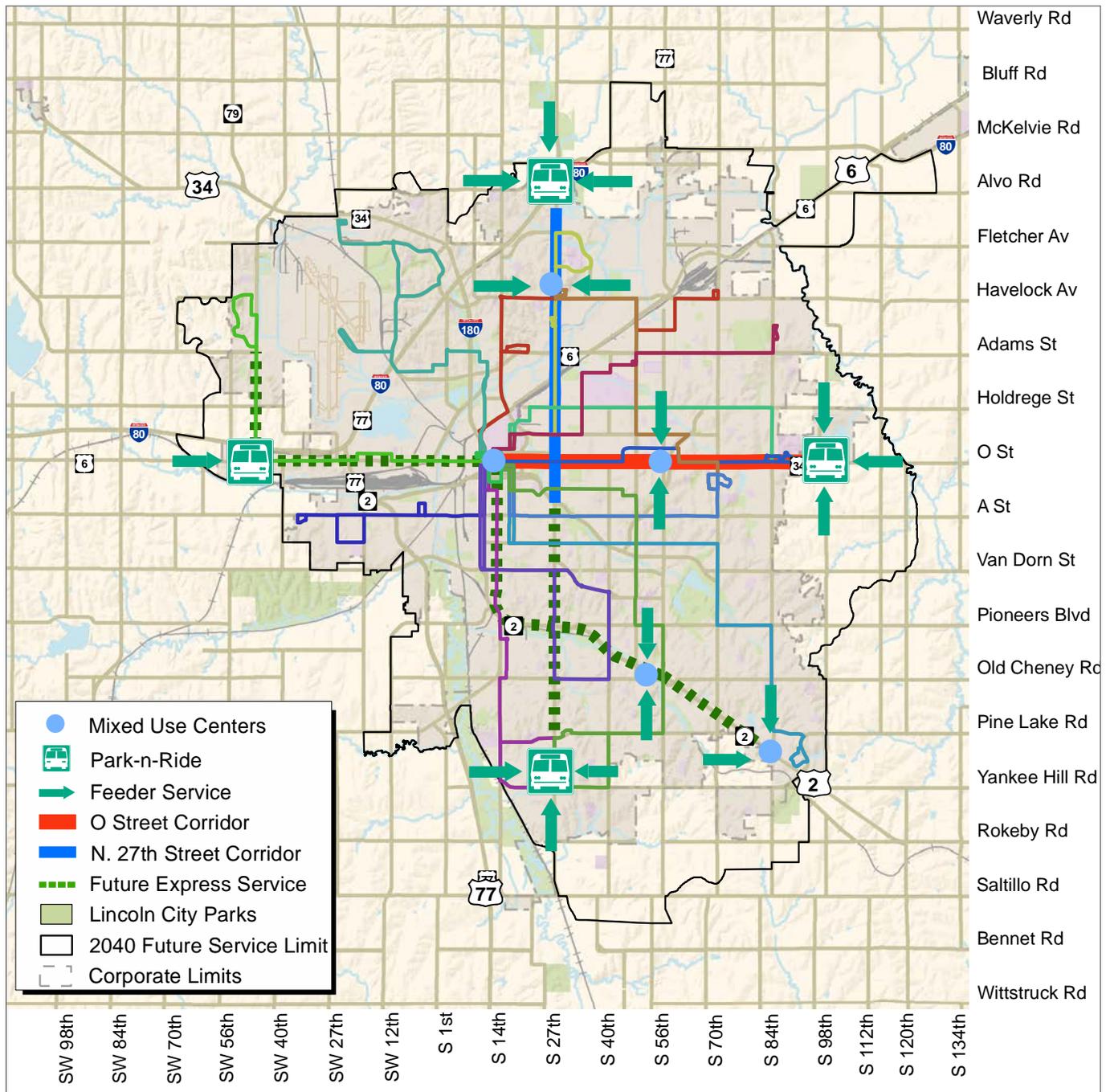
The current transit pattern in Lincoln attempts to provide some level of service as many households as possible while consolidating or eliminating services in unproductive areas. However, in the future, consideration of a change to the pattern of transit delivery needs to be made in order to maximize 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 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





Map 10.15: 2040 Transit System Concept Map

“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.

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 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 L RTPs 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.

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 L RTP 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.

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.”



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 [L RTP 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 10.4.

Table 10.4: 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 10.5, 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 10.5, LRTP Resource Allocation was used to develop the Fiscally Constrained Plan as shown on Figure 10.2, 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.

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.

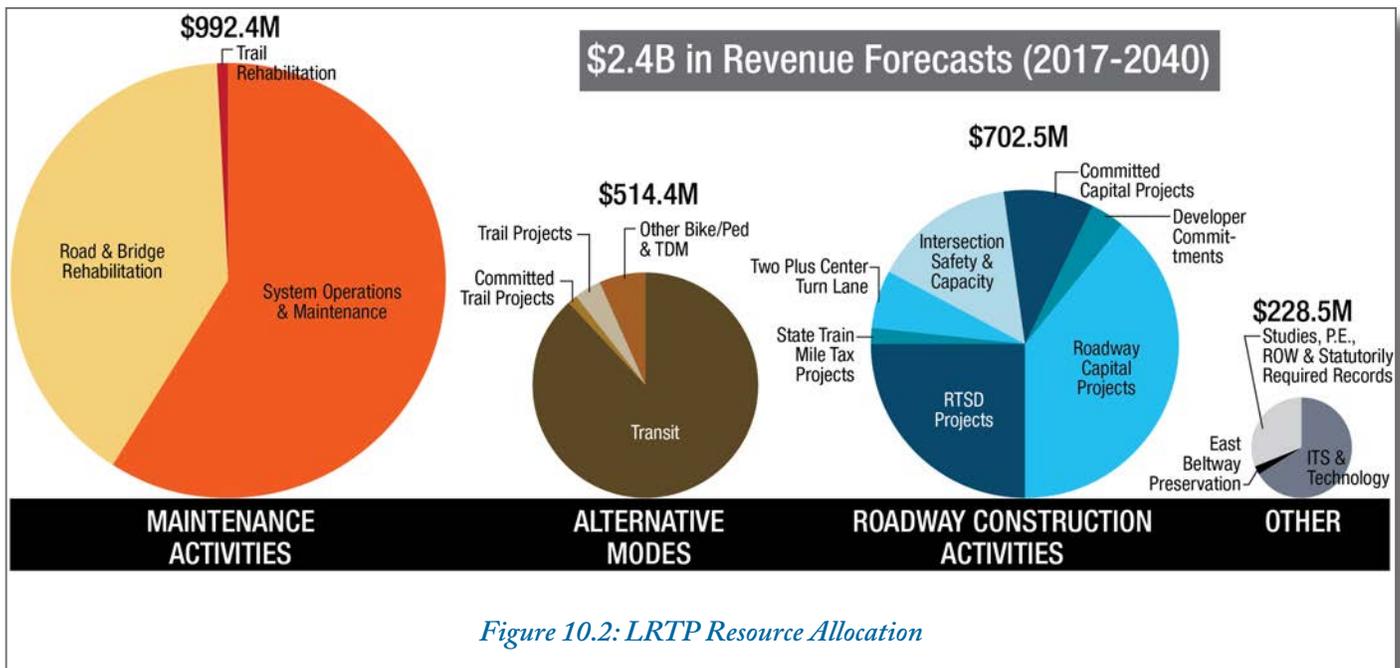
PROJECT PRIORITIZATION PROCESS

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.

Table 10.5: 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





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 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 10.6 identifies

Table 10.6: 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 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 10.16.

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 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 10.7 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.

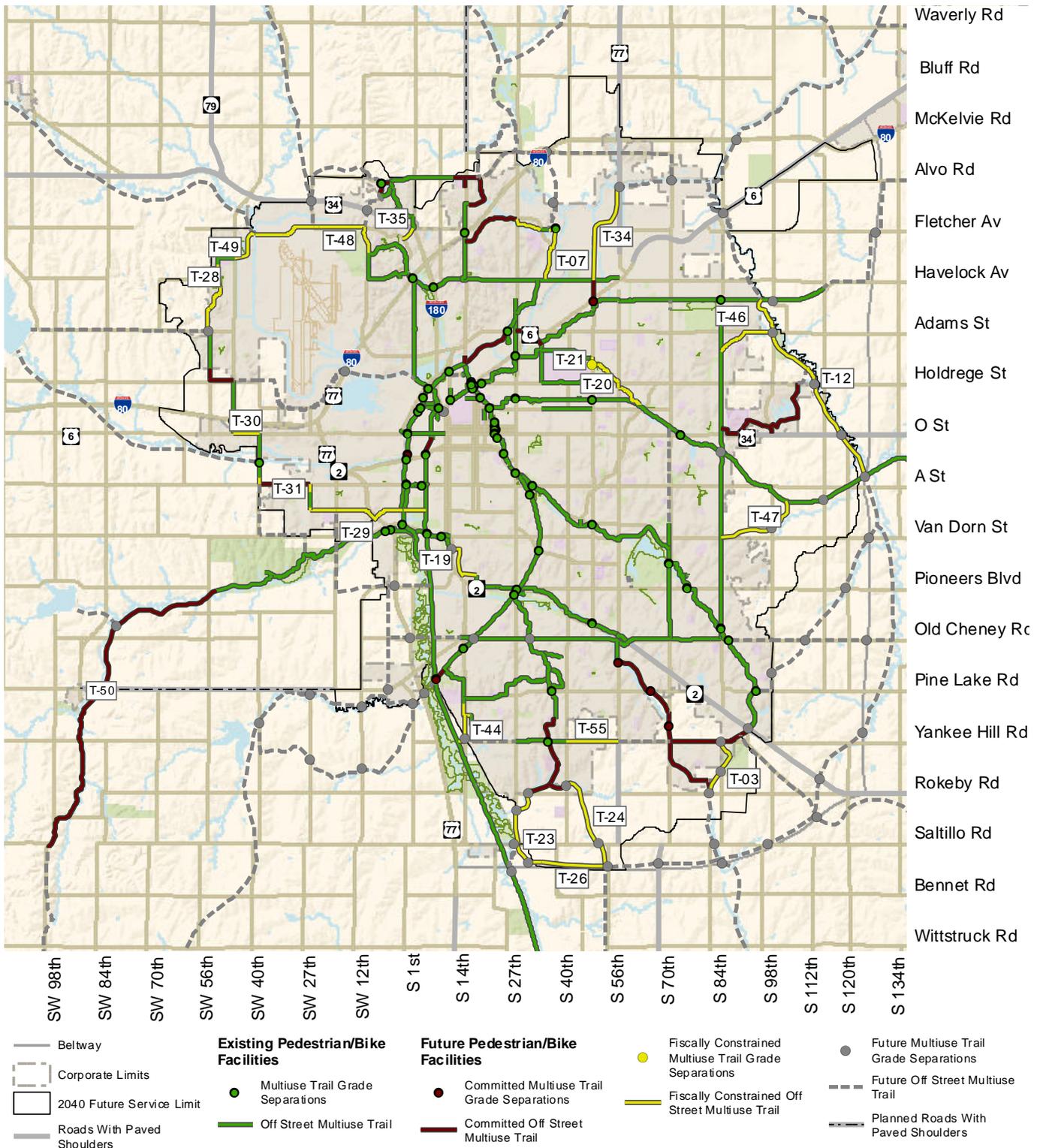
The future on-street bike facilities identified in the [LRTP Technical Report](#), Chapter 4 (Figure 29), are assumed to be funded, to the extent possible, through the existing street improvement programs. Further study of these on-street facilities was conducted during the development of the Lincoln Bike Plan and includes 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

Table 10.7: 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 10.16: Priority Trail Projects

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 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 10.8.

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



Table 10.8: 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

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

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 10.9. 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 10.9 lists the ranked projects that can be funded within the Fiscally Constrained Plan, including the committed projects and developer commitments. Map 10.17 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 10.9, 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 10.9.

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

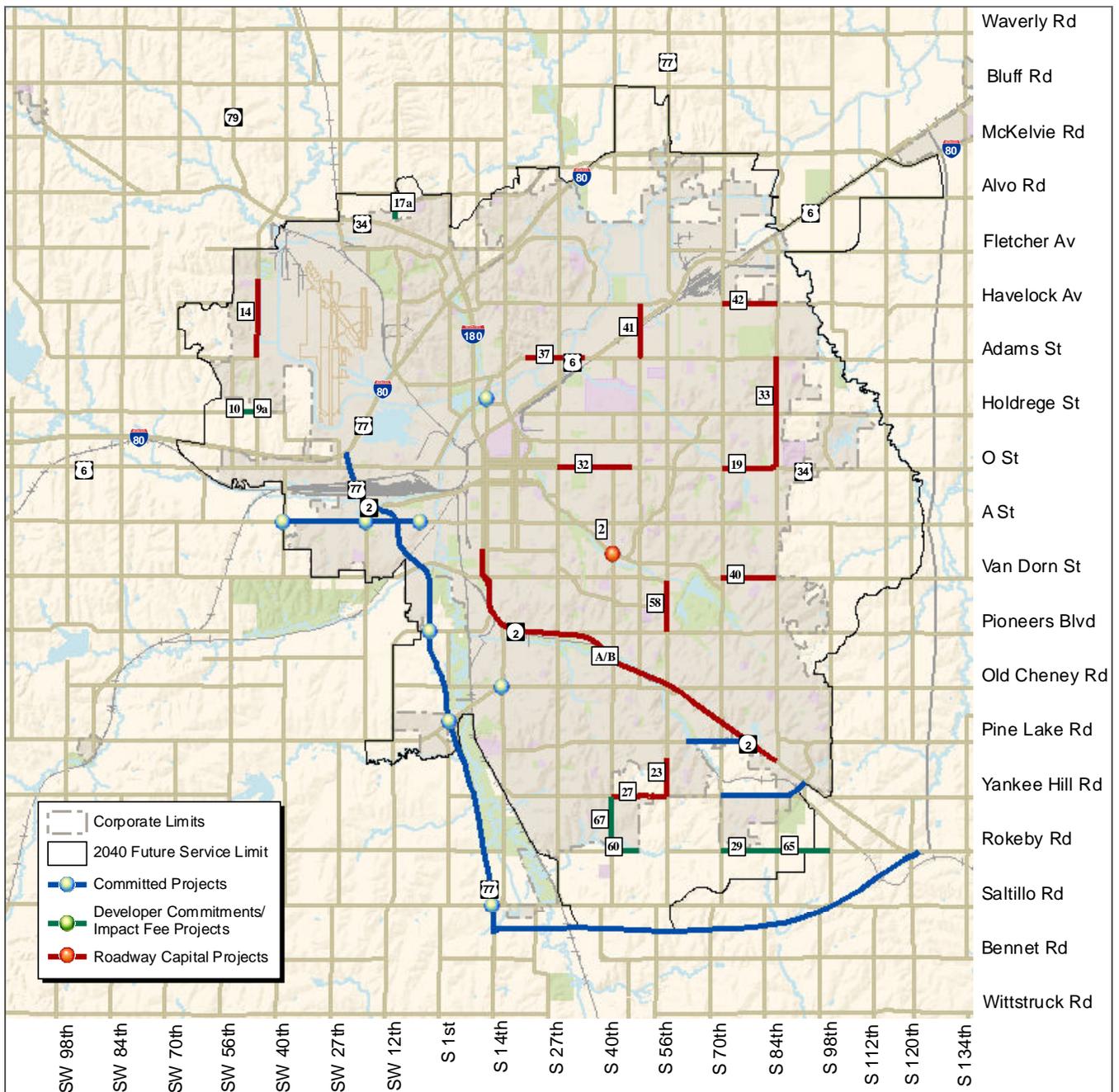




Table 10.9: Fiscally Constrained Roadway Capital Projects

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	Rokeyby 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	Rokeyby 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	Rokeyby 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 Rokeyby 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 Rokeyby 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 10.17: Fiscally Constrained Roadway Plan

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.

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 10.18 shows the rural roads projects, which are also listed in Table 10.10. Some of the County projects

shown on Map 10.18 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.

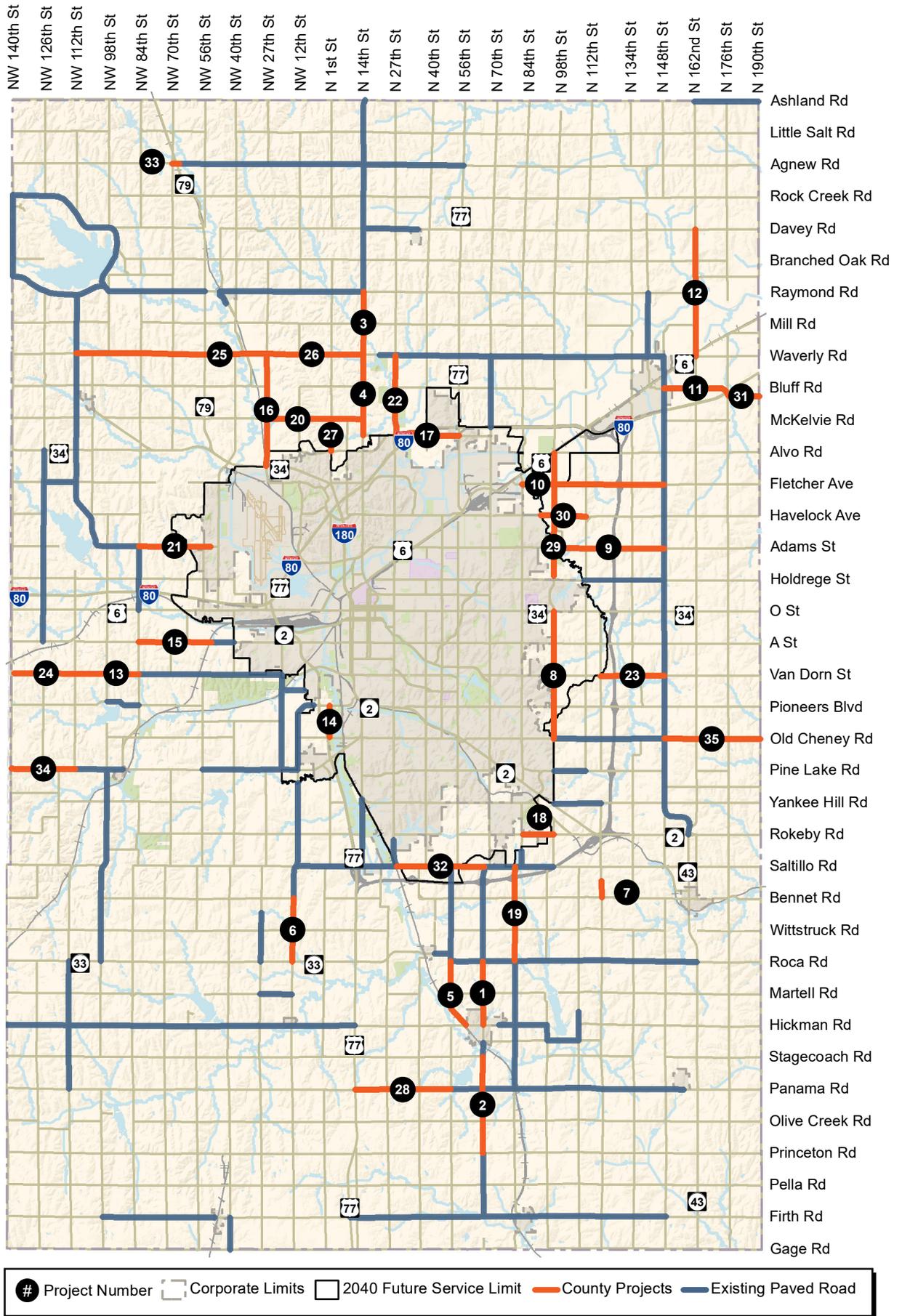
ILLUSTRATIVE PLAN

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.



Map 10.18: Rural Roads Projects



Table 10.10: 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. 148th St	4.42	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

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 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.

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 improvements 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.
- 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.

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.

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

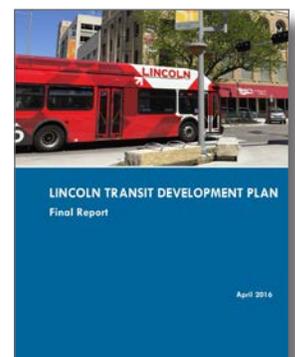
- Implement the recommendations in the Transit Development Plan (TDP). Extend evening service hours per the recommendations in the TDP.
- Examine alternatives to change from a coverage based transit system to a productivity based transit system.
- Consider Mixed Use Redevelopment Nodes and Corridors 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 to 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.

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



11 ENERGY & UTILITIES

This chapter examines energy and individual utilities including water, wastewater, watershed management, solid waste, electric services, information technology, and natural gas service.



INTRODUCTION

Energy use, supply and conservation are topics of global as well as local concern. This chapter includes an assessment of energy use, evaluates the utilization of renewable energy sources, and describes efforts to conserve energy in the community. The relationship between land use patterns and energy consumption has been widely researched and is a topic of national conversation. As Lincoln and Lancaster County continue to plan for the future, the need to consider the impacts of energy supply and demand is likely to increase in importance.

The provision of other basic services, (such as water, wastewater, and electricity) is also discussed in this chapter. The need to plan for the extension of these services to new growth areas is one of the primary reasons for comprehensive planning. Lincoln has a history and policy of providing utilities only to those areas that have been annexed into the City. Lincoln wastewater collection systems operate on a gravity flow principle and so are planned to extend along the natural drainage of the land, or drainage basins. These growth policies have served Lincoln well in that it has retained a clear differentiation between urban and rural areas and has been able to resist sprawl to a greater degree than

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many other communities. The efficient extension of utilities will continue to be a major factor in land use planning.

GUIDING PRINCIPLES

OVERALL GUIDING PRINCIPLES

- Continue the City's growth policy of contiguous urban growth; urban development will occur in areas immediately abutting the city that reflect a logical and timely extension of urban infrastructure.
- It is the policy of the City of Lincoln to only provide water and wastewater service to properties located within the corporate limits of the city. This policy provides for contiguous growth, allows for efficient long range planning and cost-effective construction and management of the system.

ENERGY GUIDING PRINCIPLES

- Promote renewable energy sources.
- Promote the conservation and efficient use of energy in all areas.

WATER GUIDING PRINCIPLES

- Development proposals should ensure that there is adequate quantity and quality of water available to serve their project without impacting other customers.
- Development actions should not impact Wellhead Protection areas or the municipal water wells serving towns.
- Water improvements must be in accordance with the Lincoln Water System Facilities Master Plan and LPlan 2040. The [Lincoln Water System Facilities Master Plan](#) will guide future actions



and serve as the basis for facilities planning and improvements.

WASTEWATER GUIDING PRINCIPLES

- The City's collection system, in general, will continue to be a gravity flow system that is designed to accommodate urbanization of drainage basins and sub-basins. This system encourages orderly growth within the natural drainage basin boundaries. This policy encourages urban growth from the lower portion of the drainage basin and discourages pumping of wastewater across basin boundaries.
- Development proposals should ensure that there is an adequate on-site wastewater system to serve a project without impacting adjacent properties. However, in urban areas, it may be necessary to create assessment districts if a sewer line crosses abutting properties.
- Wastewater improvements must be in accordance with the [Lincoln Wastewater Facilities Plan](#) and [LPlan 2040](#). The Lincoln Wastewater Facilities Plan will guide future actions and serve as the basis for facilities planning and improvements.

WATERSHED MANAGEMENT GUIDING PRINCIPLES

- Watershed planning will continue in order to be proactive and integrate stewardship principles for land conservation, stream and wetland buffers, better site design, [Water Quality Standards](#), [Best Management Practices \(BMP\)](#), and erosion and sediment control. The natural drainage system can serve multiple benefits, including wildlife habitat and recreation.
- The community encourages site designs that are compatible with the natural characteristics of the site, conservation design for new subdivisions, clustering development, minimizing grading and impervious surfaces, and preserving site hydrology to the maximum



extent possible. Naturalized or bioengineered solutions to drainage issues should be used wherever possible.

- In new growth areas, the City of Lincoln and Lancaster County have a policy of No Adverse Impact, with a goal of ensuring that the action of one property owner does not adversely impact the flooding risk for other properties.
- Urban development in new growth areas will be outside of the floodplain and floodway.

SOLID WASTE GUIDING PRINCIPLES

- No out-of-county waste is accepted for landfill disposal. This policy reserves landfill capacity for city and county residents and allows administration of programs under existing authorities.
- The City policy of privately owned and operated collection of refuse and recyclables coupled with public ownership, operation and financing of disposal and selected integrated solid waste management services will continue during the planning period.
- Enhance recycling efforts in the community by increasing waste reduction and recycling and reducing the per capita disposal by 30 percent by 2040.

ELECTRICAL GUIDING PRINCIPLES

- Lincoln Electric System will be the sole electrical utility within the City of Lincoln.
- Norris Public Power District will be the primary provider of electricity outside the City of Lincoln.
- Norris Public Power and Lincoln Electric System should continue their cooperative effort in regard to future growth areas of Lincoln and changes in service boundaries between the two utilities.

INFORMATION TECHNOLOGY GUIDING PRINCIPLES

- Information technology programs and regulations must be flexible enough to adapt to advances in technology.
- The development of a well designed fiber optic network to serve residential, business, education, and public facilities is very important. This network is a priority to ensure a high quality of life, serve as an economic development tool, and provide efficient public services.

Best Management Practices (BMPs) are defined as measures that remove or prevent pollutants from entering stormwater, streams and lakes. Examples of BMPs include stabilizing all areas disturbed during construction and preserving natural drainageways. It is the City's policy to encourage the use of BMPs in new development and redevelopment.

ENERGY

To remain competitive as the global economy expands and puts greater strain on traditional fuel supplies, energy costs rise, and supplies remain unpredictable, Lincoln must develop a comprehensive strategy of fuel diversity and encourage conservation, alternative forms of energy and modern energy technologies.

The City of Lincoln and Lancaster County are making substantial efforts toward sustainable energy reform. The City will soon have an energy strategy for City government and also intends to develop



Figure 11.1: Watershed showing the area that drains into a stream or river



recommendations for residential energy conservation. In addition, through the [Cleaner Greener Lincoln Program](#), the City has funded municipal lighting upgrades, energy saving improvements for residential buildings and



non-profit facilities, clean energy production and green building practices. The City of Lincoln is not currently funding Cleaner Greener Lincoln Program

projects but evaluating available options to fund the program. Lincoln Electric System also provides energy rebates for investments in energy-saving devices through their Sustainable Energy Program.

Using energy more effectively through more efficient end-uses or through more productive generation, such as combined heat and power,



reduces the amount of fuel required to produce a unit of energy output and reduces the corresponding emissions of pollutants and greenhouse gases. Energy from renewable resources such as solar, geothermal, and wind technologies generally

does not contribute to climate change or local air pollution and generally conserves nonrenewable natural resources.

In 2016, the City of Lincoln was awarded match funding from the Nebraska Environmental Trust (NET) to install 10 dual – point electric vehicle (EV) charging stations to be placed in the City’s public parking garages. Lincoln joined with the Nebraska Community Energy Alliance (NCEA) representing dozens of other communities in Nebraska on this joint application. The charging stations will track

usage and calculate dollars saved by the vehicle owner along with greenhouse gas emissions avoided through use of an EV. Usage data will also assist the City in firming up trends in the demand for EV and charging capacity in the community.

Property Assessed Clean Energy (PACE) legislation has been passed by the State of Nebraska and is now available to communities across the state. PACE financing enables businesses and homeowners to fund energy efficiency upgrades and renewable generation through a property tax assessment, similar to a street repair or other improvement. The City of Lincoln is evaluating how best to implement a PACE program which would be in the best interest of homeowners and businesses.

The City is also moving forward with a plan to engage Energy Savings Performance Contractors (ESPCs) to design, procure and construct energy and utility conservation measures for municipal buildings and utility operations. Projects executed under the ESPC model are intended to be financed by the energy and utility savings generated as a result of the facility or operational improvements. ESPC contracting has been successfully utilized across the country by federal, state and municipal operations to pay for critical infrastructure improvements for close to 30 years.

Municipalities across the country are increasingly converting streetlight systems to Light Emitting Diode (LED) technology in efforts to improve energy efficiency and other safety and aesthetic factors. The City’s design standards for municipal lighting were modified in 2016 to require all new and replacement streetlights to meet minimum efficiency ratings of LED technology. The City will also be determining the most cost-effective means of converting all streetlights to LED over the next several years in consideration of all safety, aesthetic and energy savings impacts for the various products available.

Other projects and initiatives with the potential to significantly reduce energy consumption and greenhouse gas (GHG) emissions include:



- Continued conversion of the StarTran Bus Fleet to Compressed Natural Gas (CNG)
- Modifications to the Theresa St. Water Reclamation Facility to capture Renewable Natural Gas (RNG) from the waste digestion process as a source for StarTran and potentially other City vehicles.
- Continued deployment of centralized thermal energy provided by the District Energy Corporation where appropriate and cost effective.
- Continuing to adopt the most current and cost effective energy codes.
- Continued support for the LES solar energy project.
- Continue to increase LES's renewable generation portfolio with the purchase of renewable power sources.

STATUTORY REQUIREMENTS

In 2010, the Nebraska Legislature passed legislation requiring cities and counties in Nebraska to assess, evaluate and promote renewable energy sources and energy conservation measures as part of their Comprehensive Plan updates. Energy affects many aspects of land use, and as the population continues to increase over the next 30 years, so will energy consumption and the need for renewable resources.

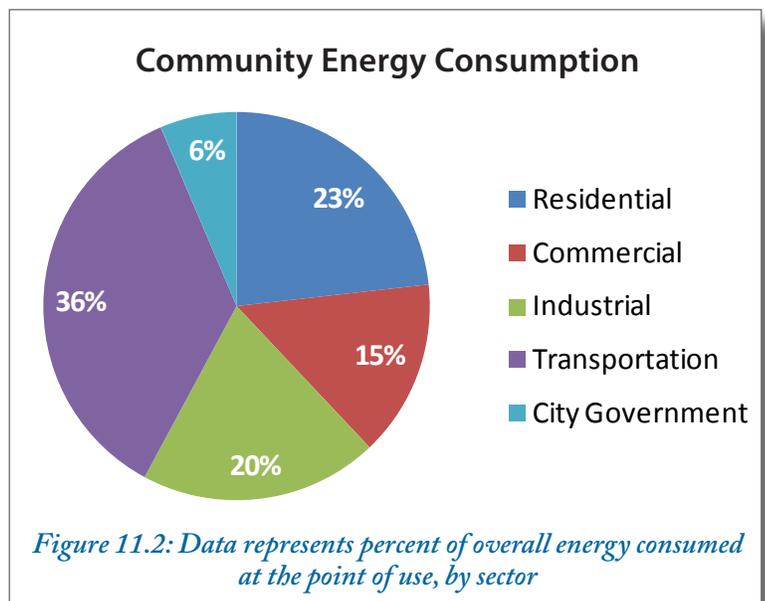
ENERGY USE

Like many other communities, it is a challenge for the City of Lincoln and Lancaster County to obtain data that can be put into a meaningful model to use in setting goals and comparing our community with others.

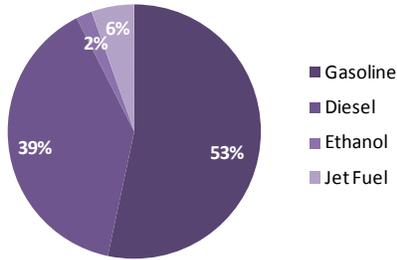
During the 2011 update, the City has assessed energy infrastructure and energy use by sector, including transportation, residential, commercial, city government and industrial sectors at the local level. The data does not include lifecycle

consumption, or energy that is used to generate the end use energy product. Thus, the following data provides a snapshot of energy being consumed at the point of use and does not factor in energy such as coal that is used to produce the electricity that powers our homes and businesses. New local data was not available at the time of this update; however a detailed analysis is completed at the state level on an annual basis. The state data is published in an [Annual Report](#) by the State of Nebraska Energy Office that identifies energy trends and needs by sector. The 2015 report also notes that Nebraska's total energy consumption 2013 was 872 trillion British thermal units (Btus), an increase of 21 trillion Btus - or 1.5% increase from 2012 to 2013. As shown in the accompanying chart, the majority of Lincoln's energy consumption is related to how we live and how we get around. (All data are from 2008, except the transportation data which are from 2010).

Per State Statute Section 15-1102: "The comprehensive plan shall, among other things, show:... an energy element which: assesses energy infrastructure and energy use by sector, including residential, commercial, and industrial sectors; evaluates utilization of renewable energy sources; and promotes energy conservation measures that benefit the community."

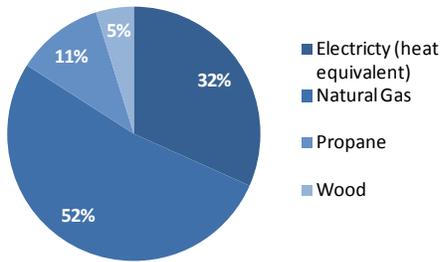


Transportation



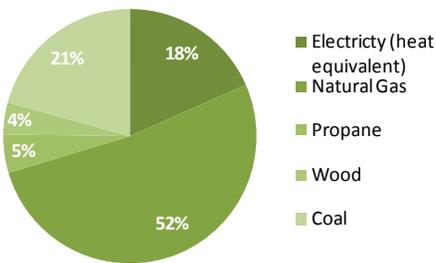
Transportation is the biggest energy user in the City at 36% of total consumption. Within this sector, 53% of that use is gasoline and 39% is diesel. Fleet fuel economy is mandated by Federal requirements and by consumer preferences, much of which is beyond local control. Opportunities on a local scale for using energy more efficiently in this sector would be to provide and promote alternative transportation options such as walking, biking and transit services and improving traffic flow.

Residential



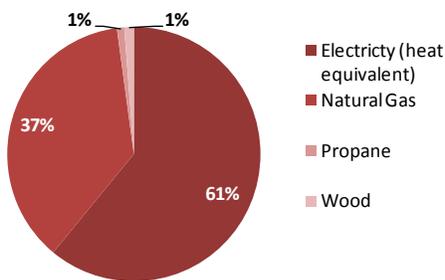
The Residential sector represents 23% of the energy consumption of the City of Lincoln. As shown in the chart, 52% of that use is in natural gas, primarily for heating, water heating and cooking. Electricity, used primarily for lighting, air conditioning and appliances accounts for 32% of energy used. Propane is primarily a rural usage, and kerosene and wood are quite small. The biggest impact on energy usage in the residential sector would be made by increasing the thermal performance of homes, improving heating and cooling equipment, and improving the efficiency of appliances and lighting.

Industrial



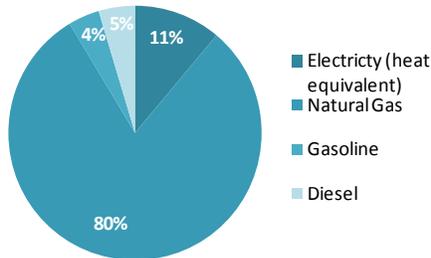
Industrial use represents 20% of the total city energy consumption. Within the Industrial sector, 52% is natural gas, 18% is electricity and 21% is coal. Opportunities for improvement should be determined on a process by process basis in addition to striving for general building efficiencies.

Commerical



Commercial sector energy consumption represents 15% of total energy use of the City. Within this sector, electricity represents 61% as the primary energy use and natural gas is 37%. Natural gas is used for heating businesses and water along with some food preparation and water heating. Electricity is primarily represented by lighting and air conditioning. Opportunities for improving the efficiency within this sector should be directed at building, lighting and heating/air conditioning.

City Government



The majority of City Government energy consumption is in natural gas. The City of Lincoln water and wastewater facilities consume more than half of the energy in this sector.

Figure 11.3: Energy consumption by sector and energy type



As the chart identifies, Transportation represents 36% of the overall energy use in the community with the Residential sector being second at 23%. The Industrial sector comes in at a close third with 20%, followed by Commercial at 15%. Although the City Government sector has an impact, it is less significant at 6% of the overall energy use. Nevertheless, City Government can have a significant impact on efforts to reduce energy consumption by setting an example for the community through more efficient use of energy and investing in renewable resources.

RENEWABLE ENERGY

Local government entities, including all local utilities, should strive to increase utilization of renewable energy sources such as wind power, hydropower, solar energy, biomass, and geothermal energy. Energy providers such as Lincoln Electric System, Norris Public Power District and Black Hills Energy should strive to purchase a higher percentage of energy from renewable sources. Today, on a nameplate basis, the LES generating capacity portfolio is now essentially split equally between renewables, natural gas, and coal. The LES SunShares initiative offers customers an affordable opportunity to be involved in the development of a local community solar facility. Each SunShare is just \$1 per month; three-share (\$3) minimum required. This nearly 5-megawatt project is located at N.W. 75th and W. Holdrege in Lincoln. The site went commercial in June 2016. Additional information should be collected to better facilitate a more comprehensive energy strategy.

Through engagement with numerous stakeholders, the City of Lincoln is preparing a “Sustainable Lincoln Plan” that will lay out specific short and long term goals and actions that are aligned with the guiding principles and strategies referenced in this chapter. The Sustainable Lincoln Plan is anticipated to be completed in early 2017.

STRATEGIES FOR RENEWABLE ENERGY

- Continue to encourage and expand wind and solar access to buildings and other land uses.
- Incorporate the use of alternative fuels into local government and institutional operations.
- Incorporate the use of alternative fuels when feasible.

ENERGY CONSERVATION

Because of the limited amount of nonrenewable energy sources on Earth, it is important to both reduce consumption of resources and substitute non-renewable resources with renewable ones, so that our natural resources will be available for future generations.

Energy conservation is also important because consumption of nonrenewable sources impacts the environment. Specifically, our use of fossil fuels contributes to air and water pollution. For example, carbon dioxide is produced when oil, coal, and gas combust in power stations, heating systems, and car engines. Carbon dioxide in the atmosphere acts as a transparent blanket that contributes to the global warming of the earth, or “greenhouse effect” according to the [Environmental Protection Agency](#) (EPA). There is consensus of scientific thought that this warming trend is significantly altering our climate. Possible impacts include a threat to human health, environmental impacts such as rising sea levels that can damage coastal areas, and major changes in vegetation growth patterns that could affect agricultural productivity and cause some plant and animal species to become extinct.

At the local level, energy conservation saves money and energy which benefits both homeowners and businesses.

Today, LES capacity portfolio is split equally between renewables, natural gas and coal.



Through the [Cleaner Greener Lincoln Program](#), the City is setting goals and developing measurable strategies to use energy more efficiently, which will in turn save the City and its residents money.

STRATEGIES FOR ENERGY CONSERVATION

Land Use and Development

- Consider prioritizing infrastructure investment based on projects that can show net energy reduction.
- Provide incentives for projects that utilize green building codes or green rating systems.
- Encourage higher density housing in/near large commercial development, redevelopment nodes and corridors and employment centers.



- Encourage energy-efficient compact development, conservation design for new subdivisions and mixed use development.
- Explore options for allowing more home

occupations that are compatible with neighborhoods.

- Revise codes to allow for more opportunities to work and live in the same place.

Transportation

- Include provisions for safe and convenient pedestrian and bicycle use.
- Continue traffic signal optimization measures.
- Incorporate use of technology and fiber capacity.
- Expand transit services to increase use of transit.
- Encourage integration of alternative modes of transportation in new developments.

- Encourage transit-oriented development near transit stops, bicycle pathways and bicycle parking stations.
- Encourage telecommuting to reduce vehicle miles traveled.
- Encourage employers to initiate work schedules that will help alleviate congestion at peak hours.
- Encourage carpooling, car/ bike sharing, and use of transit.

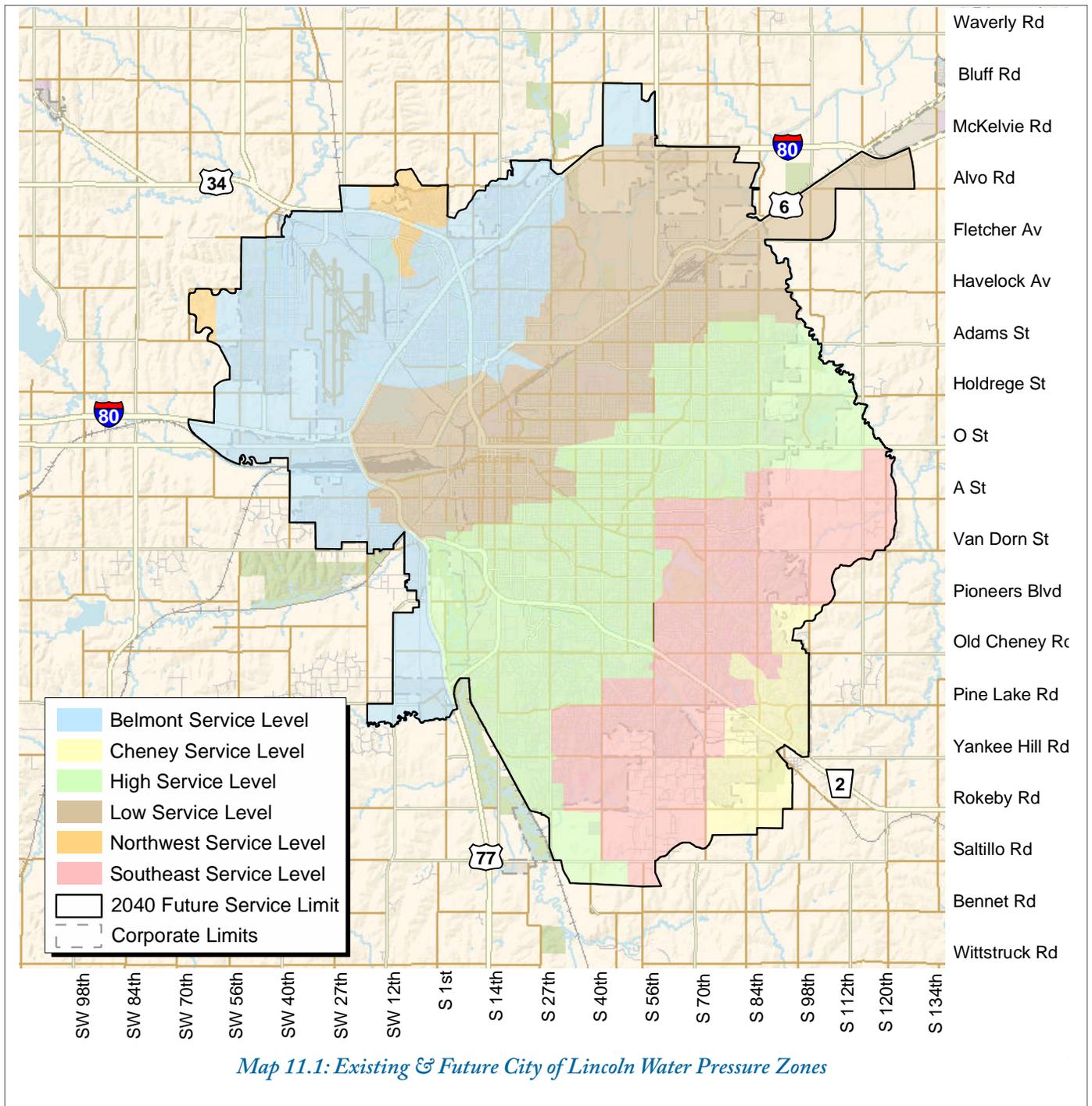
Buildings and Landscaping

- Retrofit and weatherize existing buildings with energy efficient technologies.
- Incorporate energy-efficient design and technology into new buildings.
- Encourage orientation and siting of new buildings to take advantage of solar heating and cooling breezes.
- Use landscaping to provide shade to reduce heating and cooling demands and to act as windbreaks.
- Reduce and reuse construction and demolition waste.
- Consider incentives such as fee waivers and rebates to encourage sustainable measures for buildings and landscaping.
- Use Stormwater Quality Best Management Practices to improve stormwater runoff from new or substantially improved buildings.

Public and Semi Public

- Conduct an energy audit of all buildings.
- Promote weatherization programs.
- Educate the public on the benefits of energy-efficient buildings and development.
- Improve the City's ability to measure energy use and conservation efforts.





- Continue to provide and promote waste reduction, reuse and recycling options.
- Explore opportunities for using grey water.
- Promote and encourage the use of water conservation systems and conservation design for new subdivisions in City and County codes.

WATER SERVICES

LINCOLN WATER SYSTEM AND COUNTY WATER RESOURCES

Potable water is provided to Lincoln residents and businesses by the Lincoln Water System (LWS). The System is owned by the City of Lincoln and managed by the City's Department of Public Works



and Utilities under the direction of the Mayor and City Council. It is a revenue producing and self-supporting system (i.e., no tax funds are used by the system).

Lincoln's only source of water is groundwater recharged from the Platte River northeast of Lincoln. Lincoln Water System processes groundwater at the treatment facility prior to its transmission to Lincoln for distribution.

Lincoln's only source of water is groundwater recharged from the Platte River northeast of Lincoln.

The distribution system is divided into six pressure zones. Each zone has a system of storage facilities and pumping stations that keep operating pressures in the 35-100 pounds per square inch (PSI) range. Because pressure for the system relies upon elevation, reservoirs and pump stations are often located outside the respective service area, and in some cases outside of the City.

The existing water system is made up of more than 1,245 miles of water distribution mains. Pipes providing service to customers range in size from 4" to 16" in diameter and total 1,100 miles. There are also 145 miles of transmission and transfer mains which range from 24" to 54" in diameter.

The water distribution system contains approximately 26,000 valves for the isolation of water main breaks to minimize the number of customers out of service. Approximately 11,500 public hydrants in the distribution system provide for the fire protection needs of the City.

The Public Works and Utilities Department completed the [Lincoln Water System Facilities Master](#)

[Plan](#) in 2013. The plan is a guide for short term and long term improvements to the infrastructure of the Lincoln Water System during the planning period.



The Lincoln Water System Facilities Master Plan was adopted as a subarea plan in 2014 (see [Plan Realization](#) chapter). The projected maximum day water demand for year 2040 is 141 million gallons per day (MGD), and for 2060 is 175 MGD based on the assumed population growth rate of 1.2% per year. Additional supply, treatment, and transmission improvements will be necessary to meet these growing demands. The well fields currently owned by the Lincoln Water System have a projected maximum capacity approximately equal to the projected need by 2040 to 2050. Additional well field property and water rights will need to be acquired in the planning period to meet these demands and a financial plan adopted to fund such a project.

Lincoln's drinking water currently meets all of the State and Federal regulations regarding water quality. As new drinking water regulations are implemented, additional treatment may be required. LWS strives for environmental stewardship in all aspects of its operations.

LWS actively promotes water conservation to customers and works to conserve energy in system operations. Operators continually work toward the best balance between system energy needs and the variable rate schedules provided by both Lincoln Electric System and Omaha Public Power District.

Residential water bills are determined by an increasing block structure. The more water the resident uses, the higher the price per unit of water. Traditionally, residential water use has been a major cause of fluctuations between low winter and high summer use. The price structure's intent is to encourage water conservation and the water rates are competitive with local and regional cities. In the event that the Water Management Plan restrictions are implemented, Water Shortage Rates will take effect.

RURAL AND TOWN WATER SERVICES

Water service to rural Lancaster County residents is obtained through private water systems (i.e., private



wells), rural water districts, or Sanitary Improvement Districts (SIDs). The Lincoln-Lancaster County Health Department enforces standards on wells within the city limits and three-mile extraterritorial jurisdiction. In addition, the Property Transfer Code enforces standards on wells throughout the county which serve private residences. These standards are applied when ownership changes through the sale of property. The Lower Platte South Natural Resources District is maintaining a [Groundwater Management Plan](#) for the County to ensure the protection of this resource.

Two rural water districts supply potable water to Lancaster County residents; Lancaster Rural Water District No. 1 and Cass County Rural Water District No. 2. These rural associations include property owners adjacent to the City limits. There are three SID's providing water services to area residents: Emerald, Holland, and Walton.

Cities and villages in Lancaster County collect water from municipally owned wells. Some communities are provided water via contract from rural water districts. Limited well source and poor water quality in some areas contribute to reliance on rural water districts.

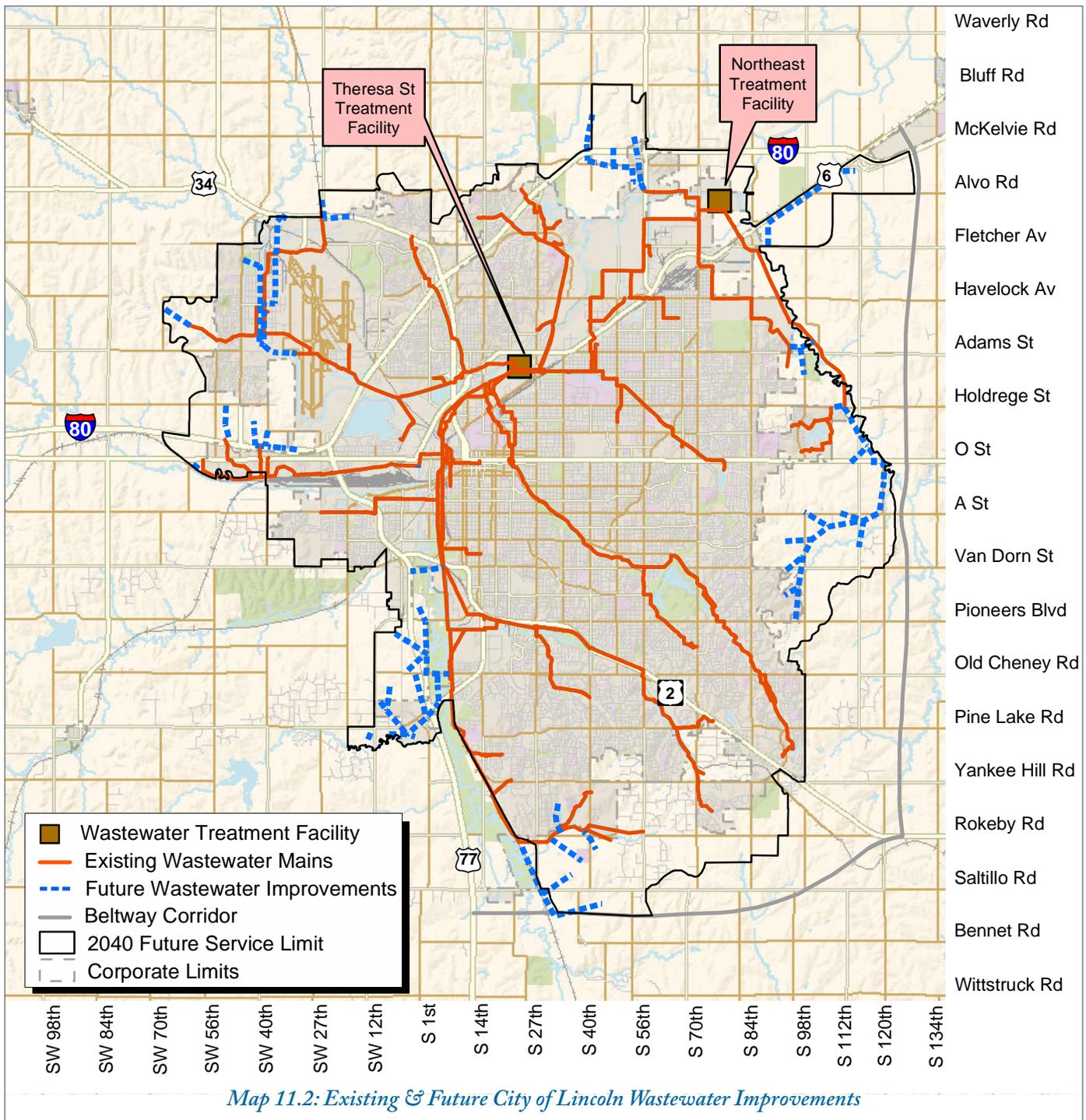
GROUNDWATER MANAGEMENT PLAN

In April 1995, the Lower Platte South Natural Resources District (LPSNRD) adopted a [Groundwater Management Plan](#). This Plan describes steps for managing the area's groundwater to protect its future quality and quantity and has led to the designation by the LPSNRD of a Groundwater Management Area. This designation provides the District with the authority to regulate nonpoint sources in the urban and rural areas that might affect groundwater quality and quantity. The LPSNRD conducts an annual review assessing the District's actions, activities, and effectiveness under the Rules and Regulations for implementation of the Ground Water Management Plan.

STRATEGIES FOR WATER SERVICES

- Property owners are responsible for the cost to alter the boundaries of the Rural Water District and have their land removed from the district's service area, prior to annexation. The City of Lincoln will be the sole public water district within the city limits. The City of Lincoln, Lancaster Rural Water District No. 1 and Cass County Rural Water District No. 2 should work toward a cooperative agreement and planning regarding changes in service boundaries between the two rural utilities and the City.
- Continue to encourage water conservation practices with the development of the City and County.
- Continue to utilize impact fees to recover a portion of the capital costs to build water mains. This includes increasing the capacity of the existing water treatment facilities for future growth.
- Continue to collect water service and water usage utility fees to pay for operation, maintenance, debt service, replacement improvements, and fund the majority of water capital improvements, including growth related projects.
- Continue the strategic use of revenue bonds to finance growth and expansion of the system. (Revenue bonds are not a new source of revenue, but rather a means to address the timing of improvements.)





WASTEWATER SERVICES

LINCOLN WASTEWATER SYSTEM AND COUNTY AREAS

The City of Lincoln Wastewater System is a publicly owned and operated system. The system is a revenue producing and self-supporting,

enterprise fund system (i.e., no tax funds are used). The Department of Public Works and Utilities Wastewater Division manages the operation of the system.

COLLECTION SYSTEM

In general, the wastewater collection system is a gravity flow system that is designed to



accommodate urbanization of drainage basins. The existing system includes 16 lift stations to assist in pumping and conveying the wastewater in the collection system. The collection system currently serves 11 major drainage basins, with more than 1,040 miles of sanitary sewer pipes ranging in size from 8" to 90" in diameter. This system encourages orderly growth within the natural drainage basin boundaries.

TREATMENT FACILITIES

There are two treatment facilities in operation: Theresa Street and Northeast Wastewater Treatment Facilities.

The Theresa Street facility is located at 2400 Theresa St., near N. 27th Street and Cornhusker Highway, and currently serves approximately 70% of the City. The Northeast facility is located at 7000 N. 70th Street, near N. 70th and Salt Creek and serves the remaining 30% of the City. By the year 2040, because of strong growth projected to the south and east, the Northeast Wastewater Treatment Facility will have increased to about 40-45% of the service and Theresa Street Wastewater Facility will serve the remaining 55-60% of the City.

The Theresa St. facility also receives liquid wastes from liquid waste haulers providing services to Lincoln and Lancaster County businesses and residents. Treated effluent from both facilities is discharged into Salt Creek. Prior to being discharged into Salt Creek, the effluent from the Theresa Street Facility is used in an innovative process to heat and cool buildings located at the Nebraska Innovation Campus (NIC). Effluent is pumped from a newly constructed pump station at the treatment facility to a heat exchanger building located on the NIC. The effluent is the thermal energy source for the Central Renewable Energy System (CRES). The thermal property is transferred between the two systems and CRES water is pumped to each tenant building on the NIC. The two systems do not mix and the effluent is then returned to the treatment facility discharge point into Salt Creek.

Wastewater solids that have been biologically treated and stabilized are called biosolids. Following treatment and processing, biosolids become a nutrient rich organic material that can be recycled and applied as a fertilizer to improve and maintain productive soils and stimulate plant growth. All of the biosolids produced from the two wastewater treatment facilities meet Federal and State regulatory standards and are beneficially applied on cropland through a program operated jointly by the City's Wastewater System and the Lancaster County Cooperative Extension Office.

The Public Works and Utilities Department completed the [Lincoln Wastewater Facilities Master Plan](#) in 2015. The plan is a guide for short term and long term improvements to the infrastructure of the Lincoln Wastewater System during the planning period, as well as potential service extensions beyond Lincoln's anticipated future service limits.



Methane or "biogas", a byproduct of the anaerobic digester process at both treatment facilities, is currently used to generate electricity at the Theresa Street Facility. Used as a fuel source for engine generators, approximately 19,000 kilowatt hours of electricity are generated on a daily basis decreasing the treatment facility's energy demand. The Utility is in the preliminary design phase of a renewable natural gas (RNG) project adding additional treatment to provide cleaned and compressed biogas as a fuel source for the City's StarTran bus fleet.

RURAL AND TOWN WASTEWATER SERVICES

Residents in unincorporated areas employ on-site septic and/or lagoon treatment systems. Lancaster County has adopted standards for on-site



wastewater treatment systems that are enforced by the Lincoln – Lancaster County Health Department.

Each incorporated city and village in the county operates a municipally-owned wastewater collection and treatment facility. In addition, on-site septic treatment systems are permitted within their planning and zoning jurisdictions.

There are a number of subdivision developments in Lancaster County that utilize shared infrastructure systems. These systems are typically for sewer

collection and treatment within the development and provide no connections or services to outside development or communities.

Three Sanitary Improvement Districts provide sanitary sewer to local residents: Cheney (lagoon), Holland (lagoon), Emerald (lagoon).

These larger point-source and community systems

(towns, subdivision systems and SIDs) are reviewed and approved by the Nebraska Department of Environmental Quality.

replacement improvements, and fund the majority of wastewater capital improvements, including growth related projects.

- Continue the strategic use of revenue bonds as a means to address the timing of improvements.
- Minimize the demand for energy in the collection and treatment of wastewater.
- Explore the use of grey water systems that safely repurpose non-pathogenic sources of wastewater.

"Point" and "non-point" sources of contamination: A point source is one that can be traced to a single origin, such as a manufacturing plant. Non-point source pollution comes from many diffuse sources, often carried in stormwater runoff.

WATERSHED MANAGEMENT

As discussed in the [Environmental Resources](#) chapter of LPlan 2040, Lancaster County is primarily within the Salt Creek watershed. When it rains in Lincoln, stormwater flows into drainage inlets, gutters and underground pipes before reaching Salt Creek, which drains into the Platte River. Rain that falls on hard surfaces like rooftops, parking lots and other surfaces can carry pollutants into our streams and lakes. Lincoln occasionally gets more rain than the storm drain system or streams can adequately convey, which can lead to flooding.

FLOODPLAIN AND STORMWATER MANAGEMENT

Local floodplain and stormwater management responsibility is shared by the City of Lincoln, which assumes care of the tributaries and storm drain system, and the [Lower Platte South Natural Resources District](#) (LPSNRD), which maintains the main stream channels. Both the City of Lincoln and Lancaster County participate in the [National Flood Insurance Program](#) administered by the Federal Emergency Management Agency (FEMA).

Water quality from stormwater is managed under the [Federal Clean Water Act](#). The [National Pollutant Discharge Elimination System](#) (NPDES) program addresses non-agricultural sources of stormwater discharge. This program is administered in the State by the [Nebraska Department of Environmental Quality](#) (NDEQ). The City of Lincoln and the

STRATEGIES FOR WASTEWATER SERVICES

- Maintain and expand programs to recycle and reuse treated wastewater effluent and bio-solids where appropriate.
- Encourage programs to minimize impacts of treatment facilities on adjacent properties and natural resources.
- Continue to utilize impact fees to recover a portion of the capital costs to build trunk sewer lines. This includes increasing the capacity of the existing wastewater treatment facilities for future growth.
- Continue to collect utility fees to pay for operation, maintenance, debt service,



LPSNRD developed a Clean Water Program to identify the actions needed to improve the quality of stormwater runoff from developed (post-construction) areas to meet, at minimum, state standards.

COMPREHENSIVE WATERSHED MANAGEMENT

The City of Lincoln Watershed Management program combines previously separate floodplain and stormwater management initiatives. This approach recognizes that floodplains, tributaries, and upland areas are all part of a comprehensive, integrated watershed system. A comprehensive approach to watershed planning is crucial as development expands into new basins around the Lincoln city limits and as redevelopment occurs within the existing urban area. A comprehensive watershed management program needs to incorporate a range of strategies including land use planning, conservation design for new subdivisions, conservation efforts, appropriate standards for floodplains and stormwater, flood warning system development/expansion, stream stabilization, stormwater storage basins, and other structural flood control efforts.

As part of the overall watershed management program, the City, in cooperation with the LPSNRD, is developing a unified master watershed management plan. This plan will be a compendium of previously approved Watershed Master Plan Studies and is to be used as a planning tool to be referenced in conjunction with proposed developments and as a guide in the preparation of future capital improvement projects. Individual [Watershed Plans](#) for several watersheds in Lincoln and the surrounding area have already been completed and are adopted as subarea plans in this document (see [Plan Realization](#) chapter). These plans evaluate and propose projects to address a wide range of water resources, and they are formulated in cooperation with other local, state and federal agencies. Ideally, additional watershed

plans are completed and adopted prior to urban development occurring within a new basin. This allows projects and recommendations in the plan to be considered during the review of specific development proposals.

Watershed planning and the performance and adequacy of stormwater storage basins and other measures to prevent increases in peak flows will require continued assessment with the growth of the City. Upstream detention facilities are critical to preventing further increases to the floodplain, and if properly designed also help to reduce pollutant loads to downstream waterbodies. Development and significant redevelopment projects need to meet stormwater quality requirements through the use of [Stormwater Quality Best Management Practices](#) facilities. Requirements can be accomplished through the use of detention facilities that are developed in a manner that incorporates water quality best management practices and causes minimal adverse impact to existing residential, agricultural and other land uses.

Basin management plans are a more recent watershed planning initiative that is part of the ongoing effort to proactively forecast, evaluate and manage stormwater quality impacts associated with existing and future

development and redevelopment of the City. These plans provide available information on the source of contaminants and how such contaminants can be reduced through projects and programs. They also include information for the education of the public on water quality and include projects to protect and restore stream channels. The first of these basin management plans ([Antelope Creek from Holmes Lake to Salt Creek](#)) provides a framework upon which future plans can be built.



FLOODPLAIN MANAGEMENT

The overriding policy for the floodplain is a “No Adverse Impact” policy for the City and County, which means that the community has a goal of insuring that the action of one property owner does not adversely impact the flooding risk for other properties. The majority of the strategies below relate back to and support this umbrella concept.

The No Adverse Impact concept is supported by the [Map 1.3: Growth Tiers with Priority Areas](#) which designates the majority of floodplain areas outside of the existing urban area as Green Space, Environmental Resources, and Agricultural Stream Corridors. This supports the opportunity to reduce the risk of flood damage to life and property



and to preserve the important functions of floodplains. This concept is more explicitly supported by the [Salt Creek Flood Storage Area Standards](#) and the [Flood Regulations for New Growth Areas](#) which protect flood

storage in the areas with greatest risk for impacts. While regulations to support the No Adverse Impact concept have not been fully adopted throughout the [Existing Urban Area](#) or in the County’s jurisdiction, goals and strategies in this plan support minimizing impacts to the floodplain in all circumstances.

STRATEGIES FOR WATERSHED MANAGEMENT

- Designate areas for future urban development outside of floodplain and floodway to avoid introducing new development to flood risks and to preserve the important functions of the floodplain.
- Create a stormwater utility, as a division of the Public Works and Utilities Department, to provide for a steady revenue source as well as an organizational structure to address the growing needs of the stormwater and watershed management system.
- Develop and utilize watershed plans during the review and evaluation of proposed developments and as a guide in the preparation of future capital improvement projects; unify individual plans into a Watershed Management Master Plan for Lincoln and future growth areas.
- Utilize naturalized approaches or bioengineered solutions to drainage issues wherever possible, and use public projects as an opportunity to set positive examples. Seek opportunities for [Best Management Practices](#) (e.g. Rain to Recreation, Rain Gardens, etc) that reduce flood damages, protect water quality and natural areas, while providing for recreational and educational opportunities so as to realize multiple benefits.
- Develop project approaches which view stormwater as an asset, by working with the natural topography and using wetlands, floodplains, and natural drainage corridors as natural ways to manage flood flows and stormwater runoff.
- Preserve and enhance vegetative buffers along stream corridors to slow the flow of stormwater, filter pollutants, protect the biological health of the stream, and conserve other natural functions of the floodplain.
- Develop and implement a floodplain buyout program for the City and County to restore floodplain functions while being sensitive to the need to minimize impacts on neighborhoods and historic districts.
- Seek broad public participation in the location and design of specific watershed management projects, and evaluate the relative benefits as they relate to flood hazard reduction, water quality, channel integrity, natural character, bridges, culverts, and existing public and private structures.



- Continue to develop a comprehensive, watershed approach to floodplain mapping and to improve the accuracy by making it a priority to which specific resources are dedicated.
- Retain City or County property in the floodplain in public ownership, and consider the purchase of easements or land when right-of-way is vacated or other publicly-owned property in the floodplain is proposed for surplus. Retain conservation easements to protect floodplain functions where unusual circumstances merit the consideration of surplus floodplain property.
- Continue to implement education efforts to promote environmental stewardship and to notify floodplain property owners and prospective buyers of flood risks.
- Promote discussion of incorporating conservation design into new subdivisions with the initial steps of completing an inventory of existing and future land uses, natural resource evaluation, and a build out map.
- Promote development of conservation design standards of new subdivisions that maximize open space conservation and interconnected network of such open spaces without reducing overall building density.

SOLID WASTE

SOLID WASTE MANAGEMENT

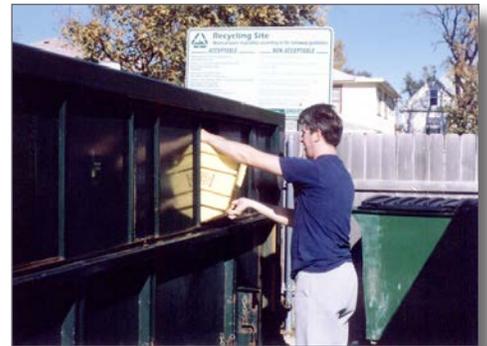
The City of Lincoln has entered into interlocal agreements with Lancaster County and all the villages and cities in Lancaster County, with the exception of Hallam, to serve as the lead agency for solid waste management in the County. The Public Works and Utilities Department, Solid Waste Operations in conjunction with the Lincoln-Lancaster County Health Department Environmental Division oversees the City and County's solid waste management programs. In 2013, the City completed the [Solid Waste Plan 2040](#), which shall serve as a

guidance document, communication tool, and a resource for policy decisions.

COLLECTION

The City of Lincoln does not have a mandatory residential waste collection policy. A number of independent private companies are licensed to provide waste collection services to area residents. Residents may also haul their waste to a small vehicle transfer station located at 5101 North 48th Street.

Three villages in the county — Bennet, Davey and Panama – operate solid waste transfer stations. Residents transport their waste to these facilities. All other communities in the county offer residential waste collection.



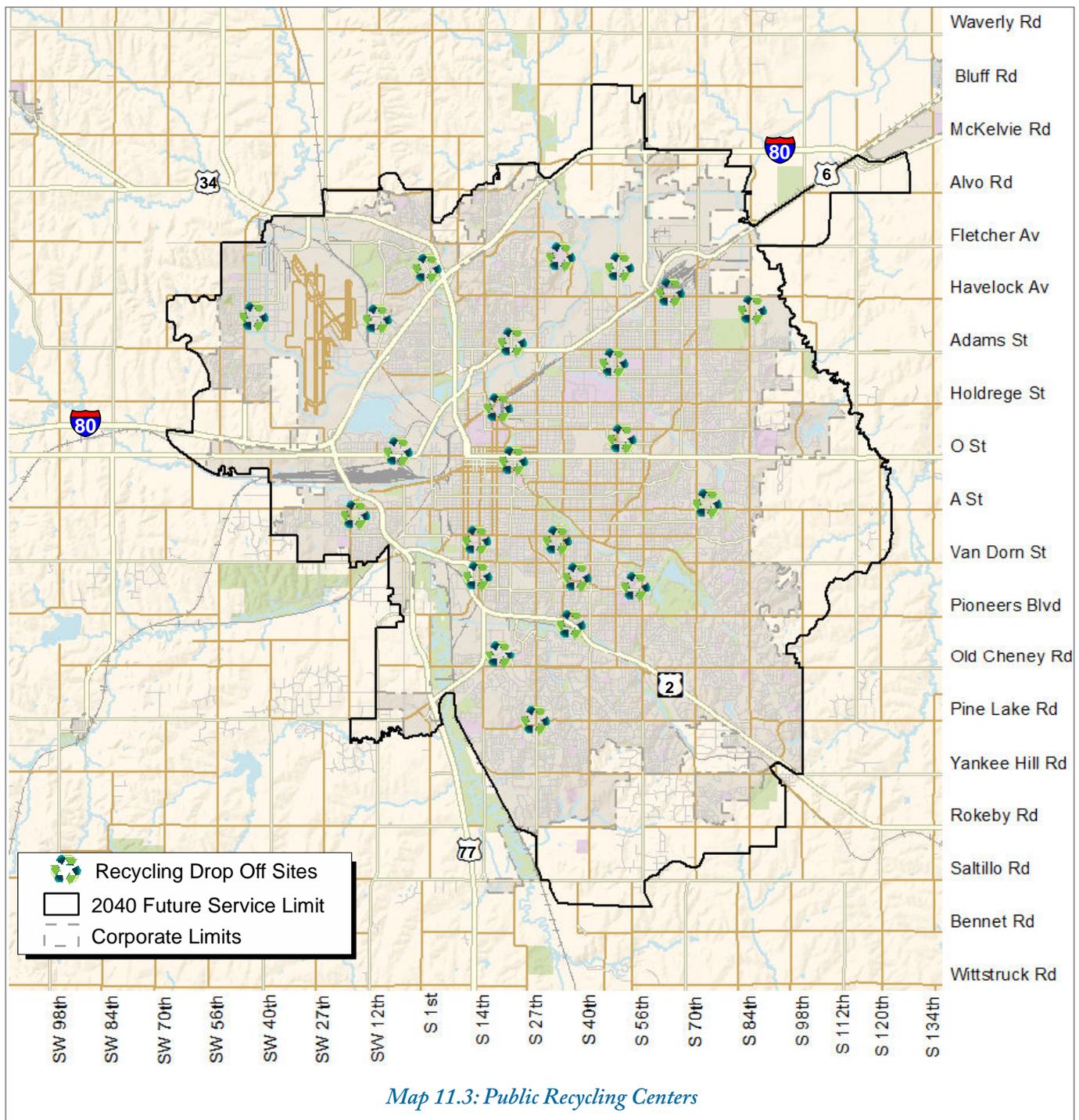
DISPOSAL

The City of Lincoln's primary solid waste sanitary landfill is located at Nebraska Highway 77 (N. 56th St.) and Bluff Road, just north of I-80. This facility began operating in the late 1980's. It accepts approximately 800 tons of waste each day. The facility is projected to be at capacity near the year 2035 based on current generation rates and the projected population growth rate of 1.2 percent per year. Planning for expansion of the Bluff Road Landfill on City owned property just east of the existing site is anticipated. The City policy of public ownership, operation and financing of integrated solid waste management services is anticipated to continue during the planning period. The expansion into this additional landfill area has not been permitted by the State of Nebraska Department of



Composting of lawn and garden debris helps reduce waste in landfills.





Environmental Quality. A portion of Lincoln’s and Lancaster County’s waste is also being exported outside Lancaster County. This is the result of having acquired local waste collection companies and a landfill in Milford, Nebraska.

The City also operates a landfill for construction and demolition debris at 5101 North 48th Street. This

facility is located on the site of the County’s previous solid waste landfill, and it also hosts the small vehicle transfer station for the general public to bring waste to the landfill. The construction and demolition debris landfill is projected to have capacity through the year 2029. While this landfill should be completed and closed, the N. 48th Street transfer station and recycling areas are scheduled to remain.

ENVIRONMENTAL SERVICES

Lincoln's Solid Waste Operations and the Lincoln-Lancaster Health Department (Environmental Health Division) provide a wide assortment of integrated solid waste management services. These range from source reduction and pollution prevention to recycling and disposal. Many of these services are voluntary — that is, they are not specifically required by any federal or state regulations.

The City considers these services to be like any other utility, and recycling drop-off sites should be convenient to every resident in the community. Diversion of waste from landfill disposal extends the life of the landfill, conserves natural resources, contributes to the local economy by creating jobs to collect and sort recyclables and reduces greenhouse gas emissions by producing products with recycled content versus raw material.

Development, maintenance and ultimate closure of the Bluff Road Landfill, as well as daily operations, are funded by a fee collected for disposal of wastes in the landfill. Other solid waste management programs are funded by a combination of user fees, revenue bonds and an occupation tax assessed to refuse haulers collecting refuse in the city or in the county and utilizing the Bluff Road Landfill for disposal. These forms of financing for solid waste management are anticipated to continue during the planning period.

Recycling helps to save landfill space, conserves resources, and reduces greenhouse gas emissions. For those reasons, the City has established a goal of increasing waste reduction and recycling and reducing the per capita disposal by 30 percent by 2040. This means reducing the per capita disposal rate of 1,970 pounds per person in 2014 to 1,475 pounds per person by 2040. The City manages 28 recycling drop-off sites in the city and county. Twenty multi-material sites are located in the City of Lincoln, accepting newspapers, cardboard, mixed paper (junk mail, magazines), glass bottles, plastic bottles, tin cans and aluminum cans. There are

currently 8 multi-material collection sites outside of Lincoln located in Bennet, Davey, Denton, Firth, Hickman, Malcolm, Panama and Waverly. It is anticipated that a recycling site in Roca will be established in the summer of 2016. Additional multi-material recycling sites should be obtained in each new development area to provide for convenient use by residents in growth areas. The growth of the population in the County will also require additional recycling sites in other towns in the County. Southwest Lancaster County would have the higher priority for new sites.

Residents and businesses also have the option to subscribe to single stream recycling collection services through private haulers for a nominal fee. Commercial waste generators that generate sufficient amounts of cardboard, office paper, or other recyclables can also obtain collection services for specific recyclable commodities.

**The City's RecycleLincoln!
Initiative seeks to double
Lincoln's recycling rate by 2020**

LANDFILL GAS COLLECTION AND CONTROL

Landfill Gas consists of about 50% methane and 45% carbon dioxide, with other trace gases resulting from biological decomposition of solid waste. Methane is of particular concern as a greenhouse gas since each unit of methane has an effect equivalent to 21 units of carbon dioxide. An active landfill gas collection system is in place at the Bluff Road Landfill and in cooperation with the Lincoln Electric System's Terry Bundy Generating Station is producing approximately 4 MW of electricity. Future collection phases will be constructed as landfilling of waste continues until the landfill reaches capacity. The electrical generating capabilities is expected to expand as additional methane is produced from the landfill.



STRATEGIES FOR SOLID WASTE MANAGEMENT

- Develop standards for future commercial and industrial development to ensure proper space for separation and handling of recyclables and solid waste. Investigate amending zoning ordinances to encourage new commercial centers to provide space for recycling drop-off facilities.
- Discourage future urban acreage developments in the area around the Bluff Road landfill and LES power generating operations, which are located between N. 56th and N. 84th Streets. Acreage development could impact the current and future landfill and LES operations.
- Review and update information contained in the [Solid Waste Management Plan](#) at least every 5 years and coinciding generally with the Comprehensive Plan updates.
- Create a county-wide integrated, efficient, environmentally safe and conservation-oriented recycling and waste management system. Promote and support markets for waste materials and recycled products.

Renewable Energy Sources

The renewable energy sources used by Lincoln Electric System in 2010 and their energy production quantities (MWh mega-watt-hours) are as follows:

Hydro:

265,000 MWh

Wind Plant and Wind Turbines:

1,309,000 MWh

Landfill Gas to Energy:

38,000 MWh

Solar:

6,000 MWhP

- Minimize the use of energy in Solid Waste Management processes.
- Continue the development of the Landfill Gas Collection and Control Project.

ELECTRIC SERVICE

The Lincoln Electric System (LES) is owned by the City of Lincoln. It is operated under the direction of an

administrative board appointed by the Mayor and City Council. LES is revenue producing and self-supporting (i.e., no tax funds are used by the system).

LES provides electric service to the City of Lincoln and much of the surrounding area within Lincoln's three-mile planning jurisdiction. The LES service area includes the City of Waverly and the unincorporated villages of Cheney, Walton, Prairie Home, and Emerald.

The balance of Lancaster County, including cities and villages, is served by the Norris Public Power District.

Norris Public Power District (Norris) and Lincoln Electric System (LES) have a formal Joint Planning and Service Area Adjustment Agreement. This agreement establishes a "Joint Use Area" which is primarily

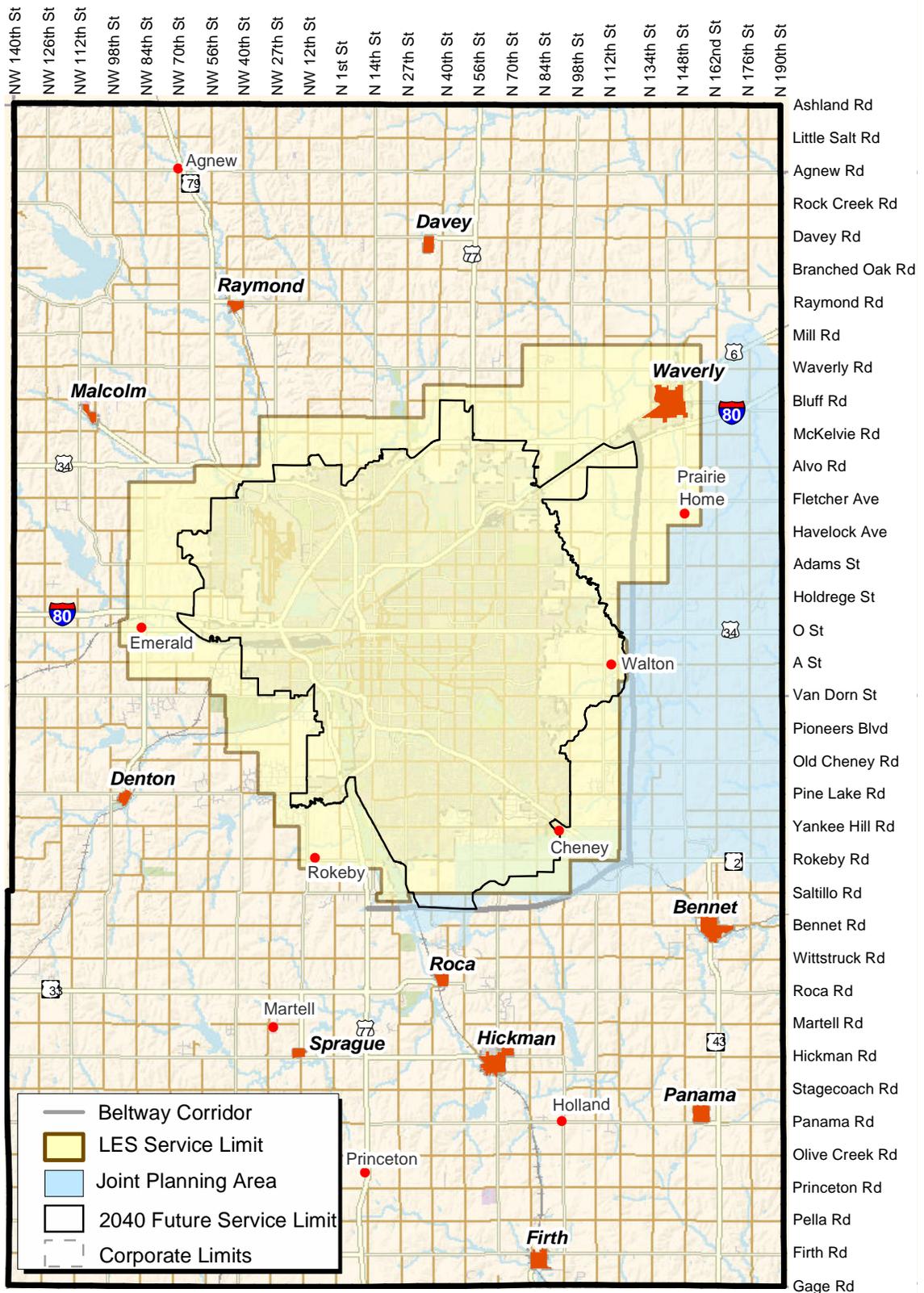
east and southeast of Lincoln. LES provides all of the power, but both LES and Norris own facilities in the area. LES and Norris may amend this joint area in the future.



The customer-owned utility should continue to maintain a diverse generation portfolio with a balanced mix of resources. By the year 2040, the LES peak load is projected to increase by about 128 megawatts (MW) to a peak load of 842 MW. This forecast includes a planned load reduction of 61 MW through the Sustainable Energy Program and Air Conditioning Load Control. LES will need to build new 115 kilovolt (kV) lines in growth areas in order to serve the new development. In addition, LES will need to build several new substation sites to serve these new growth areas.

Lincoln Electric System is actively involved in efforts to educate homeowners, builders, and businesses





Map 11.4: LES Service & Joint LES/Norris Planning Area



about energy conservation including publications, presentations and individual on site assessments.

WIND ENERGY

Lincoln Electric System currently operates multiple renewable resources within the county, including two wind turbines, a community solar project, and a landfill-gas-to-energy plant. In addition, LES currently has contracts for energy from regional hydroelectric generation and seven other wind projects. LES will continue to pursue the development of wind and other renewable generation technologies to the extent they are feasible, economical, and consistent with LES power supply needs.

STRATEGIES FOR ELECTRIC SERVICE

- As LES plans new transmission line routes, it will continue its policy of examining multiple options and conducting public forums on proposed routes in order to minimize the impact of new lines as much as feasible.
- Continue, and amend as necessary, the Norris/LES Agreement which provides for cooperative planning and utility service in Lincoln and Lancaster County.



- Within the City of Lincoln, wherever feasible and affordable, continue a phased program to relocate overhead utility lines underground.
 - Continue to encourage energy conservation practices in the City and County.
 - Continue to purchase efficient equipment (transformers, conductor, etc.) to reduce system energy losses and increase energy efficiency.
- Continue the LES Sustainable Energy Program to assist customers with purchasing efficient

equipment (heat pumps, lighting) that will reduce system energy requirements.

- Continue to include, and increase where feasible, renewable sources of energy, such as wind and solar energy, in future planning of LES facilities and partnerships.
- Continue to investigate the development of Smart Grid technology to increase efficiency and allow consumers a higher degree of control over their energy usage.

NATURAL GAS SERVICE

Blacks Hills Energy owns and operates natural gas and distribution systems in Lincoln and eight other incorporated and unincorporated communities in Lancaster County. The company serves about 99,587 residential, commercial and industrial customers in Lincoln and another 2,793 in Waverly, Walton, Cheney, Bennet, Firth, Panama, Hickman, and Holland.

Black Hills Energy transports natural gas to area customers through two major interstate pipeline systems which traverse the county - Northern Natural and Natural Gas Pipelines of America (NGPLA). Black Hills Energy is the only provider of natural gas services in the county.

Liquefied propane is the other major fuel used in Lancaster County. Several propane distributors serve town and rural customers throughout the county.

As the community and the nation grow, additional pipeline facilities will be required. Most of these lines are proposed and developed by private companies. The Health and Planning Departments have expressed concerns about the location of current and future pipelines and their potential impact during an accident on adjacent residential land uses. However, pipeline locations are necessary and should be accommodated within the County in locations that will not impact public health.



STRATEGY FOR NATURAL GAS SERVICE

- Land uses with vulnerable populations such as occupied residential structures, childcares, retirement facilities, schools, or hospitals are not recommended to be located within pipeline planning areas. For large high pressure natural gas pipelines, pipeline planning areas are established based upon a formula that takes into consideration the pressure and diameter of the natural gas pipeline. Other uses such as residential garages, commercial and industrial uses, parking lots, open spaces or roads are acceptable uses within pipeline planning areas.

INFORMATION TECHNOLOGY

Information technology is subject to rapid and dramatic change. The nature of the industry continues to push the limits of the technology. Various technologies converge to create new, integrated products and services. The concept of “telecommuting” portends a city where people may be able to work from most any site – including their own home. In the economy of the future, information is likely to become the primary product. This product can be “manufactured” at sites other than traditional factories and offices.

Wireless telecommunication is part of a global information revolution. The need for additional infrastructure to support wireless facilities is expected to increase in response to rising consumer demand and new applications. The City and County understand the importance of these technologies to the world of tomorrow and support the development of the infrastructure needed to further their use. A full range of cellular and wireless services, provided by a variety of carriers, is available in the city and county. See the [Placemaking](#) chapter for information on how wireless facilities should be located.

The first step to meeting Information Technology needs is to ensure affordable, next-generation broadband infrastructure is made available to

every citizen and business in our community. The infrastructure required is fiber optic-based with competitive access for multiple broadband providers. The City of Lincoln has promoted the installation of fiber optic networks across the City via the Lincoln Technology Improvement Plan. By 2019, every home and business will have access to at least one fiber-based broadband carrier. The next step in the Lincoln Technology Improvement Plan is to work with wireless providers to deploy public Wi-Fi areas and to upgrade cellular networks in advance of the national 5G network rollout.

The City of Lincoln and Lancaster County promote the integration of information technology throughout the community by their use of technologies in the business of local government. Examples of such activities include:

Public Internet Terminals. These terminals provide public access to the Internet for residents and visitors to Lancaster County. High speed lines and free access terminals have been placed in libraries, community centers, recreation centers, and senior centers.

City and County Websites. The City and County websites offer expanded opportunities to access government in the areas of employment, health and human services, planning and land development, and general information assistance. The ability to conduct various government transactions online saves travel time and resources for citizens and government employees.

Advanced Audio and Video Equipment. An array of video equipment is used to broadcast local government meetings over a local cable channel as well as via the Internet.

Geographic Information Systems (GIS) Technology. City and county departments, in partnership with other agencies, have created an extensive system of digital geographic information that includes hundreds of layers of information on features such as natural resources, topographic features, land use, structures, floodplains,



jurisdictional boundaries, and infrastructure. A broad assortment of digital imagery — i.e., photographs, permit and property information — is also included in this GIS information base.

Intelligent Transportation Systems.

Information technology offers many opportunities for making better use of transportation facilities and services. Intelligent Transportation Systems (ITS) use computers and digital technology to get the most out of the community's investment in roads



and other transportation facilities. This approach is described further in the [Transportation](#) chapter of the Plan.

Green Light Lincoln. As the new fiber infrastructure is deployed, connected public infrastructure to the new networks is an important part of the Lincoln Information Technology Plan. Connecting transportation infrastructure is

the first area of focus for City and County leaders. In pursuit of this goal, Lincoln Public Works has announced the [Green Light Lincoln](#) (GL2) program. GL2 will connect every intersection in the City to a new, centrally managed traffic management software system. New intelligent traffic detection systems based on Wi-Fi, Bluetooth, and an advanced short-ranged radar system will dynamically adjust signal timing. Dynamic Message Signs and Pan-Tilt-Zoom (PTZ) cameras will be used to monitor traffic flow and actively communicate with motorists about traffic events.

Next generation broadband networks and smart traffic systems are only two areas where City of Lincoln and Lancaster County leaders are partnering with private entities to upgrade the Information Technology system. Other examples of public-private Information Technology partnerships include:

Public Wi-Fi. The City will partner with private broadband carriers to install an outdoor public Wi-Fi system in The Haymarket, Railyard, and Downtown

Retail Corridor (P St. & Q St.; Antelope Valley to 10th St.). The Public Wi-Fi project is designed to ensure all Lincoln visitors will have access to 21st century Wi-Fi networks.

Educational Wi-Fi. The City of Lincoln, Lincoln Public Schools (LPS), Lincoln Libraries, University of Nebraska – Lincoln, and private broadband providers will partner to extend the LPS student Wi-Fi network into every home and business connected to the Fiber to the Home project. The goal of the Educational Wi-Fi project is to ensure every student in Lincoln has access to safe and secure high-speed Wi-Fi networks regardless of income.

Cloud-Based Public Infrastructure. Continued growth in Information Technology applications requires the expansion of server and database storage infrastructure. City leaders are planning the first test of cloud-based storage options for email and electronic document archiving. Based on a successful outcome of this test project, a large percentage of public technology infrastructure will be moved to the cloud over the next decade.

The explosive growth in Information Technology has impacted our community in many positive ways. City and County leaders are rising to this challenge by partnering with private entities to construct and deploy next-generation technology infrastructure in a beneficial way – a way that supports the future described in the LPlan 2040 Vision.

STRATEGIES FOR INFORMATION TECHNOLOGY

- Support efforts to maintain, expand, and upgrade the community's information technology infrastructure.
- Explore efforts to increase access to information technology for all members of Lincoln and Lancaster County, especially within minority, low income, disabled, rural, and aging communities.



- Further the cooperation between the City and County and local universities and colleges in applying information technology throughout the community.
- Encourage the underground placement of existing wired facilities, thus supporting a more reliable information technology infrastructure.
- Promote regional cooperation in the formation of information technologies alliances.
- Endorse the on-going cooperation of City, County, and State governments to integrate information technology in the delivery of their services to the community.
- Investigate means for expanding the maintenance, development, and application of Geographic Information Systems data among public and private sector users.
- Consider ways to maximize use of the public rights-of-way and public easements that support multiple applications including information technology facilities. This can include consideration of right-of-way management for utility separation, coordination of work in the ROW, and compensation for usage.
- The City and County will work with government entities to facilitate access to broadband services including high speed internet, television, interactive television and similar future services. Techniques including, but not limited to, franchise and preferred service contracts should be explored. The City and County will work with legally mandated state and federal agencies in order to achieve these goals.
- Management of wireless facilities should provide flexibility and responsiveness that recognize the rapidly changing and highly competitive nature of the industry. Similarly, the placement and construction of such facilities needs to occur in a way that is compatible with the natural and built environment.
- Partner with private broadband providers to construct fiber optic-based infrastructure to every home and business in our community.
- Ensure the new broadband infrastructure is available to every student within our community through partnership with educational, business, and community leaders.
- Leverage a cloud-based infrastructure solution for public entities.
- Deploy cross-agency technology platforms for asset, electronic records, financial, and human resource management.
- Create an Open Data website where all community data can be accessed – free of charge.
- Develop a public/private technology advisory board to review future technology needs and provide best practices to meet those needs.



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12 PLAN REALIZATION

This chapter looks at the means for bringing about the Vision described throughout this Plan and for ways to ensure that the community continues to view the Vision and the Plan as remaining current and pertinent to them.



INTRODUCTION

Implementing the Vision in this Plan begins when the Plan is formally adopted by the City and County. The Plan then becomes the community's guide for directing its resources and efforts toward making the common vision a reality. The ways to achieve this objective are further described below.

LAND USE PLAN AND GROWTH TIERS

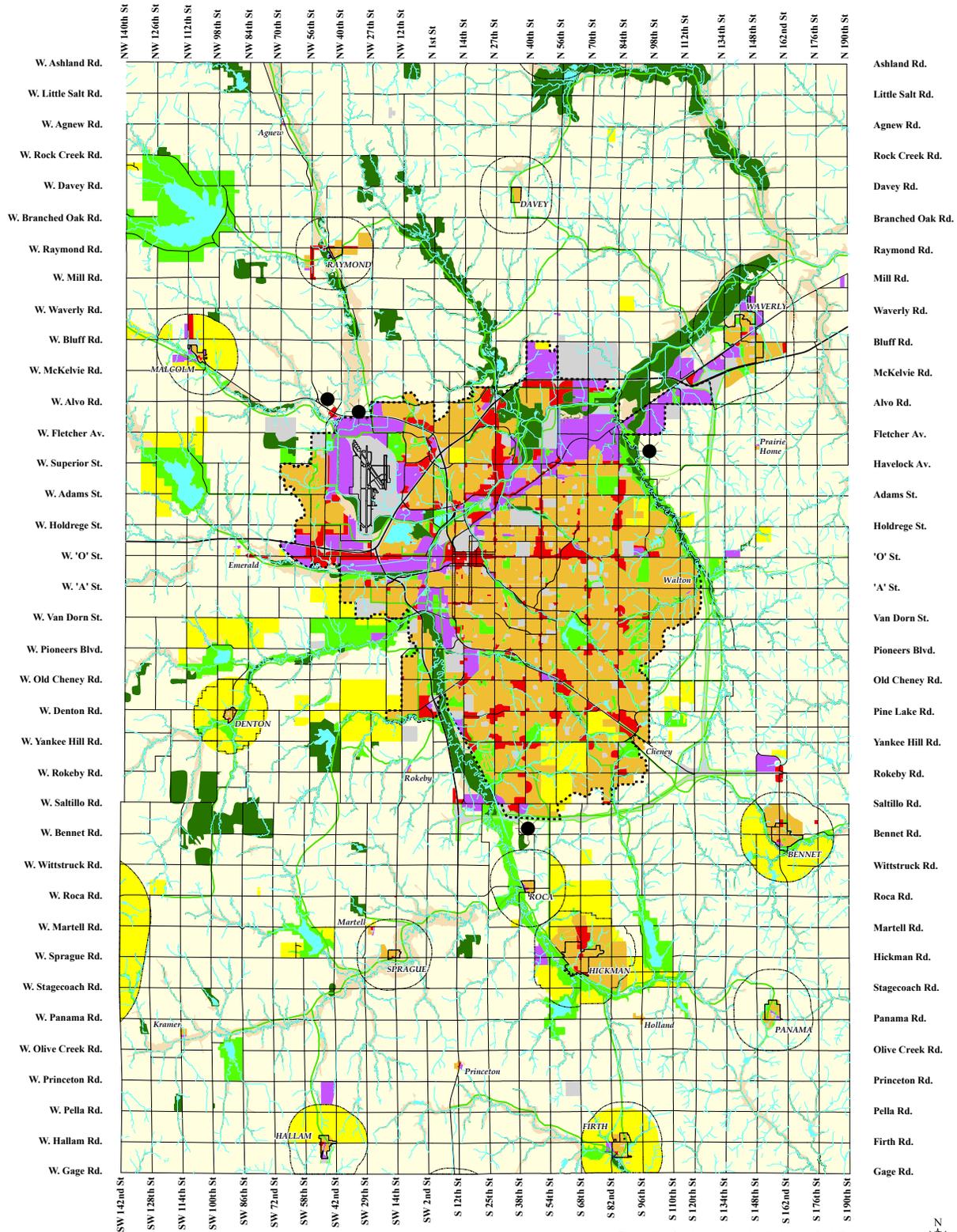
LAND USE PLAN

There is one land use plan for both the City of Lincoln and Lancaster County. This one land use plan is displayed in two figures for the purpose of permitting greater clarity of display within the Lincoln urban area. The first figure displays the entire Lincoln/ Lancaster County Land Use Plan. The second figure is an enlargement of the Lincoln urban area.

The land use plan displays the generalized location of each land use. It is not intended to be used to determine the exact boundaries of each designation. The area of transition from one land use to another is often gradual. The Comprehensive Plan also encourages the integration

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2040 LANCASTER COUNTY FUTURE LAND USE PLAN

- | | | |
|--|------------------------------|-------------------------|
| Agricultural | Commercial | Green Space |
| Residential - Urban Density | Industrial | Environmental Resources |
| Residential - Low Density | Public & Semi-Public | Lakes & Streams |
| Potential Large Employer Opportunity Areas | Agricultural Stream Corridor | Future Service Limit |

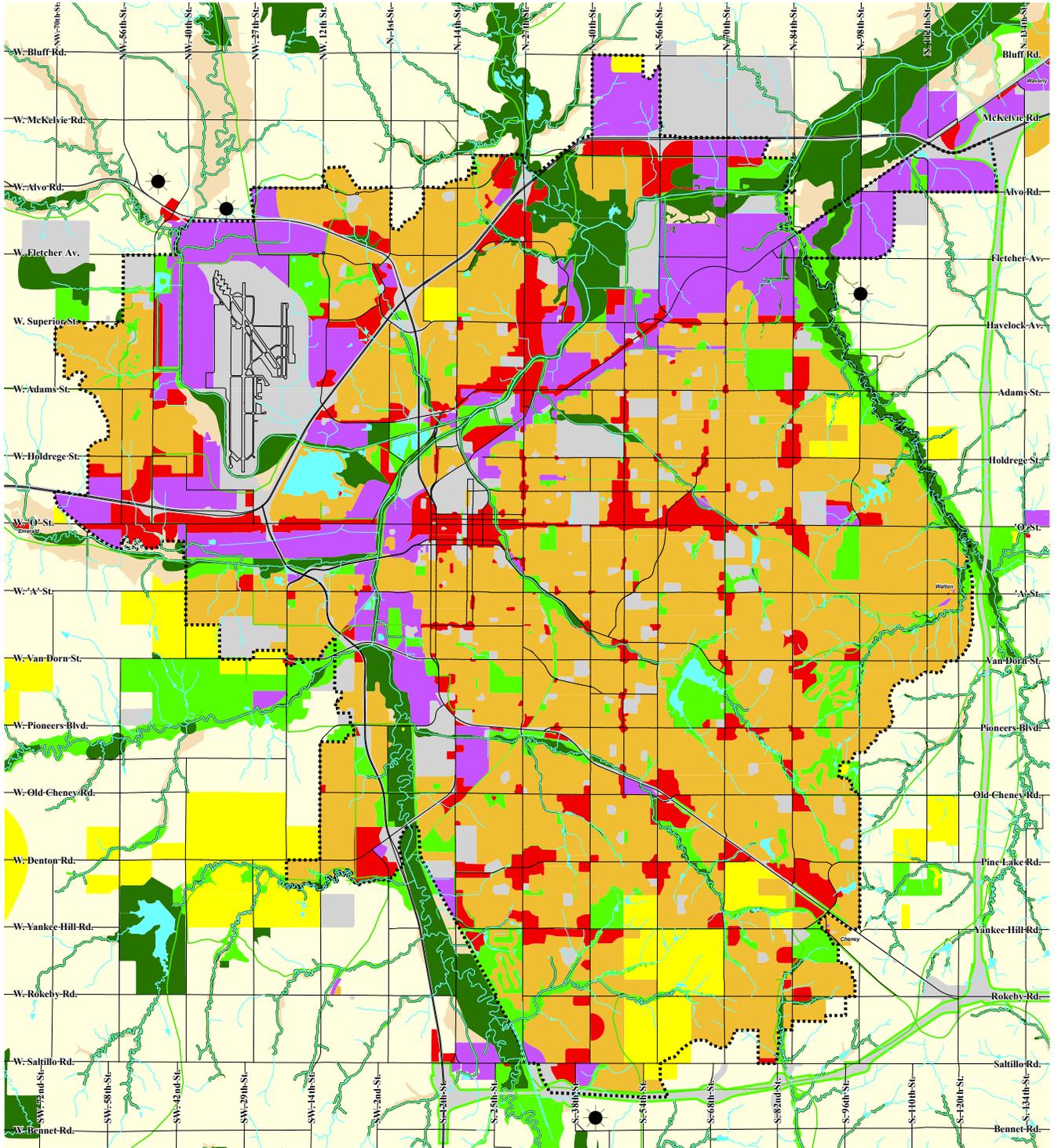
The location of each land use designation is generalized. The appropriateness of a particular zoning district for a particular piece of property will depend on a review of all of the elements of the Comprehensive Plan. Please consult other sources for exact locations of environmental resources such as wetlands, native prairie and floodplain. Not all of these resources are displayed on this figure.

The incorporated town plans are displayed on this figure. In many circumstances the land use categories in the town plans were different from the categories used in the Lincoln Lancaster County Plan, so some adjustments were made for the purposes of this display. These communities and their specific adopted plans should be consulted as the source for decisions within



Map 12.1: Lancaster County Future Land Use Plan



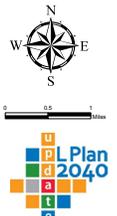


2040 LINCOLN AREA FUTURE LAND USE PLAN

- | | | |
|--|------------------------------|-------------------------|
| Agricultural | Commercial | Green Space |
| Residential - Urban Density | Industrial | Environmental Resources |
| Residential - Low Density | Public & Semi-Public | Lakes & Streams |
| Potential Large Employer Opportunity Areas | Agricultural Stream Corridor | Future Service Limit |

The location of each land use designation is generalized. The appropriateness of a particular zoning district for a particular piece of property will depend on a review of all of the elements of the Comprehensive Plan. Please consult other sources for exact locations of environmental resources such as wetlands, native prairie and floodplain. Not all of these resources are displayed on this figure.

The incorporated town plans are displayed on this figure. In many circumstances the land use categories in the town plans were different from the categories used in the Lincoln Lancaster County Plan, so some adjustments were made for the purposes of this display. These communities and their specific adopted plans should be consulted as the source for decisions within their zoning jurisdictions.



Map 12.2: Lincoln Area Future Land Use Plan



of compatible land uses, rather than a strict segregation of different land uses.

Individual proposals for land use changes should be evaluated using best available information. Issues such as the presence of floodplains, effect

There is one land use plan for both the City of Lincoln and Lancaster County.

on neighboring land uses, and preservation and protection of natural resources are among the considerations that should be reviewed in making specific land use decisions.

The land use plan for Lincoln and Lancaster County contains several general categories of land use types that are listed below:

Industrial. Areas where railroads, manufacturing, trucking and transportation facilities are the dominant land use, with some commercial activities.

Commercial. Areas of retail, office, service and residential mixed uses. Commercial uses may vary widely in their intensity of use and impact. Individual areas designated as commercial in the land use plan may not be appropriate for every commercial zoning district.

Urban Residential. Multi-family and single family residential uses in areas with varying densities ranging from more than fifteen dwelling units per acre to less than one dwelling per acre.

Low Density Residential. Residential areas, often referred to as acreages, having densities ranging from 1 to 5 acres per dwelling unit, with a typical density of 3 acres per dwelling unit. Existing Low Density Residential areas within the Future Service Limit with urban utilities available may also be appropriate to be considered for future Urban Residential development.

Agricultural. Land principally in use for agricultural production. Agricultural land may be in transition to more diversified agribusiness ventures such as growing and marketing of products (e.g., horticulture, silvaculture, aquaculture) on site.

Public and Semi-Public. Areas of public or semi-public land use and/or structures that serve the general public. Only the largest facilities are shown on the land use plan. Highways and interstates are also included in this category.

Green Space. Public or privately-owned areas predominantly used for recreation, such as parks, golf courses, soccer or ball fields, and trails. Many green space areas also serve functions such as buffers between incompatible uses and as stormwater management areas. In some cases, privately-owned Green Space such as golf courses may also be appropriate to be considered for future Urban Residential development.

Lakes and Streams. This category includes the larger stream corridors, lakes, and ponds.

Agricultural Stream Corridor. Land intended to remain in open space, predominately in agricultural use, but that may also include parks, recreation fields, or parking areas when near future commercial, industrial, or public uses. These areas are mostly in the 100 year floodplain, outside of the existing Lincoln urban development.

Environmental Resources. Land and water masses which are of particular importance for maintenance and preservation, such as saline wetlands, native prairie, and some floodway and riparian corridors.

Future Service Limit. The land use plan also displays the future service limit for the City of Lincoln. Land inside this line represents the anticipated area to be provided with urban services within the planning period.

The Mixed Use Redevelopment Nodes and Corridors discussed in the [Mixed Use Redevelopment](#) chapter are generally intended for commercial areas, not residential areas. These areas are shown in that chapter of the plan.

The land use plan also displays the generalized land use plans for other incorporated places within the county. These include:

- City of Hickman Comprehensive Development Plan, adopted 2007
- City of Waverly Comprehensive Development Plan, adopted April 2013
- Village of Bennet Comprehensive Plan, adopted December, 2006
- Village of Davey Comprehensive Development Plan, adopted August, 1977
- Village of Denton Comprehensive Development Plan, adopted February, 2006
- Village of Firth Comprehensive Development Plan, adopted June, 1969
- Village of Hallam Comprehensive Development Plan, adopted February, 2011
- Village of Malcolm Comprehensive Plan, adopted 2007
- Village of Panama Comprehensive Development Plan, adopted April, 2014
- Village of Raymond Comprehensive Plan, adopted May, 2000
- Village of Roca Comprehensive Development Plan, adopted October, 1976
- Village of Sprague Comprehensive Development Plan, adopted February, 1977

Individual plans are posted on the [Planning website](#).

Where land use designations in these plans are not identical to those used in the Lincoln/Lancaster County land use plan, adjustments were made to reflect the intended land use. Hickman has requested that certain areas beyond their one-mile planning jurisdiction reflect their goals for future development. When they generally agree with the LPlan 2040 land use planning principles, these requests are reflected in the land use plan. At all times, individual towns should be consulted

as the source for decisions within their zoning jurisdictions.

The Planning Department will continue its policy of coordinating with other Lancaster County towns by sharing information, notifying them of activity near their jurisdictions, and continually updating the land uses identified in their individual comprehensive plans on the Lancaster County Future Land Use map.

At all times, individual towns should be consulted as the source for decisions within their zoning jurisdictions.

FUTURE GROWTH TIER MAP

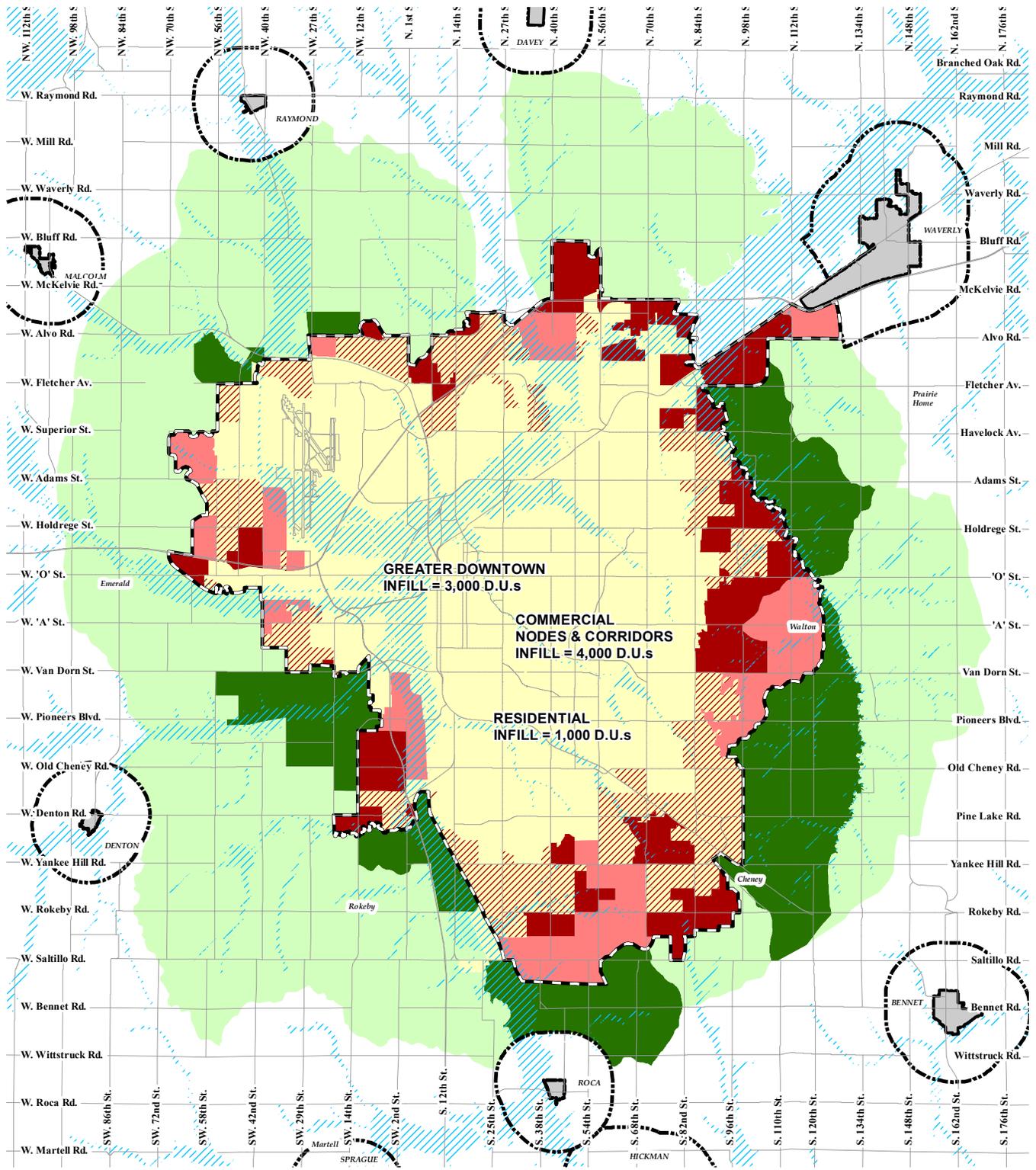
In order to facilitate a sustainable growth pattern, the Growth Tiers with Priority Areas map shows the phased growth anticipated over the next 44 years and beyond. The growth areas are broken up into four general regions: Redevelopment and infill in the existing city, and the Tier I, II, & III growth areas. Redevelopment and infill dwelling unit projections are noted in the yellow portion of the map. For a more thorough discussion of these projections, see the [Mixed Use Redevelopment](#) chapter of this Plan. Tier I includes three Priority Areas for phasing development as discussed below. Priority A, which is mostly within the existing 2016 city limits, is shown as red hatching over the yellow area, Priority B is shown in dark red, and Priority C in pink. Tier II is shown in dark green and Tier III in light green.

TIER I

Tier I reflects the “Future Service Limit,” approximately 52 square miles of developing areas and beyond the 2016 city limits where urban services and inclusion in the city limits are anticipated within the 24-year planning period. This area should remain in its current use in order to permit future urbanization by the City.

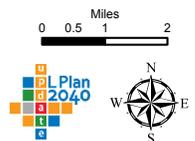
Setting Priorities

The top priority for infrastructure improvements is the existing city and areas that are currently under development. In order to provide for the



2040 PRIORITY GROWTH AREAS

- Existing Lincoln City Limits and Approved Preliminary Plans (2016)
- Floodplain and Flood Prone Areas
- 2040 Future Service Limit
- Tier I, Priority A (Developing)
- Tier I, Priority B (2025)
- Tier I, Priority C (2040)
- Tier II (2060)
- Tier III



Map 12.3: Growth Tiers with Priority Areas



orderly future growth of the city, additional land is identified in Tier I as the next area for improvement. However, the community does not have the financial resources, nor is it necessary, to provide urban services to the entire Tier I area within the next few years. So within Tier I, the community needs to prioritize areas for infrastructure improvements.

Priority A of Tier I — 21.52 square miles

Priority A is comprised of undeveloped land within the City limits, as well as areas that are not yet annexed but which have approved preliminary plans such as preliminary plats, use permits, community unit plans, or planned unit developments. There are still significant infrastructure needs within the existing city and areas currently under development. The top priority areas are those which are within the city limits at the beginning of the planning period. In some cases, annexation agreements commit the City to the construction of certain improvements (arterial roads, water and wastewater lines) by a predetermined date, or commit the City to the repayment of their cost which may have initially been assumed by the developer. Priority A serves as the “future urban area” for purposes of annexation per state statute, and these areas are appropriate for immediate annexation upon final plat approval. In general, commitments to serve the Priority A areas should be met before the annexation of new areas within Priority B.

Priority B of Tier I — 16.83 square miles

Areas designated for development in the first half of the planning period (to 2026) are generally contiguous to existing development and should be provided with basic infrastructure as they develop. Some of the infrastructure required for development may already be in place. Some infrastructure improvements may be made in the near term while others, such as road improvements

that are generally more costly, may take longer to complete. In certain cases, areas in Priority B have special agreements that include some level of commitment to build future infrastructure. These areas move into Priority A upon approval of preliminary plans.

Priority C of Tier I — 13.99 square miles

The next areas for development, after 2026, are those which currently lack almost all infrastructure required to support urban development. In areas with this designation, the community will maintain present uses until urban development can commence. Infrastructure improvements to serve this area will not initially be included in the City’s Capital Improvement Program (CIP), but will be actively planned for in the longer term capital improvement planning of the various city and county departments.

The principles for prioritization and the individual priority areas are described as follows:

Guidelines for Amending Priority Areas:

- Infrastructure should generally be provided in different directional growth areas, depending upon limited financial resources and if there is development interest in the area.
- The community should only approve development proposals that can be adequately served by the initial urban improvements such as electricity, water, sewer, pedestrian facilities and roads and by all urban improvements and services in the long term. Initially, roads may not be built to the full capacity; for example, rural asphalt roads



may continue to be used for some period, or a two lane urban street may be built and later expanded to four lanes with turn lanes when conditions warrant. Public safety services and schools may be provided to an area by facilities that are more distant and new facilities phased in over time.

- Generally, adequate infrastructure improvements should be completed in all Priority A areas where there is development interest prior to beginning infrastructure in Priority B and C areas.
- It is anticipated that there may be unique circumstances that may warrant consideration of development of land in Priority B prior to



the full completion of improvements in Priority A. Proposals for changes from Priority C to B should be evaluated and considered through a review process that should consider the following items:

1. The project is contiguous to the City and proposed for immediate annexation, and is consistent with principles of the Comprehensive Plan.
2. The developer provides information demonstrating how the necessary infrastructure improvements to serve the area would be provided and financed. The City should contact other public agencies to obtain their report on the infrastructure necessary to serve the area, including utilities, roads, fire service, public safety, parks, trails, schools and library needs.
3. The impacts that development in the area will have on capital and operating budgets, level of service, service delivery and Capital Improvement Programs are addressed,

including impact of financing, utility rates and other revenue sources and to what degree the developer is willing to finance improvements. In order to maintain a fiscally constrained plan, acceleration of one project may mean other planned projects must be removed from the list of future facilities.

4. There is demonstrated substantial public benefit and circumstances that warrant approval of the proposal in advance of the anticipated schedule.
- Growth into most of the Priority C areas is comparatively inefficient in terms of required capital investment as compared to the Priority B areas.

TIER II AREAS

Tier II is an area of approximately 34 square miles that defines the geographic area the city is assumed to grow into immediately beyond Tier I. It shows areas where long term utility planning is occurring today and acts as a secondary reserve should Tier I develop faster than anticipated. Tier II should remain in its current use in order to allow for future urban development.

Infrastructure planning, especially for utilities such as water, wastewater and watershed facilities, can reach beyond the Plan's 24 year time horizon to 44 years and further. Water, wastewater and watershed master plans identify infrastructure, environmental issues and future project needs in undeveloped sub-basins. As new areas are proposed for transfer from Tier II to Tier I, these plans should be used to assist in guiding development.

The Plan's premise is that within the next ten years, if the anticipated growth expectations are realized, additional areas from Tier II will be added to Tier I. Such change would include amending the Future Service Limit accordingly to reflect the new 24 year planning time frame. Conversely, if growth is slower or more dense than anticipated, the addition of new areas may not be necessary.

The balance between the efficient use of existing urban infrastructure and the provision of a sufficient supply of land to maintain an affordable lot supply is a delicate one, and one that should be carefully considered in this process. It is important that relevant data be maintained and critical analysis be conducted in any decision to increase the supply of Tier I land.

TIER III

Tier III provides an approximately 131 square mile area for Lincoln's longer term growth potential — beyond 44 years. This area is based upon the drainage basins located within the 3-mile extraterritorial jurisdiction, excluding the area identified as Salt Creek Tiger Beetle habitat. Little active planning of utilities or service delivery is likely to occur in the near term in Tier III. However, it should also remain in its present use in order to provide for future urban development.

COMMUNITY INVOLVEMENT & CONSENSUS: KEEPING THE TRADITION ALIVE

The City of Lincoln and Lancaster County have long encouraged the public to participate in local government activities. Keeping people knowledgeable about and involved in the Comprehensive Plan's implementation is crucial to ensuring its ultimate success.

A key to securing community interest in the planning process is early involvement. An emphasis should be placed on providing ample, "up front" participation. This includes having the community identify planning issues of concern to them and having them aid in setting up the process for so doing. It is important to have dialogues with many people and organizations of differing opinions with the aim of reaching community consensus. Every effort should be made to work with interested parties, to maintain civility and keep ties between groups and persons with different viewpoints, and

Interaction between LPlan 2040 and the Citizens



"Although LPlan 2040 is intended primarily to guide the physical development of our community, the results of such development are ultimately felt by individuals and

their families. The planning process aspires to make this interaction between people and their physical landscape one in which all facets of our community can prosper, not only economically, but also intellectually, aesthetically, and spiritually. LPlan 2040 seeks to accommodate and encourage the participation of all citizens of the city and county in the making of public policies to implement the visions of the community. Comprehensive planning is a continuous process, requiring a continuing and frequent interaction between the governments and their constituencies."

LPlan 2040 Vision

to use the leadership of experts and appointed and elected officials.

Another part of the City and County's tradition of involving the public is having citizens regularly serve on boards and commissions. These groups address a wide variety of civic concerns. Meetings are kept open to all members of the community. Public hearings on key issues — such as Plan amendments, the capital improvement program, subarea studies and specific development proposals — are held as part of the continuing planning process. Public hearings and many other meetings of elected officials are televised over the community access stations (5-City TV) along with streaming video over the Internet.

STRATEGIES FOR COMMUNITY INVOLVEMENT

- Encourage developers and others with planning proposals to make early contact with neighborhood groups and other interested parties. This will allow for a greater understanding of the issues and for time to seek resolution of contentious items.
- Maintain current mailing and contact lists of local neighborhood groups and home owner associations.
- Notify surrounding property owners, interested groups, and other appropriate agencies of formal development applications.
- Offer free Internet access on an on-going basis at public libraries, senior centers, and publicly owned locations of common assembly.



- Conduct periodic workshops and charettes throughout various locations in the city and county to solicit ideas for planning and public policy.
- Examine ways of simplifying the development regulations to encourage a broader understanding of planning concepts and their relevance to neighborhoods' and businesses' continuity and viability.
- Utilize technology to find ways to improve public engagement.

LAND USE ADMINISTRATION

The planning process has long had at its disposal a number of administrative and regulatory tools for implementing comprehensive plans. Many of these reach back eighty to one hundred years. Some of the land use administration approaches to be used in plan implementation include:

- **Zoning.** Zoning is a legal means cities and counties use for deciding how land can be used, the intensity of those land uses, and the relationships between various land uses. Nebraska State law, as with most states, requires zoning to be developed in accordance with the community's adopted Comprehensive Plan. This is one of the primary reasons cities and counties have Comprehensive Plans. As a legal document, zoning is reflected both as a map showing the geographic boundaries of each district and a written ordinance detailing the uses and conditions of each district. For the City of Lincoln, the zoning ordinance is presented in [Title 27](#) of the Lincoln Municipal Code; while the County's zoning standards are contained in the [County Zoning Regulations](#).
- **Subdivision.** A subdivision is the process of dividing land into lots and/or streets. While a variety of standards apply to where, when, and how the subdivision of land can happen, having an approved subdivision plat is a basic step in the development process. The City's subdivision code is found in [Title 26](#) of the Lincoln Municipal Code. For the County, these regulations can be found in the [County Subdivision Regulations](#).
- **Design Standards.** Special site design or other conditions not otherwise covered in the zoning ordinance or subdivision standards are contained in a series of [design standards](#). These standards spell out unique characteristics that may apply to a type of development proposal. These include, for example, design considerations for childcare centers, trails, new construction in older, established neighborhoods and the downtown/Antelope Valley area.

FINANCIAL RESOURCES

The provision of services is one of the primary responsibilities of City and County government. Financing these services without creating an undue financial burden for the taxpayer is, and

will continue to be, a challenge. There needs to be a balance between new infrastructure in developing areas and the improvements and maintenance needs of the existing community. It is also important to remember that the initial cost of improvements does not reflect the ongoing maintenance and operations of those facilities.

STRATEGIES FOR FINANCING RURAL INFRASTRUCTURE

- **Group new acreages in limited areas.** This will enable services to be provided more efficiently, such as minimizing the amount of paved roads, reducing and shortening school bus routes and providing more cost effective rural water district service.
- **Direct growth to cities and towns.** Direct and support residential, commercial, and industrial growth to incorporated cities and towns in order to maintain a tax base for the services and utilities in the towns, as well as to economize on the costs of services and utilities.

STRATEGIES FOR FINANCING URBAN INFRASTRUCTURE

- **Take a Balanced Approach.** The community at large should provide more financing of maintenance and improvements in existing areas. Both new and existing developments should pay their fair share of improvement costs due to growth and maintenance. In general, improvements which are of general benefit to the whole community should be paid by the community, while improvements which are of special benefit to a specific area should be paid by that area.
- **Develop a Fair and Predictable System.** Distribute infrastructure costs fairly among all property owners who benefit from the improvements. The goal of the financing system is that costs should be known in advance of development. Property owners should participate in funding improvements in new

areas at generally the same rate.

- **Encourage Higher Densities.**

Maximize the community's investment in infrastructure through well-designed and appropriately-placed density in

residential and commercial development. Both for new development and redevelopment, an increase in well-designed and appropriately-placed density will decrease the amount of infrastructure necessary overall in the community.

- **Minimize Impact on Affordable Housing.** Infrastructure financing should not increase the cost of affordable housing in Lincoln.
- **Minimize Impact on Those Who Are Not Developing Land.** As much as possible, property owners should only be assessed or pay the improvement costs at the time they seek approval of development proposals or building permits. Financing mechanisms should be sensitive to property owners in an area under development who don't want to develop their land at that time, but should not encourage them to hold their property out of development indefinitely. Property owners need to be educated about growth and infrastructure plans to reduce the element of surprise and to foster more informed personal planning decisions.
- **Maintain Expanding System.** The addition of infrastructure and growth of the City requires attention to provide an adequate level of service. Expanding facilities adds financial maintenance needs for all city services.



Ongoing maintenance and operations costs can be higher than an initial investment in structures and equipment.

CAPITAL IMPROVEMENTS PROGRAMMING

Capital improvements have historically been financed by general revenues, special assessments, user fees, revenue bonds, grants from Federal and State government, other local and state taxes and general obligation bonds. Capital projects can be broadly defined as new projects to meet additional needs of the community and rehabilitation of the built infrastructure. It is imperative that timely maintenance of capital improvements occurs to



protect the City's and County's investment and minimize future maintenance and replacement costs.

As an implementation tool, the capital improvement programming process plays a

vital role in guiding when and where the city, and even to some degree rural areas, grow. Capital improvements programming can be separated into two broad areas:

PUBLIC SECTOR CONTRIBUTIONS

Capital improvements are generally defined as any improvements with a useful life in excess of 15 years. The direction and timing of these improvements have a powerful influence on the development of a community. Arterial roads, major water mains, trails, wastewater treatment and transmission lines, parks, recreational facilities, street lights, fire and police stations, libraries, government administration buildings, schools, electrical facilities, and sanitary landfills are all basic elements of what makes up a city. Hundreds of millions of dollars of public tax dollars and user fees are invested each year in these facilities. The public process used to determine where and when such investment occurs plays a fundamental role

in determining how the LPlan 2040's Vision is achieved.

The City of Lincoln designates those capital improvements it plans to build over the next six years through the development of a six-year [Capital Improvement Program](#) (CIP). The first two years of the City's CIP is termed the "Capital Budget," and it represents the list of projects formally approved and funded by elected officials.

The City of Lincoln's Charter requires that before the City Council can approve a capital project it must undergo a test of "Comprehensive Plan conformity." This means that the Planning Commission or Planning Department must issue a report stating whether the proposed capital expenditure is consistent with the Comprehensive Plan. Should the project be found to be not in conformance with the Plan, the City Council can still approve the project. No equivalent Plan conformity standard is applied in the County's CIP process.

A companion document to the City's CIP, called the [Transportation Improvement Program](#) or TIP, is prepared on an annual basis. This task is assigned to the Lincoln Metropolitan Planning Organization, a policy making board comprised of representatives from local government and transportation authorities that reviews transportation issues and develops transportation plans and programs for Lincoln and Lancaster County. The TIP gathers together in a single document those local, State and Federal transportation capital projects proposed for the next four years. These include improvements for streets and highways, airports, railroad support facilities, trails, and public transit. Transportation projects must have a finding of substantial conformity to the Comprehensive Plan before they can be included in the TIP. The MPO's fiscally constrained Long Range Transportation Plan requires that all projects programmed must fall within the limits of funding that can be reasonably expected.

Lancaster County prepares an annual Road and Bridge Construction Program, commonly referred to

as the “County 1 and 6 Program” because it includes the projects and programs for the first year and a more generalized list of projects going out 6 years in the future. The County 1 and 6 Program supports the projects identified on the Lancaster County Future Road Improvements map, which is a part of the MPO’s Long Range Transportation Plan. This program identifies not only capital improvements but also maintenance projects such as grading and graveling of roads. Projects that use federal funding or are part of a regional system are included in the TIP.

PRIVATE SECTOR CONTRIBUTIONS

Private investment is a significant part of the funding used to construct infrastructure in new developments. Most local streets, sidewalks, water, sanitary sewer, and stormwater facilities are built and paid for by the private developer, and impact fees contribute to the larger infrastructure components. Decisions made in the private sector play an important role in managing and guiding the expansion of the urban area. Expenditures from private sources are critical to furthering the growth of the community. Privately funded projects are also expected to conform to the goals and strategies of the Comprehensive Plan.

Private investment is a significant part of the funding used to construct infrastructure in new developments.

STRATEGIES FOR THE CAPITAL IMPROVEMENT PROGRAM

- The CIP should be utilized to provide a systematic and predictable forum for determining the timing of infrastructure improvements.
- Infrastructure improvements should continue to be implemented only in areas identified for development in the Lincoln/ Lancaster County Comprehensive Plan. One of the most important tools in financing is adherence to the physical plan for the community. Following the Plan for development and systematic improvements throughout Lincoln increases efficiency in construction and maximizes the community’s investment.
- The top priority for the City’s Capital Improvement Program (CIP) is to maintain existing infrastructure.
- Fully serving Tier I, Priority A areas is a priority.
- Infrastructure funding to serve the growing community relies upon adequate revenue from all sources, including gas tax allocation, wheel tax, impact fees, and water and wastewater fees.
- Explore innovative funding strategies and new sources.
- Use the CIP as a planning and programming guide.



CONCURRENCY POLICY

Public infrastructure — including transportation facilities, water, sewer, parks, schools, and libraries – is essential to the health, safety, and welfare of



the community. In new growth areas, the most essential public infrastructure (such as electricity, water, sewer, pedestrian facilities and roads) should be made concurrently with that growth.

Some public infrastructure, such as water and sewer lines, is most efficiently built to serve the ultimate demand of the new area. Other public infrastructure, such as arterial roads, may be provided in proportion to the initial need, with later improvements added as growth proceeds. Still other services, such as schools and libraries, may be provided at more remote locations until the population to support a new facility is in place. Developing public infrastructure in this manner will protect the public health, safety and welfare of the community while efficiently using capital improvement funds.

Conversely, infrastructure should not be built or developed if it is not needed. Public resources are scarce and should be conserved and used efficiently. Development of infrastructure beyond the needs of the community is a waste of resources and is not beneficial to the community as a whole. Thus, some improvements, such as park land, must be obtained early in the process, but may not be fully improved until more development occurs.

Land for other services such as fire and police stations or schools may also be obtained. This may also apply to road improvements, which in early stages can be adequately served by two-lane, offset,

paved streets, after obtaining the needed future urban right-of-way, with additional lanes planned for but not developed until later when traffic demand warrants the improvements.

The key to a successful community is the concurrent development of infrastructure proportionate to the development and need of the community — a balance between the need for infrastructure and the need to conserve resources.

ANNEXATION POLICY

Annexation policy is a potentially powerful means for achieving many of the goals embodied in the Plan’s Vision. Annexation is a necessary and vitally important part of the future growth and health of Lincoln. The annexation policies of the City of Lincoln include but are not limited to the following:

The provision of municipal services must coincide with the jurisdictional boundaries of the City – in short, it is not the intent of the City of Lincoln to extend utility services (most notably, but not necessarily limited to, water and sanitary sewer services) beyond the corporate limits of the City.

The extension of water and sanitary sewer services should be predicated upon annexation of the area by the City. City annexation must occur before any property is provided with water, sanitary sewer, or other potential City services.

The areas within Tier I Priority A that are not annexed serve as the future urban area for purposes of annexation per state statute and are appropriate for immediate annexation upon final plat. These areas have approved preliminary plans.

To demonstrate the City’s commitment to the urbanization of land in Tier I Priority B, the City should annex land in Priority B that is contiguous to the City and generally urban in character, as well as land that is engulfed by the City. Land that is remote or otherwise removed from the limits of the City of Lincoln will not be annexed. Annually, the City should review for potential annexation all property in Priority B for which basic infrastructure

Annexation policy is a potentially powerful means for achieving many of the goals embodied in the Plan’s Vision.

is generally available or planned for in the near term.

Annexation generally implies the opportunity to access all City services within a reasonable period of time. Voluntary annexation agreements may limit or otherwise outline the phasing, timing or installation of utility services (e.g., water, sanitary sewer), and may include specific or general plans for the private financing of improvements to the infrastructure supporting or contributing to the land uses in the annexed area. The annexation of large projects may be done in phases as development proceeds.

The character of existing residential areas should be respected as much as possible during the annexation process. When low density “acreage” areas are proposed for annexation due to the City’s annexation policy, additional steps should be taken to ease the transition as much as possible, such as public meetings, advance notice and written explanation of changes as a result of annexation. In general, many aspects of acreage life may remain unchanged, such as zoning or covenants. However, any annexation of existing residential areas will include some costs that must be the responsibility of property owners.

Annexation to facilitate the installation of improvements and/or possible assessment districts is appropriate if it is consistent with the annexation policies of the Plan listed above.

Plans for the provision of services within the areas considered for annexation shall be carefully coordinated with the Capital Improvement Program of the City and the County.

Each town in Lancaster County will have its own procedures for annexation.

ON-GOING COMPREHENSIVE PLAN ACTIVITIES

While the Comprehensive Plan may have received formal approval, certain long-range planning tasks

remain to be completed or continued as part of the Plan’s implementation. These include:

- **Interagency Cooperation and Coordination.** Broad involvement of numerous public agencies and departments were used in the Plan’s formulation. The cooperation and coordination of efforts with these groups needs to remain in place during the Plan’s implementation.
- **Joint Planning Commission and Planning Department.** The City and County created a joint City-County Planning Commission and a single City-County Planning Department more than fifty years ago. This structure has served the community well over this period. It is intended that this structure remain in place as a means for furthering the implementation of the Plan.
- **City-County Common.** The City Council, County Board, and Lincoln Mayor hold a joint meeting each month to discuss issues of common concern to them. This group is known as the City-County Common. The Common provides a regular opportunity for the elected officials to discuss planning issues of joint interest to them.
- **MPO Officials Committee and Technical Committee.** Through the Metropolitan Planning Organization structure, the Officials and Technical Committees lend additional policy and technical oversight to the process. These standing groups meet on a regular basis to review, discuss, and approve matters relating to the area-wide transportation planning process. This includes the annual MPO Work Program, Transportation Improvement Program (TIP),



Annual Certification, Long Range Transportation Plan (LRTP) and other related studies and programs.

- **Subarea Planning.** The Comprehensive Plan provides broad guidance for achieving the community's stated Vision. Putting details to the Plan takes additional effort. One means of doing this is through the preparation of subarea plans. Subarea plans offer greater details about the intended future of an area of the community — including land uses, infrastructure requirements, and development policies and standards. Many of these subarea plans are prepared by the City-County Planning Department, while some are prepared by other agencies and departments. Subarea plans considered part of this Comprehensive Plan include:
 - [Wilderness Park Subarea Plan](#); February 2000
 - [NRGIS Greenprint Challenge](#), August 2001
 - [City of Lincoln Strategic Plan for HUD Entitlement Programs](#); FY 2013-2017, Urban Development;
 - [Lincoln Water System Facilities Master Plan](#), Public Works and Utilities Department; June 2014.
 - [Lincoln Wastewater Facilities Master Plan](#), Public Works and Utilities Department; November 2015.
 - Watershed Master Plans:
 - [Beal Slough Stormwater Master Plan](#), May 2000
 - [Southeast Upper Salt Creek Watershed Stormwater Master Plan](#), 2003
 - [Stevens Creek Watershed Master Plan](#), 2005
 - [Cardwell Branch Watershed Master Plan](#), 2007
 - [Deadmans Run Watershed Master Plan](#), 2007
 - [Little Salt Creek Watershed Master Plan](#), 2009
 - [Antelope Creek Watershed Basin Management Plan](#), 2012
 - [South Salt Creek Watershed Master Plan](#), 2014
 - [Haines Branch Watershed Master Plan](#), 2014
 - [Middle Creek Watershed Master Plan](#), 2014
 - [Upper Wagon Train Watershed Master Plan](#), June, 2017
 - [Oak Creek Watershed Master Plan](#), May 2018
 - [Lynn Creek Watershed Master Plan](#), May 2018
 - [North Salt Creek Watershed Master Plan](#), May 2018
 - [Lincoln Public Schools 10 year Plan](#), December, 2013
 - [North 48th Street/University Place Plan: Neighborhood Revitalization & Transportation Analysis](#), 2004
 - [Lincoln Airport F.A.R. Part 150 Noise Compatibility Study](#), 2003
 - [Airport West Subarea Plan](#), 2005
 - [Downtown Master Plan](#), 2005 (including the 2012 [Downtown Master Plan Update](#))
 - [Transit Development Plan](#), April 2016
 - [Antelope Valley Redevelopment Plan](#), November 2004
 - [West Haymarket Integrated Development Plan](#), July 2009
 - [South Haymarket Neighborhood Plan](#), December 2015
 - [The Implementation Plan for the Conservation of Nebraska's Eastern Saline Wetlands](#), 2003
 - [Parks and Recreation 10 Year Facilities Plan](#), December 2015
 - [Downtown Lincoln Master Plan](#), December 2018

As part of the Annual Plan Status Report process, the Planning Director should complete a yearly review of all subarea plans that become five years of age and older. This review would be for the purpose of determining the continued viability and relevance of those subareas plans to the Comprehensive Plan and the long range planning process.



- **Human Services Planning.** Explore points of common concern and emphasis between LPlan 2040, the future land use plan, and the Community Services Implementation Plan (CSIP). Enhancing the coordination of these endeavors should be initiated and completed.

to meet federal requirements. The update process currently assumes that the Comprehensive Plan undergoes a major update every ten years with a minor update at five years.

PLAN AMENDMENTS

The Plan is the community's collective vision. Yet, change is inevitable. New technologies and new community needs will arise during the planning period which were not foreseen during the Plan's development. Jobs, housing, transportation, goods and services will shift over time. The amendment process to the Plan must accommodate and help manage the inevitable change in a way that best promotes, and does not compromise, the community's core values, health and well being. The Plan amendment process must be an open and fair process, utilizing sound planning, economic, social and ecological principals.

Amendments to the Plan may be submitted in writing to the Planning Director by any group or individual at any time during the year. The Planning Director may elect to forward the Plan amendment request to the Planning Commission upon submission, or wait to include the request in a compilation that is reviewed by the Planning Commission once each year as part of the Planning Department's annual review of the Plan.

PLAN UPDATE PROCESS

The Federal Highway Administration (FHWA) requires that communities maintain a fiscally constrained Long Range Transportation Plan (LRTP) that is updated every 5 years and embodies at least a 20-year planning horizon in order to receive federal transportation funds. The Lincoln MPO's 2040 LRTP is a companion to the [Transportation](#) chapter in the 2040 Comprehensive Plan. By the year 2020, the community will need to begin the process to update the LRTP, and potentially the Comprehensive Plan

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