



5 ■ FUTURE NEEDS ASSESSMENT

5. FUTURE NEEDS ASSESSMENT

Transportation Challenges

The L RTP is grounded in an understanding of the transportation challenges facing Lincoln and Lancaster County today and those expected to emerge over the next 25 years. Together, these challenges shaped the plan's goals, investment priorities, and recommendations. Key challenges include:

- **1 Keeping Up with Growth:** Long-term infrastructure investment across Lincoln and Lancaster County is necessary to accommodate increased travel demand, maintain acceptable travel times, and support safe and efficient movement across all modes of transportation.
- **2 Maintaining Streets and Bridges:** Proactive investment in Lincoln and Lancaster County streets and bridges is necessary to maintain infrastructure in good condition and avoid higher costs and closure risks associated with delayed improvements.
- **3 Improving Transportation Safety:** Targeted safety improvements are needed to reduce serious crashes, particularly near downtown and along corridors such as O Street, 13th Street, 27th Street, and 48th Street, with attention to people walking, biking, and using transit.
- **4 Maintaining Reliable Travel on Key Corridors:** Investments in Lincoln's key corridors are needed to manage growing congestion and maintain reliable travel times, particularly along O Street, Cornhusker Highway, 27th Street, 84th Street, Highway 77, and I-80 interchanges.
- **5 Expanding Transportation Access:** Reliable transportation options are needed across the community to provide access to jobs, schools, healthcare, and other important destinations.
- **6 Connecting the Bicycle Network:** Closing network gaps and improving challenging crossings are needed to create a more continuous, connected citywide system of trails and bikeways.
- **7 Making Short Trips Easier Without a Car:** Improvements to sidewalks, arterial crossings, rail crossings, and other barriers are needed to make walking and biking safer and more comfortable for short trips throughout the community.
- **8 Improving Transit Connectivity and Flexibility:** Improvements to the transit network are needed to provide more convenient cross-town travel and connections while reducing travel times and inconvenient transfers.
- **10 Improving Rail Crossings:** Improvements at rail crossings are needed to reduce delays and safety risks, particularly at high-impact locations such as 33rd Street and Cornhusker Highway.
- **9 Improving First- and Last-Mile Transit Connections:** Safe and convenient connections to StarTran stops are needed to improve transit access, particularly near destinations such as UNL, SCC, and Gateway.

Project Needs

The LRTP identifies the transportation investments needed to support Lincoln and Lancaster County through 2050. These needs include both specific capital projects that can be evaluated and prioritized through the LRTP and ongoing programs that are addressed through broader funding allocations.

The project prioritization process (detailed in **Chapter 7**) focuses on four categories for which specific projects have been identified: Lincoln roadway projects, Lancaster County roadway projects, NDOT projects, and trail projects. Within each category, some projects are already committed through the Transportation Improvement Program (TIP), while additional projects represent longer-term needs considered through the LRTP.

Other important transportation needs—such as operations and maintenance, roadway and bridge rehabilitation, safety programs, transit, bicycle and pedestrian improvements, Intelligent Transportation Systems (ITS) and technology, and planning and engineering activities—are treated as programmatic funding categories rather than individual projects prioritized through the LRTP. Many of these needs are recurring, evolve over time, or are identified and prioritized through more detailed planning and programming processes. In particular, the Lincoln Mobility Plan and Safe Streets Lincoln – Vision Zero Action Plan provide a more detailed assessment of the community’s multimodal and transportation safety needs and establish projects, strategies, and priorities that are carried forward into the LRTP.

In addition to the four prioritized project categories, the East Beltway represents a major long-term regional transportation need and is considered separately because of its scale and multiagency nature. **Table 6** summarizes the committed and additional project needs identified.

Public Input Helped Define Project Needs

Community input helped inform the projects considered through the LRTP. During Phase 1 engagement, participants identified transportation challenges, locations of concern, and ideas for potential improvements throughout Lincoln and Lancaster County. The Roadway and Trail Subcommittees reviewed this input alongside technical analysis and previously identified projects to determine whether additional project needs should be considered in the LRTP. This process helped ensure that the project list reflects not only technical transportation needs but also issues and opportunities identified by the people who use the system every day.

Together, these projects represent approximately \$2.8 billion in identified capital needs in today's dollars, before accounting for construction cost escalation over the planning horizon.

Table 6. Summary of LRTP Identified Project Needs

Project Category	Committed Projects	Committed Cost	Additional Identified Projects	Additional Need	Total Identified Need
Lincoln Roadway Projects	25	\$266 M	104	\$970 M	\$1,236 M
Lancaster County Roadway Projects	13	\$61 M	69	\$203 M	\$264 M
NDOT Projects	2	\$224 M	4	\$212 M	\$436 M
East Beltway	NA	NA	1	\$775 M	\$775 M
Trail Projects	4	\$5 M	37	\$71 M	\$76 M
Total	44	\$556 M	215	\$2,231 M	\$2,787 M

Note: Costs are shown in today's dollars and are rounded. East Beltway costs represent the current estimated total project need and are shown separately from the LRTP project prioritization categories. Programmatic needs such as operations and maintenance, rehabilitation, transit, safety, ITS and technology, and other ongoing programs are not included in this table.

The following subsections summarize the major capital project needs identified directly through the LRTP, followed by the multimodal and safety needs established through the Lincoln Mobility Plan and Vision Zero Action Plan.

The project costs presented in this chapter are generally expressed in today's dollars to provide a consistent basis for comparing identified needs. Because projects will be implemented over many years, however, their actual construction costs will increase over time. The **Construction Cost Inflation section** (at the end of this chapter) describes how year-of-expenditure costs are used to account for future construction cost inflation.

Lincoln Roadway Projects

Lincoln's roadway network will require continued investment to address existing transportation needs, improve safety and system performance, replace aging infrastructure, and accommodate future growth. The LRTP begins with 24 committed Lincoln roadway projects included in the TIP, representing approximately \$275 million in investment.

Beyond these committed investments, the LRTP identifies 106 additional Lincoln roadway projects with an estimated cost of approximately \$1 billion in today's dollars. These projects represent the broader set of roadway capital needs that may be considered for implementation through 2050.

The identified needs include a diverse range of improvements, including intersection improvements, corridor improvements, new roadway segments, and bridge replacements. Together, these projects are intended to address needs throughout the city rather than focusing solely on roadway expansion. They provide opportunities to improve safety and reliability, modernize existing infrastructure, address bottlenecks, improve multimodal connections, and provide the transportation infrastructure necessary to support planned growth.

Lancaster County Roadway Projects

Lancaster County's transportation needs reflect the important role of the rural roadway network in connecting communities, supporting agricultural activity, providing access to growing areas, and connecting residents and businesses with Lincoln and the broader regional transportation system.

The TIP includes 13 committed Lancaster County roadway projects totaling approximately \$61 million. In addition to these committed investments, the LRTP identifies 69 additional County roadway projects with an estimated cost of approximately \$203 million in today's dollars.

Applying the Congestion Management Process

The LRTP used the Lincoln MPO's Congestion Management Process (CMP) to identify potential gaps in the roadway project needs and to consider the most appropriate strategies for addressing future congestion. The CMP provides a systematic approach for identifying congestion, evaluating potential solutions, and incorporating effective strategies into the regional transportation planning process.

As part of the LRTP, 2050 Existing + Committed traffic forecasts and volume-to-capacity ratios (as described in **Chapter 7**) were reviewed to identify corridor segments expected to experience congestion where no improvement was already identified. The Roadway Subcommittee then reviewed these locations to determine an appropriate response. Rather than assuming additional roadway capacity was needed at every location, the Subcommittee considered a range of strategies consistent with the CMP, including traffic signal timing and operational improvements, mobility nodes and multimodal strategies identified in the Lincoln Mobility Plan, intersection improvements, and other targeted roadway improvements. Where additional infrastructure was determined to be appropriate, new projects were added to the LRTP project needs.

This approach helps to ensure that the roadway needs identified in the LRTP not only respond to anticipated congestion but consider operational and multimodal solutions alongside traditional roadway improvements.

Identified projects include roadway paving, intersection and corridor improvements, and bridge replacements. These improvements address a combination of existing infrastructure needs and future transportation demands across the county.

Nebraska Department of Transportation Projects

State highways and Interstate facilities are a critical part of the Lincoln metropolitan transportation system, carrying regional and statewide traffic while providing important connections for people and freight. The LRTP, therefore, incorporates transportation investments identified by NDOT in addition to locally identified projects.

Two major NDOT projects are already committed: the I-80 widening project and the West Beltway, representing approximately **\$224 million** in committed investment. Beyond these projects, NDOT has identified **four** additional projects totaling approximately **\$212 million** in today's dollars for consideration over the LRTP planning horizon.

These investments focus on preserving the performance of the state highway system while making strategic improvements to important Interstate and U.S. Highway corridors. Collectively, they will help maintain regional mobility, improve safety, and support the long-term performance of the state transportation system within the Lincoln metropolitan area.

Trail Projects

Lincoln and Lancaster County's trail system is an important component of the regional transportation network, providing connections for walking, bicycling, recreation, and access to destinations throughout the community. Continued investment is needed both to complete planned extensions of the trail system and to improve connectivity among existing trails, neighborhoods, activity centers, and other transportation facilities.

This plan proposes a future trails network radiating in all directions from the existing trail network toward other Lancaster County communities. Waverly would be linked by a trail running along Salt Creek around the northern, eastern, and southern corporate limits at approximately 84th and Havelock Streets. The Prairie Corridor on Haines Branch will connect southwest Lincoln to Denton and regional destinations such as Conestoga Lake and Spring Creek Prairie. So also, the towns of Sprague, Hickman, and Bennet can connect to the trail network on the south just as Malcom, Raymond, and Davey on the north. By capitalizing on the rising demand for active transportation, ecotourism, and accessibility of electric pedal assistance bicycles, these trails can provide a key function and support additional mode split for transportation throughout the county.

The LRTP includes **4** committed trail projects totaling approximately **\$5.2 million**. Beyond those committed projects, **37** additional trail projects have been identified, representing approximately **\$71.2 million** in needs in today's dollars.

These projects form the pool of trail expansion needs considered through the LRTP prioritization process. Trail rehabilitation is also an important long-term need, but it is addressed separately as a programmatic funding category because rehabilitation priorities will continue to evolve as facilities age and conditions change. Taking this approach allows the LRTP to identify and prioritize major trail expansion projects while maintaining a dedicated source of funding for preservation of the existing system.

East Beltway

The East Beltway is a major long-term transportation need intended to provide a new north-south connection on the east side of the Lincoln metropolitan area. The proposed corridor would connect the South Beltway (Nebraska Highway 2) with I-80 to provide an additional route for regional travel, support continued growth on the east side of the metropolitan area, and improve the overall connectivity and resiliency of the regional roadway network.

The East Beltway is estimated to cost approximately \$775 million in today's dollars, making it one of the largest transportation investments identified in the LRTP. Given the scale of the project, implementation will require a long-term, multi-agency approach and would likely occur in phases such as planning, design, right-of-way, construction, and funding decisions advance. Unlike the Lincoln, Lancaster County, NDOT, and trail project categories, the East Beltway is not part of the LRTP project prioritization process. Instead, it is identified separately as a regionally significant long-term investment.

Lincoln Mobility Plan Needs

The Lincoln Mobility Plan, developed in coordination with the LRTP, provides a more detailed assessment of multimodal transportation needs within the city of Lincoln. The plan establishes a long-term vision for a connected, low-stress transportation network that makes walking, bicycling, rolling, and transit more practical for everyday trips. It considers these modes as an integrated system, with particular emphasis on connections among the on-street bicycle network, trails, transit, neighborhoods, and key destinations.

A major need identified in the Mobility Plan is the completion of a safe and connected bicycle network. Analysis of bicycle demand, existing facilities, public input, and connections to destinations was used to identify gaps and barriers in the existing system.

The Mobility Plan also identifies future locations for **35** mobility nodes at strategic points throughout Lincoln, as shown in **Figure 10**. Mobility nodes are intended to improve connections between transportation modes and include amenities such as transit facilities, bicycle and scooter connections, shelters, lighting, wayfinding, bicycle parking, and real-time transit information. The plan identifies two types of nodes:

- **Growth Mobility Nodes:** These link multimodal transportation with future development or redevelopment opportunities.
- **Intermodal Mobility Nodes:** These focus primarily on connections among transit, bicycling, walking, and other travel modes.

The recommended node locations are distributed throughout the city and are intended to work together with bicycle, trail, and transit connections as a citywide network.

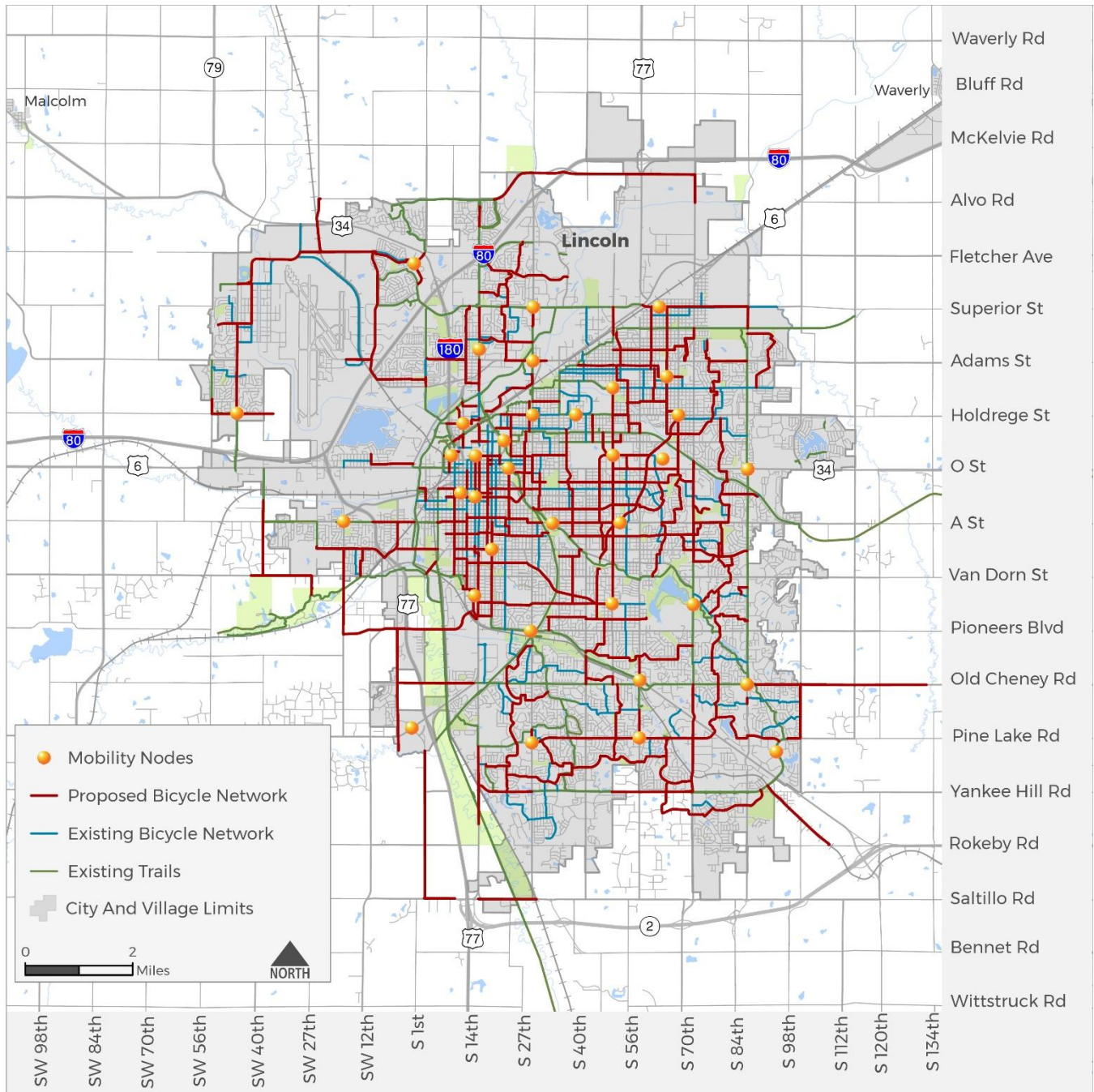
The Mobility Plan identifies **207** recommended on-street multimodal projects that together create a comprehensive future on-street bicycle network. Recommendations include bicycle boulevards, bike lanes, protected or separated facilities, sidepaths, safer arterial crossings, and other improvements that connect neighborhoods to trails, schools, parks, employment, transit, and other destinations.

The Mobility Plan also includes recommendations based on the interrelatedness of transportation and land use. Mobility Oriented Design, or “MOD,” is development that provides enhanced access and relates to nearby trails and transit facilities. MOD works where some or all of these features are within proximity to nearby housing:

- Multi-use trails
- On-street bicycle-pedestrian facilities
- Bus stops
- Compact, walkable land use
- Mixed-use development

Implementation of these needs will occur incrementally through dedicated bicycle and pedestrian funding, mobility node investments, roadway reconstruction and rehabilitation projects, development and redevelopment, and other opportunities. The Mobility Plan specifically emphasizes integrating multimodal improvements into already planned transportation and infrastructure projects, where possible, to accelerate implementation and use available resources efficiently.

Figure 10. Mobility Plan Bicycle Network and Mobility Nodes



Safe Streets Lincoln – Vision Zero Action Plan Needs

The Safe Streets Lincoln – Vision Zero Action Plan (VZAP) establishes Lincoln’s comprehensive approach to reducing fatal and serious-injury crashes. The plan sets a goal to eliminate roadway fatalities and reduce serious injuries by 60 percent by 2045. Using a data-driven Safe System approach, the VZAP recognizes that serious crashes are preventable and that roadway design, speeds, user behavior, technology, and policy all contribute to transportation safety.

Needs identified through the VZAP include targeted improvements at high-crash corridors and intersections, safer pedestrian and bicycle crossings, speed management, intersection and roadway design changes, and systemic application of proven safety countermeasures. Implementation also extends beyond individual capital projects to policies, operations, education, data collection, and other strategies that embed safety into transportation decision-making. The VZAP, therefore, provides the basis for the LRTP’s dedicated Safety Projects funding category, while also informing roadway and multimodal projects throughout the Fiscally Constrained Plan.

The **VZAP** identifies where the **greatest** safety needs are concentrated by **analyzing crash history** and **developing a High Injury Network**, including a specific focus on vulnerable road users such as people walking and bicycling. The analysis identifies **priority corridors and locations** where future transportation investments can have the **greatest impact** on fatal and serious-injury crashes. The VZAP also identifies **priority safety projects and systemwide strategies** that can be incorporated into roadway, bicycle, pedestrian, and other transportation investments.

The VZAP and Mobility Plan were developed in close coordination. The VZAP’s High Injury Network and Vulnerable Road User High Injury Network were incorporated into the LRTP’s evaluation of Lincoln Roadway Projects. VZAP recommendations were reviewed as LRTP projects were developed to help align investments in safety and multimodal connectivity.

Construction Cost Inflation

The costs presented for many of the identified project needs are expressed in today’s dollars, but transportation projects included in the LRTP will be constructed over a planning horizon extending to 2050. A project estimate today will cost more if it is constructed several years—or decades—from now. As a result, comparing today’s project costs directly with future revenues would overstate the amount of transportation investment that those revenues can actually purchase.

To provide a realistic assessment of what can be funded, the LRTP converts project estimates to year-of-expenditure (YOE) costs. YOE costs account for the anticipated increase in construction costs between the present day and the year in which a project is expected to be implemented. This means that projects programmed later in the planning horizon carry a higher estimated cost than the same project would if constructed today.

Applying inflation to individual projects is an important part of developing the Fiscally Constrained Plan. As projects are prioritized into future implementation periods, their costs are escalated to the anticipated YOE. Consequently, the total YOE cost of the prioritized projects is greater than the sum of their costs expressed in today's dollars. For example, Lancaster County's approximately **\$203 million** in identified roadway capital needs increases to approximately **\$315 million** after accounting for the anticipated timing of those investments and construction cost escalation.

Using YOE costs ensures that the LRTP compares future revenues with future costs consistently and provides a more realistic picture of what the region can afford through 2050. These adjusted costs form the basis for the fiscal constraint and funding strategy described in the following sections.

For this LRTP, construction costs are assumed to increase by **5 percent** annually in 2027 and 2028, followed by a long-term annual escalation rate of **3 percent** from 2029 through 2050. These assumptions were developed in consultation with the Funding and Revenue Subcommittee and reflect a moderation in construction cost growth compared with the unusually rapid escalation experienced during development of the previous LRTP.