Mobility & Transportation

This section considers a full complement of transportation components, namely – roads, pedestrian, bicycles, trails, transit, parking, railroads, airports and airfields. It describes a dynamic local transportation system built upon the comprehensive plan's vision.

This section not only serves as the City and County's Long Range Transportation Plan (LRTP) but also fulfills the requirements of the Federal transportation planning process. The process includes goals, objectives and strategies to meet the community's vision. The result of this endeavor is a "Preferred Plan" that identifies transportation needs believed necessary to address the community's vision during the next 25 year planning period.

Transportation Planning Principles

The transportation system for Lincoln and Lancaster County involves different modes of transportation to achieve the safe, efficient and convenient movement of persons and goods. The transportation system includes streets and highways, public transportation, railroads, trails, sidewalks, and airport facilities. The transportation system is primarily influenced by land use, facility cost, operating cost, the environment and the socio-economic factors of the community.

The Mobility & Transportation section of the Comprehensive Plan guides decisions that will support the Plan's overall objectives by allowing Lincoln and Lancaster County's transportation system to move people and goods around the community in a safe, efficient, and convenient way. However, the roles and effects of the transportation system are far more complex than simply moving people and vehicles. The characteristics which contribute to this complexity include:

- The size of capital investment in the transportation system. This system represents the community's largest single public works investment. Transportation projects are significant community investments, requiring that every dollar be spent to maximum advantage.
- The level of public interest in transportation issues. People in American communities, including Lincoln, value their ability to move freely about their cities. We expect our transportation systems to respond to our needs with a minimum of inconvenience and delay. We also interact with the transportation system every day during work, shopping, recreation, and social trips. Because of this, the transportation system attracts a high level of public interest and debate.
- The relationship between land use and urban development patterns. The transportation system both serves and shapes development. When most trips were made by walking and public transportation, cities exhibited relatively dense development patterns. The convenient access to all parts of the City provided by the automobile allowed people to live, work, and shop in more dispersed locations, creating lower density cities. The construction of roads opens areas to development, helping to mold the City's directional growth. Just as the transportation system is influenced by land use, land use is also influenced by transportation.
- The environmental impact of transportation facilities. Of all public infrastructure investments, transportation facilities probably have the greatest visible effects on most people. Roadway improvements can influence the quality of neighborhood environments, making residents extremely sensitive to these projects. Transportation is also a major energy user in American cities. The character of the transportation system can help to determine the long-term viability of a community.
- Conflicts between transportation constituencies. Generally, people have different expectations of the transportation system, which frequently creates conflicts. A resident of a newly developing area expects the system to provide a quick, convenient way to work. However, the expectations of this commuter can conflict with the concerns of an established neighborhood along the commuter's route.

As a result, transportation planning must balance a variety of needs and priorities of the community. The transportation system provides the links that knit Lincoln and Lancaster County together as one community. Yet, the impact of that same transportation system can create physical barriers and conflicting interests that can also erode this sense of community. The following four principles guide Lincoln and Lancaster County's transportation planning:

- A Connected City. 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 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, liveable, 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 realistic 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 the City. Lincoln and Lancaster County will use major road projects to reinforce desirable land use development patterns.
- 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 should also establish an ongoing process that responds to these changes.

The overall objectives of the transportation plan include:

- Developing a balanced transportation system that meets the mobility needs of the community and supports Lincoln and Lancaster County's land use projections and plan.
- Using the existing transportation system to its best advantage.
- Developing and maintaining a sustainable transportation network that minimizes energy consumption and environmental pollution.

Federal Planning Requirements for the Long Range Transportation Plan

- Address at least a twenty year planning horizon and updated every five years;
- Include long-range and short-range strategies/actions for operation and management activities;
- Provide an integrated intermodal transportation system for the safe and efficient movement of people and goods;
- Use latest estimates and assumptions for population, land use, travel, employment, congestion, and economic activity;
- Maintain consistency with the projected transportation demand of persons and goods in the metropolitan planning area over the period of the plan;
- Identify management and operations strategies, such as traveler information, traffic surveillance, incident response, freight routing, work zones management, weather response, pricing, fare payment alternatives, public transportation management, demand management, alternative routing, telecommuting, and parking management;
- Plan pedestrian walkway and bicycle transportation facilities;
- Consider and provide for congestion management system alternatives;
- Assess capital investment and other measures to preserve existing system and to make the most efficient use of existing facilities;
- Include design concept and scope descriptions of all existing and proposed transportation facilities in sufficient detail to develop cost estimates;
- Reflect a multimodal evaluation of the transportation, socioeconomic, environmental, and financial impact of the overall plan;
- Reflect consideration of local long-range land use plans, housing goals and strategies, community development and employment plans, and environmental resource plans, work force training and labor mobility plans, energy conservation goals, and the metropolitan area's overall social, economic, and environmental goals and objectives;
- Indicate proposed transportation enhancement activities;
- Include a financial plan demonstrating the consistency of proposed transportation investments with already available and projected sources of revenue.
- Include an intelligent transportation systems (ITS) strategy.

- Increasing the use of under-utilized means of transportation, including public transportation, bicycling, and walking, by improving and expanding facilities, services and by encouraging compact, walkable land use patterns and project designs.
- Continuing Lincoln's street and trails network into newly developing areas.
- Designing a street and road improvement program that is both physically attractive and sensitive to the environments of urban neighborhoods.
- Maximizing the safe and efficient movement of railroad traffic, while minimizing at grade street conflicts and reducing the creation of barriers by rail corridors.
- Enhancing aviation facilities, while minimizing their impact on surrounding land uses.
- Investigating and securing additional resources to implement the proposed transportation system.

The maintenance, improvement and expansion of the Long Range Transportation Plan is fiscally constrained. The benefits and costs of alternative transportation improvements must be evaluated on an ongoing basis to assure that the public interest is best served.

The transportation planning process establishes a framework within which all possible transportation improvements are evaluated and prioritized for implementation. This process establishes a series of refinements that move projects from the general to the specific and from concept to construction.

Transportation Planning Requirements

Federal legislation dramatically affects the way transportation planning is conducted in the United States:

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

SAFETEA-LU promotes more efficient and effective Federal surface transportation programs by focusing on transportation issues of national significance, while giving State and local transportation decision makers more flexibility for solving transportation problems in their communities. It is the intent of this transportation plan to meet or exceed the principles of SAFETEA-LU planning provisions in addressing the changing transportation needs and many challenges facing the Lincoln Metropolitan Planning Area.

The Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) lists eight factors to be considered in the Long Range Transportation Plan:

- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
- Increase the safety of the transportation system for motorized and non-motorized users;
- Increase the security of the transportation system for motorized and non-motorized users;
- Increase the accessibility options available to people and freight;
- Protect and enhance the environment, promote energy conservation, and improve quality of life;
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
- Promote efficient system management and operation; and
- Emphasize the preservation of the existing transportation system.

The Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) became law on August 10, 2005 and is the most recent authorization for surface transportation investment in the United States. This builds upon the two previous national transportation bills, the Inter-modal Surface Transportation Efficiency Act of 1991 (ISTEA) and the Transportation Equity Act for the 21st Century (TEA-21) which established a new agenda for maintaining and investing in the nation's transportation infrastructure. SAFETEA-LU carries forward many of the principles and accomplishments of previous legislation and builds on and refines many existing efforts. This legislation also introduces new measures to meet the many challenges facing our transportation system which include improving safety, reducing traffic congestion, improving efficiency in freight movement, increasing Inter-modal connectivity, and protecting the environment.

The key elements and directives of SAFETEA-LU, as they pertain to the long range transportation plan, are:

1. Planning Cycle for Metropolitan Transportation Plans. Metropolitan Transportation Plans in air quality non-attainment or maintenance areas are now required to be updated every four years. Plans in areas that are in attainment (ie; Lincoln) must be updated at least every five years.
2. Annual List of Projects. Two new project types must be included: pedestrian walkways and bicycle transportation facilities. The Metropolitan Planning Organization's (MPO's) intention to build such facilities must be written into the Metropolitan Transportation Plan and Transportation Improvement Program (TIP).
3. Planning Factors. SAFETEA-LU requires the metropolitan transportation planning process to provide for consideration of projects and strategies that will address eight key planning elements.
4. Creation of Strategic Highway Safety Plans (SHSP). Metropolitan Transportation Plans must reflect the goals and objectives of the adopted SHSP. States are responsible for drafting the SHSP, but MPOs must refer to and have consistent objectives with the SHSP.
5. Environmental Mitigation. The Metropolitan Transportation Plan must include a discussion of the types of potential environmental mitigation activities, and potential locations for these activities, to restore and maintain environmental functions that could be affected by the Metropolitan Transportation Plan.
6. MPO Consultation with Environmental Agencies. Metropolitan Transportation Plans should include a textual provision for consulting with state and Federal environmental protection, tribal government, wildlife management, land management, and historic preservation agencies. This should include a comparison of maps and inventory lists.
7. Existing Transportation Facilities. Metropolitan Transportation Plans should include operational and management strategies that improve the performance of existing facilities. These strategies should reduce overall congestion and facilitate the flow of people and goods.
8. Congestion Management Process. Traffic Management Areas (TMAs) should rename their Congestion Management System to Congestion Management Process. SAFETEA-LU requires that the Congestion Management Process be a key element of the Metropolitan Transportation Plan. This indicates the intent of Congress is for Congestion Management Processes to be of greater emphasis to MPOs.
9. Public Participation Plan. MPOs must develop a written public participation plan. This is a plan that lays out the process for ensuring public review and input on MPO documents.
10. Coordinated Public Transit Human Services Transportation Plans. These plans must be developed to receive certain types of Federal Transit funding. These plans must be developed through a process that includes representatives from public, private, and non-profit transportation providers.

Safety and Security

A significant portion of the City's urban transportation planning process involves the collection of transportation related crash data. Crash data and analysis is an important transportation engineering tool that provides a foundation for improving the safety and security of the transportation system. The City's annual crash report provides a source of information through which local and state officials examine and respond to changing transportation conditions. During the year 2004 approximately 9000 crashes were reported, involving pedestrians, bicyclists, buses, trucks, trains, motorcycles and automobiles, within the City limits. Theses total crashes resulted in an estimated monetary loss of $184 million.

The State of Nebraska's highway traffic fatality rate of 1.4 fatalities per 100 million vehicle miles of travel (MVMT) generally parallels the National average of 1.5 fatalities per 100MVMT. The State's goal is to achieve a rate of 1.0 fatalities per MVMT by the year 2008. Accordingly, the City's goal should mirror that of the state to reduce overall 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 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 the new provisions in SAFETEA-LU each state is required to develop, prepare, submit and implement a comprehensive safety plan. The Nebraska Safety Plan developed in collaboration with public and private agencies has identified the following Critical Emphasis Areas that will require the continuation of existing or implementation of new programs:

- To reduce the number of alcohol-related crashes
- To reduce young drivers' involvement in fatal and injury crashes
- To increase occupant restraint use
- To reduce the number of speed-related crashes
- To improve the accuracy, timeliness and completeness of traffic records data
- To reduce the number of run-off-the-road crashes
- To improve roadway intersection safety
- To increase roadway work zone safety
- To increase commercial vehicle safety

The City's Annual Crash report and Transportation Crash records system are intended to address the requirements of SAFETEA-LU and the state-wide Critical Emphasis areas. It is anticipated that the City's transportation safety program will continue to emphasize education, enforcement, engineering and evaluation to help mitigate crashes. It is imperative that all funding opportunities be pursued to help mitigate and improve Lincoln's transportation safety program.

The safe, secure and continuous movement of people and goods during emergencies depends upon well coordinated operations plans and policies. The full capability of the transportation system must be harnessed and optimized. To address the security needs of our community and the transportation system infrastructure, it is anticipated that a greater emphasis would be placed on the funding and implementation of Intelligent Transportation System(ITS) technologies. Applicable ITS technologies will be of enormous benefit, particularly when they are integrated with information and communication systems of our public safety agencies. These ITS technologies would be supplemented by enforcement strategies, dissemination of real-time information and education.

It is envisioned that all activities pertaining to the Safety and Security of the transportation infrastructure and the community will remain a high priority throughout the 2030 planning period.

PEDESTRIANS

Pedestrian and Bicycle Workshop Vision Statement

"Elevate status of pedestrians and bicyclists in the community to be an integral part of the Transportation Plan."

Walking is an essential part of our daily activities, whether it be trips to work, shop, or play. Often pedestrian facilities are overlooked or merely added onto street improvement projects. However, to preserve and enhance the quality of life for Lincoln, consistent maintenance and rehabilitation of the existing pedestrian system and additional facilities are needed. Planning and developing pedestrian facilities should consider many factors:

- Location of existing and planned activity centers and districts, such as shopping malls, older neighborhood centers, libraries, community centers and schools.
- Programs to retrofit established sections of town with pedestrian amenities.
- Design standards for pedestrian facilities in new residential and mixed-use developments.
- Location of existing and planned multi-use trails.
- Requirements from the Americans With Disabilities Act (ADA).
- Needs of a growing senior population.

The Comprehensive Plan's Pedestrian Plan serves to make pedestrian facilities an integral part of the planning and development from the earliest stages of the planning process.

Pedestrian Facilities Plan for ADA Compliance

The City of Lincoln Public Works & Utilities Department will update the current Pedestrian Facilities ADA Transition Plan (1992) with the development of a supplemental planning document (Pedestrian Master Plan). This plan will address the requirement to install curb ramps at existing pedestrian walkways, to repair sidewalks and to meet the expectations of pedestrians. The objective is to comply with ADA regulatory requirements and standards for pedestrians and follow guidance given in the U.S. Department of Justice Investigation Report (DOT # 2006-0094), May, 2006. The Pedestrian Master Plan is to include a schedule of pedestrian facility improvements for the continued implementation of ADA requirements that will be updated and kept current with available budget and public input.

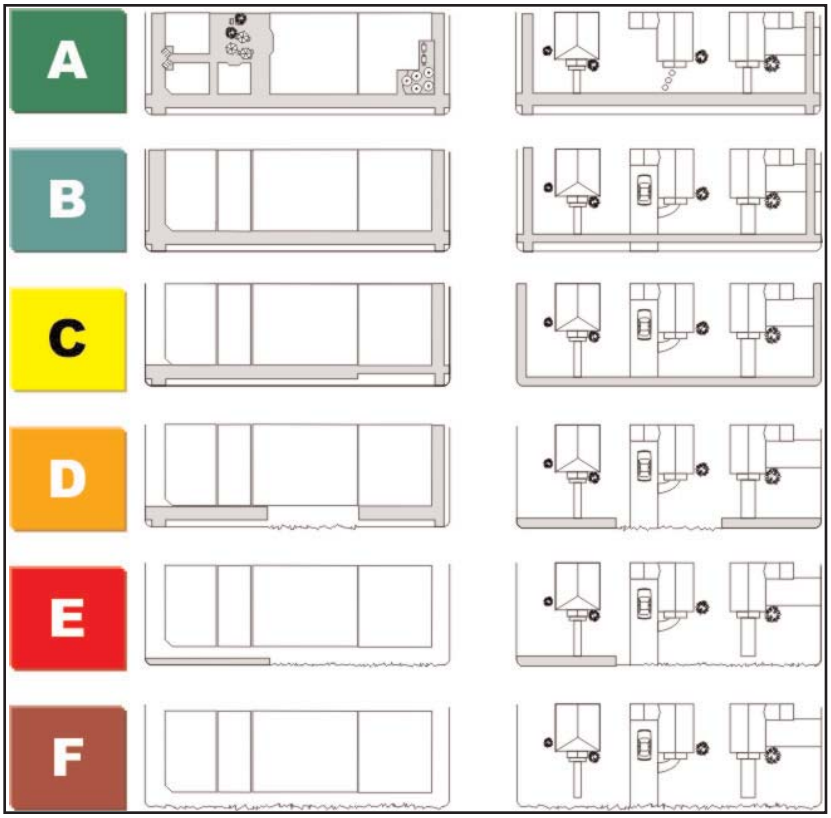
The draft Pedestrian Master Planning document is to be completed by May 1, 2007. An advisory committee or task force may be created, as deemed appropriate, to assure public involvement by special interest groups. The City of Lincoln will be hosting Civil Rights Training for staff to assure sensitivity and knowledge of laws governing the stewardship of the American with Disabilities Act as it relates to pedestrian transportation issues.

The intent of the **American with Disabilities Act** of 1990 (ADA) [42 U.S.C. 12181] is to provide persons with disabilities with accommodations and access equal to, or similar to that available to any other persons. The ADA gives civil rights protections to individuals with disabilities, guarantees equal opportunity for individuals with disabilities in public accommodations and is enforced as other civil rights laws are enforced.

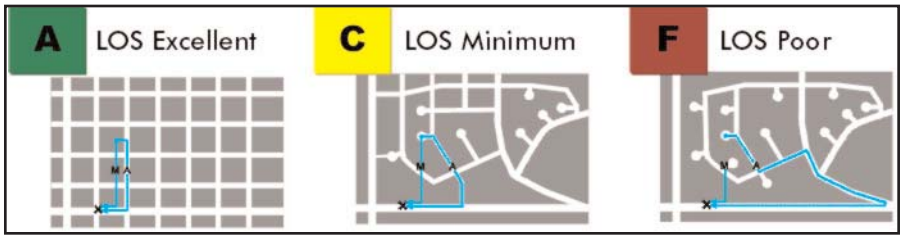
Pedestrian Level of Service Factors

Five factors make up the quality of the pedestrian environment and define pedestrian level of service:

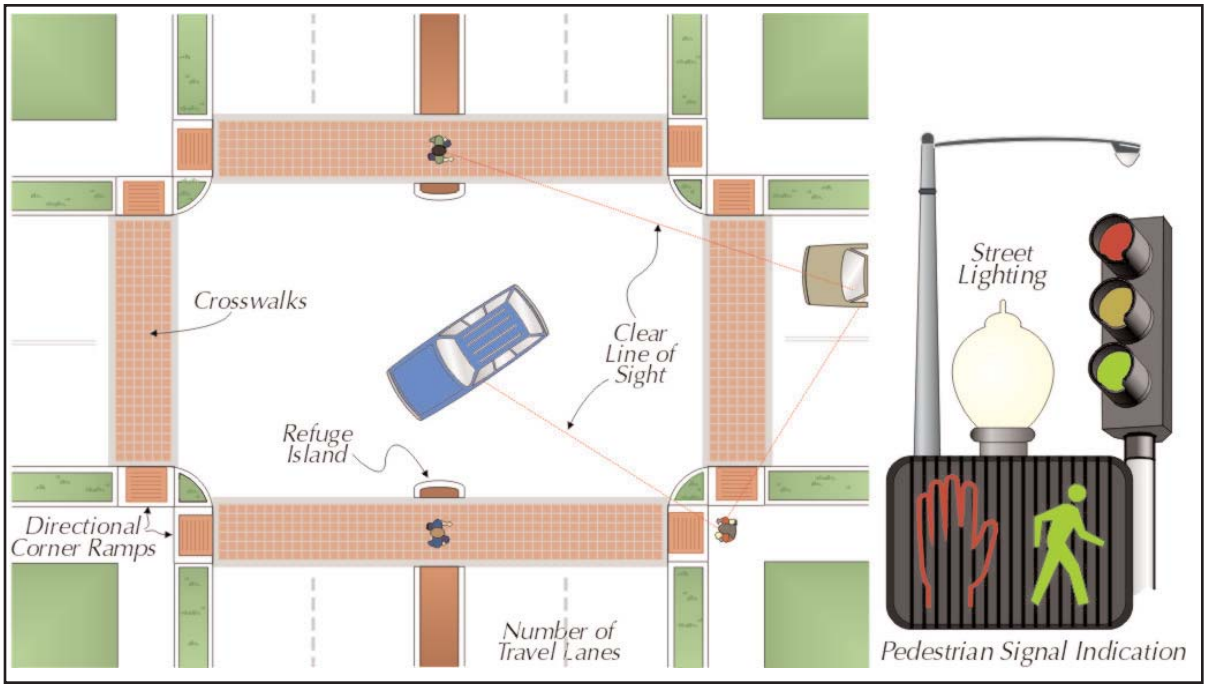
- Continuity - The sidewalk system should be complete, without gaps, and maintained in good repair. The pedestrian network in shopping centers should be integrated with adjacent activities.
- Security - Pedestrians should be visible to motorists and other pedestrians. Pedestrians should be separated from motorists and bicyclists. Adequate lighting should be provided.
- Visual Interest - Pedestrians enjoy a visually appealing environment. Street lighting, fountains, and benches should match the local architecture. Pedestrian amenities should include landscaped parkways with street trees between the street and sidewalk while being sensitive to existing areas and uses.



- Directness - Pedestrians should be able to walk in a reasonably direct path to destinations like transit stops, schools, parks, and commercial and mixed-use activity centers. Directness is the ratio of actual distance along a sidewalk or pathway divided by the minimum distance the trip would take on a grid system.



- Street Crossing - Street crossings should feel be safe and feel comfortable. Factors to consider are number of lanes to cross, traffic volumes, turning movements, speed of traffic, signal indication, curb radius, crosswalks, lighting, raised medians, visibility, curb ramps, pedestrian buttons and convenience.



Pedestrian Activity Centers Plan

Pedestrians are found throughout the community. Their needs can vary by where they are located:

- Pedestrian Districts - These areas are typically located in settings where people go to walk around, shop, eat, or conduct business.

  These districts attract large numbers of pedestrians on a regular basis. They include the Downtown (along with the main campus of the University of Nebraska-Lincoln), University Place, College View, and Havelock. Pedestrian level of service standards in these areas should be high. These areas should have direct, continuous sidewalks with safe street crossings. Visual interest and amenities should serve to attract people to these districts. Future large scale, mixed- use activity districts should be considered members of this category of pedestrian activity centers.

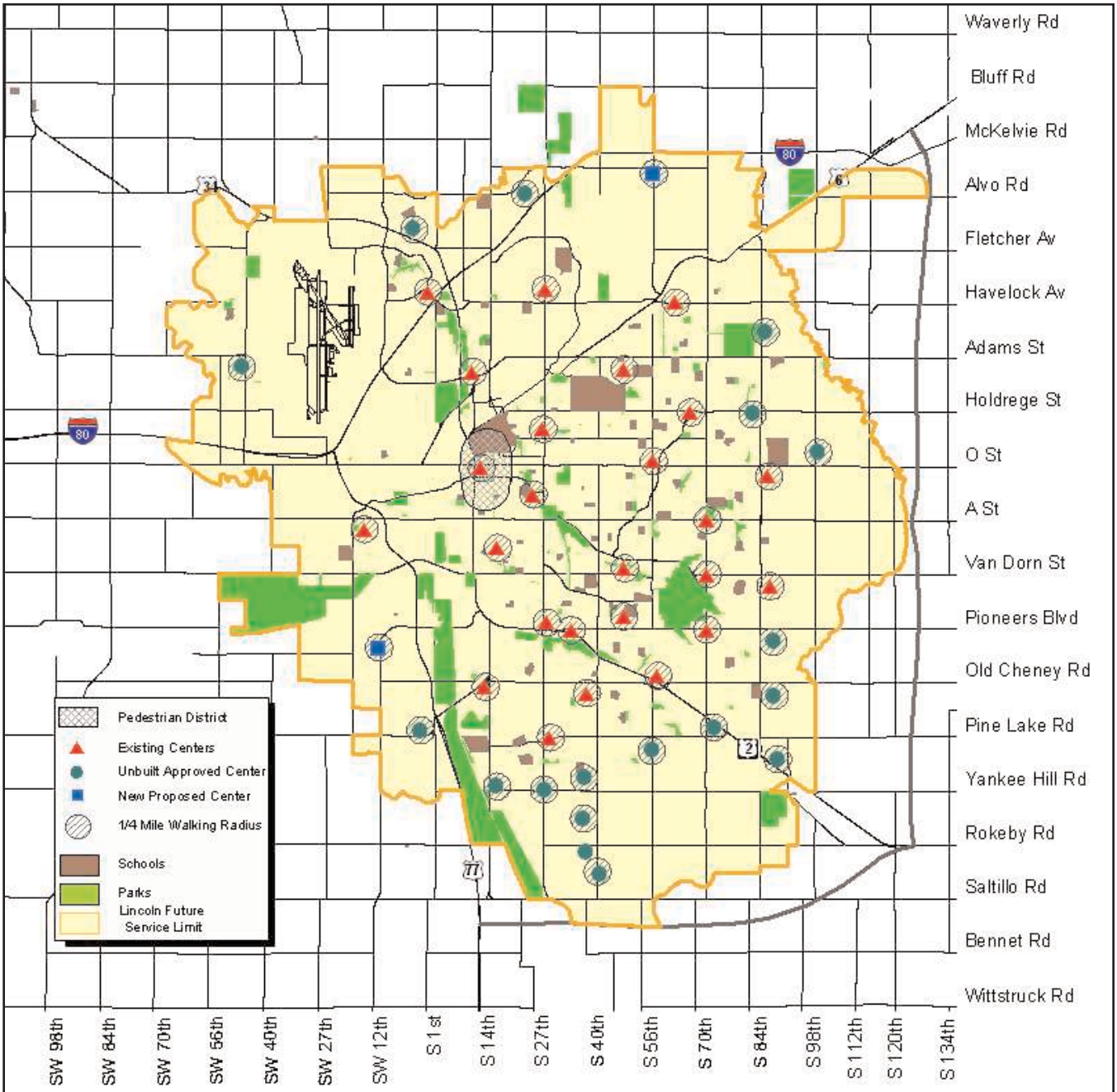
- Activity Corridors and Centers - These areas tend to be located along arterials, particularly where two major arterials might intersect. These locations often have strip commercial or "L" shaped neighborhood shopping centers. Directness and safety for pedestrians going to, from, and within these corridors and centers should be stressed.

- Schools - While it might not be critical for the route to school to be picturesque and visually captivating, a safe and secure environment must be provided for students going to and coming from schools. Sidewalks should be direct and continuous with safe street crossings.

- Transit Corridors - Transit trips begin and end as pedestrian trips. Directness and safety are critical elements.
- Other Areas - All areas of the community should have safe, secure, and reasonably direct pedestrian connections. Activities of daily living should be available within walking distance. Neighborhoods should include homes, stores, workplaces, schools, and places to recreate. Interconnecting streets, trails, and sidewalks should be designed to encourage walking and bicycling, reduce the number and length of automobile trips, and conserve energy.

Strategies: Pedestrian Activity Centers Plan

- Encourage, promote, and coordinate land use that supports pedestrian activity.
- Target pedestrian improvements in areas shown on the Pedestrian Activity Centers Plan. Refine map as necessary. Use pedestrian standards.



Pedestrian Activity Centers Plan

- Establish dedicated funding.
- Give priority consideration to funding pedestrian facilities within the capital improvements programming process.
- Maintain and improve the existing school crossing protection program and develop and implement Safe Routes to School projects.

In order to create greater pedestrian opportunities, particularly in the construction of new "multi-modal" roads and the reconstruction of existing roads, sidewalks and safe street crossings should give consideration to pedestrian push buttons, crosswalk enhancements, median refuge islands, bulb-outs, and other design features. In the older built environment, design considerations should be given to similar options with special flexibility sought to minimize impacts to adjacent uses.

Multi-use Trail System

The existing and planned multi-use trail system that serves the community is a critical resource for pedestrian users as well as other users such as bicyclists. As a strength of the community and a foundation to further meet the needs of pedestrians and other users, the maintenance, rehabilitation, and expansion of the multi-use trail system should be a priority.

Strategies: Multi-Use Trail System

- Extend the multi-use trail system into new neighborhoods as the city grows. Connections should be made to schools, parks, and other activity areas.
- Explore options to establish a dedicated funding plan to complete the multi-use trail facilities plan, and for the continued maintenance and rehabilitation of these facilities.
- Identify critical segments offering greater system continuity and connections for major activity centers and schools. Undertake projects to complete identified gaps in the system.
- Promote the usefulness of multi-use trails for various users including pedestrians.

Pedestrian Standards

Pedestrian standards should be prepared for public and private developments. These standards should consider existing and future pedestrian activity centers. The standards should be realistic and easy to understand. Checklists may be used to implement the standards.

Pedestrian standards should identify key destinations and plan for pedestrian facilities to and from these locations. Key destinations include schools, parks, trails, and activity centers.

Strategies: Pedestrian Standards

- Develop minimum pedestrian standards for all new public works projects, including new roadways and reconstruction of existing roadways. These standards should include street crossing treatment, sidewalk design, and landscaping.
- Continue to develop and implement pedestrian standards for private developments to provide pedestrian facilities connecting key destinations such as schools, parks, trails, and activity centers.
- Select a short-term public works demonstration project embracing best practice pedestrian design standards.
- Develop a city-wide database of pedestrian facilities and crosswalks. Develop a dedicated funding mechanism and prioritization process for implementing repairs and improvements.

+++ Extremely Important ** Very Important * Important		Directness	Continuity	Street Crossings	Visual Interest and Amenity	Security
Pedestrian Districts	Routes to/within	+++	+++	+++	+++	+++
Activity Corridors and Centers	Routes to/within	++	++	++	++	++
School/ Parks	Routes to	+++	+++	+++	+	+++
Public Facilities	Routes to	+	+	++	+	++
Transit	Routes to	+++	+	++	+	+

- The planning process is to develop standards that define pedestrian level of service concepts.
- Include pedestrian/bicycle access in the design and construction of bridge and roadway projects.

Pedestrian Facilities Coordination

There is currently not a single clearing house for pedestrian planning, design, and engineering in the City of Lincoln. Instead, a number of departments address pedestrian mobility and sidewalks with varying perspectives as part of other job assignments. Often either these conflict with the objectives for pedestrian design, or the specific job descriptions put pedestrian planning, design, and engineering at a lower priority than other tasks.

The City should clearly identify the organizational responsibility for pedestrian facility planning, design, engineering, and implementation. This should include responsibility for reviewing and developing pedestrian policies and standards for public and private developments, addressing pedestrian improvements needs, developing and updating the Pedestrian Activities Center Plan map, applying for state and federal grants, and prioritizing pedestrian improvements.

Strategies: Pedestrian Facilities Coordination

- Identify the City agency (or agencies) responsible for coordinating pedestrian and bicycle planning activities and for overseeing all pedestrian and bicycle activities within the City.

Pedestrian Education and Enforcement

The Pedestrian Plan should also contain an ongoing educational element regarding air quality, vehicular laws, the health benefits of pedestrian activities, and the potential contribution of pedestrian activities to the reduction of congestion. This should be part of an overall city communication and education program. In addition, enforcement of the vehicle code for both the pedestrian and automobile driver is necessary to promote a safe environment.

Strategies: Develop a Pedestrian Education Program and Enforce Traffic Laws

- Develop a pedestrian education program as part of the City's overall communication and education program.
- Provide police resources and manpower to enforce pedestrian and vehicular traffic laws.

Bicycle Facilities Planning Lingo

Bikeway – Any street or trail specifically designated for bicycle travel. May be designated exclusively for use by bicycles or may be shared with other transportation modes.

Multi-Use Path and 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.

Bicycle Lane – Bikeway on a street designated for preferential or exclusive use of bicycles by striping, signage, and pavement markings. Also referred to as a Class II bikeway.

Bicycle Route – Streets with "Bike Route" signs installed along them. Intended for the shared use of automobiles and bicyclists without striping or pavement markings. Sometimes referred to as a Class III bikeway.

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.

Bicycles

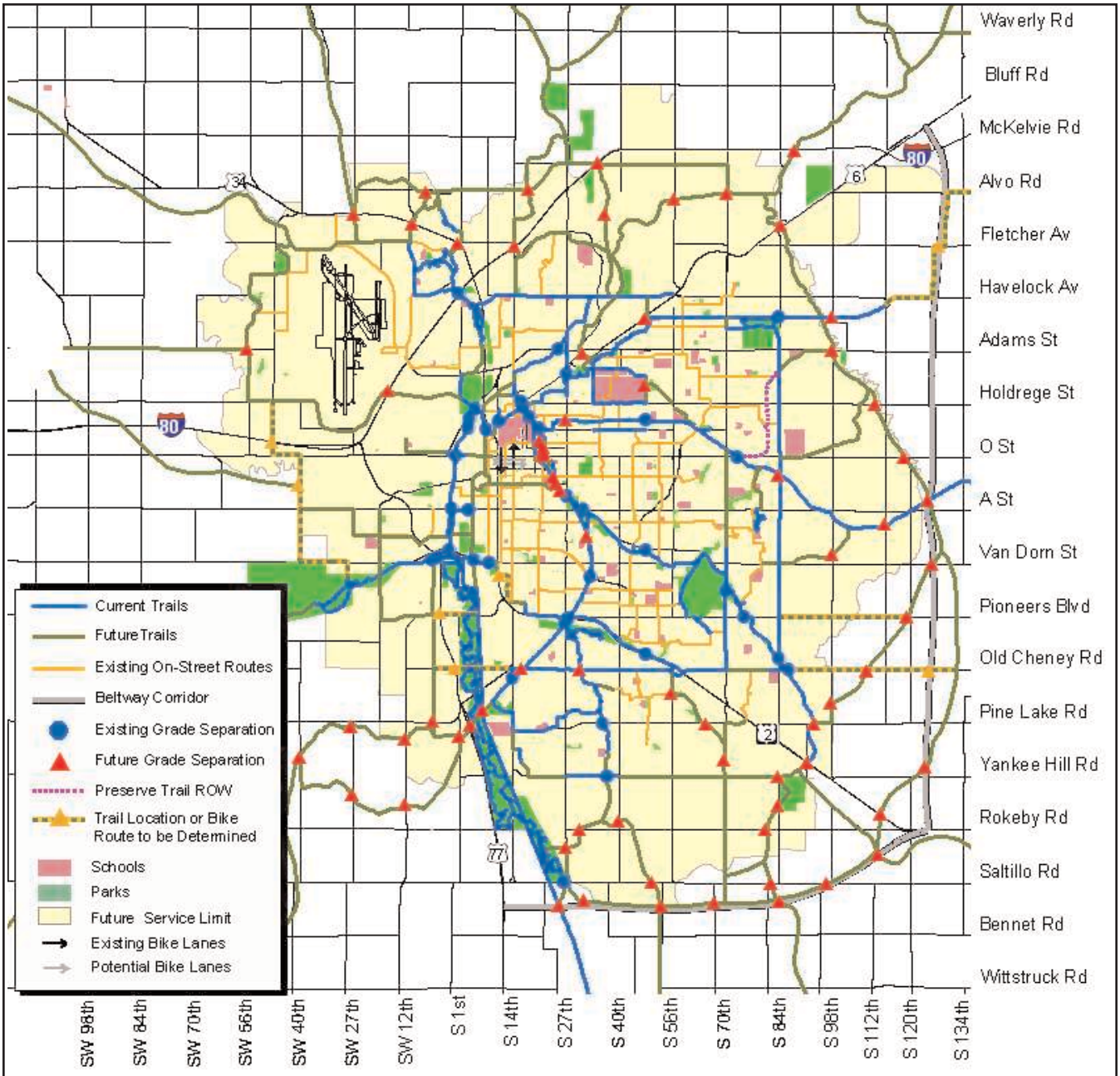
Bicycles can play an important role in the community by providing a healthy alternative to the automobile, reducing traffic congestion, improving air quality, and creating a more balanced transportation system. In the planning, engineering, maintenance, and rehabilitation of all streets and roads, cyclists should be considered "design users," with each street being considered a "bicycle facility." Education and enforcement are also key to encourage cycling as viable transportation and creating an environment which is safe and convenient for cyclists and motorists.

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. This is emphasized by the Pedestrian and Bicycle Workshop Vision Statement: "Elevate status of pedestrians and bicyclists in the community to be an integral part of the Transportation Plan."

Multi-use Trails and Facilities Standards

The community has an existing system of multi-use trails and on-street bike routes. The present system serves both commuter bicyclists who use their bicycles daily for work and shopping trips and tend to travel from point to point, and recreational bicyclists who tend to ride their bicycles on a more occasional basis, seeking attractive and safe routes. The system also serves other users such as pedestrians. Planning for future multi-use trails should be guided by the goal of having a multi-use trail within one mile of all residences in the city.



Multi-Use Trails & Bicycle Facilities Plan

(Please refer to the Salt Valley Heritage Greenway & Future Countywide Trails map in the Environmental Resources chapter.)

The future system should include a combination of multi-use trails, bike routes, and bicycle lanes that serve the entire community. As a strength of the community and a foundation to further meet the needs of bicyclists, pedestrians, and other users, the maintenance, rehabilitation, and expansion of the multi-use trail system should be a priority.

Strategies: Multi-Use Trails and Bicycle Facilities Standards for Existing Areas

- Extend the multi-use trails system into the new and redeveloping neighborhoods as the city grows. Connections should be made to schools, parks, and other activity areas.
- Explore options to establish a dedicated funding plan to complete the multi-use trails and bicycle facilities plan, and for the continued maintenance and rehabilitation of these facilities.
- Identify critical segments offering greater system continuity and connections for major activity centers, schools and the University of Nebraska. Undertake projects to complete identified gaps in the system.
- Evaluate existing bicycle routes and other travel corridors for opportunities to provide bicycle lanes throughout the entire community.
- Promote the usefulness of trails for various users including pedestrians.
- Provide cyclists safe, direct, and convenient access to all destinations served by the Lincoln area streets and roads network, and provide bike racks for commuters and shoppers.
- Maintain existing route maps for all trails, lanes, and routes and provide appropriate signage.
- Implement a public information and education program encouraging bicycles as an alternative mode of transportation.
- Develop an Activity/Trail Center that promotes active and healthy living.

Bicycles in the Downtown

Providing for the mobility needs of motorists and bicyclists in the Downtown will require careful planning and engineering.

Strategies: Bicycles in the Downtown

- Continue to implement the Bicycle Framework plan as adopted in the Downtown Master Plan.
- Work with the Downtown Lincoln Association, the Lincoln Public Works and Utilities Department, the Lincoln Parks and Recreation Department, the City/County Planning Department, and other agencies interested in the implementation of the Bicycle Framework plan as adopted in the Downtown Master Plan.

Multi-use Trails and Bicycle Facilities Standards for Developing Areas

Multi-use trails and bicycle facilities standards should be prepared for public and private developments. These standards should consider existing and future activity centers. The standards should be realistic and easy to understand. Checklists may be used to implement the standards.

Multi-use trails and bicycle facilities standards should identify key destinations, and plan for bicycle and trails facilities to and from these locations. Key destinations include schools, parks, trails, and activity centers.

Strategies: Multi-Use Trails and Bicycle Facilities Standards for Developing Areas

- Develop minimum multi-use trails and bicycle facilities standards, including bike lanes, for all new roadways and reconstruction of existing roadways.
- Encourage minimum multi-use trails and bicycle facilities standards for private developments to provide bicycle facilities and amenities connecting and serving key destinations such as schools, parks, and activity centers.
- Select and implement a near term bicycle facilities demonstration project embracing best engineering practices, bicycle design standards, and minimum Federal guidelines.
- Explore opportunities to develop multi-use trails within rail corridors proposed to be abandoned as an interim transportation use.

- Explore opportunities to combine multi-use trails within active rail corridors where linkages are needed, and rail traffic volume is low.
- Develop an interconnected system of multi-use trails that utilizes drainage channels and greenway corridors when

feasible. Trail routes adjoining major streets should only be considered in establishing trail connections over ridge-lines between drainage basins.

- 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.
- Provide cyclists safe, direct, and convenient access to all destinations served by the Lincoln area streets and roads network, and provide bike racks for commuters and shoppers.
- Grade separated crossings are to be considered in conjunction with all new construction and reconstruction of transportation projects at all trail/arterial street intersections that do not coincide with arterial/arterial street crossings.

Multi-Use Trails and Bicycle Facilities Coordination

The City should clearly identify the organizational responsibility for multi-use trails and bicycle facility planning, design, engineering, and implementation. This should include responsibility for reviewing and developing multi-use trails and bicycle facilities policies and standards for public and private developments, addressing bicycle and trail improvements needs, developing and updating the Multi-Use Trails and Bicycle Facilities Plan Map, applying for state and federal grants, and prioritizing improvements.

Strategies: Multi-Use Trails and Bicycle Facilities Coordination

- Identify the City agency (or agencies) responsible for coordinating each aspect of the Multi-Use Trails and Bicycle Facilities Plan.

Lancaster County Bikeways

The community should seek to expand bicycling opportunities throughout all of Lancaster County.

Strategies: Lancaster County Bikeways

- Identify potential bicycle corridors in rural areas of the County based upon existing and planned activity centers and land uses.
- Identify corridors linking County bikeways to existing and planned City bicycle facilities.
- Explore opportunities for widening the shoulders of County roads adjacent to the City of Lincoln. This should occur when reconstruction or resurfacing of the road is planned. Safety should be a primary consideration.

Bicycle Amenities

A major element of the overall bicycle plan is the provision for adequate bicycle facilities as part of the built environment. For example, while parking for cars is routinely planned for, rarely is there a place where the 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.

Bicycle amenities should be considered during the planning of public and private developments.

Strategies: Bicycle Amenities

- Develop bicycle rack and storage requirements for new developments. Requirements should address design, location, and number. Requiring locker facilities in major developments should be considered.
- Provide functional bicycle racks and storage facilities in all major destination areas.
- Explore opportunities for trail head facilities for heavily used trails.

Bicycle Education and Enforcement

The potential environmental, health, and traffic reduction benefits of bicycles should be promoted. Enforcing the vehicular code for both bicycles and motorists should also be pursued.

Strategies: Bicycle Education and Enforcement

- Develop a bicycle education program to promote bicycle awareness and safety.
- Provide police resources to enforce bicycle and vehicular traffic laws.
- Use the City and County's Internet sites and Cable Access Channel 5 to inform and educate the community about bicycles.

PUBLIC TRANSPORTATION

Public transportation 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 door-to-door demand responsive disability service. These public services are critical to those persons that are dependent on public transit services. These services are necessary for 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.

As a public service, StarTran transit service should be funded and supported similar to any other public service. A public transit system of a size and quality commensurate with the needs of future City of Lincoln and Lancaster County residents and businesses is an important element of the Transportation Plan.

Transit service, whether fixed-route or demand-responsive service, is intricately linked to many other governmental and planning actions. Providing transit fixed-route service relies upon direct pedestrian connections from the place where the trip begins to where the trip ends. Transit service reacts to the density of the City, transportation corridors and activity centers, as well as to the design of activities along those corridors and centers it serves. High travel corridors and activity centers with a mix of uses provide the demand that can effectively support higher levels of transit service.

Public investment and future development must balance all transportation modes. This balance includes accommodating the pedestrian and the private automobile - through construction of arterial roadways and construction and subsidies for high cost multi-level parking structures - while also investing in fixed-transit and demand-responsive services. The design of the City's infrastructure and roadway system must consider all transportation modes, including transit. An example of public investment that will be implemented during the first half of the planning period is an "Automatic Vehicle Location System" and "Smart Card" Fare-box technology. This Intelligent Transportation Systems technology should help increase overall efficiency, security and operation of the transit system.

The evolution of an auto-oriented Lincoln has occurred over decades. It will similarly take time to restructure development patterns and land uses to achieve an environment which can promote productive transit service.

To achieve viable long range transit service for the City of Lincoln and Lancaster County in the year 2030, a number of broad policies and actions are needed to guide successful implementation and expansion of public transit. These policies and action items are guided by the results of the approved Transit Development Plan (TDP) Study. The TDP is the guide for near and mid-term transit planning for the 2030 Long Range Transportation Plan. Included in the Transportation Development Plan is a comprehensive operations analysis, near and long term transit service alternatives, updated service standards and policies, and management and funding options.

Balanced Transit System

Providing transit services throughout the city requires balancing the number of routes, the frequency of service, and the hours of service. The TDP 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.

Transit-friendly Development

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 high-density land development patterns which link residential areas and employment, retail, and service centers. Development design needs to be transit friendly providing convenient access to transit services. This would be important in ensuring that new development contain transit-oriented standards.

Maximize Transit Productivity

The 2030 Plan needs to address both the coverage requirements for serving the transit dependent population as well as productive routes for capturing new riders and reducing congestion. Achieving higher productive routes requires a strategic planning effort to direct growth patterns along transit corridors and concentrate activity into mixed-use activity centers.

Maximum transit coverage and maximum transit productivity forms the continuum of options for the transit provider. At one end of the continuum is the provision of fixed route transit services which should strive to balance geographic coverage with ridership productivity. Monitoring and modifying transit services to maximize transit ridership is a key element of the TDP.

Maximize Transit Connections When Structuring Routes

As the city develops the need to serve additional populations and destinations will change and grow. StarTran routes should be modified to recognize this change in ridership and transit user needs. The TDP helps reallocate less productive services to emerging activity centers and corridors.

Accommodate Transit When Designing Roadway Improvements

Roadway design should consider the needs of public transit, including bus turnouts, sidewalk connections to transit stops, safe street crossings, street lighting for security, and bus stops and benches.

Explore Regional and Commuter Transit Service Options

Travel between Lincoln and regional destinations such as the Omaha metropolitan area will increase during the planning period. This travel will include routine commuter trips as well as other discretionary travel. Public transportation may support this travel using a variety of transit delivery options including various vehicle types and service configurations. Planning and improvements might be considered to help promote and support the possibility of commuter rail for Lincoln beyond 2030. These strategies might include developing a multi-modal center in the Downtown area with immediate access to the existing rail service.

StarTran Transit Contract Service

Contract transit services typically operate with a higher level of ridership productivity and generate greater revenues than do traditional fixed route services. Contract transit services funded by various local and federal government funds and rider fares need to abide by federal regulations and should be explored to the extent possible.

Contract service is common in university cities as it (1) provides the transit operator a large and compact ridership base to

service, and (2) provides university students and faculty with convenient transit access. This type of contract also benefits a city in which the university is located by reducing congestion.

Special Needs Demand Responsive Transit

StarTran provides special transportation services for persons with disabilities in compliance with the Americans with Disabilities Act. Services include accessible fixed route buses, the Handi-Van service, and brokerage program.

Special needs transit services are also offered to their clients by various local private organizations. Area-wide coordination efforts of all special transportation services are currently underway that would make better use of available equipment and better meet the needs of persons with disabilities.

Park-and-ride Opportunities

Establishing park-and-ride locations along outlying areas of the community could support transit connections to the Downtown and other mixed use centers. As Lincoln grows and expands its urban boundary, trip numbers will increase. Shifting some automobile trips to transit can reduce traffic impacts within the existing community, reduce the cost of parking in the central core, and provide increased mobility options for both future and existing development. The TDP provides future park-and-ride route concepts and other transit related services and enhancements.

Long Term Public Transportation Funding Approach

Enhancing transit usage should consider ways to ensure that public transportation service has committed, adequate financial support over the entire planning period.

StarTran fixed-route and demand-responsive transit services account for less than two percent of the current six-year City of Lincoln Transportation Improvement Program (TIP). While this level of funding might be adequate to provide for the basic transit services for the disabled and transit dependent, the funding level is not sufficient to provide the frequency, route coverage, and structure to compete with the level of service offered by the automobile.

Public funds and policies subsidize parking in the Downtown area against which transit then competes. Transit funding is not seriously considered as a way to provide mobility along congested travel corridors. There are significant fiscal, neighborhood, and environmental impacts when those corridors are widened. The long term strategy to enhance mobility though a wide range of alternative transportation modes requires long term funding commitments for StarTran. The TDP reviews potential funding sources and alternatives that help support and increase StarTran's stability and viability during the planning period and beyond. The TDP also explores organizational options, state enabling legislation, and state funding policies.

Parking in the Downtown Area

Downtown Lincoln will continue as the largest commercial district within the city and county. As both new construction and reuse of existing structures occurs, the demand for parking services will remain strong. These parking services will be needed to support office workers, students, residents, and entertainment goers. Parking planning and management will include:

- New parking facilities are programmed in the near term for the eastern vicinity of Downtown.
- The Antelope Valley Project will alter the long term land use and traffic patterns in the Downtown area. The provision of parking and other transportation services in and around Downtown will need to be considered as this redevelopment project moves forward.
- Pending further study on its future, the Pershing Auditorium complex could require the expansion of parking in its current location Downtown. If a new auditorium or arena is called for, further study would be needed to identify appropriate parking supplies.
- Comprehensive and subarea studies will need to be completed on a periodic basis to determine the need for additional parking or managing existing parking as new employment, residential, and entertainment centers arise.

Strategies: Parking in the Downtown Area

- Employ management techniques to promote the efficient use of parking facilities in the Downtown – by promoting parking facilities, monitoring occupancy levels and market-structured parking fees to offset high and low demand areas, evaluate and revise current validation and discount parking programs, and conduct periodic parking studies to evaluate parking conditions.
- Consider a comprehensive approach to managing and maintaining Downtown parking by encompassing management of off-street, on-street, enforcement, and collections of all parking activities.

Future Street and Road Network

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. In addition, much of the area's freight movement occurs on local streets and highways; StarTran buses use local streets to transport their patrons around the City; and bicyclists often utilize the street system for their travel.

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. However, evaluation, consideration and planning needs to be undertaken to promote and accommodate other alternative modes of transportation.

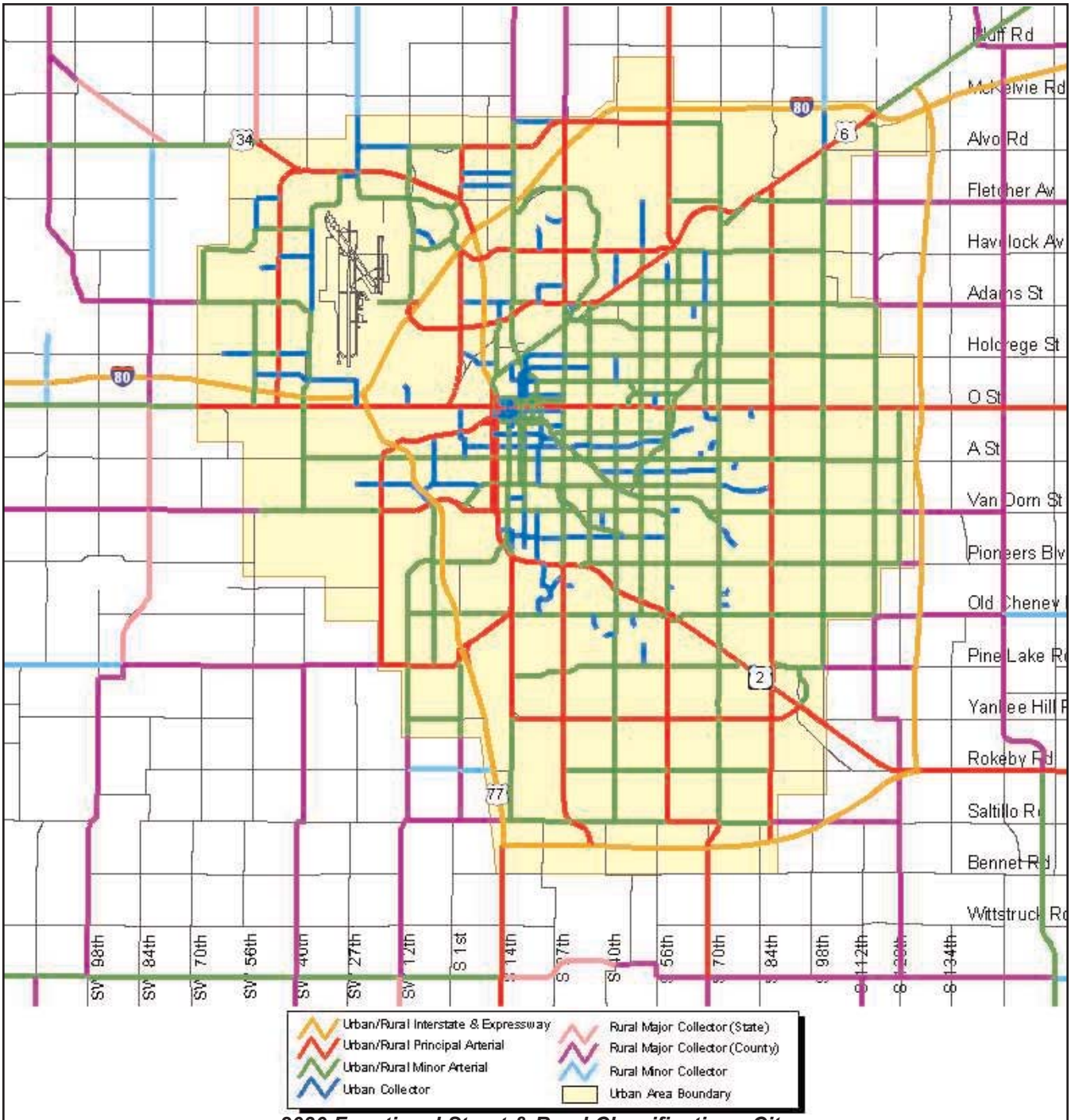
This subsection examines the future streets and highway system designed to serve the future community form of the City of Lincoln and Lancaster County as presented in this Comprehensive Plan. This subsection describes the future roadway projects, studies, and programs forming the Plan's transportation element in terms of:

- Functional Classification
- Urban Area Street System
- County Rural Road System

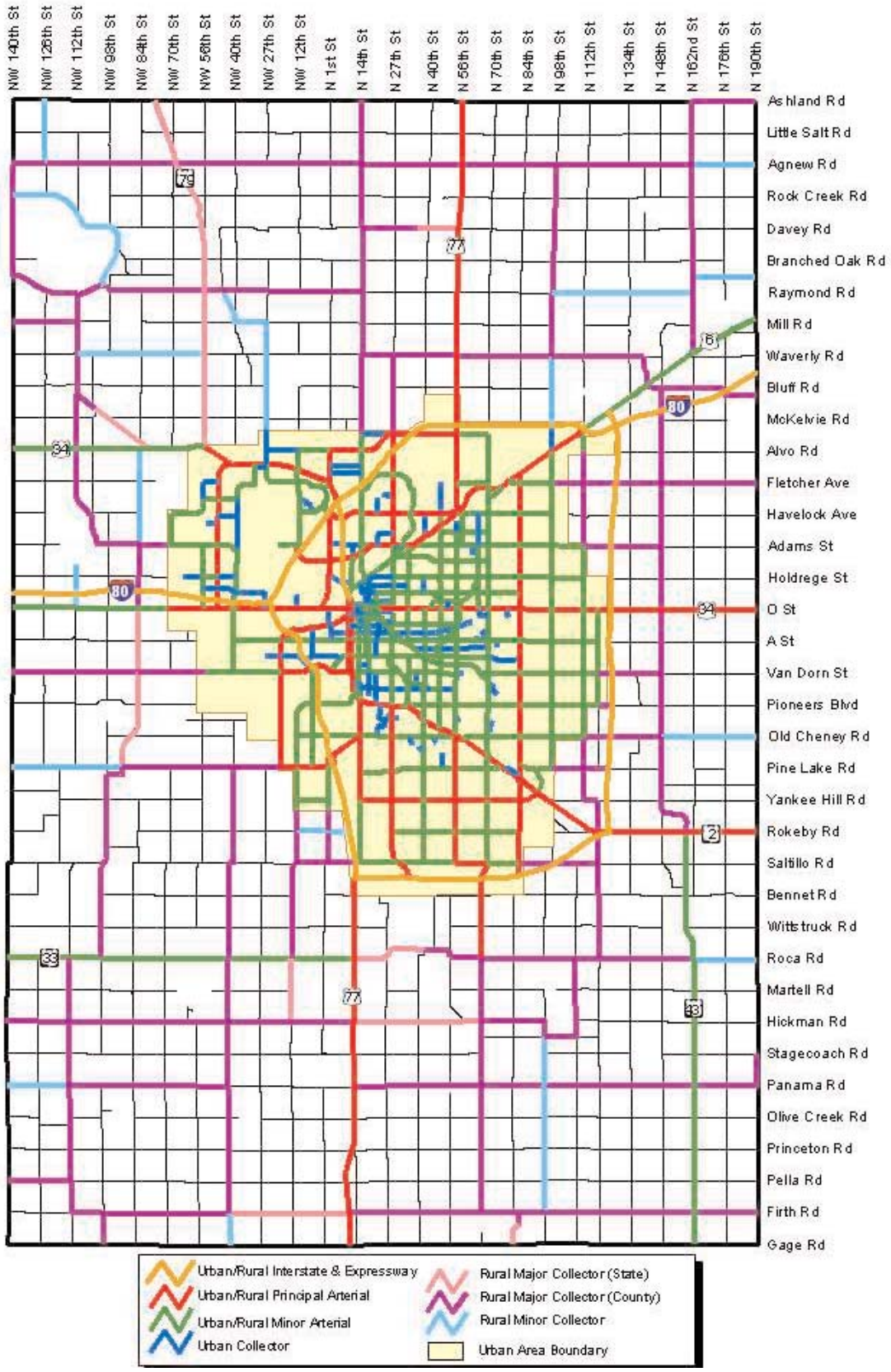
Functional Classification

Roadways are classified based on the function they serve. All roadways fall under one of four broad categories: principal arterial, minor arterial, collectors or local streets.

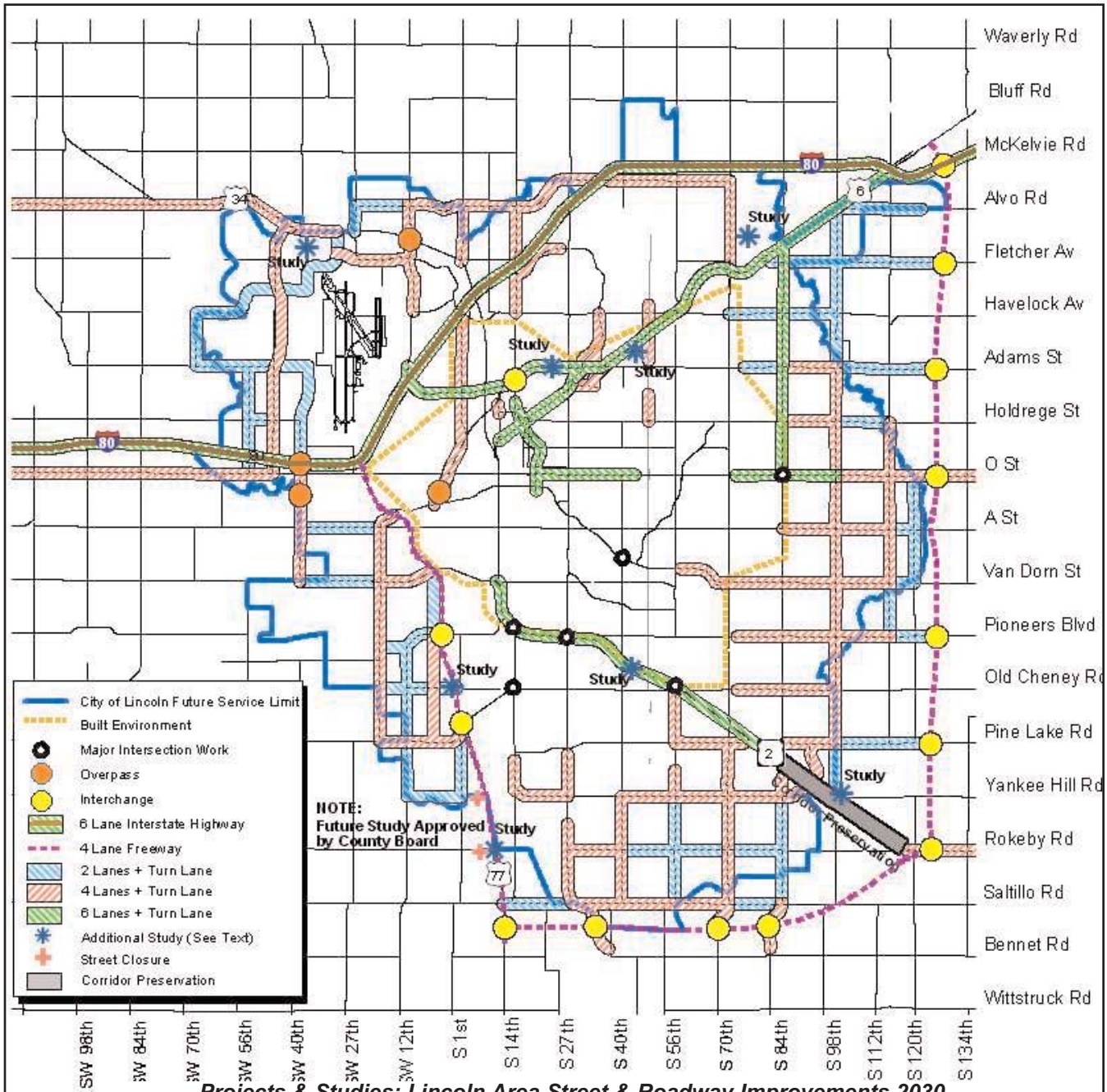
"Arterials" are multiple use corridors that carry large volumes of through traffic. "Collectors" equally serve to carry traffic but also provide access to neighborhoods and abutting properties. "Local" streets primarily provide access to abutting properties. Each classification performs an important function in making the transportation system work effectively. The fol-



2030 Functional Street & Road Classification - City



2030 Functional Street & Road Classification - County



Projects & Studies: Lincoln Area Street & Roadway Improvements 2030

lowing describes the functions of the various street classifications used in the Lincoln-Lancaster County transportation planning area:

A. Principal Arterial: This functional class of street serves the major portion of through-traffic entering and leaving the urban area and is designed to carry the highest traffic volumes. These serve intra-area traffic such as between the downtown and outlying residential areas or traffic between major inner-city communities or suburban centers. Managing and controlling access to these types of roadways is very important. This access must respect and reflect the land uses and development context adjacent to each principal arterial. For example, managing and controlling access to and from a roadway in the "built environment" differs from that in developing locations, because of the varying character of these areas. The principal arterial system is stratified into the following two subsystems:

- Interstate Highway, Freeway and Expressway: These are divided, limited access facilities with no direct land

access. The freeway does not have at-grade crossings or intersections. The expressway is similar to a freeway except it may have some cross streets that intersect at grade and access is either full or partially controlled. Both the freeway and expressway are intended to provide the highest degree of mobility serving potentially large traffic volumes and long trip lengths.

- Other Principal Arterial: This functional class of street serves the major portion of inter-community and intra-community traffic movement within the urban area and is designed to carry high traffic volumes. Facilities within this classification are capable of providing direct access to adjacent land but such access is incidental to the primary functional responsibility of moving traffic within the system.

B. Minor Arterial: This functional class serves trips of moderate length and offers a lower level of mobility than principal arterial. This class interconnects with and augments principal arterials, distributes traffic to smaller areas, and contains streets that place some emphasis on land access. These are characterized by moderate to heavy traffic volumes.

C. Collector Streets: These streets serve as a link between local streets and the arterial system. Collectors provide both access and traffic circulation within residential, commercial, and industrial areas. Collector streets also provide more direct routes through neighborhoods for use by transit, pedestrians and cyclists. Moderate to low traffic volumes are characteristic of these streets. There should be one north/south and one east/west continuous, but not straight, collector street within a developing square mile.

D. Local Streets: These are composed of all lower order facilities that essentially serve as a conduit between abutting properties and higher order streets. Local streets provide the lowest level of mobility and generally exhibit the lowest traffic volumes.

Urban Area Street System

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 presented within the following elements:

- Federal and State Improvements
- South and East Beltway
- Antelope Valley Roadway Project
- "Two Plus Center Turn Lane" Program
- Additional Urban Area System Improvements
- Proposed Studies
- Highway 2 Corridor Preservation
- Right of Way Consideration

Federal and State Improvements

During the planning period, improvements are planned for Interstate 80 and many of the existing Nebraska State Highways in Lincoln and Lancaster County. These improvements can generally be categorized as the widening of roadways or construction of interchanges. All of the projects listed below are considered to have funds committed for design and construction during the 25 year planning period:

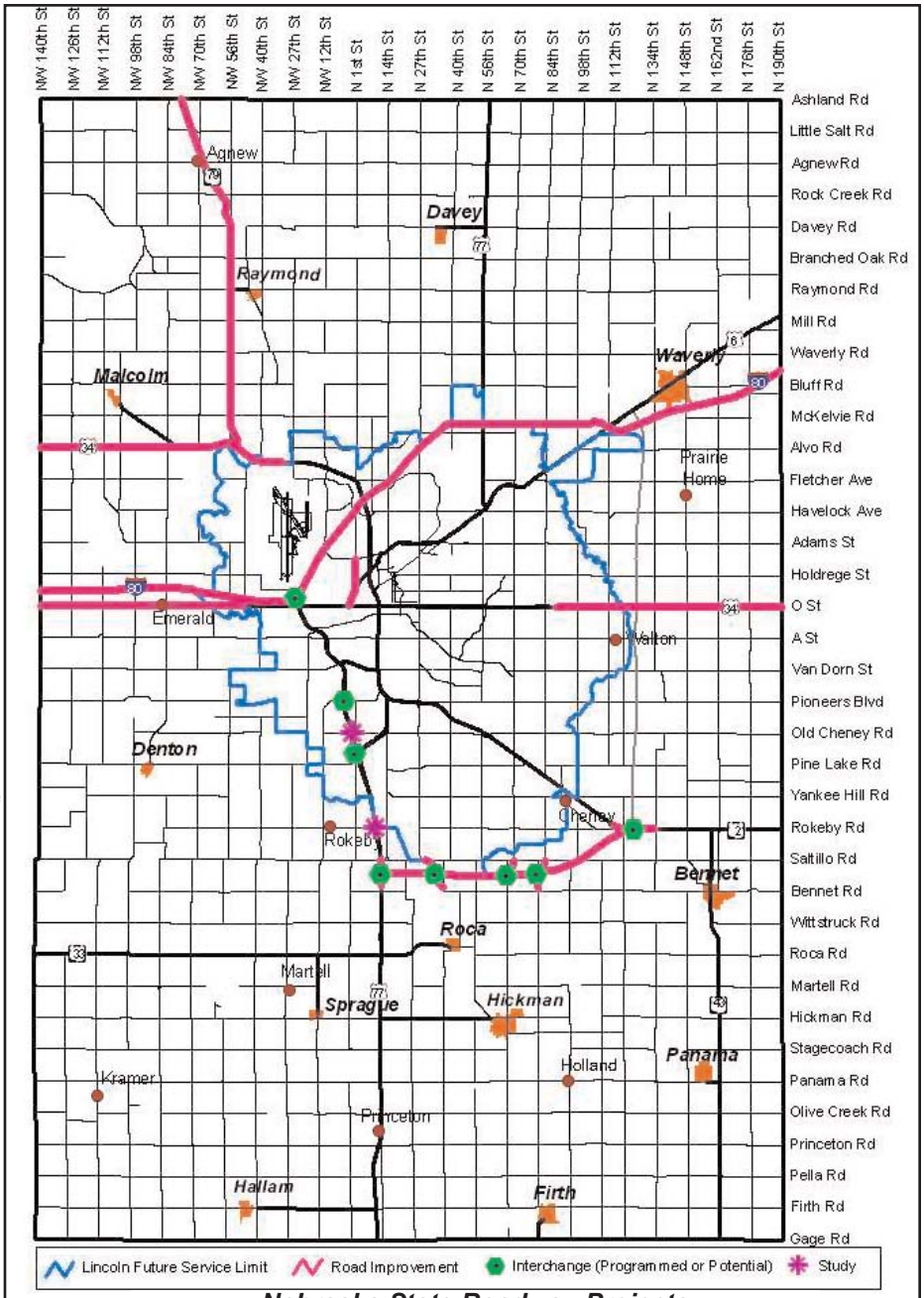
Interstate Highway 80, between east and west county lines	6 lanes
US-34 East, 84th Street to east county line	4 lanes + turn lanes
US-34 West, west city limits to west county line	4 lanes + turn lanes
US-6 West, west city limits to west county line	4 lanes + turn lanes

US-6 (Sun Valley Boulevard), "O" Street to Cornhusker Highway	4 lanes + turn lanes
US-77 and Warlick Boulevard Intersection	Interchange
US-77 and West Pioneers Boulevard Intersection	Interchange
South Beltway, US-77 South to Nebraska Highway 2	4 lanes
US-79, US-34 to County Line	Paving Improvements

The Interstate 80 project is part of the Nebraska Department of Roads' intent to ultimately widen this facility to six lanes from Omaha on the east to Grand Island on the west. This widening will include reconstructing several interchanges and overpasses as the Interstate passes through Lancaster County. This project could also involve the relocation of certain interchanges and the possible elimination of existing overpasses.

The Nebraska Department of Roads has completed study of portions of US-77 as it passes through Lincoln. This study gave consideration to upgrading the facility to freeway status from its present classification as an expressway from I-80 to the South Beltway. This upgrade will require eliminating existing at-grade intersections. These intersections could be replaced with interchanges, overpasses or the road connection could be eliminated altogether with no crossing provided. As part of the US-77/West Beltway project, study for potential overpasses at US-77 and Old Cheney Road and Rokeby Road will be conducted as a joint State/County/City feasibility study, including a traffic analysis, a citizen participation element, and an appropriate environmental review. The study will be started no later than one year prior to the contract letting of the US-77 (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.

As part of the implementation of this project to upgrade US-77 to freeway status the needs of pedestrians and bicyclists will be addressed. It was affirmed during the study process that the proposed pedestrian and bicycle crossing points at the planned



Nebraska State Roadway Projects

Pioneers Boulevard interchange and at the abandoned railroad right-of-way south of the planned Warlick interchange would be provided. The existing US-77 bridge structures over the abandoned railroad right-of-way are intended to remain and be used to separate US-77 traffic from pedestrians and bicyclists, and the design of the new Pioneers interchange is to contain a multi-use trail facility. An extensive system of trail facilities is planned within this area extending along both the east and west side of the US-77 corridor. The US-77 trail connections will allow pedestrians and bicycle movement between the new growth area to the west and the existing urban area and the Wilderness Park Trails system to the east of US-77. Also, the City, County, and State will work together to resolve bicycle access issues that will result from the upgrading of this segment of US-77 to freeway status. The City, County, and State will collectively work together to provide a comparable alternative for cyclists.

South and East Beltway

The South and East Beltway are essential components of a regional transportation network. They will aid in moving car and truck traffic around and through congested urban areas, thus reducing travel delays and improving traffic flows across the entire street system. Protecting the beltway corridors, acquiring the right-of-way, and obtaining funding has begun for these routes.

In addition to their four lanes of freeway, the beltway corridors are assumed to be multi-use areas incorporating the following features:

a. trails and pedestrian facilities
b. open spaces, including linear green ways, parks and natural areas
c. utility corridors
d. potential routes for alternative transportation modes

Proposed Beltway Interchange Locations

South Beltway
- US-77
- 27th Street
- 70th Street
- 84th Street
- Nebraska Highway 2

East Beltway
- Interstate 80
- Fletcher Avenue
- Adams Street
- "O" Street
- Pioneers Boulevard
- Pine Lake Road
- Nebraska Highway 2

Their ultimate development as city-county multi-use corridors will require significant advance planning and coordination among many agencies. The planning and financing of the roadway and the other activities should be done concurrently. Maintaining open space along the corridors is in keeping with the Comprehensive Plan's Vision and serves as one way to address the impact the Beltway will have on the natural environment. The planning for these corridors should also consider their future role in bringing about the Salt Valley Heritage Greenway.

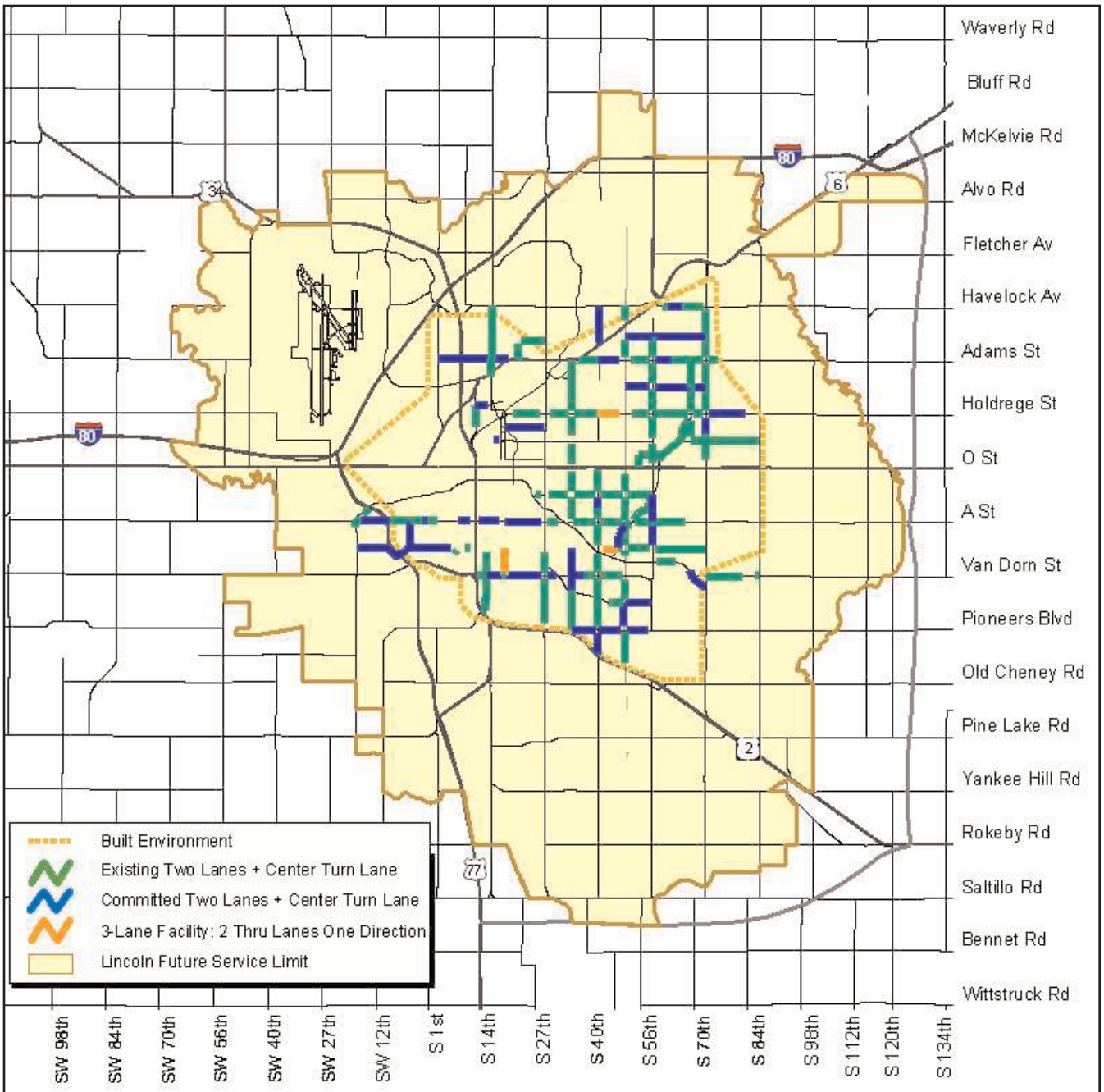
A beltway corridor of approximately 1,320 feet in width is assumed in this Plan. While this area is more than is ultimately needed (or obtained) for the project, this planning assumption will allow greater flexibility in the facility's final design. This will also allow the multi-use corridors outside of the roadway to vary in width, with the final design of the roadway corridor being approximately 300 feet wide. During the design phase, every effort should be made to reduce the impact on adjacent residences and other sensitive uses where and whenever possible.

Of the two beltway alignments, the South Beltway must be built first, with construction coming within the first half of the planning period. The South Beltway is considered a committed City project. Planning and programming for the East Beltway should continue, with studies completed in the Stevens Creek Basin to address preservation of salient natural, cultural, and historic features, and the sensitive integration of these features into the basin. In the interim, corridor protection efforts for the South and East Beltway multi-use corridors should be initiated. Plans and funding for the open space, trails, and other components of the South and East Beltway multi-use corridors should be established as soon as possible.

Antelope Valley Roadway Project

The Antelope Valley Roadway Project involves a partnership of the City of Lincoln, the Lower Platte South Natural Resource District and the University of Nebraska-Lincoln. Initiated in the early 1990's, this effort was designed to address the concerns of traffic/pedestrian circulation, community revitalization needs, and storm water drainage and flood control associated with a portion of the Antelope Creek drainage basin.

The Antelope Valley Roadway project envisions a multi-lane (four to six lanes) boulevard with turn lanes and a landscaped



"Two Plus Center Turn Lane" Plan

center median. When complete, the first phase of implementation will include community revitalization elements, construction of the north/south roadway from approximately N. 14th Street and Salt Creek south to K Street, construction of the east-west diagonal road from the 9th/10th Street connection to a point east of 27th Street, and construction of the storm water and flood control elements. The overpass for the Burlington Northern-Santa Fe railroad tracks will be constructed to carry six lanes of through traffic, dual left turns and one right turn lane. Phase 1 of the "Draft Single Package" is under construction and is considered a committed City project.

Implementation of the Antelope Valley Roadway project will be conducted through the Joint Antelope Valley Authority (JAVA), which includes representatives from all three of the study's original participants listed above.

"Two Plus Center Turn Lane" Program

As the community seeks low impact ways to minimize traffic congestion while preserving the character and viability of the established neighborhoods and other components of the built environment, it renews its commitment to an essential program implementing the "two plus center turn lane" concept in the " built environment."

Under this concept, designated arterial streets in the "built environment" are to be 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. The Comprehensive Plan recognizes though that occasionally 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 may vary depending on the particular neighborhood circumstance.

This program is considered a priority and is assumed to be fully in place well before the end of the planning period.

Additional Urban Area System Improvements

In addition to those projects described above, numerous other streets and roadway projects are identified for construction or programming during the 25 year planning period.

These projects will generally be the responsibility of the City of Lincoln, although participation from other governmental entities will occur.

These include a wide range of projects for which the City has already committed funds, as well as longer term projects that do not have specifically earmarked funding.

Committed Projects

Pioneers Boulevard., S. 70th Street to S. 84th Street	4 lanes + turn lanes
Antelope Valley Phase I Projects	
Antelope Valley P1, Big "T" Overpass, includes West Leg	6 lanes + turn lanes
Antelope Valley P1, North/South Roadway,"Y" St. to Vine Street	6 lanes + turn lanes
Antelope Valley P1, North/South Roadway, "Q" Street to "K" Street	6 lanes + turn lanes
Antelope Valley P1, East Leg, Overpass to west of N. 27th Street	6 lanes + turn lanes
Antelope Valley P1, North/South Roadway, Vine Street. to "Q" Street	4/6 lanes + turn lanes
Antelope Valley P1, "P", "Q", "O", "N", "J" and South Street	Bridges

Proposed Projects

W. Adams Street, NW. 70th Street to NW 48th Street	2 lanes + turn lanes
W. Adams Street, NW. 48th Street to NW 38th Street	2 lanes + turn lanes
Adams Street, N. 75th Street to N. 84th Street	2 lanes + turn lanes
Adams Street, N. 84th Street to N. 98th Street	4 lanes + turn lanes
Adams Street, N. 98th Street to East Beltway	2 lanes + turn lanes
Arbor Road, N. 27th Street to N. 70th Street	4 lanes + turn lanes
Alvo/Arbor, N. 14th Street to N. 27th Street	4 lanes + turn lanes
W. Alvo Road, NW 27th Street to NW 12th Street	2 lanes + turn lanes
W. Alvo Road, NW 12th Street to N. 1st Street	4 lanes + turn lanes
Alvo Road, N. 1st Street to N. 7th Street	4 lanes + turn lanes

Alvo Road, N. 7th Street to N. 14th Street	4 lanes + turn lanes
Alvo Road, N. 98th Street to 1/4 mile east of N. 120th	2 lanes + turn lanes
Antelope Valley P2, Adams Street, 35th St. area over 33rd to Huntington Ave.	AV 4 lanes + turn lanes
Antelope Valley P2, Ant.Valley Rdwy, N/O Corn. Hwy. to Superior, Salt Creek.Bridge	AV Bridge
Antelope Valley P2, Huntington Ave., P1 connection to N. 33rd Street	AV 4 lanes + turn lanes
Antelope Valley P2, Hunt. Ave., P1 connection to N. 33rd St., RR Rdwy Underpass	Underpass
Antelope Valley P2, P1 East Leg Project End to N/O US-6 (Corn. Hwy)	AV 6 lanes + turn lanes
Antelope Valley P2, P1 N/O US- 6 (Corn. Hwy) to Superior Street	AV 4 lanes + turn lanes
Antelope Valley P2,N. 33rd St. US-6 to Huntington Ave. RR Rdwy Underpass	Underpass
W. "A" Street, SW. 40th Street to Coddington Avenue	2 lanes + turn lanes
"A" Street, S. 112th Street to S. 120th Street	2 lanes + turn lanes
"A" Street, S. 84th Street to S. 112th Street	4 lanes + turn lanes
S. Coddington Avenue, US.-77 to Denton Road	4 lanes + turn lanes
US-6 (Corn. Hwy), I-80 Exit 399 to I-80 Exit 409	6 lanes + turn lanes
W. Cummings Street, NW 56th Street to NW 48th Street	2 lanes + turn lanes
W. Cummings Street, NW 48th Street to NW 38th Street	2 lanes + turn lanes
W. Denton Road, Coddington Avenue to Folsom Street	4 lanes + turn lanes
Denton Road, S. Folsom Street to US-77	4 lanes + turn lanes
East Beltway, I-80 to Hwy-2, " Corridor Protection"	Freeway Corr. Protection
East Beltway, I-80 to Hwy-2	Freeway
W. Fletcher Avenue, NW 31st Street to NW 27th Street	4 lanes + turn lanes
W. Fletcher Avenue, NW 27th Street to NW 13th Street	additional 2 lanes
Fletcher Avenue, N. 14th Street to Tellride Drive	4 lanes + turn lanes
Fletcher Avenue, US-6 to N. 84th Street	2 lanes + turn lanes
Fletcher Avenue, N. 84th Street to East Beltway	2 lanes + turn lanes
S. Folsom Street, Pioneers Boulevard to Denton Road	4 lanes + turn lanes
S. Folsom Street, W. Van Dorn Street to Pioneers Boulevard	2 lanes + turn lanes
Havelock Avenue, N. 70th Street to N. 84th Street	2 lanes + turn lanes
Havelock Avenue, N. 84th Street to N. 98th Street	2 lanes + turn lanes
Hwy-2, S 84th Street to East Beltway, "Corridor Preservation"	Corridor Preservation
Hwy-2, Old Cheney Road to S. 84th Street	6 lanes + turn lanes
Hwy-2, Van Dorn Street to Old Cheney Road	6 lanes + turn lanes
W. Holdrege Street, NW 56th Street to NW 48th Street	2 lanes + turn lanes
Holdrege Street, N. 86th Street to N. 98th Street	4 lanes + turn lanes
Holdrege Street, N. 98th Street to N. 112th Street	2 lanes + turn lanes
Normal Boulevard, S. 58th Street to Van Dorn Street	4 lanes + turn lanes
US-34 ("O" St.), Antelope Valley N/S Rdwy. (19th St.) to 46th Street	6 lanes + turn lanes
US-34 ("O" St), Wedgewood Drive to 98th Street	6 lanes + turn lanes
W. Old Cheney Road, Coddington Avenue to SW 12th Street	2 lanes + turn lanes
W. Old Cheney Road, SW 12th Street to US-77	2 lanes + turn lanes
Old Cheney Road, Parkridge Circle to S. 82nd Street	4 lanes + turn lanes
Old Cheney Road, S. 88th Street to S. 98th Street	4 lanes + turn lanes
Pine Lake Road, S. 57th Street to Hwy-2	4 lanes + turn lanes
Pine Lake Road, S. 84th Street to S. 91st Street	4 lanes + turn lanes
Pine Lake Road, S. 91st Street to S. 98th Street	4 lanes + turn lanes
Pine Lake Road, S. 98th Street to East Beltway	2 lanes + turn lanes
W. Pioneers Boulevard, Coddington Avenue to SW 12th Street	2 lanes + turn lanes
W. Pioneers Boulevard, SW 12th Street to US-77	2 lanes + turn lanes
Pioneers Boulevard, S. 86th Street to S. 98th Street	4 lanes + turn lanes

Pioneers Boulevard, S. 98th Street to S. 112th Street	4 lanes + turn lanes
Pioneers Boulevard, S. 112th Street to East Beltway	2 lanes + turn lanes
Rokeby Road, S. 27th Street to S. 40th Street	4 lanes + turn lanes
Rokeby Road, S. 40th Street to S. 56th Street	2 lanes + turn lanes
Rokeby Road, S. 56th Street to S. 84th Street	2 lanes + turn lanes
Saltillo Road, US-77 to S. 27th Street	2 lanes + turn lanes
Saltillo Road, S. 27th Street to S. 40th Street	4 lanes + turn lanes
Saltillo Road, S. 40th Street to S. 56th Street	4 lanes + turn lanes
Saltillo Road, S. 56th Street to S. 70th Street	4 lanes + turn lanes
Saltillo Road, S. 70th Street to S. 84th Street	2 lanes + turn lanes
South Beltway, US-77 to Hwy-2	Freeway
US-6 (Sun Valley Blvd.), Corn. Hwy (US-6) to W "O" St.(US-6), including R.R Overpass	4 lanes + turn lanes
Sun Valley Blvd. Extension, US-6 to Capital Parkway West , including Overpass	4 lanes + turn lanes
W. Superior Street, NW 70th Street to NW 56th Street	2 lanes + turn lanes
W. Van Dorn Street, SW 40th Street to Coddington Avenue	2 lanes + turn lanes
W. Van Dorn Street, Coddington Avenue to US-77	4 lanes + turn lanes
Van Dorn Street, Normal Boulevard to S. 84th Street	4 lanes + turn lanes
Van Dorn Street, S. 84th Street to S. 112th Street	4 lanes + turn lanes
Van Dorn Street, S. 112th Street to S. 120th Street	2 lanes + turn lanes
W. Webster Street, NW 38th Street to NW 31st Street	2 lanes + turn lanes
W. Yankee Hill Road, SW 12th Street to S. 1st Street	2 lanes + turn lanes
Yankee Hill Road, S. 14th Street to S. 27th Street	additional 2 lanes
Yankee Hill Road, S. 40th Street to S. 56th Street	4 lanes + turn lanes
Yankee Hill Road, S. 56th Street to S. 70th Street	4 lanes + turn lanes
Yankee Hill Road, S. 70th Street to S. 84th Street	4 lanes + turn lanes
Yankee Hill Road, S. 84th Street to Hwy-2	4 lanes + turn lanes
NW 70th Street, W. Superior Street to W. Adams Street	2 lanes + turn lanes
NW 56th Street, W. Adams Street to W. "O" Street	2 lanes + turn lanes
NW. 56th Street, W. Cummings Street to W. Superior Street	2 lanes + turn lanes
NW 48th Street, US-34 to US-6	4 lanes + turn lanes
NW 40th Street, W. Holdrege Street to W. Vine Street	2 lanes + turn lanes
NW 40th Street, W. Vine Street to US-6, including I-80 Overpass	Overpass
SW 40th Street, US-6 to W. "A" St, Railroad Overpass & Middle Crk Bridge	Overpass
SW 40th Street, US-6 to W. "A" Street	4 lanes + turn lanes
SW 40th Street, W. "A" Street to W. Van Dorn Street	4 lanes + turn lanes
NW 38th Street, W. Cummings Street to W. Webster Street	2 lanes + turn lanes
NW 38th Street, W. Adams Street to W. Holdrege Street	2 lanes + turn lanes
NW 31st Street, W. Webster Street to US-34	2 lanes + turn lanes
NW 12th Street, W. Alvo Road to Fletcher Avenue	4 lanes + turn lanes
NW 12th Street, W. Alvo Road to Fletcher Ave., US-34 Overpass	Overpass
NW 12th Street, W. Fletcher Avenue to Highlands Boulevard	additional 2 lanes
SW 12th Street, W. Pioneers Blvd. to Yankee Hill Road	2 lanes + turn lanes
N. 1st Street, Alvo Road to US-34	4 lanes + turn lanes
N. 1st Street, Benton Street to W. Dawes Avenue	4 lanes + turn lanes
N. 1st Street, Superior Street to Benton Street	4 lanes + turn lanes
S. 1st Street, Denton Road to Yankee Hill Road	2 lanes + turn lanes
N. 10th Street, US-6 to Military Road, including Salt Creek Bridge	4 lanes + turn lanes
N. 14th Street, Alvo Road to Fletcher Avenue	4 lanes + turn lanes
N. 14th Street, Fletcher Avenue to Superior Street	4 lanes + turn lanes

N. 14th Street and US-6, Interchange	Interchange
S. 14th Street, Garrett Lane to Yankee Hill Road	additional 2 lanes
S. 27th Street, Porter Ridge to Yankee Hill Road	4 lanes + turn lanes
S. 27th Street, Whispering Wind Boulevard to Rokeby Road	4 lanes + turn lanes
S. 27th Street, Rokeby Road to Saltillo Road	4 lanes + turn lanes
S. 40th Street, Yankee Hill Road to Saltillo Road	4 lanes + turn lanes
N. 48th Street, Doris Bair Circle to Superior Street	4 lanes + turn lanes
N. 48th Street, Superior Street to Fremont Street	4 lanes + turn lanes
N. 48th Street, Fremont Street to Greenwood Street (*)	4 lanes + turn lanes
N. 48th Street, Leighton Avenue to Holdrege Street	4 lanes + turn lanes
S. 56th Street, Old Cheney Road to Shadow Pine Drive	4 lanes + turn lanes
S. 56th Street, Thompson Creek Boulevard. to Yankee Hill Road	4 lanes + turn lanes
S. 56th Street, Yankee Hill Road to Saltillo Road	2 lanes + turn lanes
N. 70th Street, Arbor Road to US-6	4 lanes + turn lanes
S. 70th Street, Pine Lake Road to Yankee Hill Road	4 lanes + turn lanes
S. 70th Street, Yankee Hill Road to Saltillo Road	4 lanes + turn lanes
N. 84th Street, US-6 to US-34	6 lanes + turn lanes
S. 84th Street, Amber Hill Road to Yankee Hill Road	4 lanes + turn lanes
S. 84th Street, Yankee Hill Road to Saltillo Road	2 lanes + turn lanes
S. 91st Street, Pine Lake Road to Hwy-2	additional 2 lanes
N. 98th Street, US-6 to Fletcher Avenue	2 lanes + turn lanes
N. 98th Street, Fletcher Avenue to Adam Street	2 lanes + turn lanes
N. 98th Street, Adam Street to Holdrege Street	4 lanes + turn lanes
N. 98th Street, Holdrege Street to US-34	4 lanes + turn lanes
S. 98th Street, US-34 to "A" Street	4 lanes + turn lanes
S. 98th Street, "A" Street to Pioneers Boulevard	4 lanes + turn lanes
S. 98th Street, Pioneers Boulevard to Pine Lake Road	4 lanes + turn lanes
S. 98th Street, Pine Lake Road to Nebraska Highway 2	2 lanes + turn lanes
N. 112th Street, Holdrege Street to US-34	4 lanes + turn lanes
S. 112th Street, US-34 to Van Dorn Street	4 lanes + turn lanes
S. 112th Street, Van Dorn Street to Pioneers Boulevard	2 lanes + turn lanes
S. 120th Street, US-34 to Van Dorn Street	2 lanes + turn lanes
S. 14th Street and Hwy-2	Major Intersection Work
S. 14th Street / Warlick Boulevard / Old Cheney Road	Major Intersection Work
S. 27th Street and Hwy-2	Major Intersection Work
S. 40th Street / Normal Boulevard / South Street	Major Intersection Work
S. 56th Street / Hwy-2 / Old Cheney Road	Major Intersection Work
84th Street and US-34	Major Intersection Work

*The Planning Commission notes that there is existing housing on both sides of 48th Street and regrets the negative effect that this widening may have, but concludes that this relatively short segment needs to be widened since there are 4 lanes both north and south of this segment.

Proposed Studies

The following areas are designated for study to determine if any facility improvements or road closings will be planned for these locations:

- North 44th at BNSF RR
- Beltway and Fringe Arterial - Explore options for promoting the maximum utilization by local traffic of the west,

south, and east Beltway, Interstate 80, and major urban fringe arterial in order to minimize the impact of future traffic growth on existing interior roadways within the built environment.

- North 70th to North 84th Streets and Havelock Ave. to Bluff Road Area Study.
- Highway 2 Corridor Study from 9th Street to 84th Street, including grade separations.
- Cornhusker Highway Corridor Study from I-80 Exit 399 to I-80 Exit 409, including grade separations.
- 98th Street and Highway 2 Area Study, including grade separation.
- A study that encompasses the general area bounded by NW 48th Street and NW 27th Street, West Webster to US-34. The study is to include north/south and east/west roadway needs and alignments, including the West Fletcher corridor and US-34 access considerations.
- As part of the US-77/West Beltway freeway project, study for 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.)

Nebraska Highway 2 Corridor Preservation

Nebraska Highway 2 is a major existing link on the urban street network. This diagonal roadway carries significant traffic volumes today and is projected to remain as the busiest thoroughfare along the city's southern tier. As an existing State Highway, the public right-of-way along this corridor as it runs through Lincoln varies widely — from 150 to 350 feet in width. The Long Range Transportation Plan calls for widening Nebraska Highway 2 from four to six through lanes from Van Dorn Street on the west, through the intersection of 84th Street on the east.

The Plan calls for looking at the feasibility of installing grade separations along Highway 2 at existing at-grade intersections. As traffic volumes continue to increase along the corridor, intersection operations will continue to degrade. In order to maintain safety and efficiency, grade separations may become necessary.

Conflicts currently exist between local commuter traffic and highway truck traffic. The South Beltway, when completed, will become Highway 2 and will be the official truck route. Existing Highway 2 will become a City/County street. When the South Beltway is opened, policies should be implemented to deter through truck traffic.

Though no projects are shown in the Plan for the area, the existing corridor along Nebraska Highway 2 from 84th Street through the location of the future South and East Beltway interchange on Highway 2 should be protected and preserved. The roadway within this corridor could be further improved or the corridor could serve as a multi-modal or multi-use area in the future.

Corridor preservation should include retention of all property within the State's present right-of- way, denial of any additional access points to the roadway, elimination of existing access points should such opportunities arise, and the acquisition of additional right-of-way should it become available.

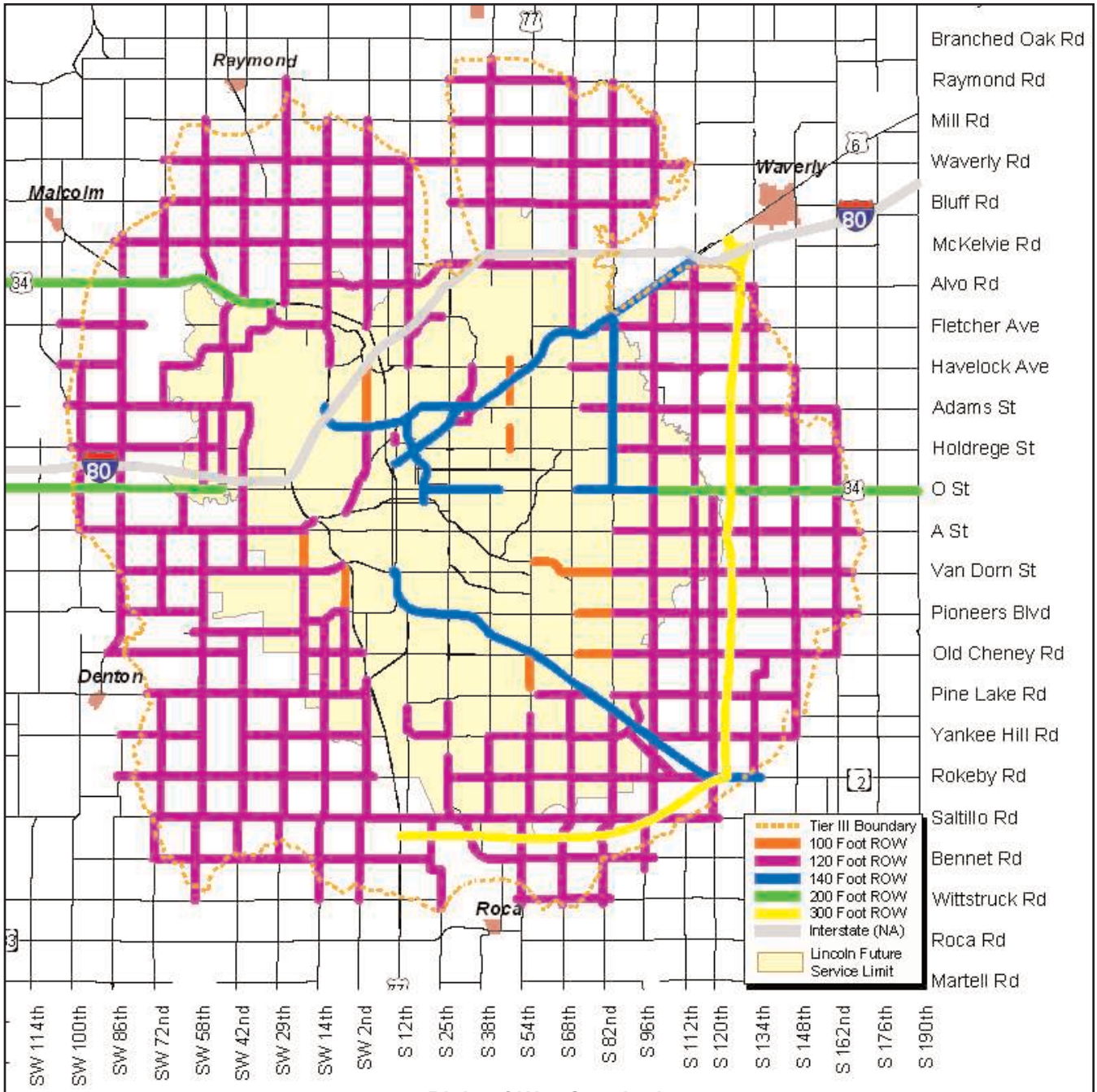
Right-Of-Way Consideration

Right-of-Way (ROW) widths for projects on the Year 2030 Street and Highway Improvements Plan are displayed on the Right-of-Way Standards Map.

Projects occurring at the intersection of two arterial streets or at locations where right turn lanes are required will warrant the further dedication 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 right-of-way at the location.

Within Lincoln's future growth Tiers I, II and III, a public right-of-way (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.



Right-of-Way Standards

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 then the corridor should be expanded by six (6) additional feet on the side where the trail will be located. This additional right-of-way should be obtained in advance of development.

Within the "built environment" area of the city, 66 feet of rights-of-way are typical. This is normally adequate for a two lane or a two plus center turn lane street design, which is typically 33 feet wide (back of curb to back of curb). Where impacts from even minor widening would be significant, 31 feet (back of curb to back of curb) is an acceptable width.

County Rural Road System

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 extreme impacts from the more dense development (close to the City) to those roads experiencing slow to moderate growth (generally outside the three mile limit). These impacts and the resulting improvements vary from simply grading and graveling a road to a 4-lane facility.

Road improvements for the County are triggered based upon daily traffic volumes with the amount of traffic dictating the type and degree of improvement necessary.

The first level of traffic volume is in the range of 300 vehicles per day. At this level, the County acquires a minimum of 100 feet of right of way, with additional ROW acquisition standards applying as appropriate. Once the ROW is acquired, the County then grades and installs new drainage structures. The process of grading and graveling provides a road profile that is safer and wider. This profile can accommodate the next level of improvement, which would be pavement, provided the traffic counts continue to increase to the second level.

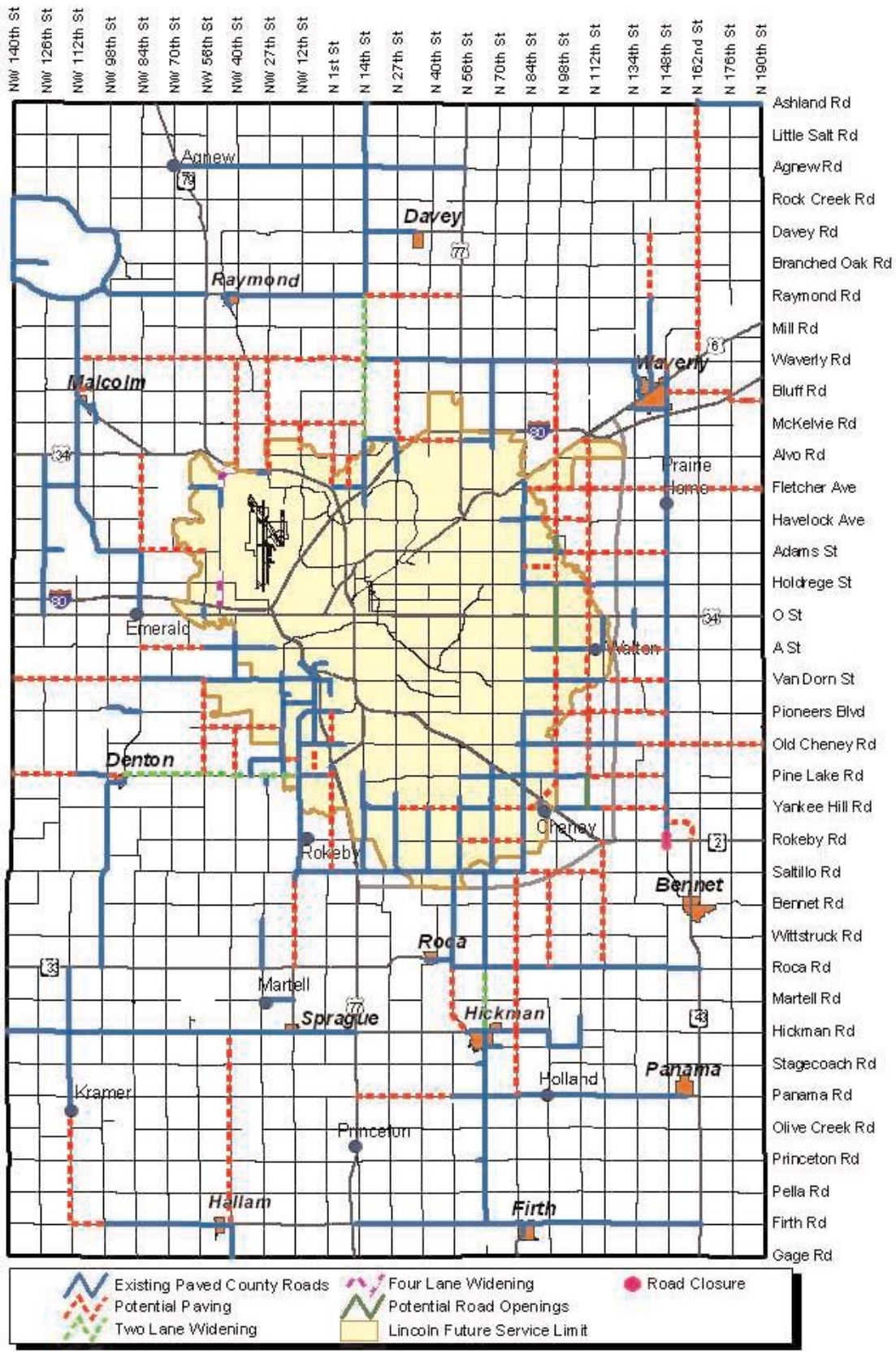
The acquisition of the required right-of-way will also preserve the future corridors for the larger and more expansive street improvements that will come with the growth of Lincoln. The second level of improvement, which is pavement, is triggered at a traffic volume level of about 400 vehicles per day. This second level should remain as an effective transportation facility, with the exception of routine maintenance and pavement overlays, until the traffic volumes reach the level of 6,000 vehicles per day. This final level would be the target for looking at the need to install a four-lane divided facility.

The County Road Plan indicates some "road widenings" for those existing two lane paved roads that are no longer adequate for today's traffic volumes. The County's road improvement plan also includes new railroad viaduct planned near Hickman to address increasing competition at rail crossings from both rail and vehicular traffic. New roadway openings included in this Plan 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, "O" Street to Holdrege Street
- 98th Street, Adams Street to Fremont Street
- 112th Street, Pine Lake Road to Yankee Hill Road

This brief explanation of County road improvements and the different levels of traffic volumes that trigger those improvements is an attempt to show that, generally, there exists a fairly orderly approach to project planning, programming and completion of the appropriate improvement.

This methodical approach does, however, become threatened when development precedes the improvements and becomes the controller of priorities and the limited fiscal resources available for road improvements. New development should



Future Road Improvements in County

locate along those facilities that have already received improvements capable of supporting such development. The Future County Road Improvements Plan shows county roads which are candidates for paving in the future.

A new program adopted in 2006 is the Rural-to-Urban Transition for Streets (RUTS). Lancaster County and the City of Lincoln agree it is mutually beneficial to provide better transition from county roads located within the three mile zoning jurisdiction of the City to City streets at the time of annexation. This process provides a more useful life from the public investment in these County roads while at the same time accommodating future growth of the City by establishing right-of-way and construction standards to allow these County roads to transition from rural to urban standards without disruption to the existing through traffic and the surrounding property.

Financial Analysis

Financing sources for current and planned roads and streets are chronically inadequate.

Federal transportation planning regulations call for Long Range Transportation Plans to, "include a financial plan that demonstrates the consistency of proposed transportation investments...with already available and projected sources of revenues."

This standard – some times referred to as the "fiscal constraint requirement" – ensures a balance between the costs of proposed transportation projects in the long range plan with likely funding sources. This standard minimizes the potential for infrastructure programs being adopted that are not likely to be implemented.

As part of this comprehensive planning process, the Lincoln Public Works and Utilities Department completed a detailed review of the financial requirements needed to undertake the City's transportation improvements. These figures show the projected revenues and expenses of $2.43 billion respectively.

These options involve a number of additional revenue sources potentially including proposed State gasoline and City sales tax increases along with discretionary Federal and State funds likely requiring the submittal of project specific requests and the staging of improvements allowing for the incremental construction of road improvements. The combination of these factors is projected to allow for the eventual construction of the roadway program as shown in this Plan.

In the event that actual revenues fall short of projected levels, the City will need to determine which of the projects currently shown in the LRTP will be constructed after 2030. This determination will be based upon the direction the community is growing, demand for types of land uses, limitations on how certain funds may be used, and the impact of these factors on near term and long term transportation and development needs. It is envisioned that an annual determination for roadway priority that coincides with available funding will be required throughout the planning period. Therefore, the proposed roadway improvement projects identified in the LRTP should be considered as illustrative and subject to an annual determination for an implementation priority. Also, every effort will be made to leverage Federal and State Funds to augment the available local funds. Regardless of any potential funding shortfall, the City is committed to funding the operations, maintenance and rehabilitation of the existing street system.

2030 Long Range Transportation Plan
Revenues/Expenditures

Projected Revenues	*Millions of Dollars*
1. City Road Funds (WC, WR, RR, HB, GR, IF 5% inflation factor after FY12, SO 1% inflation factor prior to adding LB904 dollars)	$ 1,065
2. Federal Highway Funds (BR funds, PC funds no inflation factor, FA funds after 5th year constant with no inflation, CMAQ funds constant after 2nd year with no inflation, PP funding source only identified in 6 year plan.)	$ 430
3. Other State/Federal Aid (SF and TM funds no inflation factor)	$ 7
4. Other Funds (RTSD funds with 5% inflation factor)	$ 145
Sub-Total	**$1,647**
5. State/Federal Projects (No City Funds)	$ 308
Sub Total including State project funding	**$1,955**
6. New Funds (Proposed increases of ½ cent City sales tax and 4 cents State gasoline tax)	$ 480
Projected Revenue Total All Funds	**$2,435**

Projected Expenditures	*Millions of Dollars*
7. Operations & Maintenance Activity (includes street sweeping, snow removal, street maintenance & management/debt service)	$ 562
8. City Share of Projects (includes Resurfacing/Rehabilitation and other amenities) (Roadway project estimates are 2004 year dollars non inflated)	$ 1,565
Sub-Total	**$ 2,127**
9. State/Federal Share of Projects (80% S. Beltway, I-80, W & E "O" St., Hwy. 34, Hwy. 77 Interchange and Intersection Closures, 80% Sun Valley Blvd.)	$ 308
Projected Total Expenditures All Funds	**$ 2,435**

Intelligent Transportation System

A stated mission of the Lincoln MPO is "to advance the development and application of ITS across the region, which will increase highway safety, mobility, security, economic health and community development, while preserving the environment."

The City of Lincoln/Lancaster County MPO since the early 1970's has stayed at the cutting edge of Transportation Technology, by deploying Generation-1 of the Computerized Traffic Control System and its associated communication infrastructure. Today the Lincoln MPO's Intelligent Transportation Systems (ITS) capabilities include video detection & monitoring; pavement & weather monitoring stations; dynamic message signs; state of the art traffic signal components to ultimately achieve a real-time traffic responsive system; emergency vehicle & railroad preemption devices; a hybrid communication system including fiber optic, broadband radio, and twisted pair cable; automated speed detection and display.

The Regional ITS Architecture for Southeast Nebraska, a requirement of TEA-21 was contracted for and managed by the City of Lincoln / MPO in close consultation with Federal Highway Administration (FHWA), Federal Transit administration (FTA), Nebraska Department of Roads (NDOR) and Lancaster County. The final version of the Architecture was reviewed by FHWA and FTA and on 08/09/2005 was found to be consistent with their respective 'Final Rule' and 'Policy' on ITS Architecture and Standards.

The overall objective of the ITS Architecture project was to ensure that ITS investment in Southeast Nebraska, a thirteen county coalition, has common communication protocols; to avoid duplication of non-collaborative investments in infrastructure, including hardware and software; to provide the ability to share data between agencies; and to bring the region into compliance with the nationally established ITS Standards and Architecture.

A critical component of this Architecture was the stakeholder and community outreach program. This program was successful in involving over 300 individuals representing various public agencies in the region. As a result of this effort, we now have the ability and support to pursue funding and implementation of approximately 39 ITS projects. These projects are expected to enhance the safety, security, operations and economic well being of our residents and communities. The regional Architecture successfully integrates the Urban and Rural needs of this progressive region of Southeast Nebraska. It is anticipated that this outreach effort and Architecture maintenance, project funding and project implementation will continue and expand to also include the private sector. These activities are anticipated to occur throughout the 25 year planning period.

The 2005 Regional ITS Architecture report was approved and adopted by the Lincoln MPO and will remain an integral part of the 2030 Long Range Transportation Plan.

Transportation System Monitoring & Management

Effectively managing the metropolitan area's transportation system requires an ongoing program of monitoring and data collection. This monitoring and data collection program is intended to provide the community with a balanced perspective on how well the overall transportation system is performing relative to the adopted Long Range Transportation Plan (LRTP) and the future Land Use Plan.

Over the past several years, the measures used to monitor, evaluate, and manage the MPO's transportation system has been the subject of considerable dialogue between the community and staff - beginning with the Congestion Management Task Force in the mid-1990s. This continuing dialogue has resulted in a variety of parameters being used to judge the performance of the transportation system. These include 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.

Transportation System Monitoring and Evaluation

The City, County, and Lincoln MPO have a long tradition of monitoring the overall performance of its area-wide transportation system. As more sophisticated methods have become available, these methods have been integrated into an ever evolving monitoring strategy. As such, an extensive on-going data collection program is already in place. This program collects data on a regular basis for virtually the entire City' major street network, the County roadway system, and alternative transportation modes.

Strategies: Transportation System Monitoring and Evaluation

- Utilize an extensive array of information, data, and technologies to monitor and evaluate the performance of the transportation system on an annual basis.
- Continue to routinely collect, evaluate, and publish pertinent information for peak and off-peak conditions:
  - Travel time and average speed across entire corridors
  - Travel delay at intersections
  - Public transportation usage
  - Vehicle occupancy (screen lines)
  - Crash rates
  - Pedestrian and bicycle volumes
  - Overall traffic volumes (24 hour mechanical)
  - Volume of truck traffic
  - Turning counts at intersection (a.m., noon, and p.m. peak hours)
  - Computer simulations
- Continue to develop methods to distribute real time travel information to the traveling public. Incorporate traffic monitoring cameras and dynamic message signs to aid in congestion management.
- Routinely update tools, data, and methods to aid in monitoring the transportation system's performance.

Urban Street Network Standards

The standards used to evaluate the performance of the urban street network (a.k.a., Level of Service (LOS)) should include a range of factors. In approaching this task, the community desires to continue addressing street performance differently between the "built environment" and newly developing areas. The standards should reflect the varying character of different locations within the community and the desire to maintain the existing "feel" of the "built environment." The standards should strive to be measurable, realistic, and easy to understand. Priority should be given to real-time measurements over model estimates.

Strategies: Urban Street Network Standards

- Develop an expanded set of urban street network standards for measuring "level of service" and network performance. They should encompass a wide range of factors and seek to broaden the perspective of how level of service and network are judged. These standards are to be used in examining existing and projected (i.e. modeled) street network performance.
- The urban street network standards should build upon existing data collection and analysis practices, while striving to incorporate new and innovative information gathering and system monitoring technics.
- Elements aiding to define the urban street network level of service should address:
  - Average speed (MPH) across an entire travel corridor
  - Volume to capacity ratio
  - Delay
  - Consistency of travel time
  - System connectivity
  - Safety (crashes)

- Access management
- Visual interest (e.g. 3-D perspective)
- Travel mode usage
- An access management document should be put together to educate and show the value and need for this program. This should help in supporting applicable standards for driveways and access points. The document should stress the importance of context sensitive design in managing and implementing roadway access standards. This includes respect for the unique character of the "built environment".
- An appropriately-scaled broadly-based community and agency participation process must be used in conducting any studies conducted by the MPO or by individual participating agencies. Such processes are expected to include community participation in scope of work definition, data analysis, alternatives evaluation, and the selection of recommendations. The overall monitoring and evaluation process will continue through out the planning period. It should seek the involvement of applicable stakeholders using a balanced and collaborative study approach. These studies will address impacts on the community, neighborhood, and the natural and built environments, as well as the overall transportation system and the future land use plan, including its core principals and objectives.

Congestion management and mitigation

Congestion management and mitigation should remain flexible and ongoing. 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.

Strategies: Congestion Management and Mitigation

- 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 may will suggest strategies for congestion mitigation. Strategies may include:
  - Intersection improvements
  - Additional turn lanes
  - Road improvements
  - Signalization improvements
  - Intelligent Transportation System (ITS) improvements
  - Transportation Demand Management (TDM) techniques
  - Alternative transportation modes
- Studies or recommendations for congestion mitigation must address as a minimum the impacts on the following:
  - Established neighborhoods
  - Homes and businesses
  - Pedestrian and bicycle safety
  - Public and private trees
  - Property values of the surrounding area
  - Access to adjacent properties
  - Cost of ROW and of purchasing properties
  - Traffic noise
  - Crash rates
  - Budgetary constraints
- Traffic monitoring cameras should continue to be placed at key locations of the street network to monitor transportation activity on a daily basis. These real time camera images are an important tool for the transportation professionals as well as a means to provide traveler information via the internet.
- Dynamic message signs should continue to be placed at appropriate locations to notify drivers of road closures and detours, allowing them to make better choices when determining their travel routes.
- Continue to develop methods to distribute real time travel information to the traveling public.

Continuing Monitoring and Planning

The monitoring and planning of the community's land use patterns and transportation systems is an integral part of a continuing process. This process involves the periodic examination of the City-County Comprehensive Plan and Long range Transportation Plan. Amendments to these two plans - as well as related capital improvement programs and other implementation documents - are an inescapable part of this process. Such amendments help insure these plans remain current, relevant, and practical.

Strategies: Continuing Monitoring and Planning

- Develop and prepare an Annual Transportation Report. An Annual Transportation Report can provide a meaningful perspective on the performance of the overall transportation system and its relationship to the future land use plan. This Report is to be prepared under the auspices of the MPO Technical Committee and, as applicable, coordinated with any annual review of the City-County Comprehensive Plan. It shall be researched and authored by staff from a diversity of local, State and Federal agencies. The Report's conclusions and recommendations are to reflect a consensus of professional staff opinions regarding transportation and land use planning goals and practices. Recommendations may include proposals for further studies, specific projects, and/or text changes to this Plan.
- Acknowledge Transportation-Land Use Development Relationship. The success of transportation system initiatives and land use developments are closely related. Proposed changes in the City-County land use plan should be reviewed as part of the MPO's continuing monitoring and planning process. This will allow for the closer integration of existing planning and capital improvement programming process.

Railroads

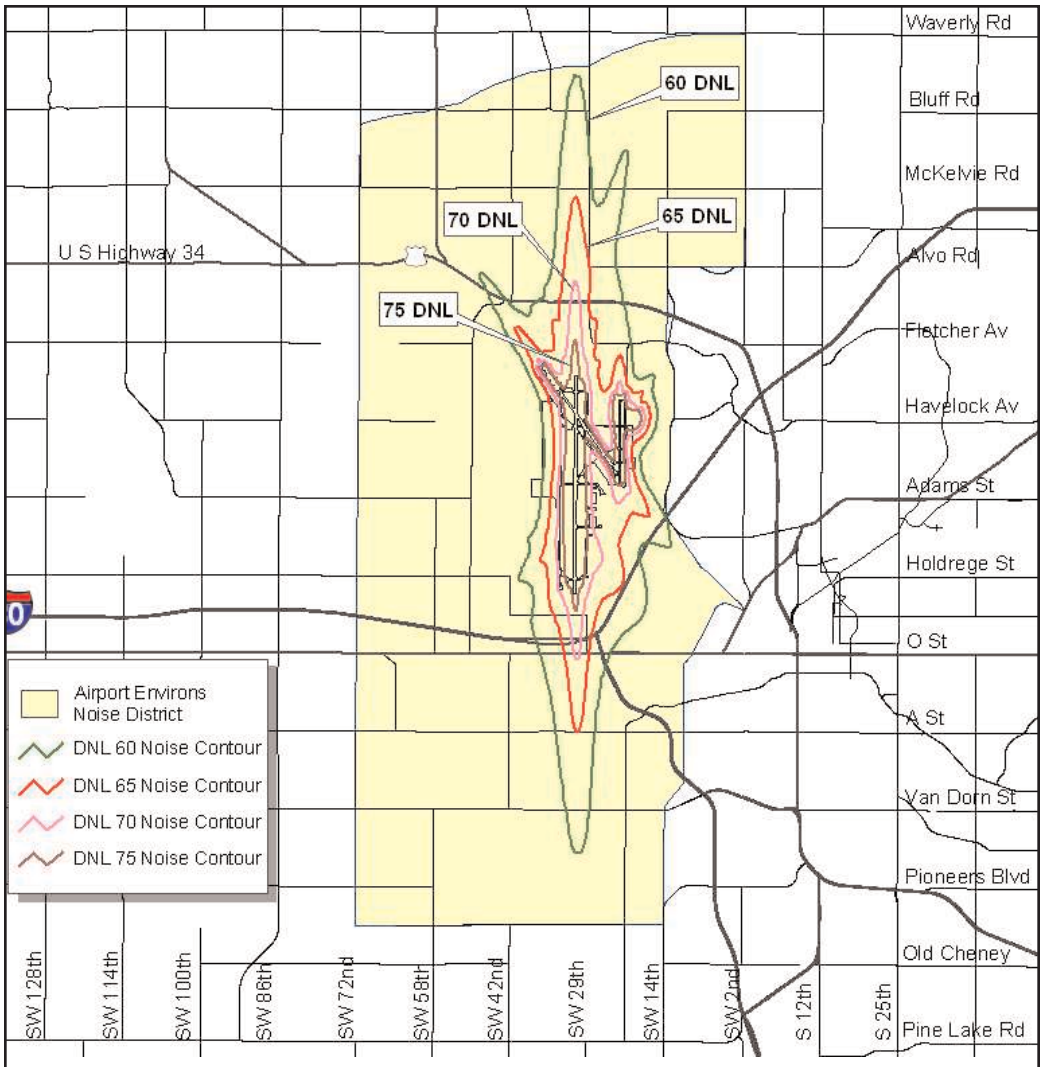
The city and county are served by both freight and passenger rail service. There are currently a number of projects in the planning analysis, study, development or implementation stage which should reduce the rail/vehicular/pedestrian conflicts at street crossings. These projects include:

- Antelope Valley Phase I roadway, elevated intersection (Big "X") in the vicinity of N. 16th Street and State Fair Road
- Antelope Valley Phase II North 33rd Street underpass at the BNSF rail corridor south of Cornhusker Highway.
- Antelope Valley Phase II at grade rail crossing closure, on Adams Street east of 35th Street. Road closures on Adams Street, between 33rd Street and BNSF rail line and intersection modification at 35th and Cornhusker Highway.
- BNSF rail crossing at 44th Street south of Cornhusker Hwy.
- Antelope Valley Phase II roadway underpass at the BNSF rail corridor near N. 29th Street at Huntington Avenue.
- SW 40th Street roadway overpass at BNSF rail corridor, south of West "O" Street
- South 1st and "J" Street undercrossing.
- Salt Creek trail underpass at BNSF railroad, west of 1st and "J" Street.
- South 68th Street roadway overpass south of Wagon Train Road, south of Hickman at BNSF rail corridor.
- Holdrege Street at 18th Street
- BNSF crossing "A" Street west of SW 56th Street

The consolidation of railroad tracks along the southern portion of the community should be explored. A transportation corridor that also offers the potential of combining railroad activities, including the BNSF facilities along Highway 2, would increase the safety and security of our growing community. Future evaluation and use of railroad right-of-ways and tracks should consider light rail possibilities.

AIRPORTS AND AIRFIELDS

The Lincoln Airport is 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. It is operated by the Lincoln Airport Authority. This facility provides a wide range of services to this region and provides essential transportation links to national and international markets. The Airport is located in the northwest part of the City of Lincoln with surface access provided by Interstate and State highways. In the transportation planning process, the ground transportation issues were evaluated. The Plan will continue to provide for a high level of access to the Airport terminal and associated facilities.



Lincoln Municipal Airport Environs and Noise Contours

The City of Lincoln's Airport Environs Noise District and Airport Zoning Regulations have been established to ensure the balance between the airport operations and the surrounding land uses. These regulations govern land uses and structural characteristics compatible with the airport's operations to minimize negative impacts on surrounding residents and to protect the airspace around the airport. The Lincoln Airport Authority has assessed the existing and future noise impacts, and accordingly developed noise contours for the Airport environs in a Part 150 Airport Noise Compatibility Planning Study. The study was completed in September, 2003. This study proposed measures to reduce noise and non-compatible land uses. The Comprehensive Plan will use information from the Part 150 Study to guide land use planning throughout the airport environs.

Strategies: Assess the Existing and Future Noise Impacts

- The Lincoln Airport F.A.R. Part 150 Noise Compatibility Study, was completed in 2003 and is part of the Comprehensive Plan. Recommendations of the Study may be implemented over time.
- Maintain compatible land uses and zoning within the 60 DNL and 75 DNL noise contour line.

Future Considerations

The Lincoln Airport provides essential commercial air service for the region as well as a wide variety of general aviation services to the local community. As the City of Lincoln continues to grow to the north and west, it will ultimately surround the airport. To help protect and to keep the airspace around the airport safe, and secure, the Airport Zoning Regulations ordinance will become increasingly important. To ensure that future developments are aware of their proximity to the airport and the noise issues are appropriately addressed the Airport Environs Noise District ordinance and the recommendations of the Airport Noise Compatibility Study will become very important. In order to ensure that the future development and land uses are compatible with the existing airport and its functions, following the Airport West Subarea Plan will be necessary.

- The Airport West Subarea Plan was approved in 2005 and was amended into the 2025Comprehensive Plan. Elements of the Plan should be pursued for implementation over time.
- As a follow-on study to the Airport West Subarea Plan, additional transportation corridors around the airport, especially to the north, may be considered.
- Other future considerations include redevelopment of the Lincoln Airpark West for a variety of uses including the development of sites for rail accessible warehousing and the 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.
- Improving convenience of traffic circulation around the Airport would require implementation of a “loop” roadway.
- As the Airport continues to expand services to the area it may be necessary to provide mass transit from regional providers.
- As Airport services and amenities continue to expand, implementation of a strategic plan to improve access to and from the Airport will be necessary.
- As an integral part of the community the Airport needs to function as a major Transportation Hub.

Airfields

Smaller private airports and airfields are also located throughout the County. Airfields are limited by local ordinance to use by the residents of a single family home with not more than one plane. The Federal Aviation Administration encourages continuous monitoring of private air facilities and discourages the location of airfields in close proximity to homes, schools, and hospitals. The monitoring of these facilities is not only to protect areas potentially sensitive to noise, but also to provide safety and security of air space around these private airports and airfields.

Goods and Freight Movement

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. The Transportation Plan coordinates a multi-modal effort with and between the various modes and the street and highway component of the overall transportation system.

Air, rail and trucking industries are private entities outside the purview of the City of Lincoln and Lancaster County. Future transportation planning efforts are to continue planning efforts that will further integrate freight interests into the transportation planning process.

The planning process will continue to encourage consideration of specific freight projects, including organizational and procedural issues.

Planning Policy Strategies

- Work with Nebraska Department of Roads to take a more pro-active role in analyzing freight flows and proposing specific freight improvement projects for inclusion in State Transportation Improvement Plan (STIP) and local Transportation Improvement Plan (TIP), especially freight projects of Statewide and national significance.
- Work with State and freight hauling community to examine freight flows and issues at the regional trade corridor or trade area scale.

- Build on current efforts to establish an MPO freight advisory task force. MPO should consider establishing a freight advisory committee with representatives from all appropriate modes to ensure that projects proposed by the private sector are incorporated into the planning and programming process.
- Institute a "short-range" freight transportation improvement program, listing only small projects that can be completed within 18 months, to narrow the gap between the public and private sector planning horizons.

As a component of the transportation system, freight and goods movement impacts land use. The level of impact intensifies around high traffic corridors and facilities such as rail lines, interstates and highways, airports, pipelines and freight destination areas (i.e., industrial, office and commercial centers). Planning for these elements in order to minimize negative impacts and maximize economy and efficiency requires long range planning.

Land Use Policy Strategies

- Continue the review of existing policies concerning distances (i.e., buffers) between conflicting land uses.
- Encourage the assessment of risk concerning hazardous materials and impact on land uses.
- Enhance access to the external transportation connectors (e.g., Interstate system) in order to minimize impact on existing land uses.
- Enhance the internal transportation routes (e.g. State highway and City arterials) in order minimize impact on existing land uses.

Planning Data and Analytical Tools Strategies

The data and analytical tools to conduct effective local planning are not readily available to MPOs. There are several ways to address this issue:

- Coordinate the purchase of commodity flow data from private sources.
- Develop freight analytical and modeling tools.
- Revise and re-weight project evaluation criteria to give greater recognition of and emphasis to freight projects that advance local, State, regional, and national economic development and trade strategies.

Inter-modal and Multi-Modal Freight Operations

Multi-modal and inter-modal freight delivery is emerging as an efficient system of freight delivery and holds opportunities that are increasing. New concepts are also being developed where warehouse distribution, light manufacturing, and assembly facilities are being combined with inter-modal freight facilities. This is a new era for transportation where "inter-modalism" is changing freight delivery systems and Lincoln and Lancaster County residents continue to be reliant on rail-to-truck and truck-to-rail freight transfers arriving through the only inter-modal facilities in Nebraska located in Omaha.

The advantages of an inter-modal freight center located in Lincoln are that is in the geographic center of the nation which enables it to provide access to the major mid-western markets within a single day's drive. Lincoln is located at a crossroads of three U.S. highways and a major railroad line. Interstate 80 is the nation's only coast-to-coast Interstate system where truckload service is available anywhere in the country within three days. And all domestic destinations are accessible by railway within four days.

Future transportation planning efforts should work toward decreasing the barriers that prevent the development of new inter-modal freight terminals and the planning process should do more to encourage and support the development of individual inter-modal projects by private industry.

Planning Policy Strategies

- Encourage potential individual inter-modal freight providers, the railway companies, and other public and private entities in a more pro-active role for the development of an inter-modal distribution center.
- Work together with State, County, City, Airport Authority and other public organizations in developing suitable ground access to proposed inter-modal facilities.

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