Mobility & Transportation

Mobility is an essential ingredient in ensuring the community's quality of life. This section of the Plan examines the current status of mobility in the city and county as reflected in the area's transportation facilities and services. This review includes Streets and Highways, Street System Maintenance, Public Transportation, Parking, Trails and Bicycle Facilities, Railroads, Airports and Airfields, and Goods and Freight Movement.

Streets and Highways

Existing Pattern of Streets and Highways

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

Section line roads form the basic layout for the city's and county's existing street system. Spaced approximately one mile apart, these roads create the underlying grid pattern found throughout the county. This roadway pattern was established nearly a hundred and fifty years ago by the United States government. Surveyors were sent west to the Plains states to create a patchwork of one mile squares. These squares became the building blocks upon which the earliest settlements and agricultural communities were formed.

The section line roads are used today as Lincoln's main system of arterial streets. In the newer areas of the city, section line roads are typically built with four through lanes, with turning lanes added to improve safety and operations along these corridors.

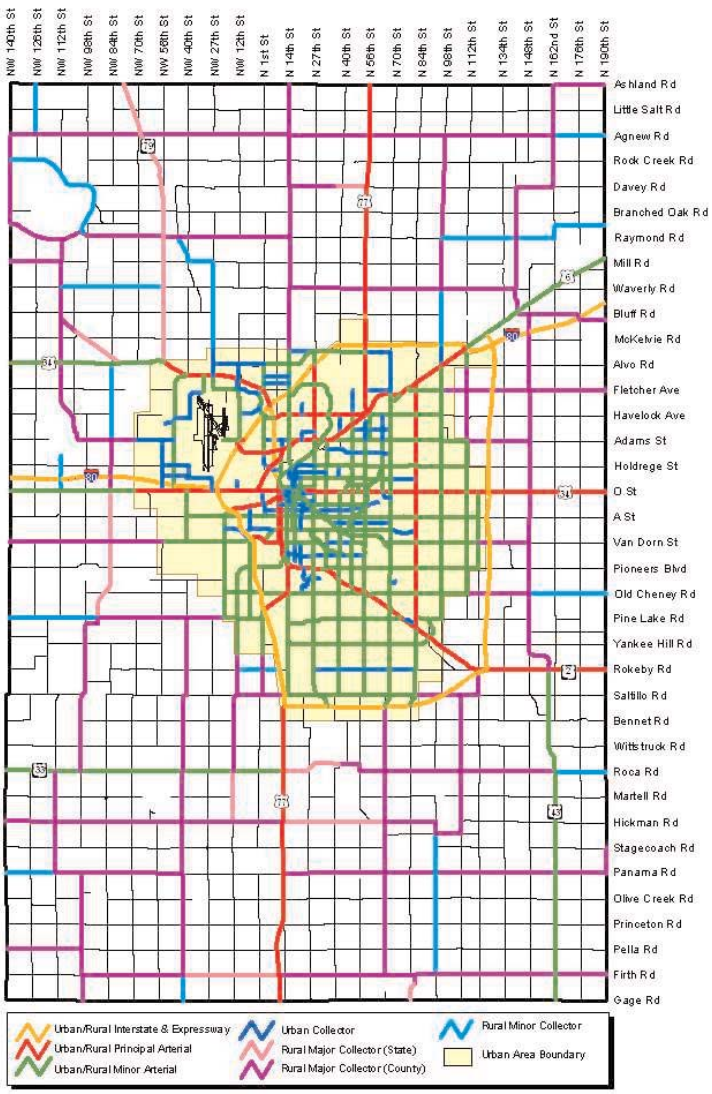
The grid pattern has also been accentuated in the traditional areas of Lincoln through the use of arterial streets at the half section (or half mile) line. This has created a more extensive street grid pattern in the "built environment" of the community.

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

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

Today there are an estimated 2808 miles of streets and highways serving the city and county. This includes approximately 30 miles of Interstate, 158 miles of U.S. and State Highways, 565 miles of major arterials and collector streets, and 2055 miles of local streets.

Functional Classification



National Functional Street & Road Classification - County

Transportation planners and engineers classify streets and highways into "Functional Classifications." Each classification indicates the roadways function and attributes, how the roadway is intended to be used and its relative importance to the neighborhood, community, and region.

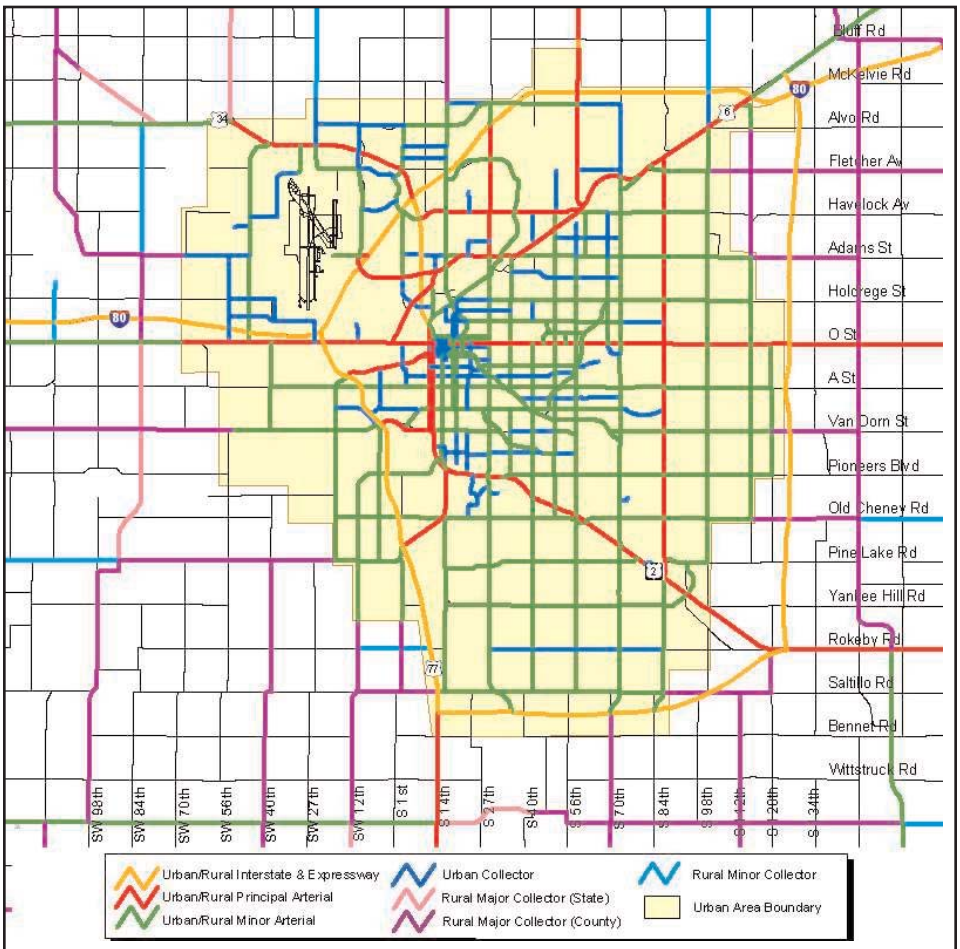
At the top of the classification scheme are "Urban/Rural Interstates, freeways and Expressways." These are roads capable of carrying large numbers of vehicles at higher rates of speed over long distances. Access to these roadways is strictly controlled. Vehicles can only get on or off these facilities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

"Principle Arterials" and "Minor Arterials" are at the next level of roadway classification. Arterials carry traffic between major activity and population centers. They may run for many miles across the city and county. Posted speed limits are generally in the 35 to 45 miles per hour range with access provided at grade. Traffic signals as well as roundabouts are often used to regulate the flow of traffic along arterials. Access is man-

aged, although movement to and from adjacent property is sometimes allowed depending upon the character of the area and the uses being served.

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

The lowest classification of streets is the "local" or "residential" street. These streets provide very limited opportunities for through traffic; their primary function is to provide access to adjacent properties.



National Functional Street & Road Classification - City

Congestion Management Task Force

During a twenty month period in 1995 and 1996, the Congestion Management Task Force examined traffic flow issues for six "high impact corridors" in the older areas of Lincoln. A series of recommendations from the Task Force's work was amended into the 1994 City-County Comprehensive Plan in 1996. The City has implemented or is in the process of implementing the following Task Force recommendations:

Create a "2 Plus Center Turn Lane" System within the "built environment": The Task Force's top priority was the creation of a street system within the"built environment" of Lincoln using a "2 plus center turn lane" design. Portions of South 13th, South 33rd, South 40th, South 48th, South 56th, and Pioneers were slated for such improvements. Since 1996, the City has improved or has plans to improve all of these street segments. Arterial streets within the "built environment" have been identified for upgrading to the "2 plus center turn lane" design.

Install More Responsive Traffic Signal System: The City's Public Works and Utilities Department has undertaken numerous improvements to the traffic signal system since 1996. This includes installation of sensors and communication lines to monitor traffic flow, traffic monitoring cameras, upgraded software and hardware for traffic signal management, and intersection preemption units. Additional improvements to the traffic signal system are programmed and will be undertaken over the coming years.

Implement Intersection Improvements: Thirteen intersections within the high impact corridors were identified as needing improvement. Six of eight locations had major improvements, and the other two locations are active or

within the near term of being completed. Two of the other five locations are identified in this plan as "Major Intersection Work" and the remaining three locations had major/minor timing changes and/or left turn phasing added.

Complete Inner Ring Road System: The Task Force recommended lanes be added to segments of five specific streets to create an "inner ring road." This system of streets would add capacity along the edge of Lincoln's "built environment" as identified in the 1994 Comprehensive Plan. older area. Improvements to four of these streets — 84th, Old Cheney Road, Pine Lake Road, and Pioneers Boulevard – have been made or are planned. Portions of South 70th Street have been upgraded, although no additional improvements are presently scheduled for North 70th Street.

Implement Transportation Systems Management (TSM) / Transportation Demand Management (TDM) Strategies: The City has and is pursuing the application of numerous TSM and TDM strategies. These strategies are intended to make the best possible use of the transportation system by tackling both how the system is managed and how the traveling public makes effective use of the system. Examples include flexible work schedules for public and private sector employers, express transit services, special bus services for major events, message boards for construction and crash sites, and recent upgrades to the city-wide traffic signal system.

Implement Truck Route Study: Routing truck traffic around the City was viewed as a way to improve automobile traffic flow within the built environment of Lincoln. The construction of the south and east beltway was sought as the most helpful approach to accomplish this objective. The south beltway is currently in the final design phase with construction completion anticipated during the first half of the planning period. The east beltway during the year 2007 would be entering the preliminary design phase for corridor protection and right-of-way acquisition. The completion of final design and construction of these two beltway projects would be contingent upon available funding.

Establish a One-Way Pair System on South 56th and Cotner Boulevard: As part of the East 'O' Street project, the City made South 56th and Cotner Boulevard a one-way pair. Traffic flows north along Cotner Boulevard and south along 56th Street between "P" Street and Randolph Street.. The project generally has been deemed a success.

Apply "Average Speed" Concept: A major departure from previous Comprehensive Plans was the Task Force's introduction of "average speed" as a planning evaluation concept. Under this approach, actual travel times — measured as average speed in miles per hour — was to be collected along selected arterials. This approach created an empirical, measurable means for assessing the street system's level of performance.

In response to these recommendations, the City of Lincoln began a comprehensive traffic monitoring, crash safety, and signal optimization program in the spring of 1998. This city-wide program evaluates and optimizes traffic flows along all major street corridors on a three year cycle. This approach provides for incremental improvements to the street system. These improvements include the timing of traffic signals to optimize the flow of vehicles, "Intelligent Transportation System" improvements, and other minor changes in geometry.

Street System Maintenance

Maintaining city streets is primarily the responsibility of the Lincoln Public Works and Utilities Department. Road maintenance outside the corporate limits of Lincoln is the job of the Lancaster County Engineer, with the exception of the State Highways which are maintained by the Nebraska Department of Roads.

Maintenance responsibilities include but are not limited to ice and snow control, maintenance of paved and unpaved streets and highways, storm sewers, open drainage, detention cells and right-of-way vegetation control.

The City currently operates three street maintenance facilities, located at 901 N. 6th Street., 3180 South Street, and 3200 Baldwin Avenue. The County operates three district stations and 13 patrol stations within the County.

Public Transportation Services

StarTran

StarTran is the only fixed-route public transit carrier in the Lincoln metropolitan area. During 2005, the carrier provided over 1.6 million passenger trips.

The system is owned and operated by the City of Lincoln. StarTran is operated as a division of the City's Department of Public Works and Utilities. The system receives both Federal and State funding, although the majority of the funding comes from City resources. StarTran only provides transit services within the City of Lincoln.

StarTran offers para-transit services as well as 20 regular routes and one downtown circulation route on weekdays, and 12 routes on Saturdays. Fixed route services are provided on weekdays and Saturdays. The system's entire fleet of fixed route vehicles are wheelchair accessible. A special transportation program is operated for persons with disabilities who are unable to utilize regular transit services.

The majority of the transit routes are radially oriented to the Downtown, reflecting mass transit's traditional focus of serving higher density areas.

Currently about 90 percent of Lincoln residents and employees are located within a quarter mile of a StarTran Bus route. Additional cross-town routes such as the 27th Street Shuttle service have been added to better serve the transportation needs of the new commercial areas.

During 2006, a Transit Development Study was initiated to identify near and long-term policies and action items that will enhance transit service in Lincoln. An integral part of this study is a detail public involvement effort including open houses, stakeholder meetings, and meetings of the appointed Startran Advisory Committee.

The Transit Development Study will address the following areas for enhancing transit services:

- Development of transit service area characteristics
- Development of transit service alternatives
- Updated service standards and policies
- Management and funding options

StarTran Task Force

During December 1999, the StarTran task force was appointed to evaluate the responsiveness of StarTran and the effectiveness and efficiency provided. The purpose of the review was to insure that:

- StarTran is providing services to locations where people wish to travel, and
- StarTran is providing the most possible service in the most efficient and effective manner.

The following are some of the Task Force recommendations that have been implemented so far:

- Improve the StarTran system efficiency by deleting the seven most inefficient routes.

- Implement a north-south shuttle (27th Street and 48th Street Shuttles) to supplement the current radial route network.
- Increase non-peak rider ship through promotional services.
- Expand StarTran route and schedule information services.

Para-transit

StarTran's regular fixed-route bus services are complemented by the Handi-Van paratransit program. This program is available to individuals who are functionally unable to utilize the regular fixed-route bus service. The program requires riders to register with StarTran in advance of requesting service. There are no income or age restrictions for using this service.

Similar paratransit services are also provided by a number of private entities. A total of 52 health care facilities, senior services, and other private agencies in Lincoln and Lancaster County employ 111 vehicles to provide door-to-door service to their patrons.

The Lincoln Area Agency on Aging, through an agreement with the Lancaster County Board of Commissioners, provides van transportation for all persons residing in rural Lancaster County. Service is currently provided Monday through Thursday with services offered in a different area of the County each day. Service is available in communities and outlying residences of each area. The rural transportation service provides for early morning pick ups in one of the areas of the county, with a mid-afternoon return to the rider's residence.

Taxis

Taxi services are available in Lincoln and Lancaster County. Such services provide approximately 200,000 passenger trips each year.

UNL Campus Shuttle

University of Nebraska-Lincoln's Parking and Transit Services operates four shuttle lines on the UNL city campus. The service operates weekdays to carry students, faculty, and staff from various locations on the campus fringe to the core of campus. The UNL Inter-Campus bus service between the City and East Campuses is contracted for through StarTran. Students, faculty, and staff can commute between the two campuses at no charge.

Parking in the Downtown Area

Downtown Lincoln has the area's highest concentration of workers, students, and entertainment goers. It serves as the commercial, educational, cultural, entertainment, and political center for the immediate region. Because of the large number of people in Downtown throughout the day, significant demands are placed on Downtown's supply of on and off-street parking. Planning and managing this supply must be coordinated with the overall mobility plan for the area.

Parking for the Downtown area — including the UNL City Campus — is provided through a combination of public and private off street (surface lots and garages) and on-street (metered and non-metered) parking. With the supply of on-street parking limited, recent efforts have focused on the construction of additional parking garages. The immediate Downtown area (excluding UNL City Campus) has a total of 22,423 stalls. This includes 3,906 on-street spaces, 4,080 public off-street spaces, and 14,437

private/patron spaces. These spaces meet the current estimated peak parking demand of 15,710 parkers.

The UNL City Campus area has a total of 13,265 stalls. This includes 10,687 UNL owned parking spaces and 1,578 City and private spaces. This supply of parking meets current demand. The Antelope Valley project and campus building construction may affect the supply in the future and will need to be taken into account in future parking studies.

Trails and Bicycle Facilities

Trails

The Lincoln area trails network contributes significantly to the community's quality of life. In addition to its recreational value, the trail system plays an important role in the overall transportation system. The trail system offers an alternative to the automobile and can contribute to an overall traffic congestion management strategy.

The existing Lincoln/Lancaster County network has approximately 112 miles of trails — most made of 8 to 10 feet wide concrete pathways. The City maintains 99 miles of the existing trails.

The majority of the current system is located within the City limits with several connections extending well into the County. The trails system generally connects most existing parks and other recreational facilities. Plans call for expansion of the system to complete an interconnected community trail system.

The MoPac East Trail is currently the longest trail within the network. Twenty miles in length, the MoPac East Trail starts at 84th Street in Lincoln and stretches east through Walton, Eagle, Elmwood, and Wabash. This trail is planned to be extended to the Platte River Connection.

In addition to recreational purposes, trail systems need to be considered as part of the entire transportation system. Some existing trails are incorporated as part of existing roadway corridors. The Antelope Valley project and the South and East Beltway will also provide opportunities for further developing such multi-use corridors.

The trails network receives Federal, State, and local funding, as well as funding from private fund raising efforts. The facilities are maintained by the Parks and Recreation Department, with some portions in the County kept up by the Lower Platte South Natural Resources District.

Bicycle Facilities

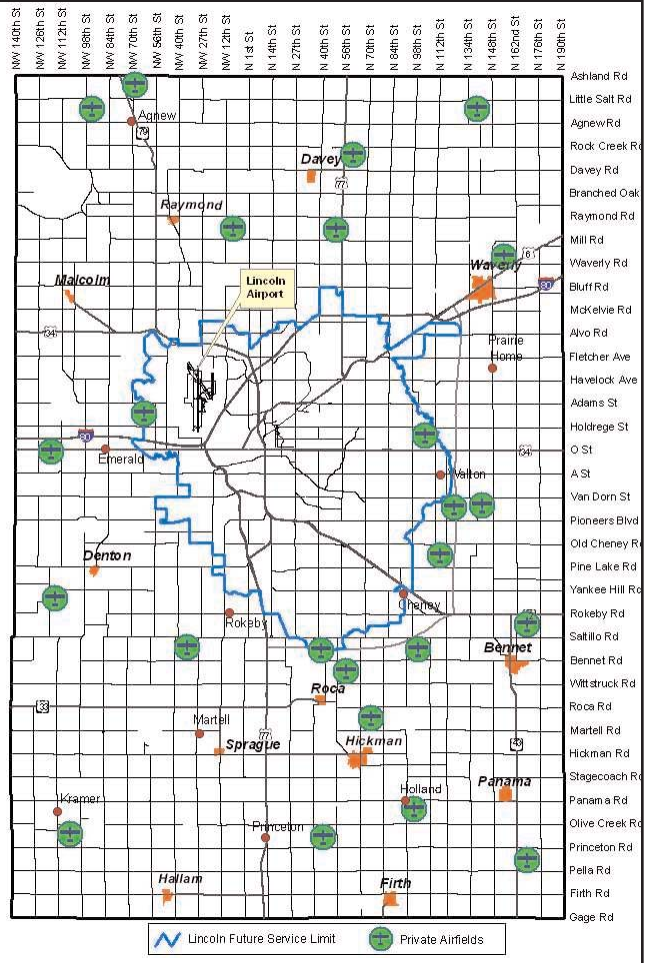
The current bike route network for the city and county ties closely to the streets and trails network. It includes existing paved and unpaved routes, proposed trails and trail easements, and on-street routes. Riding bicycles is not allowed on the sidewalk in the following commercial areas because of the large number of pedestrians:

- Downtown
- Havelock
- College View
- Bethany

AIRPORTS AND AIRFIELDS

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

The City of Lincoln's Airport Environs Noise District and Airport Zoning Regulations have been established to ensure the balance between the airport operations and the surrounding land uses. The regulations govern uses and structural characteristics compatible to the airport operations and minimize negative impacts on surrounding residents.
Smaller private airports and airfields are also located throughout the County. The distinction between an airport and an airfield is generally the number of planes using the facility and who is allowed to use them. "Airfields" are limited to use by the residents of a single family home with not more than one plane. All other air facilities, including single family airfields which accommodate guest planes or house more than one plane, are termed "airports." Within Lancaster County, airports and airfields are discouraged within close proximity to homes, schools, hospitals or other areas potentially sensitive to noise and restricted by zoning.



Airports and Private Airfields in County

RAILROADS

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

Both freight and passenger rail service are offered in Lincoln and Lancaster County. Currently up to 80 trains a day travel east-west through the County.

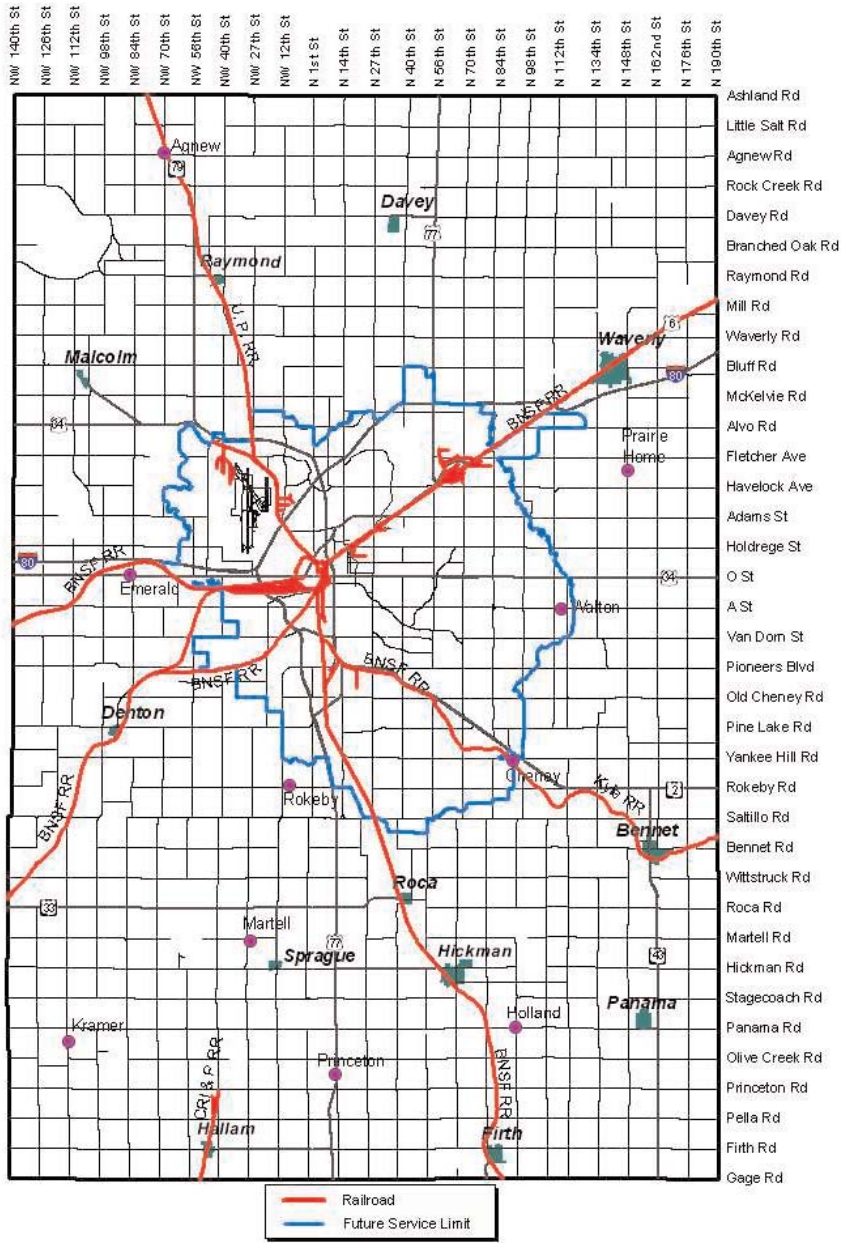
In recent years, railroads in Lincoln and Lancaster County have been affected by changes in the railroad industry and growth within the City.

Eliminating at-grade vehicular-train conflicts is a primary objective of the Plan. Removal of such conflicts will enhance safety, reduce delays, and improve emergency access to the surrounding neighborhoods. The Union Pacific Railroad tracks along 4th Street in west

Lincoln have been abandoned. This line ultimately extends from Lincoln to Beatrice, Nebraska, and then south into Kansas. A grade separation project on 'A' Street over the 3rd Street BNSF Railway tracks has eliminated the at-grade crossings along 'A' Street. This line is operated by the BNSF Railway.

The Antelope Valley project will also eliminate at-grade crossings and enhance the safety and traffic flow to areas north of 'O' Street. As part of the Antelope Valley project, four existing crossings will be closed, and two new underpasses constructed. These projects include:

- The Antelope Valley roadway elevated intersection in the vicinity of N. 16th Street and State Fair Road.
- 33rd and Adams Street extension underpass.
- Closure of the grade crossing at the 35th Street, Adams Street and Cornhusker Highway intersections.
- Addition of a new underpass under the BNSF rail corridor near N. 29th Street.



Major Railroad Lines

The Railroad Transportation Safety District (RTSD), a county-wide entity, was established in 1971 to fund transportation and safety improvements at railroad crossings. The funding mechanism provided by the RTSD allows for grade separation projects such as the above referenced to be built. These projects will enhance public safety and transportation efficiency.

Goods and Freight Movement

Goods and freight are currently transported throughout the city and county by truck, rail, air, and pipeline.

In 2005, 188 freight operations employed nearly 6000 employees in Lancaster County. The total payroll for these establishments approached $240 million per year. Trucking comprised the bulk of the freight movement services in the county in terms of employees, payroll, and number of establishments.

Truck Freight

Truck freight is the most visible form of delivering goods to customers in Lincoln and Lancaster County. Activities generating high truck traffic – especially grain elevators and warehousing operations – were historically located on the periphery of the City. Many, if not most of these, have been absorbed into Lincoln as the city's corporate limits have been pushed out by growth.

Today I-80, I-180, US- 34, Highway 2, US- 77, and US- 6 all exhibit high commercial truck traffic. A shift of truck traffic from the State highway system to the city road system have been noted in past studies on Pioneers Boulevard, Holdrege, Adams, 27th and 84th Streets.

Rail Freight

The majority of rail freight originating in Lancaster County is heavy, bulky agricultural produce. Grain elevators and mills within Lincoln and throughout Lancaster County serve as the primary customers of railroad transportation services. Nine grain elevators throughout Lancaster County and five in Lincoln are served by BNSF Railway.

Air Freight

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

Pipeline Freight

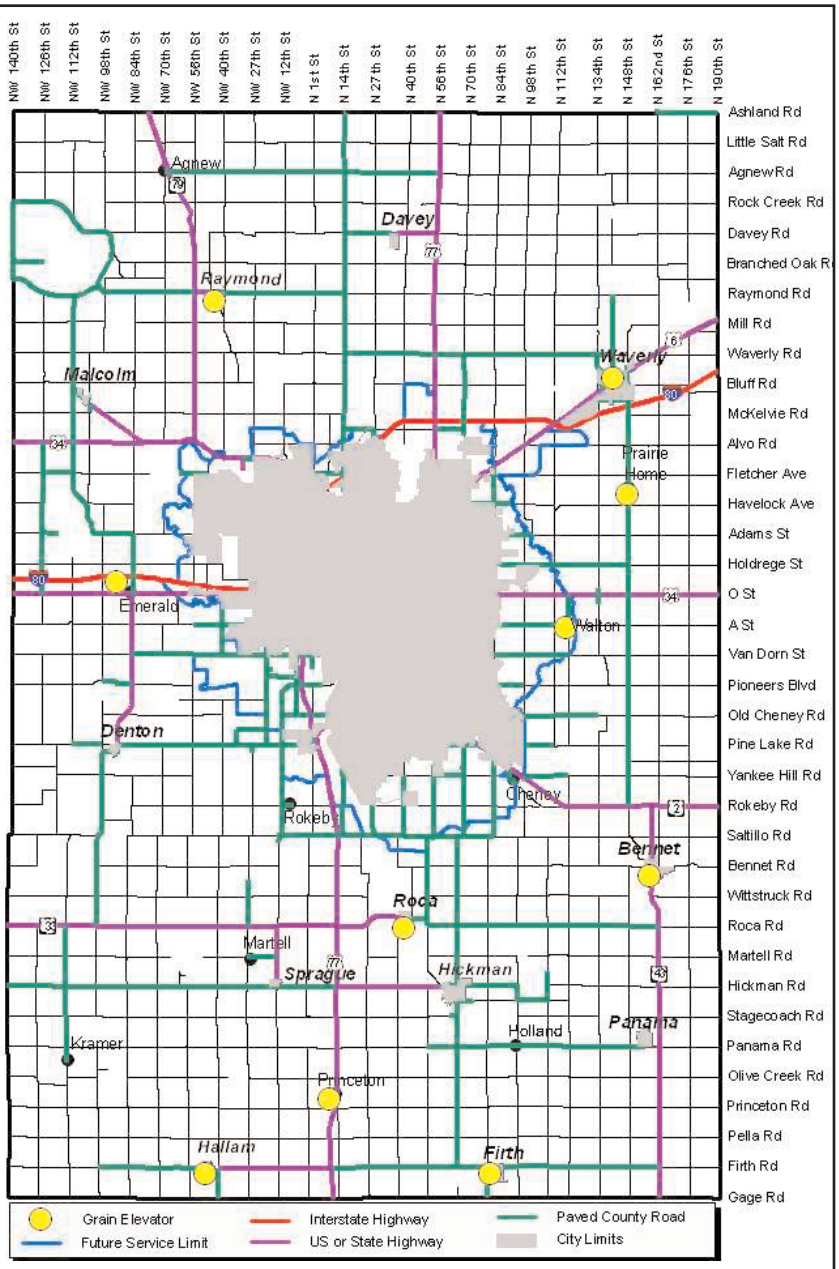
There are 17 pipelines in Lincoln and Lancaster County. The majority transport petroleum or natural gas products. One of the lines transports anhydrous ammonia, which is a product used in agricultural production. All of the pipelines are managed by four firms in Lancaster County.

Intermodal and Multi-Modal Freight Operations

Inter/multi-modal efficiency is a key component in freight transportation. Lincoln and Lancaster County residents receive parcel deliveries, general merchandise, petroleum and natural gas, and agricultural produce through a number of different modes. Intermodal freight shipments may be characterized as truck-to-rail, truck-to-air, pipeline-to-truck, and vice versa. Multi-modal shipments may be characterized as truck-to-truck or rail-to-rail activity.

The only intermodal facility in Nebraska as defined by the U.S. Department of Transportation is in Omaha (i.e., a rail-to-truck and vice versa). Parcel delivery is a multi-model operation in Lincoln since out of state parcels are typically transported by air to Omaha's Eppley Airfield and distributed to Lincoln and Lancaster County by truck.

Grain elevators have the potential to be intermodal and multi-modal facilities that connect agricultural products to production sites across the United States. Grain elevators are located within the City and throughout Lancaster County. Most are strictly multi-modal transfer points. Generally, once produce is in Lincoln, it is either processed, stored or loaded to rail to be shipped out of state. Agricultural produce delivered to elevators outside of Lincoln is often transported by truck.



Grain Elevators & County Traffic Flow

Solid Waste

The transporting of solid waste is done largely by truck. Waste destined for landfill disposal is either routed to the Bluff Road facility or the North 48th Street facility. The Bluff Road Municipal Solid Waste Landfill is the destination for all waste except construction and demolition debris, yard -waste and recyclables. The landfill received 280,106 tons of waste from 70,541 vehicles. There was also 17,680 tons of yardwaste accepted from 7,683 vehicles. The 48th Street Transfer Station is the designated disposal facility for small vehicles hauling solid waste. The

Transfer Station received 7,205 tons of solid waste from 28,031 vehicles and an estimated 2,701 tons of brush and grass clippings from 7,974 vehicles. The 48th Street Construction and Demolition Debris Landfill received 76,746 tons of material from 8,784 vehicles. Refuse collected within the corporate limits of Lincoln and disposed of in other landfills totaled 29,877 tons from 3,519 vehicles. All figures are based on FY 04-05 activity.

Recycling

In the year 2005, approximately 456,082 tons of recycled materials (including construction and demolition material were recycled by private sector firms. Recycling Drop-Off sites received 6,555 tons of materials in FY 04-05 and 39,073 tons of wastewater residuals were applied to agricultural ground.

Hazardous Material

The Lincoln/Lancaster County Health Department (LLCHD) estimates that 270,000 shipments of hazardous materials pass through Lincoln each year on Interstate 80. As a general rule, about ten percent of all truck shipments contain hazardous materials. LLCHD also estimates that about 90,000 shipments of hazardous materials pass through Lincoln each year by rail.