

Omaha Master Plan
Jean Stothert, Mayor
Report #306

Transportation Element



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TRANSPORTATION ELEMENT

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Section 1

Executive Summary

TRANSPORTATION ELEMENT

“Omaha must be a community committed to promoting and maintaining a high quality of life for all of its people.”

Omaha’s vision is more than a statement of intent: the city is actively becoming one of the country’s leaders in quality of life. Recently *Forbes Magazine* ranked Omaha sixth in the country for the best quality of life, and *Parenting Magazine* ranked it the eleventh best place to raise a family. Economically, Omaha is also prospering; in 2010, the Brookings Institute rated it among the top twenty strongest performing metropolitan regions.

With prosperity often comes growth. It is important that the City takes steps now to determine how to accommodate new growth in the most beneficial way while still maintaining a high quality of life. Transportation infrastructure is critical in this task, both in terms of enabling the movement of additional people, and in guiding the location of new development.

To support its vision of a high quality of life for all its people, the City of Omaha Transportation Element has four goals:

1. PROVIDE BALANCED OPTIONS FOR ENHANCED MOBILITY.
2. ATTAIN A SAFE AND HEALTHY ENVIRONMENT.
3. CREATE LIVABLE AND CONNECTED NEIGHBORHOODS.
4. PROMOTE ECONOMIC RETURNS WITH FISCAL STABILITY.

Through a process of existing conditions analysis, public involvement, project development and evaluation, and recommendations, this Transportation Element is a guide for the City of Omaha’s future transportation investments.

Existing Conditions

The planning process began with a review of the existing conditions in the City of Omaha, including a brief examination of roadways, traffic volumes and controls, roadway safety, pedestrian and bicycle facilities, transit, truck routes and freight, railroads, and aviation facilities.

Omaha’s transportation system is currently dominated by a need to accommodate automobile travel. Two principal interstates, 29 and 80 provide connections to points beyond the city, with 680 serving as a link between the two in western Omaha. Beyond the interstates, most vehicular travel occurs on the city’s system of arterials. The arterial roadways loosely follow the originally platted grid of the city but over time some linkages have been lost. East-west connectivity can be particularly challenging with West Dodge Road/Dodge Street serving as the only arterial that spans the city from east to west. The dependence on arterials is particularly strong in Omaha’s western areas, where the road network is less dense. As a result, many arterials west of downtown experience significant congestion.

Omaha has a solid foundation for a bicycle and pedestrian system. There are 199 miles of off-street trails, and another 84 miles proposed, but on-street

bicycle facilities are lacking in most areas. The extent of the sidewalk system is variable depending on the area of the city and the present land development pattern, with areas of the city developed in the 1960s and 1970s having the largest gaps.

Omaha Metro Transit (formerly Metro Area Transit or MAT), provides scheduled, fixed-route bus and paratransit services. Service is oriented to providing access downtown, with the highest service frequencies along West Dodge Road / Dodge Street and the Northwest Radial Highway. According to the 2010 Census, fewer than two percent of workers commute via transit, and ridership numbers indicate that few people choose transit over other modes.

Railroads no longer play the prominent role they did in Omaha's history, but along with truck routes there is a significant system of freight movement. As such, railroads are concentrated primarily in industrial areas,

and any related delays do not appear to cause major mobility issues.

Air travel also does not appear to pose any critical issues at this time. Omaha is well-served by three airports, all of which are easily accessible by car. With its centralized location, Eppley Airport in particular is well-positioned for accessibility, and there may be opportunities to expand mode choices to and from downtown.

In general, Omaha has a functional transportation system but one that is increasingly under pressure to accommodate more and longer vehicular trips. By addressing the major issues of roadway congestion in western areas, and planning for future growth, the City has an opportunity to improve mobility through strategic investments that will provide a more balanced, equitable system.



Public Involvement

This Transportation Element's foundations are in previous Omaha planning efforts, particularly the Downtown and Midtown Master Plans and the North and South Omaha Development Plans. When determining recommended projects, all previously proposed projects from community plans were considered.

The planning process included a number of opportunities for public input. In November, 2010 the City hosted a Visioning Workshop for the public to provide feedback on the vision and goals. This was followed in March and April, 2011 by two week-long charrettes where the planning team identified potential projects and transportation solutions to some of Omaha's major challenges. The expertise of Omaha's citizens was also utilized in the formation of a Bicycle and Pedestrian Advisory Committee, a Development Advisory Committee, and a Design and Engineering Advisory Committee. In addition to these formal input sessions other outreach was conducted on a request basis from various community groups; city staff provided overviews of the update process in smaller group settings.

Project Ideas

Following the March and April charrettes, the planning team compiled a list of proposed transportation projects in Omaha. Project ideas from the public process and the charrettes were also included. Within this list, all projects were coded as one of the following project types: bicycle routes, bridges, cross-section changes (mostly road diets), intersection projects, multi-use trails, publicly led new street projects, pedestrian corridors, pedestrian crossings, roadway capacity, signalizations, and transit guideways.

Because of Omaha's dependence on vehicular travel, most of the projects focused on roadway changes. Many of the projects were traditional capacity projects from existing plans such as the City's Capital

Improvement Program (CIP) and the Metropolitan Area Planning Agency's (MAPA) Long Range Transportation Plan (LRTP). Other roadway projects considered were road diets, where roadways with low volumes and high capacity had proposed lane reductions to accommodate other modes. Some projects did not involve major changes in roadway width, but proposed the conversion of one-way streets back into two-way streets.

The charrettes and previous community plans were sources of a number of non-roadway projects. One prominent project idea was the creation of the Harney Bikeway System through downtown, which could act as a catalyst for improving Omaha's bicycle and pedestrian reach. Other projects addressed bicycle and pedestrian connectivity through reducing barriers, creating more viable east-west connections, and enhancing the trails and sidewalks through opportunities present in Westside / Fairacres and North Omaha.

Other projects of note included improved and new transit guideways along Dodge Street and West Dodge, streetscapes, and improvements based on conceptual land development scenarios.

Evaluation

It is recommended that the candidate list of projects should be evaluated and prioritized following the adoption of the this plan.

These projects could be scored with metrics similar to the following, to measure progress toward four Transportation Element goals. A final official set of metrics will be developed by the Staff Working Group after the adoption of this plan.

1. PROVIDE BALANCED OPTIONS FOR ENHANCED MOBILITY.

- 1.1 Modal Options
- 1.2 Street Congestion
- 1.3 Street Options
- 1.4 Street Connectivity



*Top: the proposed Harney Street Bikeway.
Bottom: the proposed improvements to West Dodge Road/Dodge Street transit.*

2. ATTAIN A SAFE AND HEALTHY ENVIRONMENT.

- 2.1 Operational Safety
- 2.2 Walking and Biking accessibility
- 2.3 Access to healthy food
- 2.4 Impacts of Vehicle Delay
- 2.5 Impact of Vehicle Miles Traveled
- 2.6 Impervious Surfaces

3. CREATE LIVABLE AND CONNECTED NEIGHBORHOODS.

- 3.1 Appropriateness to Context
- 3.2 Consistency with Neighborhood Plans
- 3.3 Contribution to Complete Streets
- 3.4 Quality of Public Realm/Street Character
- 3.5 Quality of Public Realm/ Landscape/Streetscape Additions
- 3.6 Community Preference
- 3.7 Parks and Community Facilities Accessibility

4. PROMOTE ECONOMIC RETURNS WITH FISCAL STABILITY.

- 4.1 Unique Financing
- 4.2 Economic Development
- 4.3 Project Feasibility, Cost and Construction
- 4.4 Concurrency with Committed Public Services
- 4.5 Project Utility
- 4.6 Facilitate Goods Movement
- 4.7 Parking Facilities

Additionally, the final set of metrics will include the four “R’s” of road projects; reconstruction, resurfacing, restoration, and rehabilitation.

Recommendations

The Plan recommendations contain both capital projects and policy changes to help move Omaha towards its goals.

To pay for these improvements, there are number of funding mechanisms the City can employ. Though a more detailed funding study is recommended, Omaha should consider the use of impact fees, alternatives to the current Special Improvement Districts (SID) initiatives, tax increment financing (TIFs), sales taxes,

demand-responsive parking pricing, and tolls where appropriate.

Omaha must also re-examine its transportation and land use policies. Many previous policies regarding street vacations, parking, bridges, transit guideways, rail, demand management, reverse commuting and developing areas should remain in place and continue to be implemented. However, some language needs to be strengthened, such as a better defined “fix-it-first” approach to infrastructure.

The Transportation Element also recommends that the City commit to building a bicycle and pedestrian system over the long-term, and constantly seek opportunities to incorporate these facilities along with other capital improvements. One way to accomplish this is through the pursuit of well-defined Complete Street policy. The coordination between several key agencies must continue and become stronger to support a balanced transportation system for Omaha including Douglas County, the Metropolitan Area Planning Agency (MAPA), Nebraska Department of Roads (NDOR), and Federal transportation initiatives.

The Transportation Element concludes with a discussion of next steps, or policy action items. One of the first tasks is to create a staff working group to guide implementation of the plan, and ensure coordination between different departments. The first step of this working group should be to further refine the proposed metrics and ultimately develop a set of metrics that fulfill Omaha’s overall transportation goals.

The Element also recommends that the City begin a strategic approach to Capital Improvements Program (CIP) project selection, and embark on a series of more detailed studies to refine some projects and recommendations.

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Section 2

Introduction

TRANSPORTATION ELEMENT

Omaha owes much of its existence to transportation; its founding in the 1850s as a settler's outpost was undertaken in part because of location next to Council Bluffs, the terminus of several continental railroads. The city was eventually selected as the eastern end of the First Transcontinental Railroad connecting the western United States (US) to the more populated and industrialized areas of the east. Railroads continued to be an important foundation of Omaha's economy, as the development of a cattle stockyards complex (which eventually surpassed Chicago's as the largest in the world) made the city a national leader in meat packing and processing. Because Omaha's early growth and prosperity were aligned with the railroads, the city's initial footprint was largely defined by its rail corridors.

As with all American cities and urban areas the rise of the automobile in the 20th century had a dramatic impact on urban form. Omaha began orienting its streets to car travel as early as the 1920s; by 1960, the vast majority of travel on all city streets was by private automobile. This mode of travel allowed Omaha to expand easily, as a preference for suburban living spurred families to move from the dense urban center to spacious subdivisions in new suburban areas. The development of the Interstate Highway System throughout the US furthered this growth and expansion, allowing faster travel over longer distances and ultimately enabling new communities to grow far from the urban core.

Today Omaha is re-evaluating its transportation system. An ever-increasing demand for east-west travel has led to a configuration of Dodge Street as a quasi high-capacity, high-speed roadway. Increasing

amounts of public resources must be used for maintenance of a growing roadway system, leaving fewer resources for investment in other transportation improvements. Citizens' quality of life has also suffered from automobile-dependent lifestyles that discourage everyday physical activity, making it more difficult to stay healthy.

The Transportation Element of the Omaha Master Plan is the first step in addressing these challenging trends. It offers a blueprint for building a transportation system where there are balanced options on how to get around; roads, paths, and sidewalks that contribute to safe and healthy environments; infrastructure to improve livability and connectivity in Omaha's neighborhoods; and fiscally sustainable investments with sound economic returns.

Objectives

"Omaha must be a community committed to promoting and maintain a high quality of life for all of its people."

--City of Omaha Vision

The Transportation Element builds upon specific transportation goals that the City Council approved in the Concept Element. Specifically, this plan speaks to how "Omaha's urban form must be carefully designed to eliminate land use conflicts, offer options, manage traffic congestion, encourage pedestrian movement, and incorporate open space. Public improvements and services must be provided in a way which promotes balanced growth and redevelopment and distributes costs according to benefits received. Quality, efficiency, and equitable distribution need to be stressed in the

provision of public facilities and services. In an effort to improve Omaha's overall quality of life, fiscal, social and environmental costs and benefits must be considered in decisions regarding public services.”

The Transportation Element is driven by four fundamental community goals developed throughout the planning process.

GOAL 1: PROVIDE BALANCED OPTIONS FOR ENHANCED MOBILITY. Automobiles are Omaha's dominant form of transportation but the mobility of a city involves much more than moving vehicles on roadways. A balanced system has options for driving, walking, bicycling and public transit.

GOAL 2: ATTAIN A SAFE AND HEALTHY ENVIRONMENT. Safety and health are key ingredients in a city's quality of life. Transportation investments should improve the safety of getting around the community, and minimize negative impacts on the environment. They should also improve access to places that support healthy lifestyles, such as active green spaces and grocery stores that sell fresh food.

GOAL 3: CREATE LIVABLE AND CONNECTED NEIGHBORHOODS. Neighborhoods are the lifeblood of a city, and most accommodate at least some civic and recreational uses. However, not all neighborhoods have a variety of these services, which makes connectivity between neighborhoods essential.

GOAL 4: PROMOTE ECONOMIC RETURNS WITH FISCAL SUSTAINABILITY. Investment decisions made today will affect Omaha's future, both in terms of the obligations they establish and their economic returns. It is important that the City makes sound, thoughtful investments that have long-term, positive impacts for the community both economically and fiscally.

These four goals are a reflection of the Transportation Element's emphasis not just on building streets and bicycle paths, but on how those features shape and affect Omaha. The relationship between transporta-

tion and land use is explored throughout the plan, and builds upon previous work accomplished in the Environmental Element and Omaha by Design initiatives. The aim is to not just build a great transportation system for the city, but to help build a great city.

Organization of the Transportation Element

The Omaha Transportation Element is intended to guide capital project selection, programming and changes to the implementation of transportation policy over the next 25 years.

Following a brief introduction, Section 3 is an inventory and assessment of the transportation system's existing conditions. The next sections (Sections 4 and 5) describe the public outreach and engagement process, and document the various project ideas that the team considered. It should be noted that Section 5 is not a set of recommendations for what should be pursued under this plan but a discussion of the many ideas, proposals and observations developed throughout the process.

Section 6 documents the process by which these candidate projects would be evaluated in the future.

Finally, the Recommendations section (Section 7) outlines project and policy recommendations, including transportation-based recommendations for land use and growth management policy. This section also identifies policy recommendations for immediate attention, representing the first steps that Omaha can take to implement this plan.

Omaha in 1916



*Omaha's rapid growth from 1880 to 1920 led to the development of large office and civic buildings in its center. These were linked to the agriculture and transportation-related industries that defined the city's economy, and they established a busy, vibrant urban center where streets carried a mix of vehicles, streetcars and pedestrians. **Photo source:** Library of Congress.*

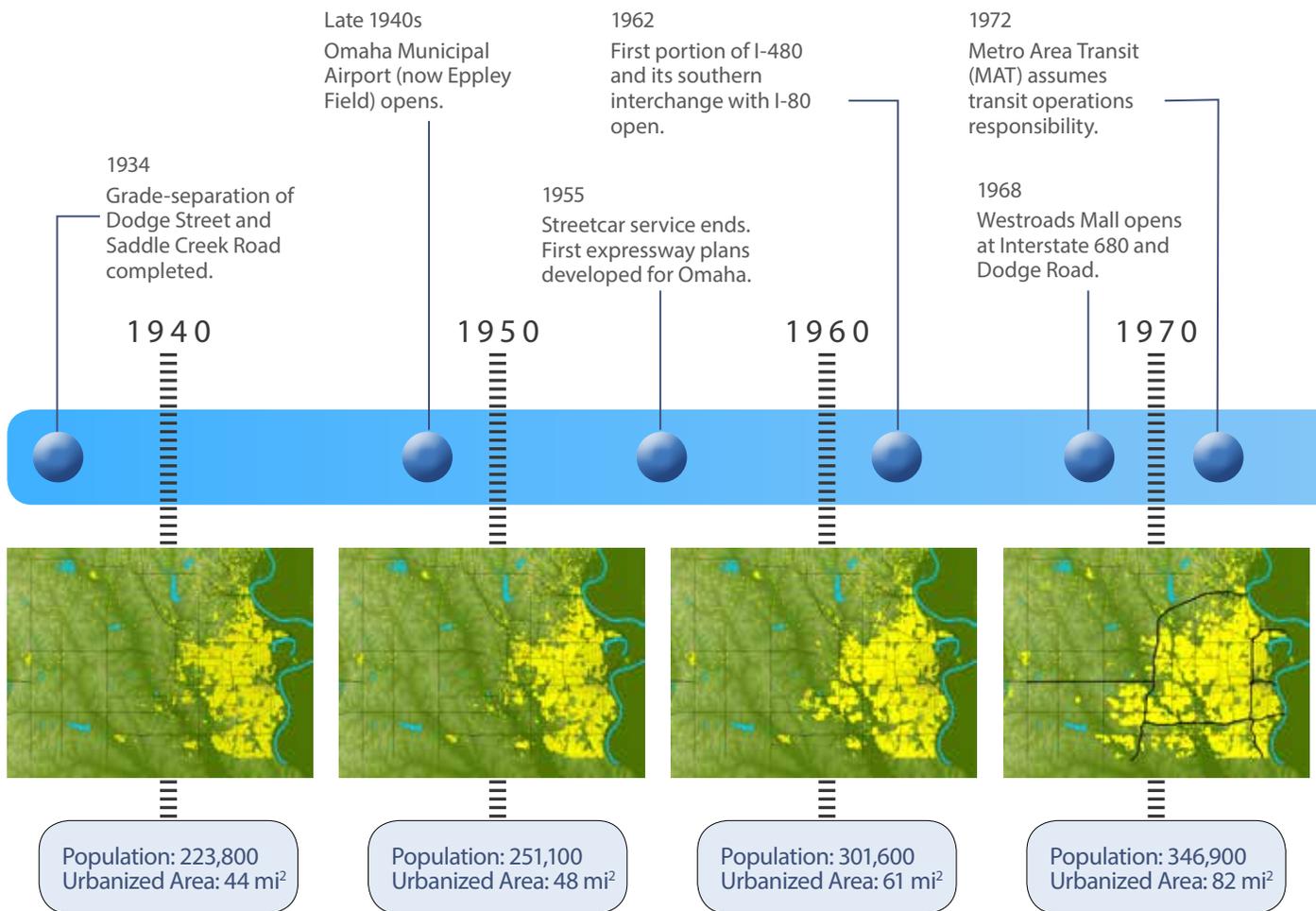
Omaha in 2010

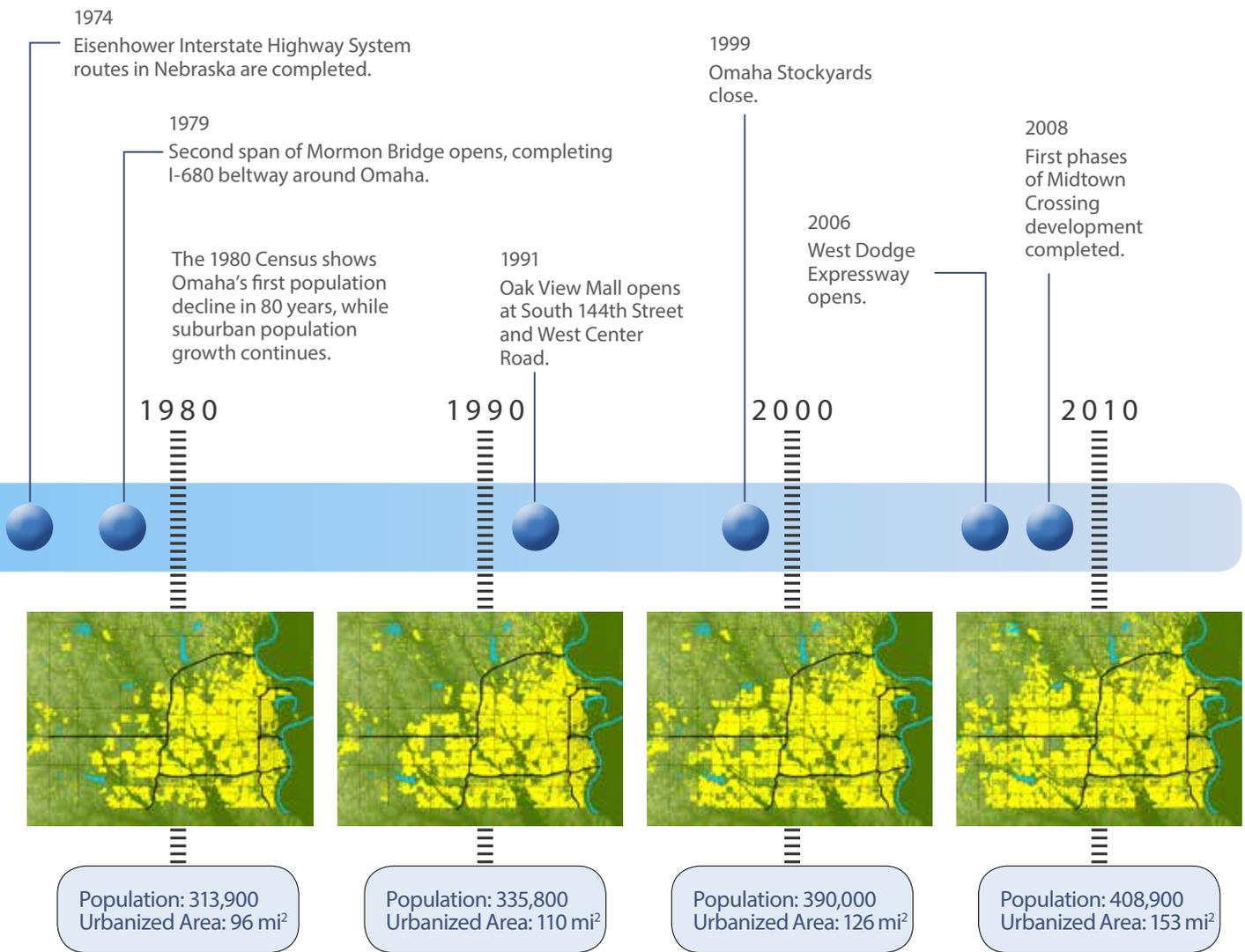


*Omaha retains much of its historic built environment, but its streets have been converted for an entirely different set of priorities. Automobile use and traffic began to grow shortly after the photograph from 1916 was taken. An even more rapid increase in the use of automobiles, brought about by societal prosperity after World War II, led planners and engineers to begin orienting streets to accommodate vehicle traffic above all else. This resulted in wide vehicle cartways and, especially in downtowns, one-way streets that could move large volumes of traffic more efficiently. **Photo source:** AECOM.*

Omaha's Growth Since 1940

This diagram illustrates Omaha's growth and development from the 1930s to the present, with major milestones in its transportation system and land development documented and compared to larger national trends. The maps of the city show its urbanized area (based on the recorded year of construction of buildings) and demonstrates Omaha's rapid spatial expansion.





Inventory and Needs Assessment

Like other major and medium-sized cities, Omaha has a complex transportation system. This section provides a description and brief analysis of roadways, traffic volumes and patterns, traffic control, roadway crashes, pedestrian and bicycle facilities, transit, truck routes, railroads, and aviation.

3.1 Roadway Network

Transportation in Omaha is dominated by travel in private automobiles. To understand the existing conditions of the roadway network and identify areas for improvement, the planning team examined roadway functional classifications, street network characteristics, roadway jurisdictions, and bridges.

Functional Classification

Functional classification is a concept that categorizes streets and roads into different classes based on the kind of vehicular travel they are intended to accommodate.

The organization of streets and roads into different classes was developed to guide the movement of traffic through a roadway network in a logical and efficient manner.

The three primary functional classes are arterial, collector and local. Arterial roadways and streets are intended to carry traffic over longer distances and have a more regional mobility function. Local streets are intended primarily to provide access to land uses, and Collectors are the logical step between the two classifications.

As with many jurisdictions in the US, Omaha employs a more complex system of functional classification than just these three categories. Table 3.1.1 contains the classifications for the 1,879.3 miles of roadway within city limits; Map 3.1.1 illustrates which roadways fall under each.

Table 3.1.1 Omaha's Functional Classification

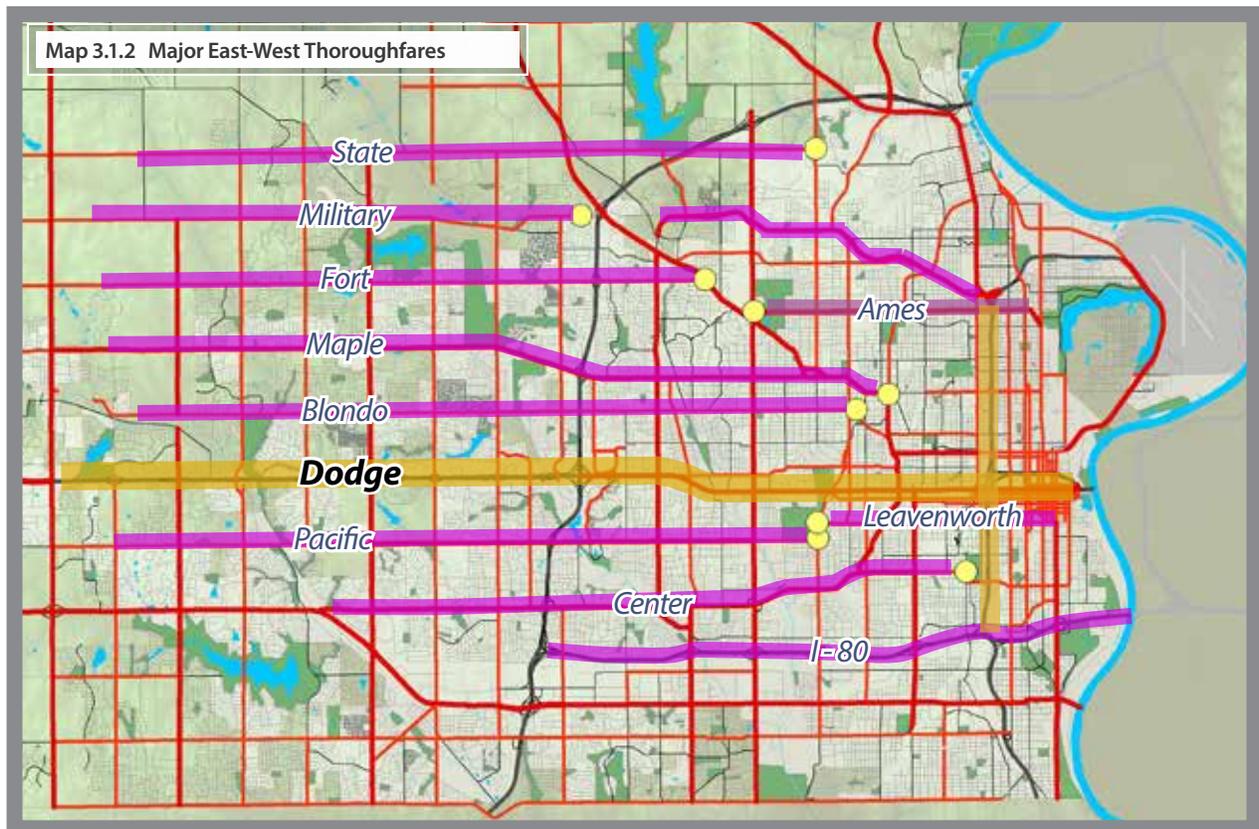
Street Classification	Length (in miles)
Major Arterial Streets	110
Minor Arterial Streets	175
Collector Streets	134
Local Streets	1,240
Private Streets	95
Other Streets (includes park streets, cemetery streets, and platted but unconstructed streets)	82
Expressways	43.3
Data Source: Omaha-Douglas County GIS	

to continue the trip. This lack of arterial continuity is one reason that travel demand on Dodge Street has remained high. In spite of alternative routes, Dodge Street is the most direct and convenient connection into downtown.

Dodge Street/Dodge Road

Within Omaha's street network, Dodge Street and West Dodge Road play a unique role. In downtown Omaha, Dodge and Douglas Streets form a one-way couplet. This ends just west of the US 75 expressway where Dodge becomes a five-lane undivided street with a reversible middle lane, thus allowing three lanes of moving traffic. Because of this configuration, left turns are not permitted on Dodge Street for most of the section between 30th Street and 69th Street. West of 69th Street, Dodge is a more typical suburban arterial roadway, with three moving lanes of traffic in each direction and dedicated left turn lanes.

Dodge's evolution over the 20th and early 21st centuries has been driven primarily by the westward expansion of Omaha's built footprint. As suburban growth moved to the west in the last decades of the 20th century, West Dodge Road evolved beyond a traditional rural road into a high-capacity suburban arterial roadway to accommodate regional movement demand. The diagrams on the following pages illustrate the different designs and roles that Dodge plays, and describes the primary transportation needs for each part of the corridor.

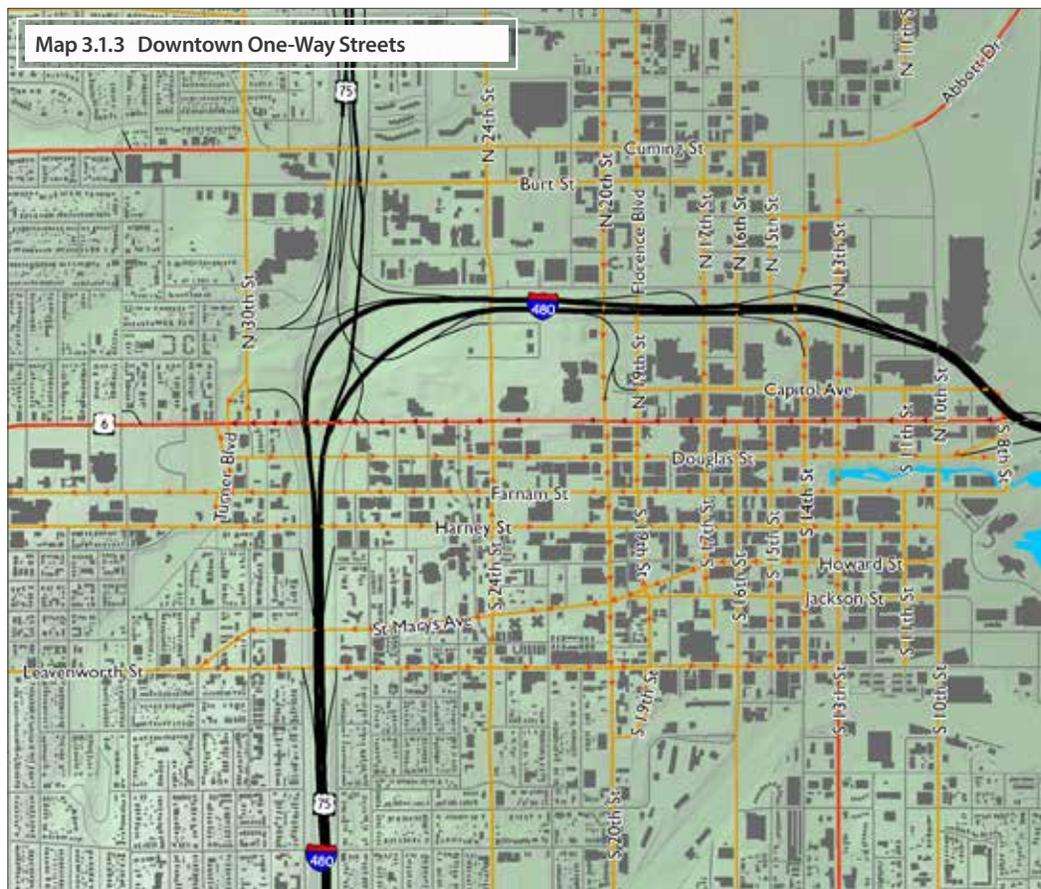


One-Way Streets

The city has 25 miles of one-way streets, many of which are in downtown Omaha. When considered with central Omaha's typical 100-foot right-of-way, this creates a street with three or four moving travel lanes and on-street parking, greatly increasing car-carrying capacity of the streets beyond what they would accommodate with two-way traffic flow. Some of these one-way streets downtown are tied to larger infrastructure such as the access ramps to Dodge and Douglas Streets from the Interstate 480 expressway bridge over the Missouri River. Yet for most of these one-way streets, traffic volumes suggest that there is an excess amount of vehicle-moving capacity.

As shown in Map 3.1.3, several extents of these one-way streets have been removed to create larger

sites for development. This break in the network has interrupted the flow of several downtown one-way streets, reducing their effectiveness for carrying traffic into and out of downtown.



Top: Diagram of directional traffic flow in Omaha in the mid-1950s, from the 1956 Plan for Trafficways for Omaha prepared by Howard, Needles, Tammen and Bergendoff (now HNTB). Bottom: Downtown one-way streets today.

Dodge St. And West Dodge Rd.: Understanding the Thoroughfare

Dodge Street is Omaha's spine and one of its major commercial thoroughfares, yet even this one corridor has many different roadway design patterns and, consequently, land use patterns. The diagrams here help to illustrate its different faces, pointing out how it transitions from a fully grade-separated expressway to a surface level downtown street from

Dodge Road: 120th Street to Interstate 680



Dodge is an at-grade, limited access expressway west of 120th Street. This section continues west for over six miles (to 204th Street).

Elevated express freeway lanes between 120th Street and Interstate 680 facilitate high-speed travel through an active area of commercial and office land uses. Below these elevated lanes, 'local' Dodge is a surface arterial highway.

Frontage streets parallel to the Dodge Road mainline allow access to properties and other local streets.

Dodge Road: Interstate 680 to 78th Street



Limited access to local cross streets and private property driveways facilitates through-traffic flow by reducing turning movements and a need for traffic signal control.

Left turns are allowed at select locations, though these nearly all feature dual-lane turn storage to accommodate high volumes

Seven through lanes carry high traffic volumes as Dodge transitions from an expressway to an urban arterial street.

west to east Omaha. Taken in a larger context, Dodge's primary role is to move traffic, yet the emphasis that has been placed on this role makes Dodge a challenging corridor through central Omaha, due to limited rights of way and numerous access points.

Dodge Street: 78th Street to Memorial Park



Driveways are more common than west of 90th Street, providing access to individual commercial properties.

5-lane section with reversible center lane begins, facilitating through-traffic flow according to the peak direction of travel. Because of this configuration, left turns are prohibited throughout this extent of the Dodge corridor.

Dodge Street: 42nd Street to Downtown Omaha



Five-lane section with reversible center lane continues, although at key intersections 'jug-handle' turn opportunities have been provided (thus expanding Dodge's right-of-way footprint).

Dodge and Douglas form a one-way couplet near the crossing of Interstate 480 (the North Expressway). Dodge carries westbound traffic only, but this one-way section begins its corridor orientation to move traffic through the city.

NDOR, Federal-Aid and National Highway System Roads

Omaha is partially governed by highway design and maintenance policies from The Nebraska Department of Roads (NDOR) and the National Highway System (NHS). NDOR maintains jurisdiction over a system of highways throughout the state. Although this system is not highly extensive within Omaha, it does include all of Omaha's Interstate Highways, the non-Interstate portions of the North and South Expressways, and several major thoroughfares in the city, such as West Maple Road, L Street and Dodge Street.

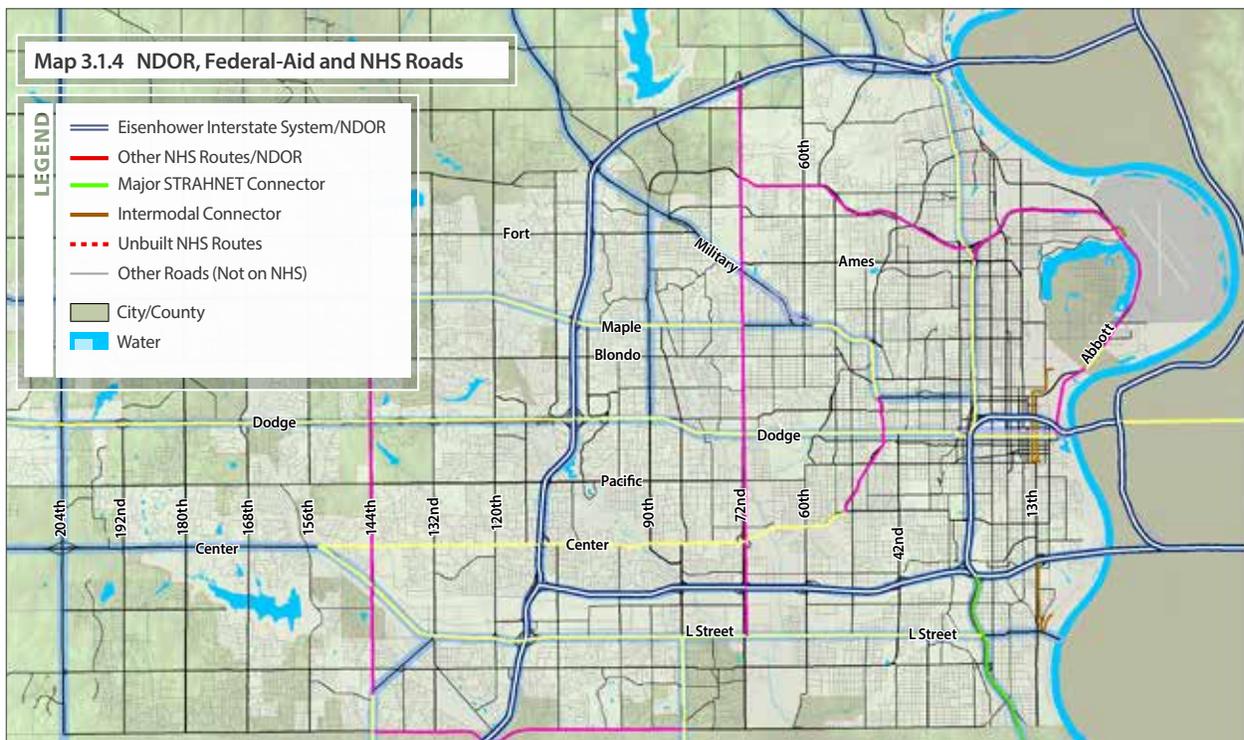
Independent of the NDOR system is the National Highway System (NHS), a 160,000-mile highway network designated by the US Department of Transportation's. In Omaha the NHS includes both NDOR and non-NDOR routes. Non-NDOR routes that constitute part of the NHS use the American Association of State Highway and Transportation Officials's Policy on the Geometric Design of Highways and Streets as governing standards.

Map 3.1.4 defines which Omaha streets and roads comprise these two systems. These are important additions to an inventory of Omaha transportation facilities because they require coordination with NDOR and the Federal Highway Administration.

Bridges

Omaha has 88 roadway bridges, most providing crossings over rivers and other water features. This does not include bridges for roadway grade separation on NDOR roads, which are often addressed separately in terms of maintenance and repair.

The condition and performance of bridges are assessed by three principal indicators: if a bridge is 'structurally deficient,' if it is 'functionally obsolete,' and a sufficiency rating expressed as a percentage. Structural deficiencies are characterized by deteriorated conditions of components and reduced load-carrying capacity. Functional obsolescence is a condition of the geometrics of the bridge (such as vertical clearance for under-passing vehicles or curve radii) not meeting



current design standards. FHWA uses these terms together with sufficiency ratings and assigns a score of 0-to-100 to determine the amount of federal funding.

Omaha's bridges are generally in good condition with only seven having sufficiency ratings below 55 percent, the FHWA-defined threshold for structural adequacy and safety.

3.2 Traffic Volumes and Travel Patterns

Omaha's growth since World War II has primarily occurred west of the central city, where a relative lack of physical barriers enabled easy expansion. As a result, the major travel patterns in the city are in east-west directions, even if this requires some north-south movement to adjust for preferred routes.

Vehicle Mobility

Table 3.2.1 details data from the Texas Transportation Institute's Urban Mobility Report, published for major US metropolitan areas annually since 1982. The table shows trends in vehicle mobility in Omaha over the

last 25 years, comparing the amount of vehicle travel to metropolitan Omaha's population. Although these indicators refer to the entire Omaha metropolitan area (including portions in Iowa), the City of Omaha has consistently accounted for over half of this metropolitan area population.

While the urban area's population has increased over the 25-year period, both freeway and vehicle miles traveled have increased at much greater rates: freeway miles traveled have more than doubled, with only the two-mile Dodge Expressway being constructed during this time period, and arterial miles traveled have increased by 50 percent. This is not surprising given the growth patterns of Omaha, where population has doubled since 1940 but urbanized land area has increased by a factor of 3.5, requiring longer trips.

Part of the reason expressways are bearing a greater burden is the lack of east-west connectivity between newer residential areas of West Omaha and the historic employment concentration in downtown, Midtown, and the industrial areas along the Burlington Northern-Santa Fe railroad corridor. As Omaha grew, however, it created breaks in the street grid that caused some east-west travel routes to be divided among different

Table 3.2.1 Omaha Regional Travel Patterns

Mobility Indicators	2009	2006	2003	2000	1997	1994	1991	1988	1985
Metro Omaha Population	630,000	625,000	615,000	605,000	575,000	545,000	535,000	520,000	510,000
Ratio of Peak Commuters (Vehicles) to Population	55.6%	55.0%	53.7%	51.7%	49.7%	48.1%	46.2%	44.8%	43.9%
Freeway Vehicle-Miles of Travel (in thousands)	3,999	4,130	3,600	3,300	2,955	2,690	2,095	1,965	1,895
Arterial Vehicle-Miles of Travel (in thousands)	7,225	7,110	6,740	6,625	6,005	5,810	5,155	4,875	4,790
Annual Passenger-Miles of Transit Travel (in millions)	17.1	16.8	16.5	16.0	20.3	20.5	22.9	28.1	31.8
Unlinked Transit Passenger Trips (in millions)	4.0	4.9	4.2	4.3	5.4	5.2	6.1	7.0	9.0

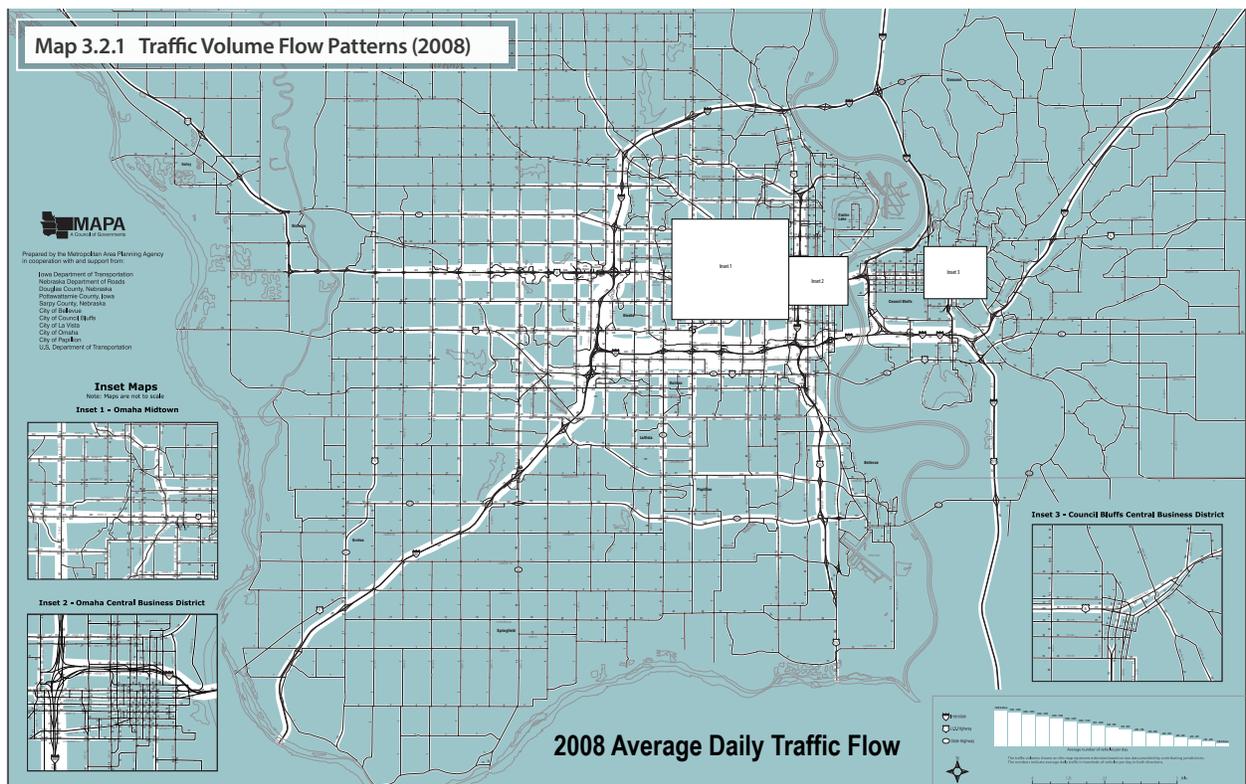
Data Source: Texas Transportation Institute, Urban Mobility Report (2010). The metropolitan population refers to the urban area, or the contiguous area with a population density of more than 1,000 persons per square mile.

streets. The only exception to this pattern among major east-west thoroughfares is Dodge Street (and West Dodge Road in western Omaha and the interstate).

Interstates 80 and 480 play an important part in this travel demand. Major east-west arterials such as West Center Road and West Maple Road eventually end prior to reaching a north-south connection that could carry their traffic directly to and from downtown Omaha. As a result, traffic volumes are higher on the extent of Interstate 680 between Maple Road and Interstate 80. Much of this traffic continues on Interstate 80 to access downtown.

It is important to note the steady increase in peak-hour commute vehicles as a portion of total population of the urban area. This suggests that an increasing number of peak-hour trips are taken in single-occupant vehicles. This is also not surprising, given the growth of suburban and exurban employment centers away

from the metropolitan core of downtown Omaha, and the resulting logistical complication of using transit and carpooling to reach employment. Map 3.2.1 is an annual map produced by MAPA for average daily traffic flow.



This map, prepared by the Metropolitan Area Planning Agency (MAPA), illustrates traffic volumes and flow patterns based on 2008 traffic volumes. The other major east-west corridors that do not fully connect to downtown or West Omaha also distribute traffic from the west onto the expressway system, adding to this confluence.

Traffic Volumes and Roadway Capacity

The Metropolitan Area Planning Authority (MAPA) travel demand forecasting model is used to understand travel patterns throughout the Omaha region and relate these to roadway capacity for vehicular traffic. This computer-based model is similar to other models used throughout the US, using current population and employment data as a basis for simulating travel patterns throughout the region and comparing them to the actual capacity on the region's roadways.

One measure used to evaluate the performance of roadway infrastructure is level of service (LOS), a system of assigning ratings to different components of transportation infrastructure. When applied to roadway segments and their overall performance, LOS can be related to the ratio of traffic volume to roadway capacity. Ratings are expressed as letters, from A to F, with A representing the highest level of performance and F representing the lowest:

LOS A - B: Volume-to-capacity ratio is less than 0.5

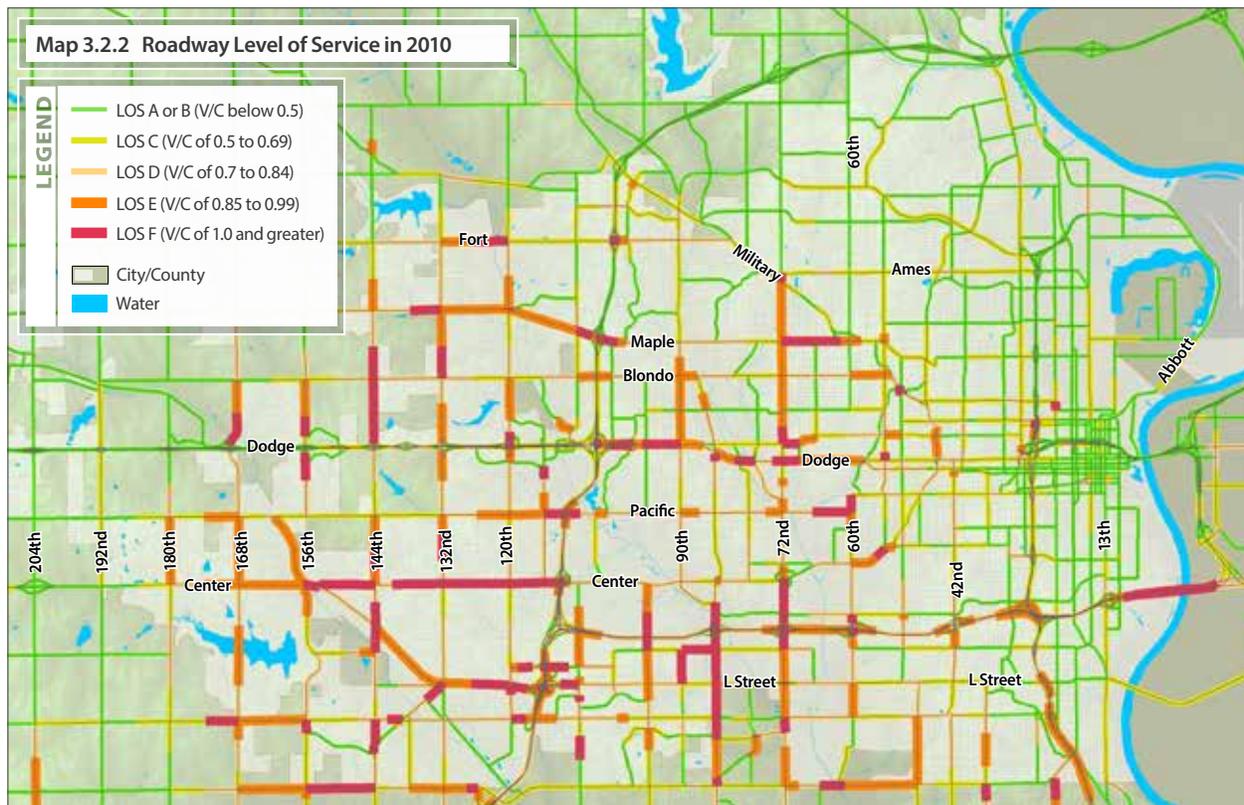
LOS C: Volume-to-capacity ratio at least 0.5 but less than 0.7

LOS D: Volume-to-capacity ratio at least 0.7 but less than 0.85

LOS E: Volume-to-capacity ratio at least 0.85 but less than 1.0

LOS F: Volume-to-capacity ratio is 1.0 or greater

Map 3.2.2 shows the level of service of major roadways as measured by the MAPA travel demand model for present conditions. Roadway segments at levels of service E and F represent conditions where traffic congestion is likely to be worst, as overall daily traffic is approaching or exceeding roadway capacity. Roads at these levels of service likely point to a need for additional transportation system capacity.



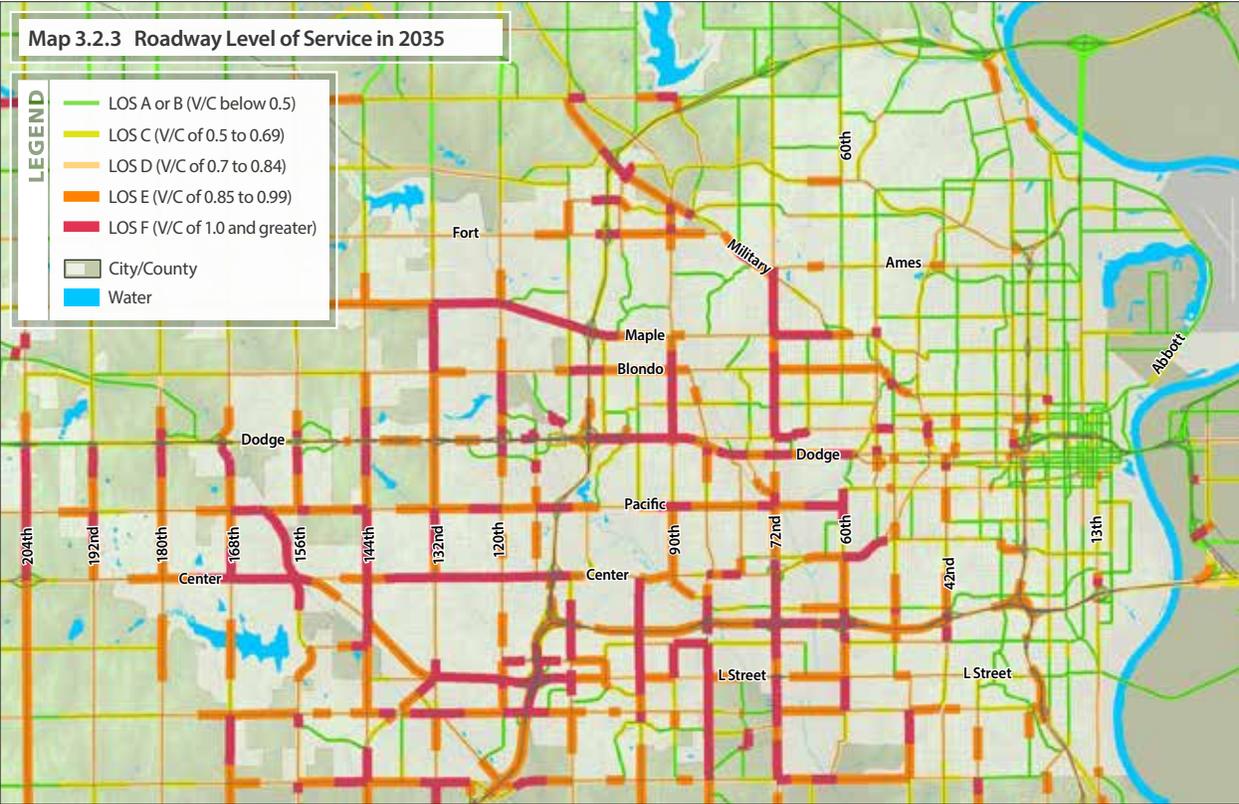
The travel demand model is also used for forecasting conditions of a future year, which helps MAPA, the City of Omaha and other partner agencies to anticipate future transportation needs. MAPA’s current model forecast year is 2035, in concert with the planning year for MAPA’s long-range transportation plan. The 2035 demand model scenario includes consideration of planned and envisioned changes to the roadway network that modify capacity. When these changes are taken into account with the traffic volumes forecast for 2035, roadway levels of service may change from 2010. In some cases, the projected capacity increase accommodates projected volume, but in other cases it does not; even with a planned increase in roadway capacity, the roadway level of service for some extents remains relatively low, pointing to continued congestion challenges. Map 3.2.3 illustrates anticipated LOS in 2035.

Congestion and Supporting Street Network

The conventional response to traffic congestion is roadway widening, such as converting a two-lane road into a four-lane road.

Maps 3.2.4 and 3.2.5 and Tables 3.2.2 and 3.2.3 illustrate a different way of expressing the transportation system’s level of service by normalizing it over the entire geographic area of a component traffic analysis zone. This is done by aggregating volume and roadway segment length for all of the travel demand model links (or segments) that serve a particular traffic analysis zone. The aggregated value is weighted by volume and length, so that longer roadway segments carrying more traffic have greater weight in determining a composite score than shorter segments carrying less.

The benefit of this analysis is that it shows geographic areas with capacity issues, not just single roads. Analysis zones with a low level of service appear as



such because the majority of their street mileage is performing at this low level of service. This implies that the majority of connecting roadways that are evaluated as significant thoroughfares experience traffic congestion.

There are several reasons why analysis zones in newer areas of Omaha show a lower level of service than older areas; for one, there are fewer streets providing connections through and between neighborhoods. As such, the travel demand model has fewer possible outlets for assigning traffic movement based on land use patterns, reflecting a real-world necessity to use major arterials and thoroughfares for some portion of any trip. These areas also have fewer options for non-vehicular travel. Land uses are separated and feature commercial and employment uses along major arterials, often only at arterial intersections. Certain areas of central Omaha, by contrast, have a broader mix of land uses and short trips that can be accomplished by walking, bicycling or transit.

In terms of transportation need, analysis zones with low levels of service do not necessarily mean that major roadways must be widened to add vehicle capacity. In some areas there may be opportunities to add system capacity by identifying parallel street network to help separate local from regional trips along major arterials, and to create connections between major arterials.

The implications of the link between available thoroughfares and development become even more pronounced when the 2035 travel demand model conditions are considered. The 2035 travel demand model network does not feature a significantly greater amount of street network in newer areas of Omaha than it does in 2010 but contains a larger population.

Table 3.2.2 Analysis Zones with High Average Congestion Levels in 2010

Number on Map	Analysis Zone (by boundary streets)	Area-wide V/C	Average block size*	Other Major Characteristics
1	Blondo south to Cuming, 132nd west to 144th	1.02	16.6 ac	
2	Shirley St south to Center, 144th west to Boozier	1.11	44.8 ac	Connectivity limited to 3 intersections with main arterial streets
3	Center south to Industrial, west of 139th	0.98	28.9 ac	
4	Shirley south to Center, 132nd west to 144th	0.99	12.1 ac	
5	Shirley south to Center, 120th west to 132nd	0.99	10.6 ac	
6	C St south to L St, 132nd west to Industrial	1.02	47.3 ac	
7	Center south to Lake Zorinsky, 168th west to 180th	0.90	25.5 ac	Connectivity constrained by Lake Zorinsky
8	Center south to Nina, Paddock west to Frederick	1.04	23.9 ac	
9	F St south to L St, 84th west to 96th	0.92	26.9 ac	
10	Dodge south to Howard, 60th west to 72nd	0.93	8.0 ac	Includes UNO Campus; connectivity exists but through campus streets. Area congestion is largely related to 72nd and Dodge intersection approaches.

Data Sources: City of Omaha GIS, MAPA Regional Travel Demand Model.
 *Citywide average block size is 10.7 acres.

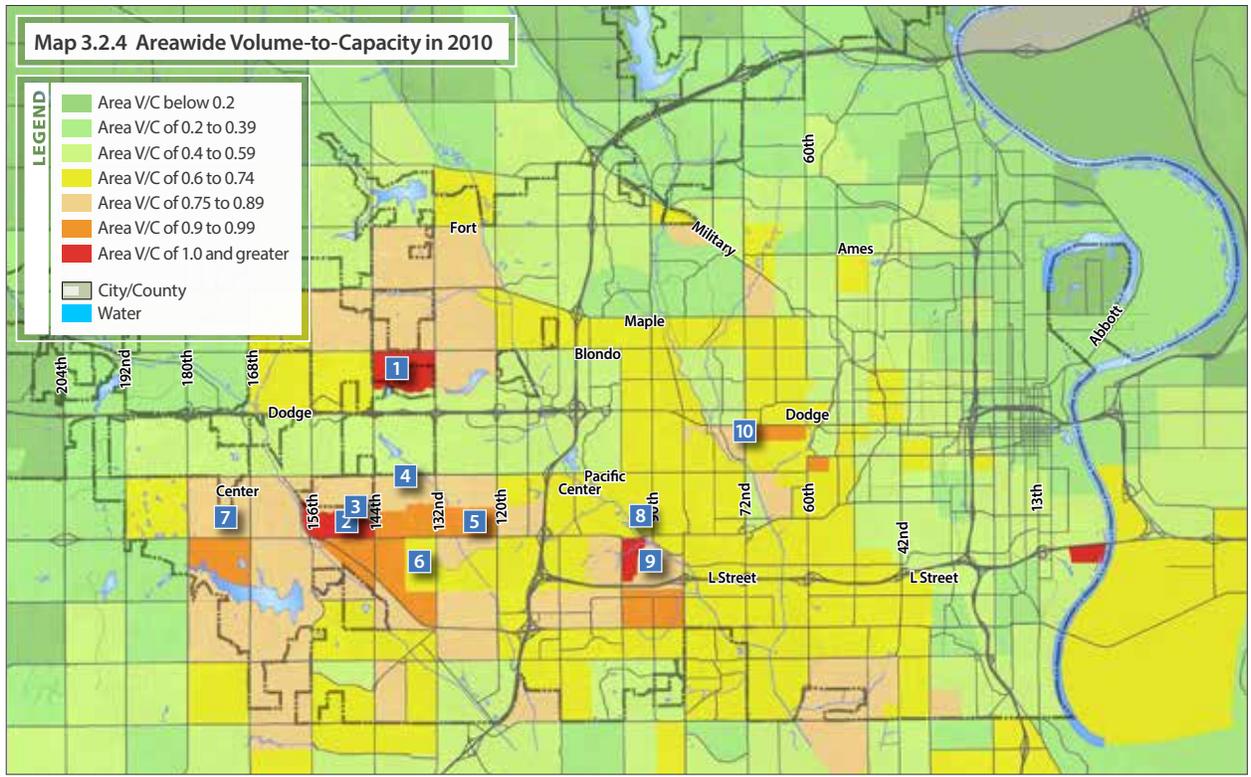
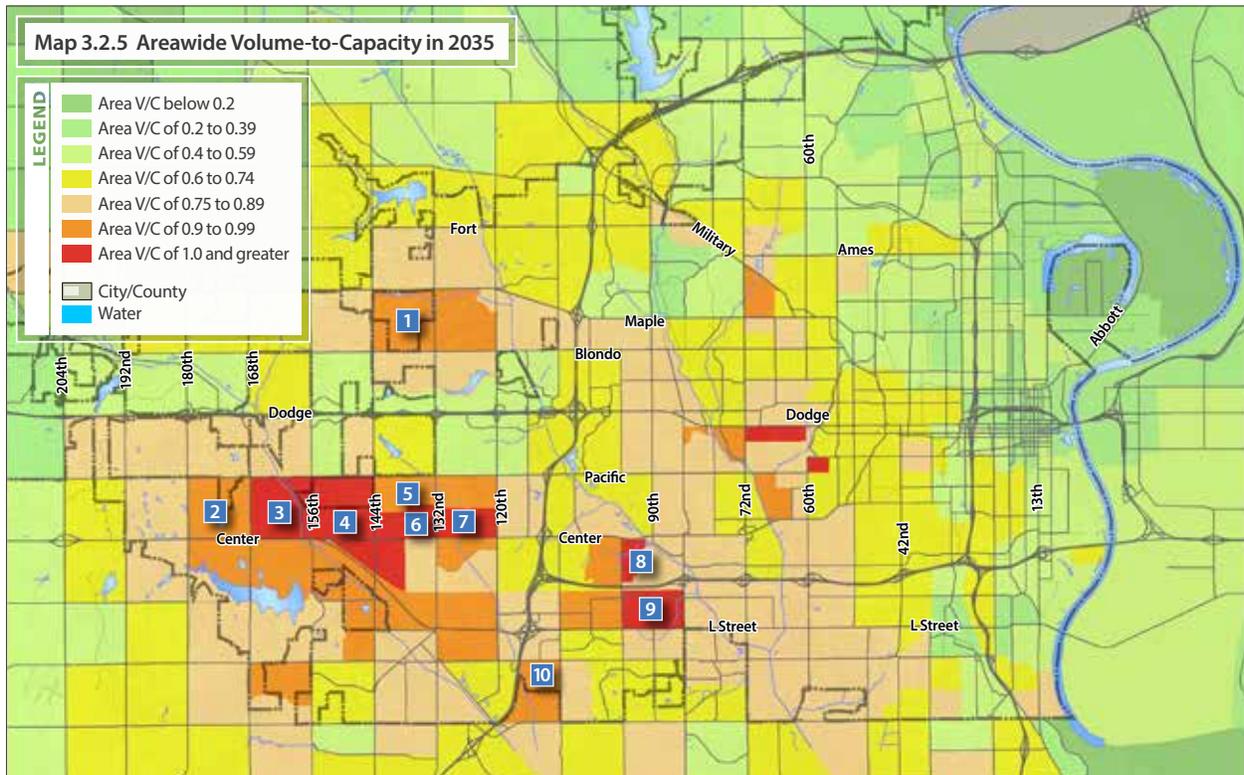


Table 3.2.3 Analysis Zones with High Average Congestion Levels in 2035

Number on Map	Analysis Zone (by boundary streets)	Area-wide V/C in 2035 (and 2010)	Average block size*	Other Major Characteristics
1	Maple south to Blondo, 132nd to 144th	0.90 (0.89)	14.6 ac	
2	Pacific south to Center, 168th west to 180th	0.93 (0.87)	12.9 ac	
3	Pacific south to Center, Boozier west to 168th	1.06 (0.86)	15.9 ac	
4	Shirley St south to Center, 144th west to Boozier	1.03 (1.11)	44.8 ac	Connectivity limited to 3 intersections with main arterial streets
5	Pacific south to Shirley, 132nd west to 144th	0.95 (0.80)	13.7 ac	
6	Shirley south to Center, 132nd west to 144th	1.09 (0.99)	11.8 ac	
7	Shirley south to Center, 120th west to 132nd	1.07 (0.99)	10.8 ac	
8	Center south to Nina, Paddock west to Frederick	1.21 (1.04)	23.9 ac	
9	F St south to L St, 84th west to 96th	1.04 (0.92)	26.9 ac	
10	Q St south to Harrison St, 108th west to I-80	0.91 (0.73)	7.6 ac	

Data Sources: City of Omaha GIS, MAPA Regional Travel Demand Model.
 *Citywide average block size is 10.7 acres.



3.3 Traffic Control

Traffic signals and standard signage are the primary means of traffic control in Omaha. The City currently has 941 traffic signals, controlling approximately 8 percent of the city's 10,000 intersections.

Traffic Control and Arterials

Of the 941 traffic signals in Omaha and its surrounding unincorporated areas, 843 of these are controlling arterial streets. Public Works is continually monitoring this system for unwarranted signals and signals requiring updating to current standards and makes every attempt to remove unwarranted signals when possible. An example in reference to another project within this document that could provide that removal of five unwarranted signals if the 19th & 20th one-way pair conversion project is completed. The City shall continue to comply with strict adherence to the MUTCD with regard to the installation of traffic signals only when warranted.

Unsignalized Control Methods

Roundabout intersections have grown in popularity across the US in recent years due largely to their relative efficiency in traffic operations and higher rates of safety for all modes when compared to conventional signalized intersections. Although they require a greater right-of-way footprint than signalized intersections, they are useful both as an efficient traffic control device and also as a traffic calming method.

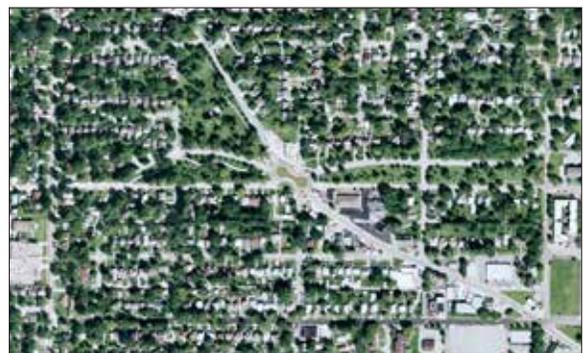
Omaha has begun using roundabout intersections as a way to manage traffic control at geometrically complex intersections. One of the most innovative roundabouts in Omaha is the 'figure eight' roundabout at the intersection of Saddle Creek Road, Happy Hollow Boulevard, Seward Street and 50th Street, which handles traffic from eight different entering roadways.

3.4 Pedestrian and Bicycle Systems

Sidewalks and bicycle paths are not only facilities for transportation, they are also important public spaces that connect the community and provide access to physical activity and recreation.

Sidewalks

The City of Omaha does not have a comprehensive inventory of sidewalk locations. To better understand the current sidewalk system, the planning team developed a method for estimating coverage based on assumptions of sidewalk construction in development patterns typical of different periods of the 20th century,



The 'figure 8' double roundabout at Saddle Creek, Happy Hollow, Seward and 50th. Although typically consisting of simple circle designs, roundabouts are increasingly used in Omaha and throughout the US as an efficient, effective form of unsignalized intersection traffic control.

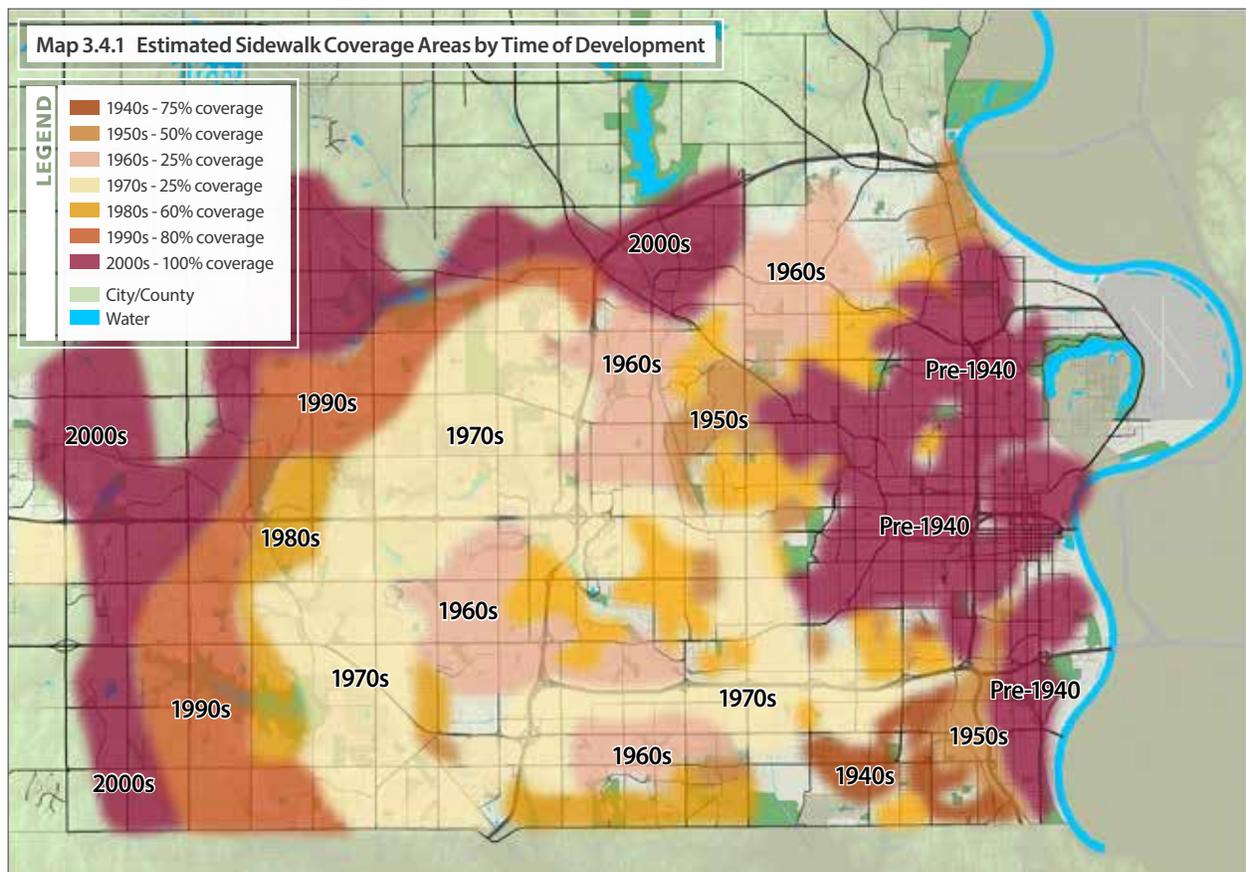
shown in Map 3.4.1.

Most of Omaha's traditional neighborhoods feature sidewalks on both sides of the street. Areas of the city that were built after World War II are more likely to have sidewalks on only portions of a street's extent, on one side of the street, or have none at all. This trend has been reversed in newer neighborhoods, such as those in West Omaha. Sidewalks became standard again in late 20th century subdivision design, prompted largely by concerns over accommodation of persons with disabilities as well as recreational safety.

City subdivision regulations began to include requirements for sidewalks on both sides of streets in order to address these concerns, and as a result much of West Omaha has complete sidewalk coverage. This raises the citywide average, and suggests that midtown Omaha has the greatest deficiencies of coverage.

Pedestrian Bridges

The city has 31 pedestrian bridges, seven of which are in private ownership and thus not maintained by the City of Omaha. Some of these bridges are near schools, implying that they were constructed for safety reasons. In several cases, such as the pedestrian bridge over Blondo Street at 68th Street, the safety concerns are clear: this particular bridge crosses a relatively busy three-lane road near the crest of a hill, where driver visibility is limited by the vertical curvature of the road. Most appear to be in good condition. Current ADA regulations overly burden the construction of new pedestrian bridges in Omaha.



Off-Street Trails

With 199 miles of trails, Omaha’s off-street multi-use trails are an important means of multi-modal transportation. These trail corridors generally follow rivers, streams and other natural drainage systems where they can take advantage of natural buffers and moderate topography. Additionally, there are 84 miles of proposed off-street trails that have not yet been constructed.

Table 3.4.1 and Map 3.4.2 show major trail corridors that contribute to Omaha’s transportation system. Some are short but provide key off-street links through neighborhoods; others are longer, regional trails that connect many different parts of the city. Commuters who bicycle to work have noted that it lacks continuous east-west opportunities. Although the standard arterial street design in areas of newer development have a shared-use trail on one side of the street, few of these trails cross Interstate 680.

On-Street Bicycle Lanes and Shared Streets

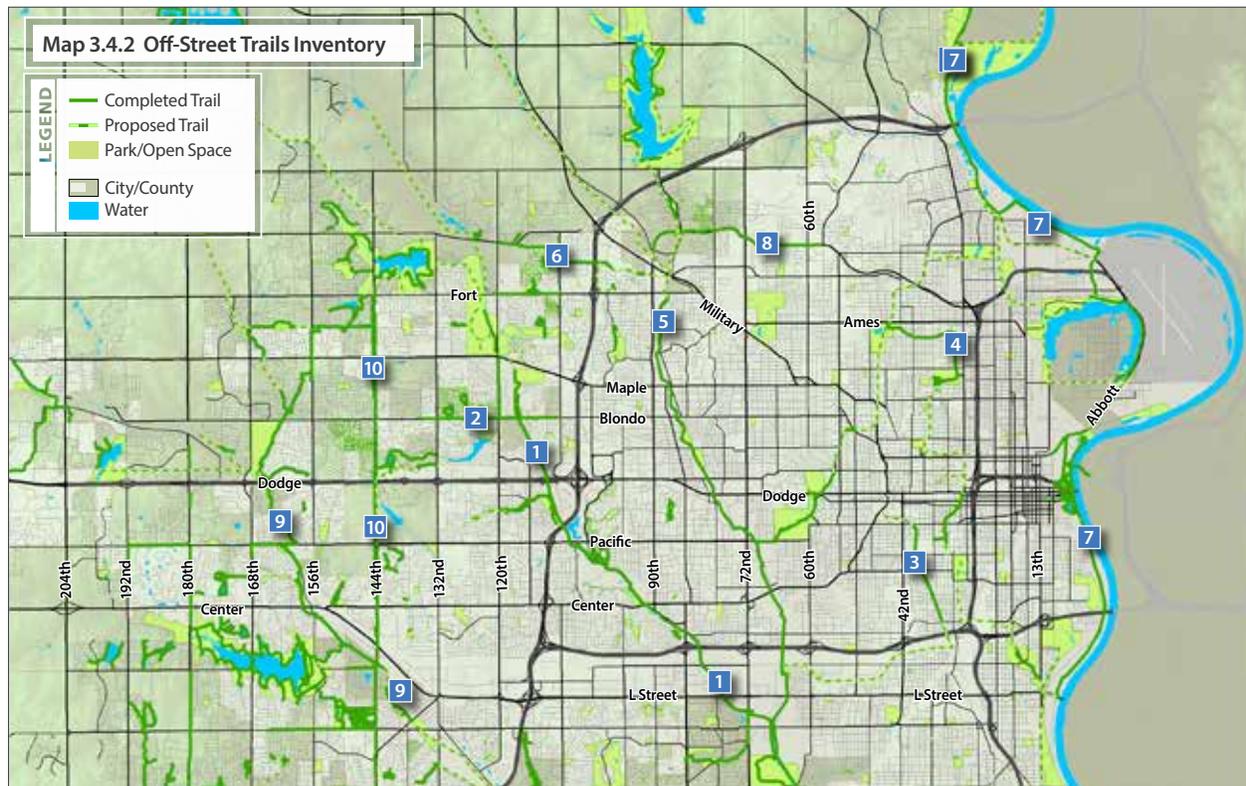
Compared to its off-street trails, Omaha has a small inventory of on-street bicycle lanes. However, striped bicycle lanes are no longer the only option for an on-street bicycle route designation. The City has begun to use the shared lane arrow marking, sharrows more extensively, following a nationwide trend to designate shared streets with pavement marking when roads lack sufficient space for a bicycle lane.

There is high bicycle travel demand for east-west movement and relatively few on-street options. Additionally, many of the city’s east-west thoroughfares facilitate high-speed vehicular movement which is not suitable for cyclists.

Table 3.4.2 Major Off-Street Trail and Path Facilities in Omaha

Number	Trail Name	Miles	Major Destinations the Trail Serves (within one-half mile of trail)
1	Big Papio Trail	10.4	Westside Middle School and multiple elementary schools; Regency Park; Tranquility Park
2	Blondo Street	2.3	Joslyn Elementary School; Willow Wood Park, Lee Valley Park.
3	Field Club	1.6	Hanscom Park; Field Club and Jefferson Elementary Schools; University of Nebraska Medical Center, DC Health Center, VA Medical Center, Clarkson Hospital.
4	Fontenelle Park/Creighton Boulevard	2.4	Fontenelle Park; Omaha North Magnet High School; multiple elementary and middle schools; historic Omaha boulevard system.
5	Keystone Trail (includes length not in city)	25.3	Methodist and Children’s Hospitals; Crossroads Mall; Elmwood Park, Ak-Sar-Ben Village; multiple public and private schools.
6	Military Road	2.4	Tranquility Park, Masters and Prairie Wind Elementary schools. Crosses I-680. Includes 3.2-mile proposed extension.
7	Riverfront	16.0	Eppley Airfield, downtown Omaha, Heartland of America Park, downtown Florence. Trail is discontinuous through Carter Lake.
8	Sorensen Parkway	3.0	Glenbrook Park; Omaha Northwest High School and multiple elementary and middle schools; Alegent Immanuel Medical Center.
9	West Papio Trail	8.2	Skutt High School, Kiewit Middle School; Northwest Park, Zorinsky Lake Park. Extension of nearly 10 miles proposed to the south.
10	144th Street (includes length not in city)	12.9	Millard North High School, Millard South High School, multiple elementary and middle schools; Standing Bear Lake Park; Oak View Mall

Data Sources: City of Omaha GIS; Papio-Missouri Natural Resources District.



End-of-Trip Facilities

Bicyclists need safe and convenient facilities for bicycle parking and storage. Omaha’s zoning ordinance calls for adequate provisions for bicycle circulation and parking in the City’s Mixed Use (MU) district (Omaha Code Sec. 55-564) and the zoning ordinance’s regulations for off-site parking and loading allow a developer to substitute up to five percent of the required vehicle parking amount with bicycle parking (Omaha Code Sec. 55-739). However, the ordinance does not quantify appropriate amounts to be provided per a given intensity of land development.

Most of the available bicycle parking in Omaha has been provided with public resources, often as a part of streetscape improvement projects. Private property owners and managers who have provided bicycle parking have done so typically on a case-by-case basis.

3.5 Transit

The Transit Authority of Omaha, also known as Omaha Metro Transit (formerly Metropolitan Area Transit), provides scheduled, fixed-route bus and paratransit services within and immediately around the Omaha city limits, including routes across the Missouri River to Council Bluffs, Iowa and contracted service to Bellevue and Papillion in Sarpy County. Like many transit systems, it evolved from a legacy of private companies operating streetcar transit in the first half of the twentieth century and then bus transit. Metro itself was created as a public agency in the 1970s.

Current Conditions

Metro’s current system covers a total of 806 revenue miles of routes, of which approximately 500 miles of this service are unique (in other words, discounting overlapped service of multiple routes on the same street). In general, the overlapping of multiple routes on the same street is limited to major corridors such

as Dodge Street, Maple Road and 72nd Street. In all, nearly 30 percent of Omaha's public streets have some form of transit service.

Service Characteristics

The Metro route system is similar in its function and configuration to systems in other medium-sized urban areas; it provides service primarily to and from downtown, with higher frequencies along major corridors such as Dodge Street and the Northwest Radial Highway. Routes apart from these major corridors tend to have frequent turns and indirect paths in order to expand the area within a short walking distance of transit service.

Transit Dependency

According to Census data, fewer than two percent of workers in Omaha commute by transit. Unfortunately MAPA's regional travel demand forecasting model does not include a mode choice model that can estimate how many trips overall are made on transit. However, Census data suggests that the rate of automobile ownership and use in Omaha may be a constraint on household finances and that there may be demand for transit service beyond what current ridership levels indicate.

Choice Ridership

Choice ridership refers to transit riders who have other commuting options but choose to use transit. Typically, choice ridership is higher in communities where traffic congestion, high parking costs and high vehicle ownership costs make driving undesirable or inconvenient.

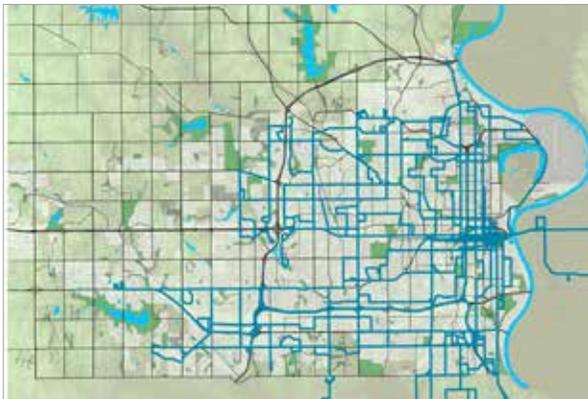
Omaha's high rates of vehicle use for travel, especially travel to work, indicate a low level of choice ridership. This can be explained in part by the trends toward decentralization and dispersal of employment throughout the Omaha metropolitan area in the last decades of the 20th century. However, a key factor in the current levels of choice ridership is the frequency and perceived reliability of transit service. Maps 3.5.1 and 3.5.2 compare service differences between peak demand during weekdays and the low service period of Sundays and holidays.

Funding

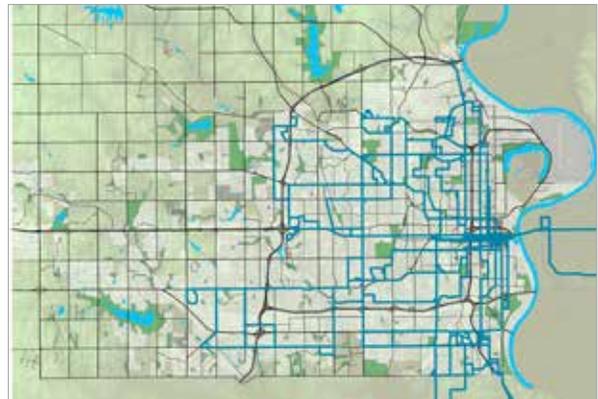
Metro is funded primarily by local property taxes, with some assistance from Federal Transit Administration for operating assistance. As in similar transit systems, a small portion of operational costs are recovered by user fares, although in Metro's case this is approximately 16 percent, lower than the national average of 29 percent for bus transit operations.

This presents a self-reinforcing challenge for Metro, as

Map 3.5.1 Weekday Peak Service



Map 3.5.2 Sunday/Holiday Service



the current levels of funding do not allow the system to offer levels of service to attract a greater number of choice transit riders but without choice riders fare box collections cannot increase.

In order to increase its choice ridership, Metro needs to identify an independent funding source. Lacking any additional funding source (such as sales tax, occupancy tax, rental car tax, etc.) the transit operator will likely be unable to sustain even current levels of service, and any hopes of capital grants from the Federal government for fixed service (BRT, rail, etc.) become very unlikely.

3.6 Truck Routes and Freight

Of the total length of surface-street routes, only 80 miles of the system are within areas of industrial land use. This suggests that nearly two-thirds of the truck route system is serving areas of the city that may be through land uses that are not suitable to truck traffic, particularly in residential areas of the city. Map 3.6.1 illustrates the inventory of major truck corridors in Omaha. Most of the city's truck route corridors enjoy relatively free-flow traffic movement and do not experience high levels of congestion. Places where congestion does occur are mostly limited to major expressway access approaches and areas of industrial land use.

3.7 Railroads

The city's principal railroad corridor lies south of downtown and is oriented east to west. This corridor runs parallel to Interstate 80 and crosses the Missouri River near the alignment of Leavenworth Street. It remains an active freight corridor and services a major concentration of industrial land uses.

Omaha is currently served by the Amtrak's Zephyr service that connects Chicago to San Francisco. In 2009, Omaha's station on Pacific Street accommodated over 43,000 boardings, making it the busiest station in

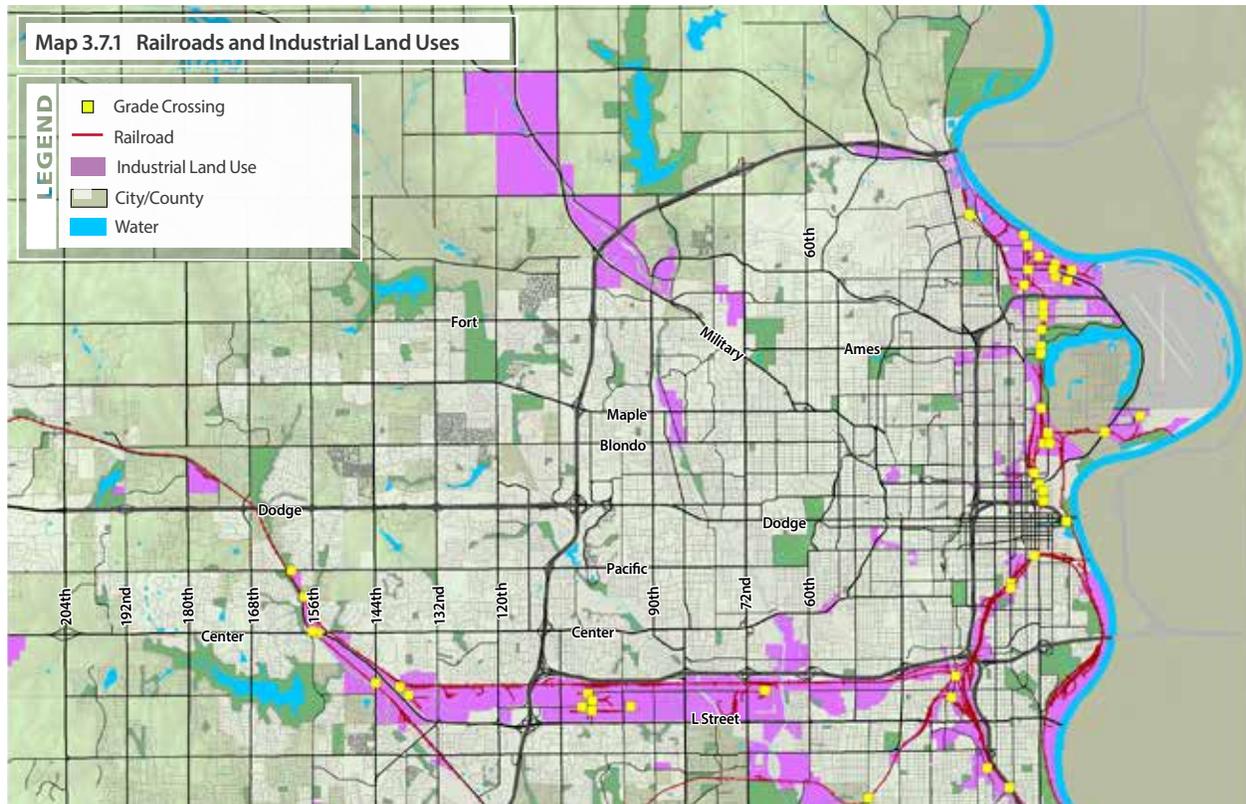
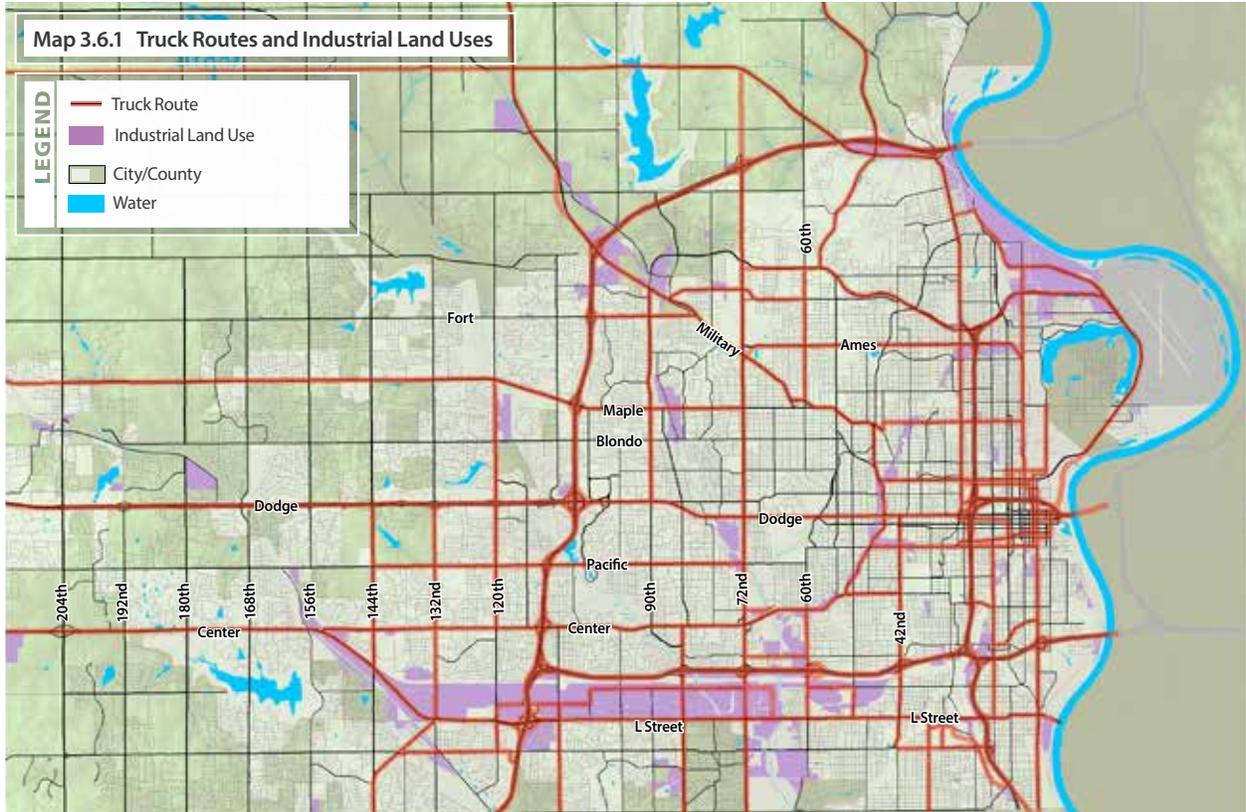
Nebraska. Omaha is also involved in plans for a higher-speed rail corridor connecting the city to Chicago.

In any community with an extensive railroad network, surface street crossings of the railroads are an important safety concern. Omaha's long-established status as a freight rail hub has led to the grade-separation of many street-rail crossings over time, although many at-grade crossings remain. Map 3.8.1 illustrates the location of these, most of which are in industrial areas. It is important that communities reliant on street links passing through these areas have safe crossings that allow reliable passage.

3.8 Aviation

Omaha enjoys a reliable level of aviation service, with one airport for scheduled commercial aviation and two additional airports in the Omaha region for general aviation services. Table 3.8.1 contains general aviation statistics for airports in the Omaha area. Eppley Airfield, Omaha's primary airport, is the largest and busiest in the state of Nebraska in terms of operations, passenger movements and mail and cargo tonnage handled. Eppley Airfield provides direct scheduled connections to approximately 21 US cities through 20 airlines. In 2011, the most recent year for which information is available, the airport served over 4.2 million passengers. It also handled over 94 million pounds of cargo and over 50 million pounds of mail.

Although Eppley Airfield is not directly served by Omaha's expressway system, it is connected to downtown Omaha by Abbott Drive, a four-lane arterial roadway. To the north, Abbott ties into the eastern end of the Arthur C. Storz Expressway, a limited-access roadway connecting to the northern end of the US 75 expressway. The proximity of the airport to downtown, the light population of the area, and the ample capacity of Abbott Drive make downtown connections from the airport relatively fast and convenient for vehicles. The Omaha area's other airports are also generally well-served by the roadway network, although not with



the same directness of connection to the expressway system that Eppley Airfield has.

However, other means of transportation access to the airports are limited. Metro only provides one route to the airport from downtown (Route 16), and this operates on half-hour frequencies in peak periods only, with no mid-day service and last service terminating at 6:10 PM. Although the close proximity to downtown may make taxi or rental car options convenient and desirable for Omaha visitors, workers at the airport would benefit from improved transit service.

Additionally, the airport's short distance from downtown (under four miles along Abbott Drive and other downtown roadways) suggests that shuttle service along this corridor may be a beneficial. This service does not need to be operated by Metro, but if operated more frequently with smaller vehicles, it may help to satisfy a general transit need.

The figure on the following page shows the three Nebraska airports serving the Omaha metropolitan area.

Omaha's Airports

Each of Omaha's airports has convenient access to major highways in the regional roadway system, with both general aviation airports (Millard and North Omaha) close to the Interstate highway system. Eppley Airfield, Omaha's principal airport and the only provider of scheduled passenger and freight aviation, is connected to downtown Omaha by Abbott Drive.

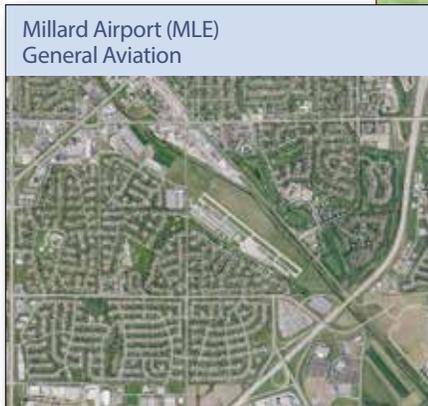


Table 3.8.1 General Aviation Statistics for Omaha-Area Airports

	Eppley Airfield (OMA)	North Omaha Airport (3NO)	Millard Airport (MLE)	Council Bluffs Airport (CBF)
Takeoffs and Landings (Year)	108,844 (2011)	14,250 (2008)	72,300 (2005)	38,700 (2008)
Aircraft Based at Airport	122	50	173	75
Distance from Omaha CBD (in direct distance)	3 miles NE	7 miles NW	11 miles SW	6 miles E
Data Sources: Omaha Airport Authority; FAA Airport Master Records; MAPA Traffic Counts; MAPA GIS.				

Section 4

Summary of Outreach and Involvement Activities

TRANSPORTATION ELEMENT

The City of Omaha began the Transportation Element with a commitment to make the process both community driven and technically sound. In order to assure that this would be the community's plan, great efforts were made to meet with, work with and communicate with as many citizens as possible in multiple formats. These efforts actively involved residents, employees, and local business interests from around the city.

This section describes the public outreach efforts undertaken in developing the Transportation Element and summarizes feedback that each committee, stakeholder group and individual participant provided to the planning team.

4.1 Structure of Public Engagement Activities

The public engagement process had four primary events: a November 2010 visioning meeting, two open-house design workshops held in March 2011, and a prioritization presentation and discussion in September 2011. In total, the process included seven public meetings as well as numerous meetings with stakeholders, partner agencies, and community groups, giving the project team a broad understanding of the Omaha community's needs, desires and challenges.

November 2010 Visioning Meeting

The planning process formally began with the community in November 2010, when Mayor Jim

Suttle and Omaha Department of Planning Director Rick Cunningham introduced the planning team to the public and outlined their aspirations for what the plan could provide for the community. The leaders of the planning team presented their approach to transportation and how the Transportation Element of the Omaha Master Plan could be developed to support Environment Omaha, Omaha by Design and other citywide planning efforts.

March 2011 Design Workshops

In two separate weeks during March 2011, the planning team conducted week-long working sessions intended to provide stakeholders and the general public with an opportunity to observe and weigh in on the plan development process through a design workshop. Planning team members worked on drawing, mapping and defining project concepts, met with stakeholders and individual citizens and undertook site visits. Each of the two weeks featured a Monday evening kickoff meeting and a Thursday evening wrap-up, where work from the preceding three days was presented to meeting attendees.

September 2011 Prioritization Meeting

Intended as a 'first glance' at early plan recommendations, the planning team held a project prioritization work session in September 2011 in which the first-draft results of the project evaluation process were presented. This enabled a public response to the preliminary recommendations and gave the project team valuable feedback to refine and adjust its evaluation criteria.

4.2 Key Stakeholder Groups

The following groups were part of the dialogue throughout the planning process, and helped form some of the Transportation Element's key recommendations.

Bicycle-Pedestrian Advisory Committee

The Mayor's Bicycle-Pedestrian Advisory Committee (BPAC) is a relatively new organization in the city. It was formed along with Omaha's recent establishment of a staff position for coordinating bicycle and pedestrian projects and activities. During the Transportation Master Plan efforts, the committee included representation from local design and engineering consulting firms, the Omaha Police Department, the bicycle merchants' community, the Metropolitan Area Planning Agency, and neighboring municipalities.

The Transportation planning team coordinated with the BPAC at the committee's regular monthly meetings over the course of the Transportation Master Plan process, and discussed critical bicycle needs, potential route alternatives, and perceived levels of cyclist comfort on different types of bicycle facilities.

Design and Engineering Advisory Committee

This committee was organized by City of Omaha staff to incorporate the expertise of local transportation engineers and other professionals associated with roadway design. The committee met with the Transportation Element planning team three times throughout the plan's development process to offer feedback on plan philosophy, the prioritized project list, and on the growth management development framework.

Development Advisory Committee

Developers from the Omaha community met with the Transportation Master Plan team to discuss the

development climate in Omaha at the time of the plan's development. Specifically, there was discussion regarding the City's and Douglas County's use of Sanitary Improvement Districts (SID) to finance new infrastructure for land development, and the challenge it poses to redevelopment.

Other Stakeholder Representatives

In addition to these groups, the planning team met with representatives of other organizations throughout the public outreach process, especially in concert with the March 2011 multi-day workshops. These organizations included the University of Nebraska Medical Center, the University of Nebraska at Omaha, Metropolitan Community College, Omaha Public Schools, and the Omaha Chamber of Commerce.

Many of these meetings discussed capital improvement needs and plans for these agencies (especially universities and hospitals), and explored specific transportation project ideas that could help these agencies better respond to future needs.

4.3 Community Goals

It was the original intent of the City and the planning team to tie the Transportation Master Plan to other planning initiatives and community concerns beyond just transportation and movement. One foundation of the plan's goals can be found in the Environment Element's Urban Form and Transportation goals:

LARGE SCALE CITY FORM. Develop a city form that both reduces both the per capita cost of providing city services and establishes the density necessary to support more energy-efficient forms of transportation.

LAND USE AND DEVELOPMENT POLICY. Generate development at higher residential densities and true mixed uses that produce more diverse environments and reduce the number of necessary automobile trips.

LAND DEVELOPMENT. Create individual developments with components that are connected, walkable, and accessible to all modes of transportation, by providing safe, defined, and pleasant routes from the public realm to destinations, based on the needs of each mode.

TRANSPORTATION NETWORK. Develop a transportation network that moves people and freight within and through the metropolitan area efficiently, maximizing access and minimizing vehicle miles traveled, energy consumed, and pollutants emitted.

TRANSIT. Develop a public transportation system that offers a degree of coverage, convenience, and amenity that both provides transportation equity for dependent customers and makes transit an attractive option for discretionary passengers.

ACTIVE TRANSPORTATION. Provide a high level of citywide access and continuity to pedestrians and bicyclists, making active transportation a realistic and integral part of the city's transportation network.

Building from these goals, the planning team and the Stakeholder Committee discussed what the Transportation Element goals should be. From an initial list of seven proposed goals, the following four were selected:

GOAL 1: PROVIDE BALANCED OPTIONS FOR ENHANCED MOBILITY. The mobility of a city is more than moving vehicles on roadways—it should address walking, bicycling and public transit use. It also involves an organization of transportation facilities that enable all of these uses and give users of the system more choice in matching a trip's purpose and length to a mode of travel.

GOAL 2: ATTAIN A SAFE AND HEALTHY ENVIRONMENT. Omaha's citizens and visitors should feel comfortable in their environment. This goal related as much to citizen concerns over air and water quality as it did for the transportation system to provide opportu-

nities for recreation and more active living.

GOAL 3: CREATE LIVABLE AND CONNECTED NEIGHBORHOODS. Neighborhoods are the lifeblood of a city, and they should accommodate basic civic and recreational uses. However, not all neighborhoods will have a variety of these services self-contained, which makes connectivity to other neighborhoods and parts of Omaha essential.

GOAL 4: PROMOTE ECONOMIC RETURNS WITH FISCAL SUSTAINABILITY. Investment decisions made today affect Omaha's future abilities to afford new investment, both in terms of the obligations they establish and in terms of the economic returns on these investments.



4.4 March 2011 Workshops

The centerpiece activities of the public involvement process were two week-long workshops in March 2011. These were focused on generating ideas and producing conceptual plans and drawings for transportation and land development projects, but also featured multiple opportunities for citizens and stakeholders to share input with the planning team.

Both of these workshops were organized around an open-house format where a public meeting on Monday evening inaugurated the workshop activities and reviewed progress made on the Transportation Master Plan up to that point. Tuesday, Wednesday and Thursday of each week featured intervals of time where members of the public were welcome to visit the workshop, discuss emerging plan ideas with the planning team, and share desires, insight and concerns. Each Thursday evening featured another meeting, where a wrap-up presentation for the week's activities showcased the concept plans developed as well as new analysis and public input applied.

Each workshop was based on a general area of the City of Omaha and its immediate surrounding areas. The workshop during the week of March 7-11, 2011 focused on Omaha west of Interstate 680, and the workshop the week of March 21-25, 2011 was based on the area inside of I-680.

The following project and policy ideas were developed during these workshops and came specifically from public and stakeholder input:

- A new neighborhood concept for the Miracle Hills area, looking forward into the future to explore a possible redevelopment of the Miracle Hills golf course should its owners wish to seek a different use for the land.
- A policy and series of street improvement projects to restore parts of Omaha's historic boulevard system

-The two-way conversion of Turner Boulevard between Dodge and Farnam Streets.

An extensive list of all the plan's outreach and engagement can be found in the appendix.

4.5 Previous Planning Efforts

Previous plans and studies in Omaha were used to help develop project candidates and provide valuable contextual information. The Transportation Element does not supersede these plans per se, but rather organizes their recommendations into a common framework throughout the entire City of Omaha.

DOWNTOWN AND MIDTOWN MASTER PLANS

Both of these plans recommended numerous projects oriented to improving quality of life in these districts of Omaha.

NORTH AND SOUTH OMAHA DEVELOPMENT

PLANS. These plans were driven largely by economic development-related concerns, and identified street- and transportation-related projects that enhanced the public realm and made their neighborhoods and commercial districts more attractive for private development.

BENSON-AMES MASTER PLAN. Completed in 2006, this plan contained a number of development and street improvement projects.

OMAHA'S HISTORY. While not captured entirely in a single planning effort, the historical growth patterns, economic trends and demographic evolution of the City of Omaha provided a context in which to consider future project recommendations. Examples of this include the potential for street connections across former (and now disused) railroad corridors that separate neighborhoods and the use of streets originally built for streetcars for bicycle routes.



Section 5

Developing New Project Ideas

TRANSPORTATION ELEMENT

One of the primary reasons for creating a transportation plan is to identify specific capital projects that enhance the overall transportation system. As the Transportation Element was being developed, the planning team began with an inventory of project recommendations from previous plans and studies, including the City of Omaha's Capital Improvements Program (CIP), MAPA's Transportation Improvement Program (TIP) and Long-Range Transportation Plan (LRTP), the Downtown Omaha Master Plan and the Destination Midtown plan. Each of these individual efforts envisions and recommends capital projects for Omaha. Until now, these recommendations had not been thoroughly consolidated into a single master plan that assigns citywide priorities.

The Transportation Element was also an opportunity to develop projects that had not yet been identified or recommended. These new ideas were created mostly through interaction with stakeholders and the Omaha public during the March 2011 workshops and with ongoing interaction with City of Omaha staff.

Project Codes and Nomenclature

Throughout this section, candidate projects (whether developed directly at one of the Transportation Element's open workshops or taken from a previous plan or study) were assigned a working project code that grouped them into one of several major categories:

B: BICYCLE ROUTE PROJECTS. either on-street bicycle lanes or shared streets/bicycle boulevards.

BG: BRIDGE PROJECTS. These projects included

pedestrian bridges as well as roadway bridges. Rail bridges were not evaluated as they are typically owned, constructed and maintained privately.

CS: CROSS-SECTION MODIFICATION. Most commonly road diets, these projects also included wide lane restripings and modification of lane widths.

IN: INTERSECTION PROJECTS. These included vehicle-based safety, operational and capacity projects, but also pedestrian-based crossing improvements.

MP: MULTI-USE TRAILS. These were strictly off-street projects for bicycles and pedestrians.

NS-PUB: PUBLICLY-LED NEW STREET PROJECTS. These projects were mostly associated with development projects, though some are extensions of current arterial roadways and others are new street connections with a public purpose.

OW: ONE-WAY TO TWO-WAY CONVERSIONS.

P: PEDESTRIAN CORRIDOR PROJECTS. These typically consisted of streetscape projects, though they also included projects from neighborhood plans oriented to improved sidewalks and pedestrian conditions.

PC: PEDESTRIAN CROSSING. These site-specific projects refer to pedestrian crossing improvements not necessarily associated with a larger intersection projects.

RC: ROADWAY CAPACITY PROJECTS. These are

conventional roadway projects for vehicle-carrying capacity, most commonly roadway widenings to add travel lanes.

SG: TRAFFIC SIGNAL ADDITION/MODIFICATION. These projects add or modify traffic signals to better manage traffic and congestion.

TR: TRANSIT GUIDEWAY PROJECTS. These projects involved some level of capital investment (such as rail, dedicated bus lanes, etc.) rather than simply changes to bus routing or operations.

The numbers given to each project in conjunction with their code were assigned simply in the order in which they were entered onto a candidate list and do not indicate ranking or an order of preference.

5.1 Roadway Capacity Projects

Although Omaha has expressed a desire to diversify its transportation system and improve modal options, the primary means of transportation in the city is by private vehicle. For this reason, there are currently many capacity projects in the regional long-range transportation plan and the City of Omaha's Capital Improvement Program.

Omaha's roadway capacity projects have typically focused on arterial roadways in the western neighborhoods. These capacity projects continue to be important. The Land Use Element of the Omaha Master Plan calls for increased intensity around key development nodes, but owing to Omaha's geographic size there will continue to be a need for vehicle movement to different parts of the city. However, these projects can be coordinated to respond to other transportation needs, with street designs that accommodate a broader set of users.

5.2 Cross-Section Modifications

Just as roadway capacity is a concern in western Omaha, many roadways in Omaha east of Interstate 680 have capacity beyond what current traffic volumes suggest that they need. Most of Omaha's roads with excess capacity are in communities with the greatest need for complete streets: neighborhoods with many zero-car households and central neighborhoods that have a rich pattern of land uses including parks, schools and other civic institutions

Road Diets

One approach to extra roadway capacity is re-thinking the cross-section. Cross-section reorganization is the reduction of travel lanes and the use of this space for other purposes. This concept is popularly referred to as a 'road diet' and most commonly involves the conversion of a four-lane, undivided roadway to a three-lane section with one travel lane per direction and a center two-way left turn lane. Without negatively impacting the mobility of cars, these streets are opportunities to incorporate multiple modes of transportation. Map 5.2.1 illustrates the locations of candidate streets for road diets, detailed in Table 5.2.1.

Studies suggest that there is actually an increase in roadway capacity and improvement in safety when four-lane sections are converted to three-lane sections. This is primarily due to the advent of the two-way left turn lane and its ability to preserve flow in the two travel lanes. Table 5.2.2 contains a list of successful road diet projects throughout the US.

Wide Outer Lanes

Many streets in Omaha were originally constructed for streetcars and have wide outer lanes. These provide an opportunity to add to the City's bicycle network with re-striping to designate bicycle space, vehicle travel lane, and parking.

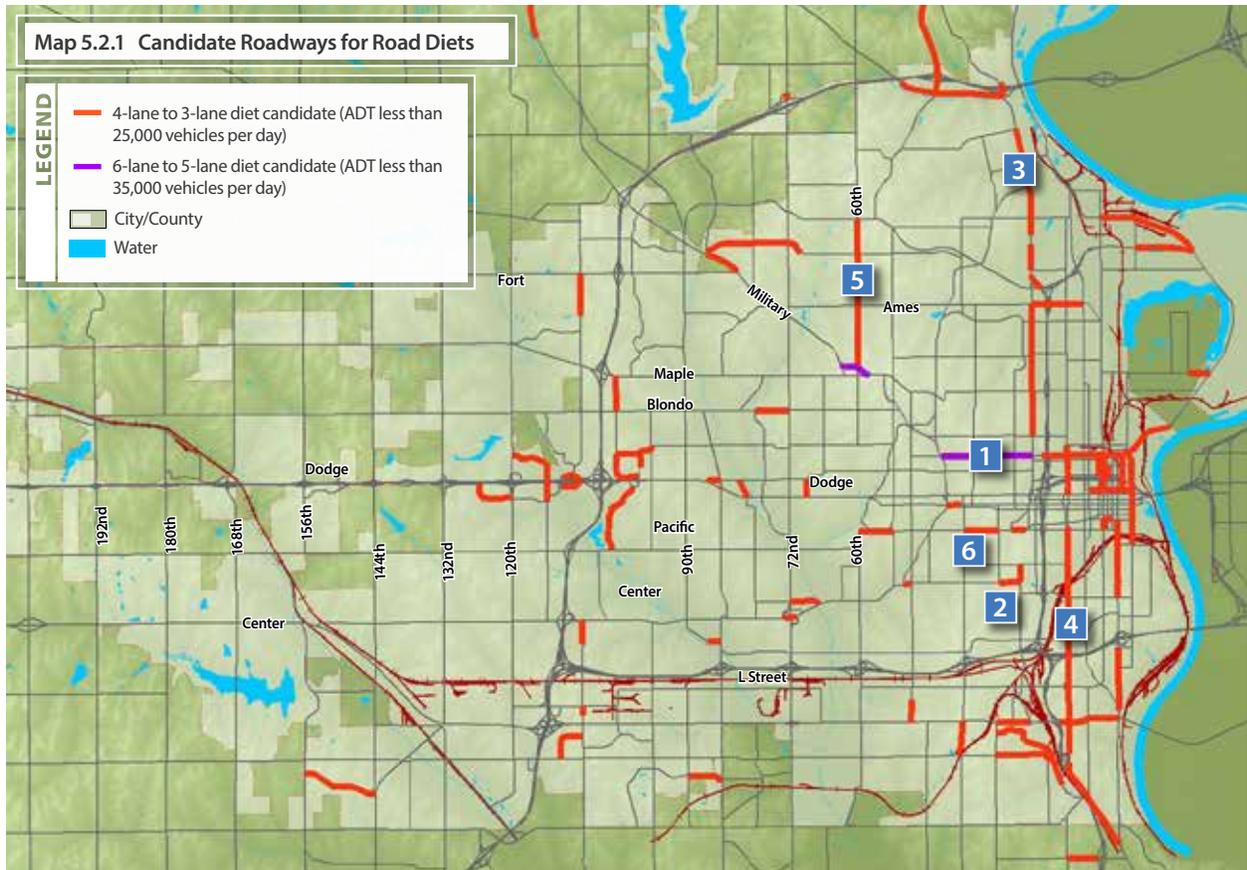


Table 5.2.1 Key Road Diet Project Candidates

Map Number	Project Number	Project Name	Basic Description and Purpose
1	CS-002	Cuming Street Road Diet	Reduce to four lanes from Saddle Creek to 30th Street and consider three lanes from 30th Street to 10th Street as development occurs.
2	CS-003	Center Street Road Diet	Reduce to three lanes with on-street parking and a strong pedestrian character, from Hanscom Park to 32nd Street.
3	CS-008	30th Street (Main Street)	Streetscape improvements, converting to 3 lane section with one turn lane in the center and parallel parking, from Sorensen Parkway to Cumming Street.
4	CS-010	24th Street	4-lane to 3-lane road diet, add bike lanes, from L Street to Leavenworth Street.
5	CS-020	60th Street	4-lane to 3-lane road diet, including on-street bike lanes, from Sorensen Parkway to NW Radial Highway.
6	CS-022	Leavenworth Street	4 to 3 lane road diet, with bike lanes. May include 2-lane typical sections in certain areas, from 10th Street to 39th Street.

Project Example:

- **B-041: WOOLWORTH BICYCLE BOULEVARD.** This crosses I-480 and provides access to Hanscom Park.

One-Way to Two-Way Conversions

Another method to improving mobility is converting one-way streets into two-way streets. In the past, streets were typically designed for two-way flow and changed to one-way to increase efficiency of movement. This came from a perceived need to move motorists quickly in and out of downtowns, giving centers of employment and business easy access to growing urban areas where automobiles were an increasingly dominant mode of transport.

While often faster than two-way roads, one-way roads cause a number of issues. First, they alter the existing street network and make it less intuitive to visitors. One-way systems often prohibit a visitor from following the most direct or simple path to reach a destination, instead requiring a series of turns that add

delay to a trip.

Studies have also shown that one-way streets are less conducive to successful business corridors, largely because they limit visibility to a single direction and at a given time of day offer less exposure to storefronts. Since one of the primary reasons that (historically two-way) streets were converted to one-way operations was the need to gain additional traffic capacity, many of these one-way streets move the bulk of their traffic in one peak hour or the other, but not both.

The higher speeds on one-way streets are also an issue in terms of safety. One-way streets tend to carry traffic at higher speeds, largely because they facilitate coordination of traffic signals to allow continuous flow and because motorists do not face oncoming traffic. This creates a less than hospitable environment for pedestrians and bicyclists.

Project Examples:

- **OW-002: TURNER BOULEVARD.** This converts Turner Boulevard to two-way traffic

Table 5.2.2 Successful Road Diet Examples

Location	Street	ADT Before	ADT After
Duluth, MN	21st Avenue East	17,000	17,000
Kirkland, WA	Lake Washington Boulevard	23,000	25,900
Seattle, WA	North 45th Street	19,400	20,300
Covington, WA	State Road 516	29,900	32,800
Bellvue, WA	Montana Street	18,500	18,500
East Lansing, MI	Grand River Boulevard	23,000	23,000
Santa Monica, CA	Main Street	20,000	18,000
Oakland, CA	High Street	22,000	24,000
Orlando, FL	Edgewater Drive	20,500	21,000
University Place, WA	67th Avenue	17,000	15,000
East Lansing, MI	West Grand River Avenue	18,000	18,000
East Lansing, MI	Abbott Road	15,000	21,000
Charlotte, NC	East Boulevard	21,400	18,400

from Harney to 30th Streets, easing traffic circulation on the east side of the Midtown Crossing area. It also allows a proposed bicycle connection to 33rd Street north of Dodge to take advantage of Turner's off-street sidepath through the Field Club neighborhood south of Harney.

- **OW-008: 19TH AND 20TH STREETS.** This extends from Cass Street to Ohio Street, returning streets to two-way traffic in an area north of downtown with redevelopment potential.

5.3 Expanding the Bicycle and Pedestrian Reach

Omaha's cycling community already makes use of an extensive system of multi-use trails that complement a limited bicycle network provided on-street.

To remedy the lack of on-street bicycle facilities, a plan from Bike Omaha proposed a framework for an on-street system. The plan mostly focused on Omaha inside the I-680 expressway loop and connected multiple neighborhood commercial centers, schools, parks and the primary activity centers of downtown and midtown.

The projects selected for Bike Omaha were intended as pilot projects for a larger citywide system and were chosen to demonstrate the use of inherently bicycle-friendly streets to designate a formal route system.

This builds upon the previous transportation element's planned on-street bicycle infrastructure and creates a more focused base bicycle network by retaining feasible routes and augmenting and extending other routes. These projects will be programmed into official city documents as well as MAPA's long range transportation Plan to provide funding for implementation.

Harney Bikeway System

Downtown Omaha has added a number of bicycle lanes on its streets in recent years. There are additional opportunities downtown to repurpose excess vehicle capacity as two-way bicycle paths. Harney Street is the leading candidate for this conversion due to its low traffic volume, high capacity, and its proximity to the Old Market shopping and entertainment district. This single, high-profile bike track could start the spine of the City's on-street system. By extending bike facilities between 10th Street and 24th Street and adding branches of the same type of cycle track design, a new network could be created linking the CenturyLink Convention Center and Arena, the Old Market, the Omaha Central Business District, the Joslyn Art Museum, Midtown Crossing and ultimately the UNMC campus. The primary project components are as follows:

- **B-100: HARNEY BIKEWAY, 10TH TO 24TH STREETS.** Refer to the diagram on pages 50 and 51.
- **B-101: 13TH STREET AND CAPITOL AVENUE BIKEWAY BRANCH.** This branch of the Harney Street Bikeway leads north on 13th from Harney to Capitol, then east on Capitol from 13th to 10th, terminating by the CenturyLink Center.
- **B-102: 13TH STREET AND CASS STREET BIKEWAY BRANCH.** This branch of the Harney Street Bikeway leads north on 13th from Capitol to Cass, then east on Cass from 13th to 10th, terminating at the CenturyLink Center.
- **B-103: 24TH STREET BIKEWAY BRANCH.** This branch of the bikeway system leads north from Harney on 24th to the Joslyn Art Museum and Creighton University.
- **B-104: HARNEY BIKEWAY, MIDTOWN EXTENSION.** This continues Project B-100 further west, eventually terminating at the UNMC campus. This section is likely to have the greatest implementation challenges due to a narrow right-of-way, greater frequency of driveway access cuts, and the need for on-site parking on private properties.

Overcoming Barriers

During the public involvement process, one of the most significant concerns that cyclists expressed was that bicycle-friendly neighborhood streets are often disconnected by major barriers, such as Dodge Street/West Dodge Road. Finding connections across these barriers is an important step to promoting cycling as a convenient and viable means of travel.

Project Examples

- **BG-014: LEE VALLEY TRAIL TUNNEL.** This project would construct a tunnel under the I-680 embankment to allow a bicycle/pedestrian off-street path to connect the two sides of the expressway. It ties into a short trail segment through Lee Valley Park (Project MP-018, connecting to 108th Street) and into the proposed Nicholas/Western Corridor (Project B-045). This project strengthened east-west connectivity for active transportation. At the time of this project this was one of few projects assisting in this issue in Omaha. It is understood that this project would be cost prohibitive to construct.
- **B-041: WOOLWORTH BICYCLE BOULEVARD.** This crosses I-480 and provides access to Hanscom Park.
- **B-044: 40TH STREET BICYCLE BOULEVARD.** This crosses Dodge Street in the Joslyn Castle neighborhood, providing a connection to the UNMC campus and the St. Cecilia cathedral and school.
- **B-051: 84TH-85TH STREET BICYCLE ROUTE.** A key crossing of West Dodge Road at a portion where its intersections are large and widely spaced.

Meaningful Connections from West Omaha

Another major challenge to bicycling in Omaha is the difficulty of travel between West Omaha and the central city. A standard roadway design for arterials in West

Omaha has included an attached eight-foot multi-use trail (on one side of the road only) offering two-way bicycle and pedestrian travel. However, this cross-section is a relatively recent design policy and has not been applied universally on all arterial roadways. For this reason, many parts of West Omaha do not have a clear bicycle route.

One opportunity to improve east-west bicycle connectivity is through the proposed Fairacres Park trail system, shown in Map 5.3.2. Because western Omaha from Interstate 680 to 144th Street is already built, making connections from east to west will require a combination of facilities that take advantage of easements, private property setbacks, and unused space in existing rights of way. These connections would also alternate from on-street to off-street facilities, and will require consistent, signage and pavement markings to make it easy for users to follow the trail.

North Omaha

The neighborhoods north of downtown Omaha are ripe for the development of bicycle facilities. This part of the city has the greatest concentration of zero-car households, requires travel to reach major areas of retail and employment, and already has a dense, interconnected grid of streets. Many of the streets carry low traffic volumes and are strong candidates for bicycle boulevards or shared streets.

Map 5.3.1 details key project candidates for North Omaha, including bicycle boulevard and bicycle lane opportunities connecting the east and west sides of the North Expressway.

Text continues on Page 50. Refer to the series of diagrams on the following pages for a more detailed description of the Harney Bikeway system.

The Harney Street Bikeway System Concept

Harney Street in downtown Omaha is a four-lane one-way street typically carrying under 8,000 vehicles per day. Within this street there is an opportunity to use space for a premium bicycle corridor. There are also opportunities to create short branches connecting major downtown destinations, eventually reaching as far west as the University of Nebraska Medical Center campus. Although this idea is proposed as a way of increasing bicycle visibility downtown and attracting



At left, Harney Street looking east from 24th Street; below, the proposed vision for Harney's bikeway project. The bikeway project concept was first proposed as a way of increasing cycling infrastructure in downtown Omaha while reusing existing right-of-way on a street with low traffic volume.



non-traditional cycling commuters, it also offers great potential as an economic development investment. —helping to generate visitor exposure along a greater extent of downtown and Midtown Omaha and creating a leisure opportunity for Omaha residents.

The proposed Harney system consists of five principal project components: **Project B-100 (1)**, the principal extent of the Harney Bikeway from 10th to 24th Streets; **B-101 (2)**, the 13th Street and Capitol Avenue Bikeway Branch; **B-102 (3)**, the 13th Street and Cass Street Bikeway Branch; **B-103 (4)**, the 24th Street Bikeway Branch connecting to the Joslyn Art Museum; and **B-104 (5)**, the Harney Bikeway Midtown Extension continuing further west, eventually

terminating at the UNMC campus. The concept is intended to evolve over time into a branded and unified system that not only increases bicycle transportation through central Omaha but also serves a core civic amenity.

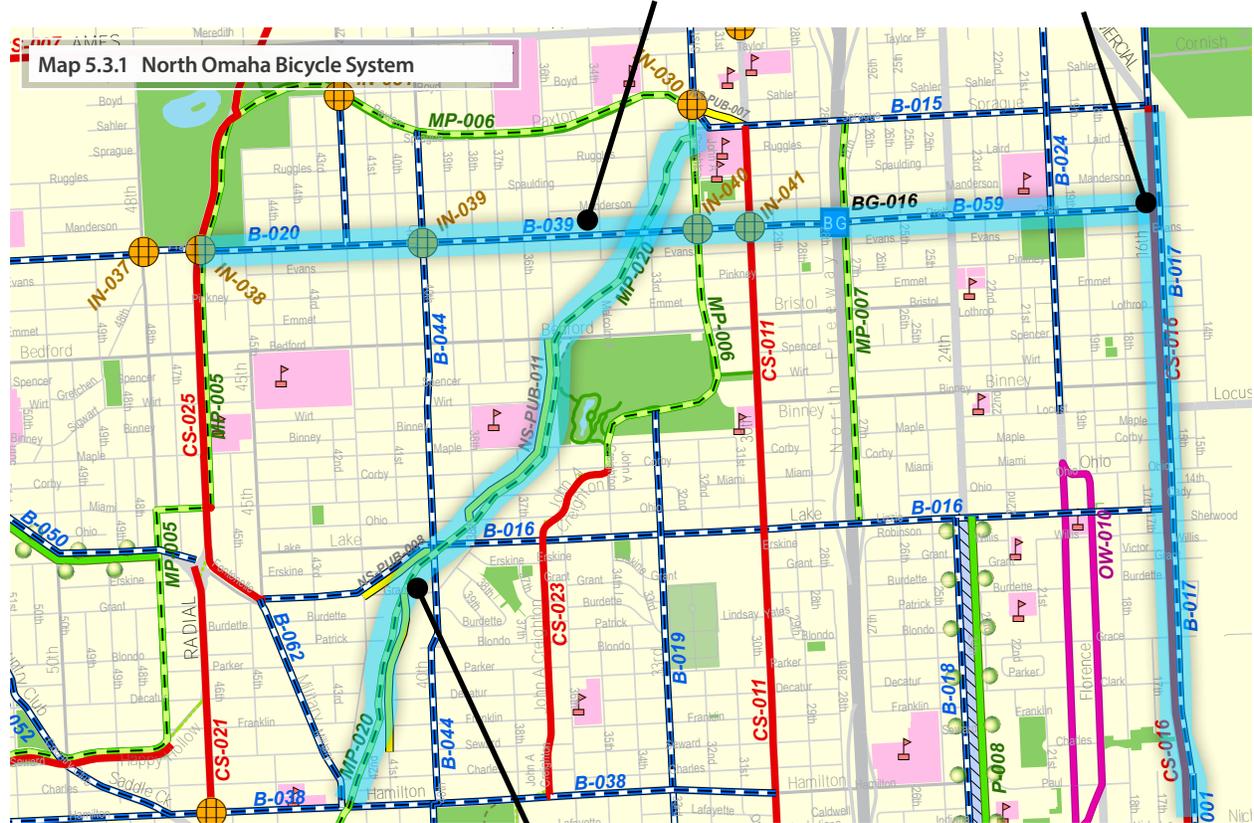


North Omaha Bicycle System

The potential for bicycle additions in North Omaha, shown below in Map 5.3.1, not only reflects its relatively rich street network but also its greater concentration of parks, low-traffic streets and boulevards in Omaha's historic boulevard system. Key opportunities are shown in the diagram below, with special attention given to projects that would contribute to a bicycle framework serving other parts of Omaha.

Projects **B-020**, **B-039** and **B-059** constitute a bicycle boulevard for Pratt Street that is a major connection between 16th Street and Fontenelle Park.

Project **B-017** restripes wide travel lanes to add on-street bicycle lanes, a major opportunity for connecting North Omaha with downtown.



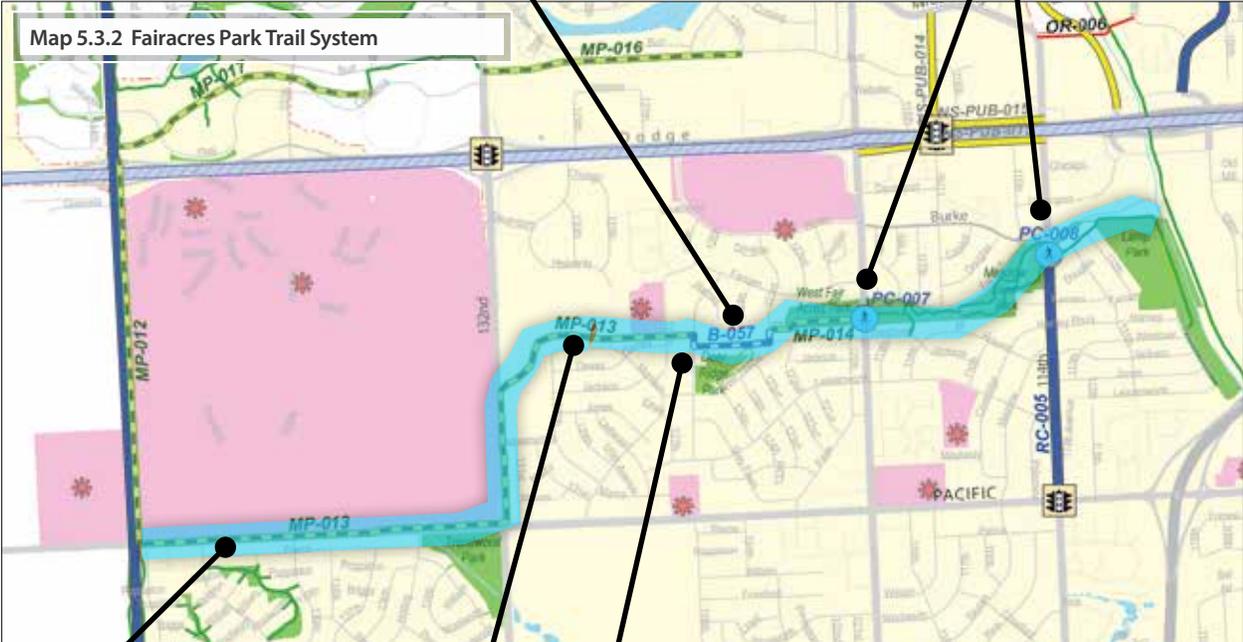
Project **MP-020** utilizes an abandoned rail corridor to connect North Omaha with Saddle Creek Drive and Cuming Street with a multi-use path.

Westside-Fairacres Trail System

The Fairacres Park neighborhood offers several opportunities for connecting West Omaha to central Omaha with a stronger bicycle network. The concept discussed here uses a series of off-street, multi-use paths and one short on-street section to provide a continuous bicycle route from 144th Street to the West Papio Trail. These projects introduce several new types of bicycle facilities to Omaha, including pedestrian-activated hybrid beacons at 114th and 120th Streets, the use and upgrading of a utility easement, and transitions between on-street and off-street facilities.

Project **B-057** would provide a short on-street connection between the two principal trail extents. A short stretch of on-street is an acceptable bridge in this system, but it should be well marked and signposted.

Projects **PC-007** and **PC-008** add button-activated pedestrian hybrid beacons to the trail crossings of 114th and 120th Streets to provide additional safety measures. These would be the first of their kind in Omaha.



Project **MP-013** would use the right-of-way edge on Pacific Street to build a sidepath from 144th east to 132nd Street, turning to the north along the east side of 132nd and using the southernmost side of the Jewish Community Center's parking lot and driveway.

Project **MP-013** uses and improves a utility easement between 126th and 127th Streets.

Omaha Boulevard System

Like other great cities of the Midwest, Omaha has a legacy system of elegant boulevards stemming from the Progressive eras of American urban development. These boulevards connected prosperous neighborhoods of grand homes and civic buildings with more modest workers' neighborhoods, though the boulevard streets are primarily residential in nature.

Over time Omaha's boulevard system has lost some of its original components, due largely to the construction of urban expressways in the 1950s and 1960s. However, many of the original boulevard system's streets and alignments remain intact, connecting 36 different parks along 45 miles of designated routes. Omaha has an opportunity to restore significant portions of this system, improving connectivity and rebuilding a sense of place.

The bulk of the boulevard streets in Omaha are two-lane local streets with large parkway spaces separating the street traveled way from sidewalks. The land in public right-of-way usually extends beyond the sidewalks, which suggests that additional land is available for landscaping or other street and neighborhood enhancement.

The Transportation Master Plan proposes a 'New Boulevard' street design type that takes advantage of the large right-of-ways and relatively gentle grade changes to add on-street bicycle lanes to boulevard streets through reconstruction projects. This new street typology could be applied to the following candidate projects:

- **JOHN A. CREIGHTON BOULEVARD** from Maple Street (Adams Park entrance) to Hamilton Street
- **TURNER BOULEVARD** from Farnam Street to Woolworth Street

- **FONTENELLE BOULEVARD**, from 45th Street to Sorensen Parkway (this includes the extent of Fontenelle through Fontenelle Park)
- **HAPPY HOLLOW BOULEVARD**, from Franklin Street to Leavenworth Street

Other sections of the boulevard system do not readily allow reconstruction of the street to add bicycle lanes without an impact on parkway/planter strip sections of the street or, in the most constrained cases, an impact to private property.

During the development of this document the City of Omaha was pursuing Local Landmark Status as well as National Register of Historic Places designation for the entire boulevard system. In addition, the city was in the early stages of developing a master planning document for the system.

5.4 Streetscape Projects

Several previous plans and studies identified streetscape and landscape project candidates. While the primary benefit of streetscapes may be beyond the scope of conventional transportation projects, these projects do have an important role in public works improvements for maturing neighborhoods, especially neighborhood commercial districts with a need for revitalization.

Streetscape projects do not have to originate entirely with transportation capital funds. Often times these projects come about as a result of opportunities tied to other capital improvements already occurring on a street; an example of this is the Combined Sewer Overflow mitigation program that is separating sewer and storm-water infrastructure in Omaha east of 72nd Street. Pursuit of these projects should take advantage of these opportunities, which will likely help in reducing project cost for streetscape improvements.

The project candidate shown in the images above would add key streetscape improvements to 30th Street in North Omaha. The project is not proposed as a



Existing (left) and proposed (right) streetscape improvements along 30th Street in North Omaha

standalone streetscape project but as part of a road diet to match current travel demand to capacity. Through a reduction in lanes there is an opportunity to add landscaping, curb extensions and on-street parking to promote a more vital business district and pedestrian environment.

Streetscape Project Examples:

- **P-004: NORTHWEST RADIAL HIGHWAY / MILITARY AVENUE FROM 48TH TO 72ND STREETS.** This project would apply the standards of the Green Streets plan to this stretch of Northwest Radial / Military Avenue, upgrading street landscaping and reducing the traveled way from six to four lanes.
- **P-007: FLORENCE STATE STREET STREETScape.** This creates a landscaped center median as well as roadside tree planting and pedestrian scale lighting.
- **P-008: 24TH STREET - NORTH OMAHA STREETScape.** This builds on streetscape enhancements already completed in the North Omaha commercial district along 24th Street. Because of other project opportunities identified for this street, streetscape design should be coordinated with potential transit and bicycle improvements as not to eliminate opportunities for accommodating those travel modes.

5.5 Transit Guideway Projects

Several previous studies have explored the idea of premium transit corridors in and around downtown Omaha. The Downtown Master Plan recommended three primary phases of premium transit service that reflect a vision for a more multimodal environment in Central Omaha. The Transportation Element’s planning team explored several of these projects for their fit and feasibility; two of these phases are included in this Element, along with an extension of service to western Omaha.

Dodge Street Downtown/Midtown Corridor

Dodge Street has long been envisioned as a premium transit street for Omaha. The first phase of transit described in the Downtown Master Plan proposed transit on Farnam and Harney Streets (with one way of transit travel on each of the one-way streets).

Text continued on page 54.

The Dodge Street Transit Guideway Concept

In concert with the premium transit proposals for downtown and North Omaha, the Dodge Street Transitway concept would extend premium bus service westward along the Dodge Road arterial and expressway corridor. It would take advantage of successful express route offerings on this same route, and by improving transit travel times offer a legitimate alternative to vehicle commuting from West Omaha. This concept would need to be further evaluated due to limited rights of way and to demonstrate benefit over costs for development.

The diagram below shows how the Dodge Street Transit Guideway's will operate. The Guideway will originate in downtown Omaha as a limited-stop bus service, continues west from the University of Nebraska-Omaha campus to I-680 and Dodge running in mixed traffic and taking advantage of queue jumper lanes at major intersections. It then continues west to the 168th/Dodge interchange serving two park-and-ride facilities. It is intended to capitalize on the current popularity of Metro's Dodge park-and-ride express routes but also to begin establishing early foundations for improved transit offerings on this corridor.

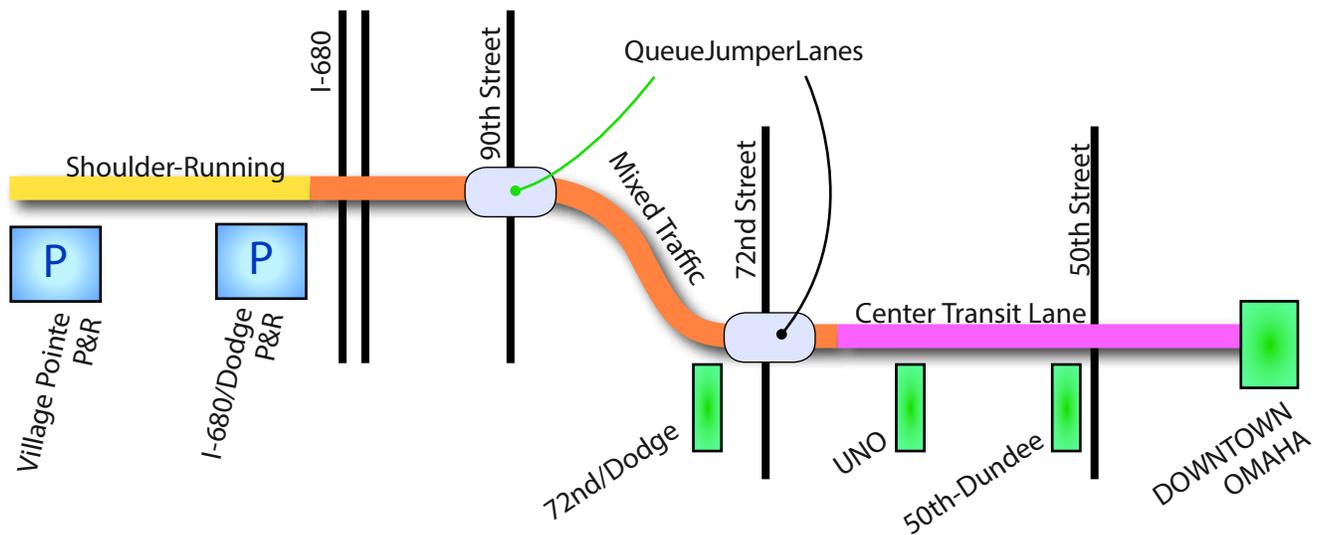
With relatively minor capital investments, this kind of service could be inaugurated quickly and take advantage of the West Dodge Road expressway's limited access and high speeds to provide automobile-competitive travel times into central Omaha. The key operational characteristics that improve travel time are the queue-jumper lanes and the use of the reversible center lane along Dodge Street from 66th Street to Turner Boulevard.

Shoulder-running transit on the Dodge Expressway could ultimately be replaced with a more formalized guideway, but in the short term this allows transit vehicles a dedicated space in which to bypass traffic congestion, as illustrated in the photograph below.

A key approach to making a case for this concept is the evolution of bus stops to transit stations, raising the profile



Figure 5.5.1 Operational Characteristics of The Dodge Street Transit Guideway



of transit's role in the community, while also improving the aesthetics of the corridor.

The photo to the right and the illustration below (Figure 4.4.3) offer a vision for how these stations might appear, using the Dodge reversible center lane as a dedicated transitway. Successful trial operation of the project should begin dialogue for how the project could be funded and constructed to be a more permanent infrastructure addition.



Figure 5.5.2 *Conceptual Station Design*



A later study led by Metro Transit extended the reach of this corridor along Dodge Street as far west as 72nd Street.

North 24th Street

One of the branches from the Dodge corridor envisioned in the Downtown Master Plan is enhanced transit on 24th Street from Dodge to Lake Streets. This would serve the North Omaha business district along 24th Street and would likely provide a valuable catalyst to economic development efforts in this area.

Dodge Street/West Dodge Road Transitway

Intended as an extension of the Dodge Downtown/Midtown Corridor, this concept was developed during the Transportation Element's workshops as a way to expand higher-level transit offerings beyond the immediate urban core of Omaha. The prevailing patterns of density in this area suggest that this service is likely to be commuter-oriented in the short term, but the high level of travel demand along the Dodge corridor suggests that this area of Omaha may likely see increased future need for other types of trips.

5.6 Transportation and Land Development Projects

There are many opportunities for enhancements to Omaha's transportation system through land development. Whether these are contributions made entirely by developers or strategic public investments to encourage development that the City wishes to see occur, they are nonetheless projects that should be pursued as private development occurs.

The transportation opportunities presented in this section are within the context of several different site-specific development opportunities. These sites were selected by the Transportation Element planning team after a city-wide analysis of land uses that demonstrate redevelopment potential. During

the course of the Transportation Element's March 2011 design workshops, conceptual master plans were developed for these sites as a means of illustrating reasonable potential for development yield, and for identifying the necessary transportation system improvements.

These projects are conceptual and do not indicate any final alignments or specific transportation improvements. They are illustrative concepts intended to provide the City with a head-start in positioning areas for redevelopment in coordination with transportation enhancements.

Crossroads Mall and the Nebraska Furniture Mart

One of the most significant opportunities for redevelopment inside the Interstate 680 loop is around the intersection of Dodge and 72nd Streets, a longtime concentration of retail uses that features the Crossroads Mall, the Nebraska Furniture Mart, and an assortment of large-lot and small-lot retail properties.

The conceptual master plans for this area developed at the Transportation Element's design workshops focus on the Crossroads Mall and the southern end of the Furniture Mart site. They feature a series of street network enhancements and a land use pattern that focuses on mixed uses around the Dodge/72nd intersection to capitalize on its prominent location. There is also a series of open space additions designed and located to take advantage of the existing Keystone Trail on the west side of the site.

Map 5.6.1 identifies several key design and transportation enhancements, including candidate project NS-PUB-017, an extension of Howard Street on a bridge across the Little Papio Creek. This is an example of a project with public benefit that is not central to the development of a site but that would not happen prior to the site's development. Figures 5.6.1a and 5.6.1b illustrate the possible changes in the local street network as the result of the area's redevelopment.

Map 5.6.1 Dodge and 72nd St

LEGEND

- Commercial
- Mixed Use
- Office
- Multi Family
- Single Family
- Parks & Open Space
- Institutional
- NE Furniture Mart
- Cross Roads Mall
- Cross Roads District Master Plan
- Retail Anchor
- Retail
- Mixed Use
- Entertainment
- Office
- Hotel
- Residential



- 1** Extend Cross Roads Mall main street across Dodge
- 2** Encourage higher density, mixed use development as redevelopment occurs
- 3** Create new park that builds on existing multi-use trail
- 4** Front proposed park with new residential and mixed use development
- 5** Provide new two-lane street to capture adjacent residential population (Project NS-PUB-017)
- 6** Front Dodge with higher density mixed use development specifically around proposed enhanced bus routes
- 7** Provide new parallel connections to Dodge and 72nd

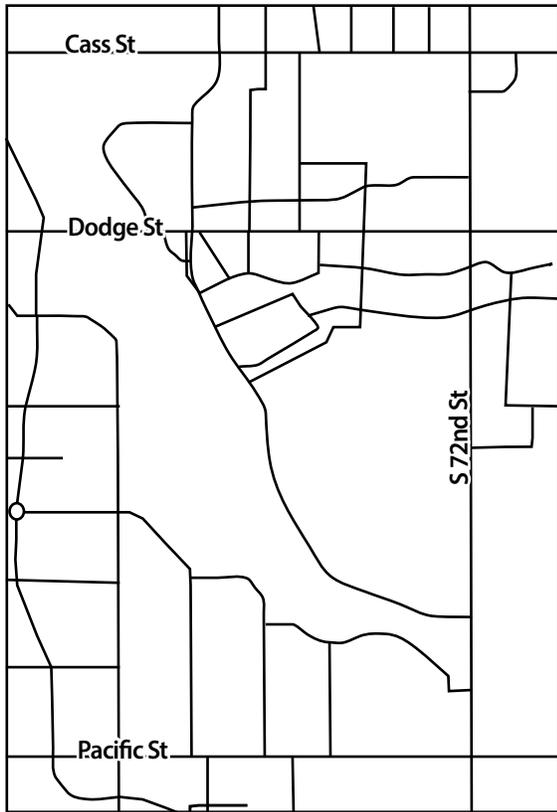


Figure 5.6.1a Dodge and 72nd Existing Network

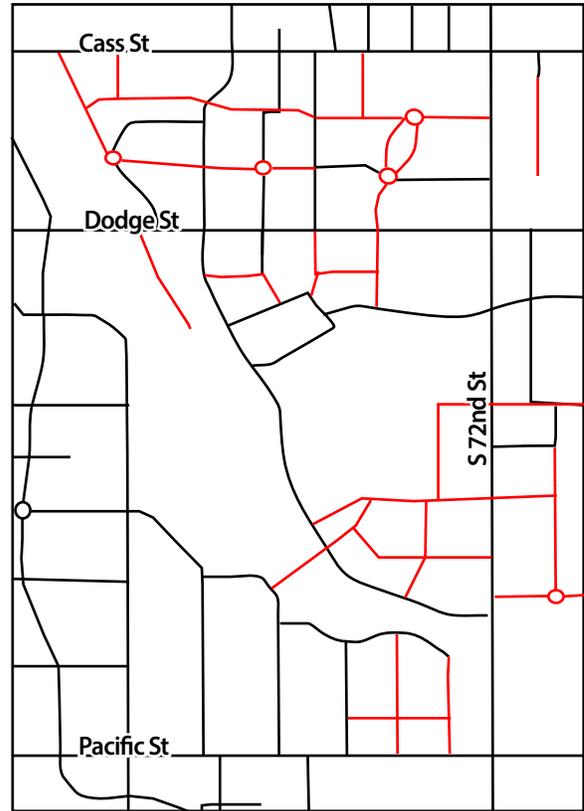


Figure 5.6.1b Dodge and 72nd Proposed Network

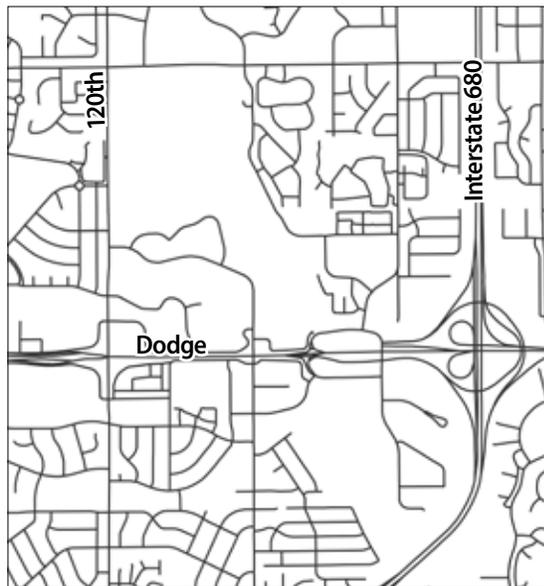


Figure 5.6.2a West Dodge and I-680: Existing Network

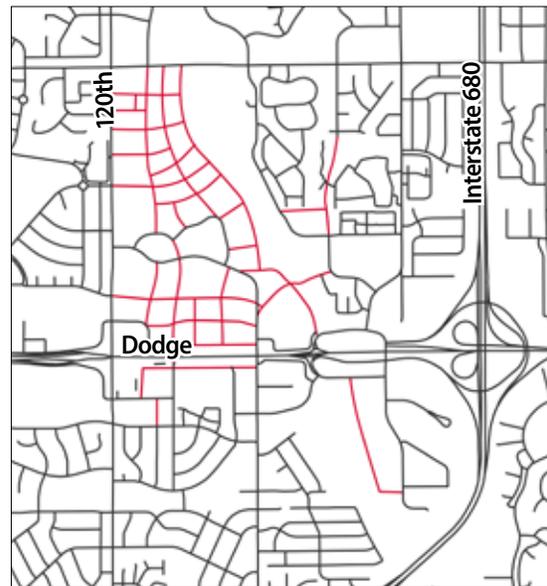
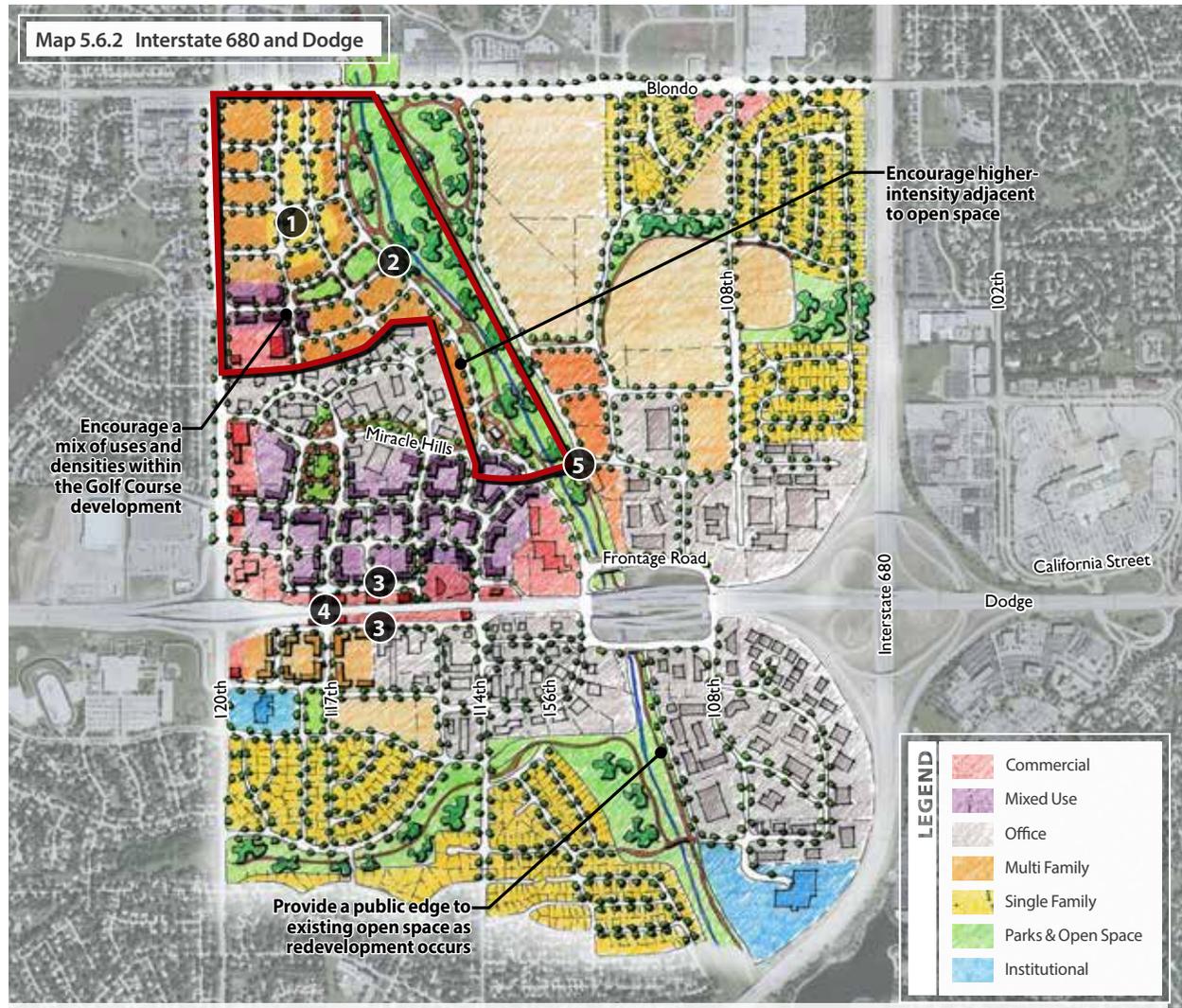


Figure 5.6.2b West Dodge and I-680: Proposed Network

West Dodge and I-680

The West Dodge Road and Interstate 680 interchange marks the beginning of West Dodge Road's expressway serving West Omaha. Although current land use patterns are oriented predominantly to cars, several large parcels and an ongoing wave of development activity suggest that the site has strong potential to evolve into a more intense, urbanized land form.

The conceptual master plan, shown in Map 5.6.2, shows a mix of land uses similar to what is in place today, but with an urban form based on a more consistent pattern of blocks and streets. Figures 5.6.2a and 5.6.2b illustrate the street network today and the proposed street network.



- 1 Guide development around a fine-grain connected street grid.
- 2 Add a new street connection that connects Blondo to Dodge (NS-PUB-018). This street can provide a public edge to a green space corridor along the Big Papio Creek.
- 3 Realign Dodge Frontage Roads to create developable parcels to front onto Dodge surface road (NS-PUB-015).
- 4 Improve north-south connectivity with extension of 117th Street across Dodge (NS-PUB-014).
- 5 Explore opportunities for connections across creek to improve east-west connectivity.

North Omaha Redevelopment

As presented in previous plans such as the North Omaha Development Project, North Omaha has several sites with potential for redevelopment. Maps 5.6.3 through 5.6.5 illustrate potential sites for redevelopment. Transportation improvements shown in these areas would likely be provided through private development.

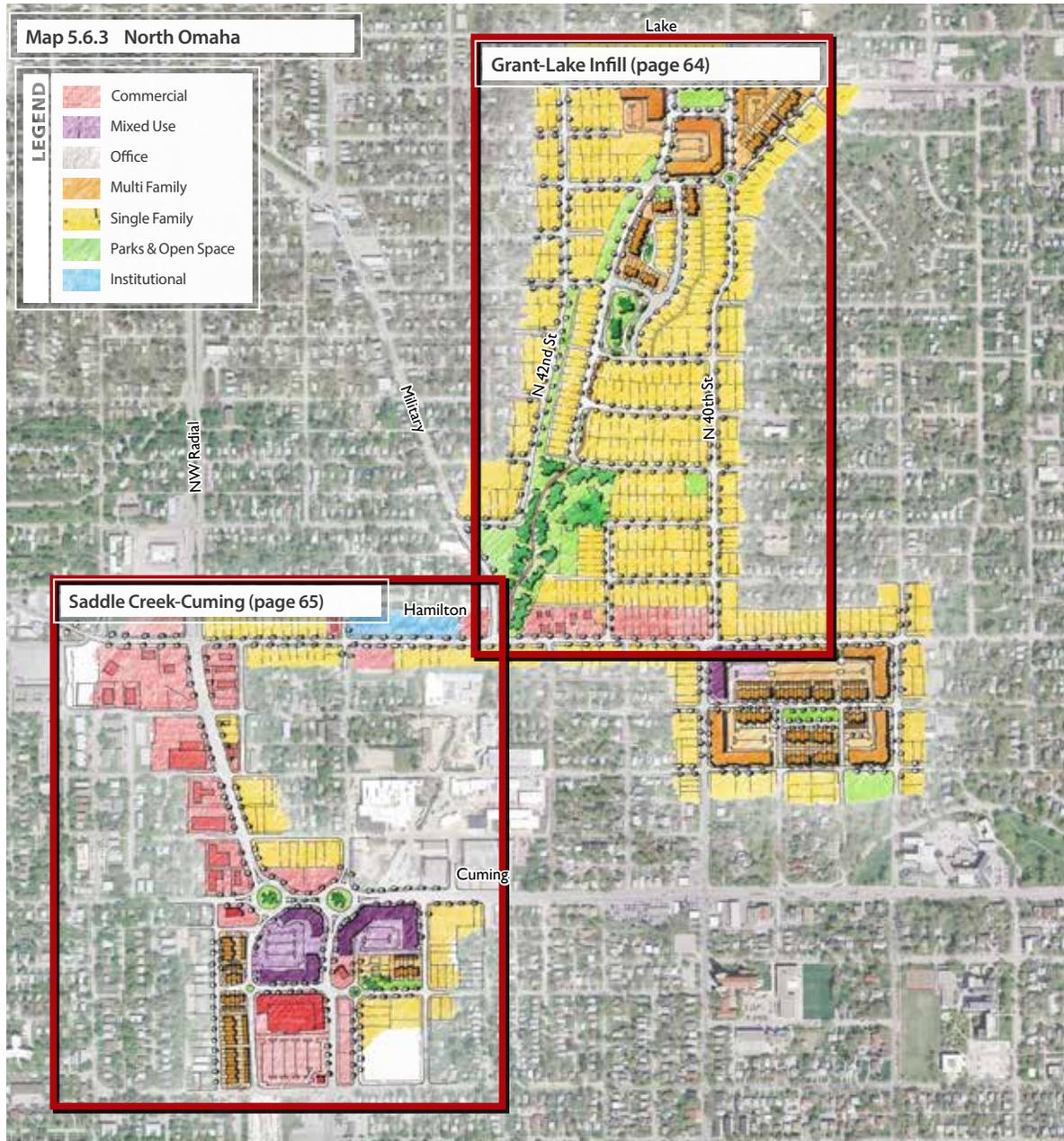




Figure 5.6.3a Grant-Lake Infill Area Existing Network



Figure 5.6.3b Grant-Lake Infill Area Proposed Network



Figure 5.6.4a Saddle Creek Existing Network

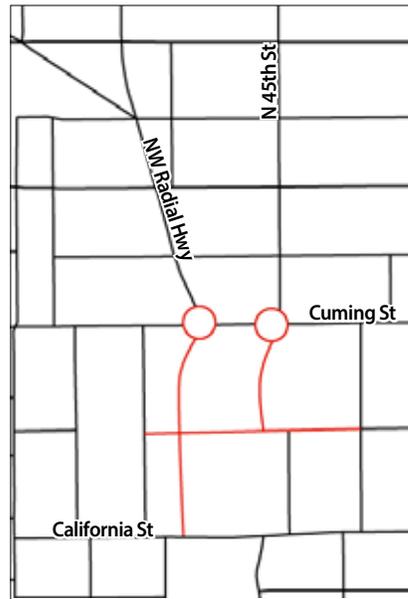
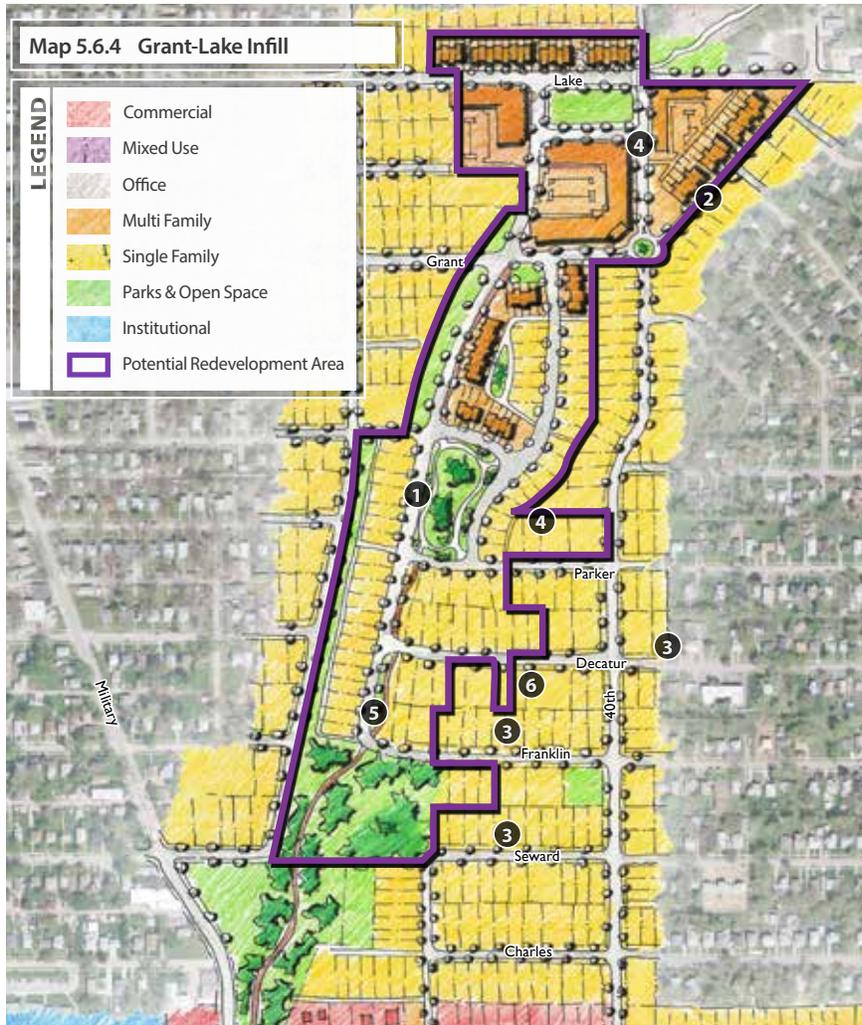


Figure 5.6.4b Saddle Creek Proposed Network

Grant-Lake Infill

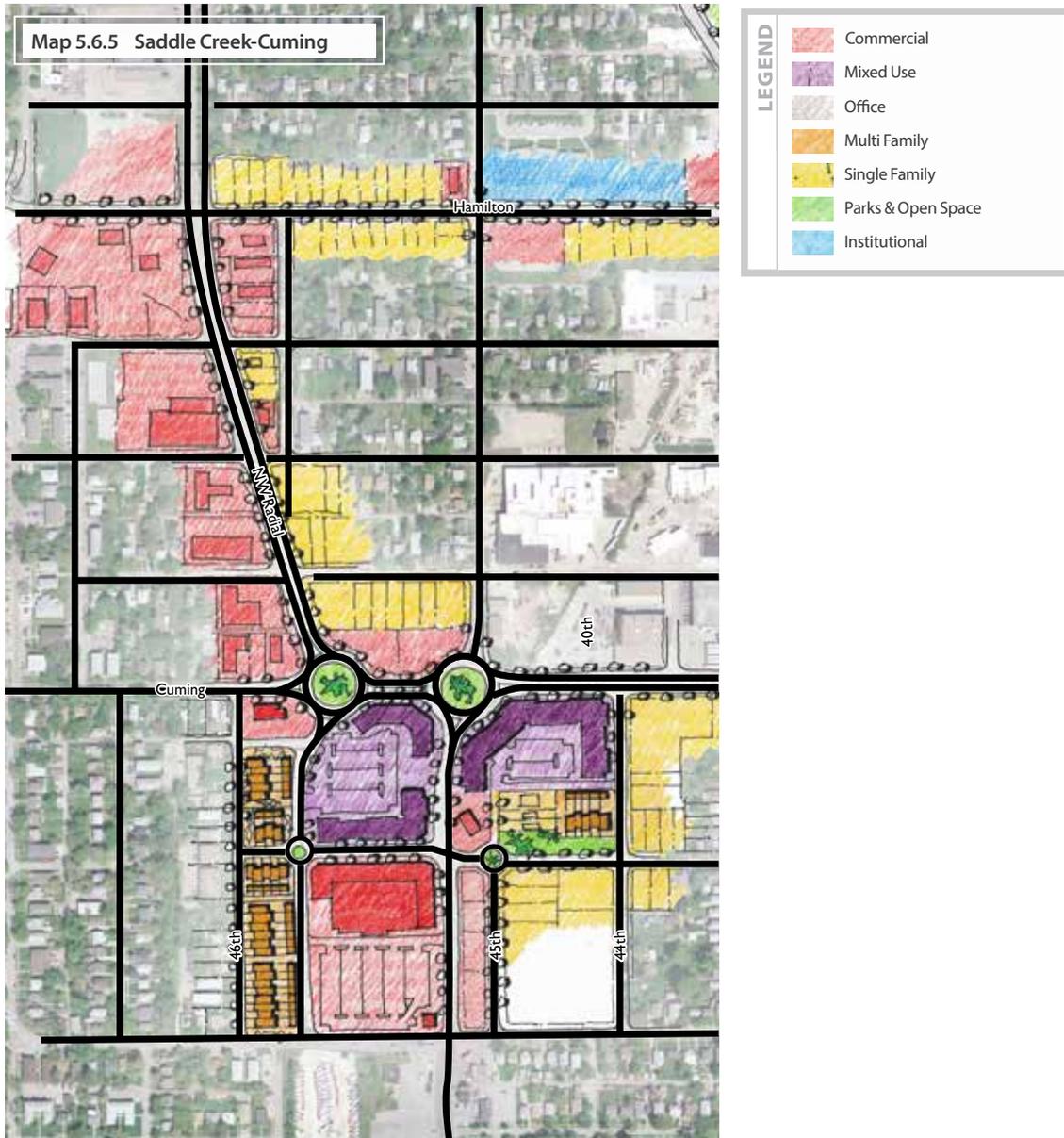
Anchored by a disused railroad corridor and industrial properties, this corridor is primarily surrounded by single-family homes and has redevelopment potential at its northern end. The rail corridor is an opportunity to re-connect dead-end streets and to add an off-street trail.



- 1 Provide new street along abandoned rail corridor (Project NS-PUB-011).
- 2 Create new higher density, multi-family node around existing Lake and 40th.
- 3 Extend street grid, where applicable, to new street within rail corridor. Most east-west streets are currently dead-ends.
- 4 Front proposed open space with townhomes or garden apartments.
- 5 Even if no public street is provided, this rail corridor provides a multi-use path opportunity (MP-020).
- 6 Enhance existing single-family neighborhoods with new single-family and multi-family developments.

Saddle Creek-Cuming

The major public project proposed for this area is a reconfiguration of the Saddle Creek/Cuming intersection. The Transportation Element planning team considered a dual roundabout to help separate the concentration of competing turning movements, although preliminary testing suggested that this design would likely not accommodate current traffic volumes. Other concepts include a single point intersection with multiple channelizations consolidated into more of a four-leg intersection, and the elimination of a southbound left turn lane from Northwest Radial Highway to Cuming Street to divert traffic south onto Saddle Creek.



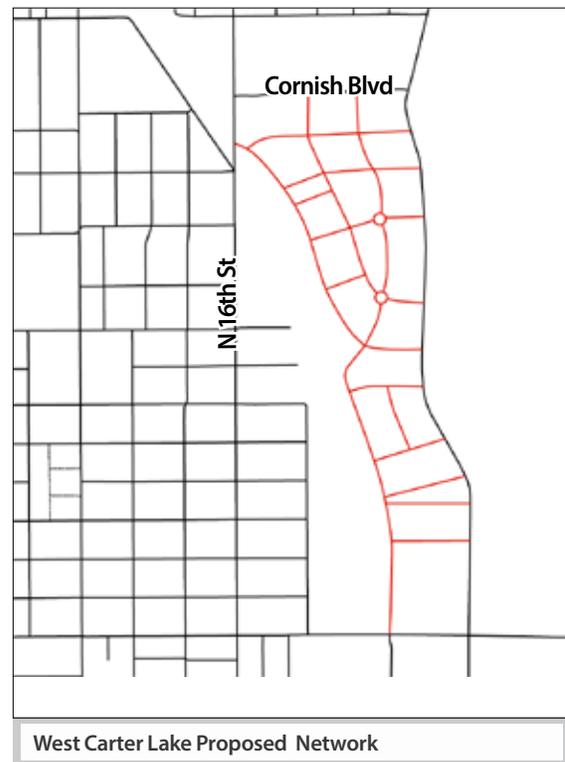
West Carter Lake

The former industrial site to the west of Carter Lake represents another opportunity for added development with supporting street network. However, significant grade changes to the west of this site limit the ease of adding street network to the established North Omaha street grid. Development should be based on a connected network of streets. No projects in this development area were proposed to be publicly-led capital projects, yet the City should help to guide development of this site by assisting in connections to the surrounding street grid and improving sidewalks along major surrounding streets. A Portion of the site below is dedicated Park Ground and it must be preserved and not developed.

LEGEND		Commercial
		Mixed Use
		Office
		Multi Family
		Single Family
		Parks & Open Space
		Institutional



- 1 Extend Commercial Avenue to Carter Lake Drive.
- 2 Provide public edge to Carter Lake with fronting residential development.
- 3 Front residential along existing sports facilities.
- 4 Encourage light industrial and /or flex office along Locust Street.
- 5 Create new open spaces throughout site that takes advantage of existing topography and views.
- 6 Create a new neighborhood center with mixed use development.



In order to implement a comprehensive list of recommendations, past projects and future projects for Omaha will need to be evaluated and prioritized for feasibility and for adherence to real funding constraints. Future evaluation processes are recommended in four steps: pre-screening, an initial evaluation against criteria, adjustments, and application to a system-wide model.

6.1 Project Pre-Screening

Although all candidate projects are legitimate enhancements to Omaha's transportation system, the city should better identify those projects that would provide the most benefit to community mobility and quality of life. To begin the evaluation process, candidate projects should pass through three screenings.

Neighborhood Bicycle Projects

Many of the on-street routes are short-length, neighborhood serving routes that do not contribute to a citywide commuting system. Although these projects add to Omaha's bicycle inventory and are worthwhile pursuits, they should be considered long-term or opportunity-based projects.

Recreational Trail Projects

Likewise, many candidates for multi-use path and trail projects are more likely to serve a recreational function than a commuting function. These project candidates should be screened out of consideration as transportation improvements but should still be considered for future implementation through a parks and recreation planning process.

Development-Dependent Projects

Many development and redevelopment opportunities have associated transportation projects. These site-based developments often feature suggestions for added street network, multi-use paths, re-configuration of existing intersections, or the upgrading of streets to be better equipped for bicycle, pedestrian and transit use.

Development-based candidate projects with little need or reasonable likelihood of being implemented should be screened out of consideration. This designation was not applied to projects proposed with a significant quality of life benefit, especially in established neighborhoods unlikely to see significant redevelopment efforts.

6.2 Project Evaluation Criteria

The remaining candidate projects should be evaluated against a determined set of evaluation criteria. Based on the four community goals of the Transportation Element, the planning team developed a proposed set of metrics based on both quantitative assessments and qualitative judgments.

The metrics are summarized briefly below and in more detail in the appendix. Upon adoption of this element the city should further evaluate these proposed metrics and ultimately adopt and utilize metrics that meet existing criteria. These metrics will create a transportation system that meets all community goals and creates a realistic plan for implementation.

Goal 1: Provide balanced options for enhanced mobility

Metric 1.1: Modal Options

The Modal Options metric evaluated the existence of bicycle, transit and pedestrian components based on the presence of direct access, proximity, and connectivity. Projects were evaluated through qualitative efforts and GIS analysis.

Metric 1.2: Street Congestion

Candidate projects were evaluated on reduced travel times from the baseline, and determined if they added to congestion, helped relieve congestion, or had no effect.

Metric 1.3: Street Options (Parallel Routes)

This metric was a qualitative assessment of how a street project can provide new connections to the existing street network, providing new ways to accomplish the same trip or connecting areas that currently have no direct connections.

Metric 1.4: Street Connectivity (Intersections and Turn Options)

This measure examined how a project affected the relationship between specific street segments in the roadway network. It helps to determine how efficient intersections are, and what the turning options would be.

Goal 2: Attain a safe and healthy environment

Metric 2.1: Operational Safety

This metric accounted for the project's safety, whether it increased the amount of crashes, decreased the amount of crashes, or had no effect.

Metric 2.2: Walking and Biking Accessibility

A measure of the project's ability to improve access to parks, schools, and other community facilities.

Metric 2.3: Access to Healthy Food Sources

This metric considered access to full-service grocery stores, community gardens and farmers markets as a source of fresh food that contributes to a balanced, healthy diet.

Metric 2.4: Impacts of Vehicle Delay

This metric utilized the travel demand model outputs to estimate impacts on vehicle delay from volume/capacity ratios.

Metric 2.5: Impacts of Vehicle Miles Traveled

Using output from the travel demand model, the percent change in Vehicle Miles Traveled (VMT) was determined from the 2035 trend model to determine the project's ability to reduce trips.

Metric 2.6: Impervious Surfaces

This metric was used to measure any increase or decrease in impervious surfaces as a result of the project. The area was estimated by multiplying a total number of travel lanes by an assumed average lane width and the overall project length.

Goal 3: Create livable and connected neighborhoods

Metric 3.1: Appropriateness to Context

Appropriateness to Context refers to how a proposed facility relates to current and future surrounding land use. This metric was determined through qualitative analysis using GIS spatial maps and prior knowledge of Omaha's neighborhoods.

Metric 3.2: Consistency with Neighborhood Plans

Through GIS, and the inventory of previous plans and studies, an evaluation was conducted to determine consistency of each candidate project with the studies' land use and density recommendations.

Metric 3.3: Contribution to Complete Streets

This measured if the project improved access to modes of transportation other than single-occupant vehicles.

Metric 3.4: Quality of Public Realm/Street Character

This metric measured if the project candidate improves or creates public space and/or promotes the vitality of an activity center based on a review of land uses.

Metric 3.5: Quality of Public Realm – Landscape/Streetscape Addition

This metric measured the amount of street tree coverage added or reduced as part of the project.

Metric 3.6: Community Preference

This was a qualitative assessment of projects that have been openly opposed or supported by the public either via project specific venues (i.e. workshops or public meetings) and/or City council meetings.

Metric 3.7: Parks and Community Facilities Accessibility

In the theme to improve connections, candidate projects received preference if they provided direct access to community facilities through non single occupancy vehicles. Scoring was based on candidate projects that included a bicycle or pedestrian element within ¼ mile of a community facility.

Goal 4: Promote Economic Returns with Fiscal Sustainability

Metric 4.1: Unique Financing

Projects were given preference if a specific financing source was dedicated for the project, such as earmarks or Transportation Impact Fees (TIF).

Metric 4.2: Economic Development

This metric was based on a qualitative assessment of if the project supports or impedes economic development opportunities.

Metric 4.3: Project Feasibility, Cost and Constructability

This metric was originally used for project cost, but was expanded to include engineering feasibility and the anticipated complexity of implementation.

Metric 4.4: Concurrency with Committed Public Services

Metric 4.4 measured whether or not a project is consistent with areas of committed public services, especially physical infrastructure-based services such as water and central sewer systems.

Metric 4.5: Project Utility

This metric utilized the travel demand model to determine future capacity of candidate projects, as measured by comparing future traffic volume from the baseline.

Metric 4.6: Facilitate Goods Movement

Candidate projects along the existing truck route network were evaluated on their ability to facilitate future truck movements.

Metric 4.7: Parking Facilities

Candidate projects were qualitatively assessed for their ability to create on street parking opportunities and/or not adversely impact access to surrounding parking opportunities.

6.3 Travel Demand Model Enhancement

To assist the city in future assessments of projects the planning team adapted and enhanced the MAPA regional travel demand forecasting model to include and evaluate multi-modal project candidates. This section provides a brief summary of that process with more detailed information in the appendix.

The MAPA model follows the standard four-step travel demand modeling process:

- Trip generation (calculating trip ends from households and jobs)
- Trip distribution (linking trip ends to form trips)
- Mode choice (dividing trips by mode)
- Assignment (assigning trips to the network)

In the MAPA model, the mode choice component has been limited to converting auto person trips into auto vehicle trips. No other modes are modeled.

The planning team worked to develop a multimodal model following the same general structure with two major changes. First, a non-motorized trip model has been added between the trip generation and trip distribution steps to allow bicycle/pedestrian project candidates to be evaluated in the context of other projects. Second, transit mode choice and transit assignment have been added. The planning team used National Household Transportation Survey (NHTS) data as a basis for estimating current modal shares in the models' different traffic analysis zones.

Section 7

Recommendations

TRANSPORTATION ELEMENT

The general patterns of transportation investment in Omaha over the last few decades have been focused on accommodating its growth. Second, making strides toward the health and livability goals suggests a set of project priorities that is significantly different from current transportation plans and programs.

However, these two observations do not need to be incompatible: Omaha can continue to spend transportation money to accommodate growth for the next 25 years and can do so in a way that enhances its transportation system and achieves the goals identified in the Transportation Element's public outreach process. What is central to these two ideas being aligned is *how Omaha grows*.

For this reason, the Transportation Element's recommendations extend beyond a pure transportation focus and include land use and development. The union of transportation projects and policies with land use and development policies is critical for Omaha to continue to afford providing infrastructure and services. The current patterns of growth, while they have greatly added to the tax base, have worked against the goals that the City has identified in its Comprehensive Plan, most notably those emphasizing an increase in population density expressed in the Plan's Environment Element. These growth patterns also have implications for transportation, especially an ever-increasing commitment of transportation resources to adding new infrastructure capacity and a consequent decline in available resources for maintaining what has already been built.

This section lays out a framework for how Omaha can strategically invest in its transportation system for the next 25 years, both in terms of accommodating new growth and in maintaining a high quality of life. It also provides policy recommendations, from both transportation and land use perspectives, as well as a set of near-term policy action items intended to launch the implementation of this Transportation Element.

7.1 Projects

Long-Term System Building

Bicycle System

In addition to specific capital projects, Omaha has identified a broad range of potential bicycle projects to add visible, signed, marked routes to Omaha's on-street bicycle system. There are many different opportunities for achieving formalized bicycle routes while other capital improvement projects are underway, such as Omaha's combined sewer overflow remediation program or the City's general street resurfacing program. However, few bicycle projects have advanced as stand-alone projects in the City's Capital Improvements Program, due mostly to scarcity of funds for roadway improvements and the predominance of need for accommodating added vehicle capacity, especially in Omaha's western suburbs.

Shown in Map 7.1.1 and Table 7.1.1, the Transportation Element focuses on a core system of on-street bicycle routes and trails, although the plan itself identifies a far more extensive set of routes for the City

to pursue as opportunities arise. The purpose of this organization is to ensure that a foundational framework of direct, long-distance bicycle routes becomes a funding priority and that all parts of Omaha have access to a citywide bicycle system. Inherent in this is the understanding that many streets may not have marked, signed bicycle facilities in the short term, but that over time they will be pursued as opportunities and funds become available.

Gateways, Green Ways and Boulevards System

Omaha’s historic boulevard system has left a legacy of well-designed public spaces. This plan seeks to build upon those assets to create a more coherent and connected system of pleasant spaces that can be broadly categorized as gateways, green ways, and boulevards.

Gateways are corridors that herald an entrance to the city. The goal of gateway planning is to design entrances to the city that reward the viewer with a sense of arrival. Overlay zoning districts should be adopted for the gateway zones, and should guide the color, signage, texture, spacing, landscaping, and the bulk of the buildings so that all land uses in the zone contribute to the sense of place.

The plan includes several system connector corridors that serve to link communities to the gateways and parks, such as the Harney Bikeway project. These projects, referred to as Green Ways, will provide highly visible linkages to the boulevards and parks that are one of the City’s lasting legacies.

The Transportation Element proposes a ‘New Boulevard’ street design type that takes advantage of the large right-of-way envelope and relatively gentle grade changes to add on-street bicycle lanes to boulevard streets through reconstruction projects. The New Boulevard type is proposed for the following extents:

- **JOHN A. CREIGHTON BOULEVARD** from Maple Street (Adams Park entrance) to

Hamilton Street

- **TURNER BOULEVARD** from Farnam Street to Woolworth Street
- **FONTENELLE BOULEVARD**, from 45th Street to Sorensen Parkway (this includes the extent of Fontenelle through Fontenelle Park)
- **HAPPY HOLLOW BOULEVARD**, from Franklin Street to Leavenworth Street

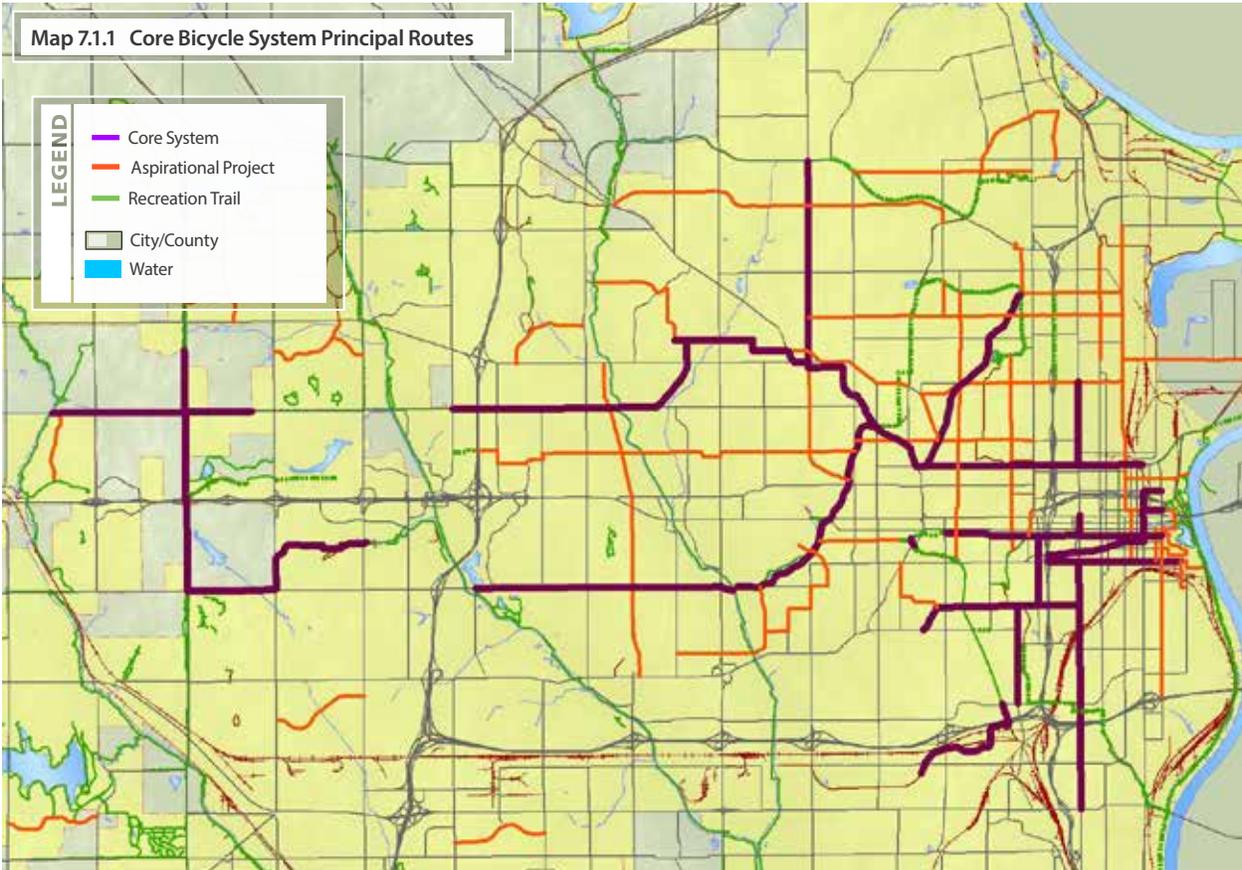
Other sections of the boulevard system do not readily allow reconstruction of the street to add bicycle lanes without an impact on parkway/planter strip sections of the street or, in the most constrained cases, an impact to private property. However, a consistent signage program that identifies these routes as part of the system can help to guide pedestrians and cyclists using them in the ‘gap’ sections.

Transportation Map Book

As a supplement to this Transportation Element, a street master plan map book has also been developed. This map book illustrates all of the recommended projects including street frameworks that are to be developed as a part of private development and redevelopment. In addition to identifying capital projects and new privately developed streets, this map book also identifies the right of way that will be required for future transportation projects.

Table 7.1.1 Core Bicycle System Projects

Project Number	Project Name	Project Number	Project Name
B-004	Howard St / St Mary's Ave Bike Lanes	B-103	24th St Bikeway Branch
B-007	Leavenworth St	B-104	Harney St Bikeway (Midtown)
B-018	24th St	CS-010	24th St
B-037	32nd St	CS-020	60th St
B-041	Woolworth St	MP-009	Happy Hollow Blvd
B-043	Cuming St	MP-010	Pacific St
B-047	Cuming St	MP-012	144th St
B-049	Wirt St and Bedford St	MP-013	Fairacres Trail: Pacific-132nd
B-052	Corby St-Saddle Creek Rd	MP-014	Fairacres Trail: West Fairacres Park
B-057	Westover Connector	MP-019	Field Club Trail Extension II
B-065	Saddle Creek Road and NW Radial Highway	MP-020	North Omaha Trail
B-066	Blondo St/Benson Gardens Blvd	MP-023	144th St Multi-Use Path (Ellison to Redick)
B-067	Park Ave	MP-024	144th St Multi-Use Path (Larimore extension)
B-100	Harney St Bikeway (Downtown)	MP-035	Keystone Trail East Phase 2/3
B-101	13th St and Capitol Ave Bikeway Branch	RC-002	144th St and Blondo St
B-102	13th St and Cass St Bikeway Branch		



7.2 Funding Tools

One of the greatest challenges Omaha will face in implementation of the Transportation Element of its master plan is securing funds to pay for recommended projects and programs. As recent trends in municipal funding throughout the US suggest, Omaha will face challenges in committing to a greater level of transportation funding than it currently commits.

Impact Fees

Impact fees are a common tool used to finance the construction of facilities in new developments. During the development process, developers and builders are charged a fee that will partially cover the additional infrastructure needed to support the new homes and businesses. The fees must be determined in a way that ensures the developer is only paying for its “fair share” of facilities. Although the funds can be used for off-site improvements, such as schools and sanitary structures, it cannot be used for fixing existing problems or deficiencies.

The State of Nebraska does not have an impact fee enabling act, but according to legal case studies municipalities have an implied authority to charge impact fees. For example, the City of Lincoln began its impact fee program in 2003, and has collected over \$34.3 million that has funded streets, parks, water and sewer systems in new areas of the city. Going forward, the City of Omaha may want to consider a similar program.

Sanitary Improvement Districts: SIDs and BIDs

The State of Nebraska enables municipalities to create special improvement districts that levy a supplemental tax for replacing or reconstructing infrastructure such as streets, alleys, and water or sewer lines. Called “SIDs”, they are not only a tool for finance and management but an organization of property owners. They are formed when the majority of owners that have an interest in the real property within a defined geography

propose a special assessment district. They can be residential, commercial, or mixed-use, but are typically found in downtowns or commercial districts.

SIDs have proven to be a highly effective means of advancing new development and have accounted for a large portion of the street, water/sewer, power and park infrastructure now in place in the City of Omaha. SIDs by themselves do not govern the form and intensity of development, but market preferences and land development policy have led to the vast majority of SID applications being in development that is primarily single-use, single-family residential.

Fundamental differences in land costs, ease of land assembly, and construction engineering concerns mean that infill and redevelopment occurring in more established parts of the city are different from new greenfield development. One reason for the SIDs’ effectiveness is their ability to transfer the costs of infrastructure from developers to purchasers of property in new development. The older parts of the city where redevelopment is the likely means of change do not currently have a means of doing this easily.

Omaha needs a mechanism or series of mechanisms to level the playing field and facilitate the different forms of development more appropriate to the more mature parts of the City. A city-oriented counterpart to the SID should be explored, allowing a similar use of bonds repaid by assessment through a homeowner association or through a special property tax levy to provide the infrastructure needs specific to infill and redevelopment projects. These projects typically do not need the same new infrastructure to be constructed and can benefit from the existing street, water, sewer and power systems. However, they may need to provide parking (often in more constrained conditions than in suburban greenfield development), assemble land, or add critical open space.

Business Improvement Districts (BIDs) are basically a type of SID, where funding goes to cleaning and maintaining streets, capital improvements such

as landscaping or streetscapes, and marketing and promotion. Typically, BIDs are formed by the property owners as a collective way to supplement governmental services. The extra tax on real property is levied and collected by the local government, who then redistributes the money back to the BID, where a board of directors assigns funds to improvement projects. The City of Omaha already has BIDs of varying levels of success. The Downtown Improvement District originally started in 1986 to build a “skywalk” system, but discontinued the effort and became inactive. In 2007, the BID was formally revived by downtown business owners and leaders to improve the appearance and safety of the area with particular emphasis on new security measures, trees and landscaping, and the addition of pedestrian amenities. Other Omaha BIDs include the well-established Benson Improvement District and the new Dundee Business Improvement District.

Because of the Transportation Master Plan’s emphasis on supporting existing infrastructure and nodes of activity, the City of Omaha should continue to work with the area’s BIDs on transportation-related improvements. As other areas of Omaha redevelop, the City should support the formation of new BIDs where appropriate.

Tax Increment Financing (TIFs)

Another tool for funding projects in existing areas is Tax Increment Financing (TIF). In Nebraska, this tool is intended to offset the public costs associated with the improvement of properties. It allows local governments to devote the additional tax revenues gained from increased property values to repay the public investment used to initially attract the redevelopment. The money can be used for land acquisition, infrastructure, utilities, and other public improvements and utilities, but by state law local governments can only use TIF in redeveloping blighted areas of the community.

Typically, TIF projects are managed through the aegis of a community redevelopment agency. Once an area

is designated as eligible for TIF, the agency prepares a redevelopment plan. To fund the plan, a TIF bond can be issued in addition with other bond issues, and any land assembled for the project can be purchased by a developer at fair value. Following completion of the plan, the bond is paid off from the increase in property taxes that resulted from the development.

The City of Omaha has a structure in place to take advantage of TIF funding. A large percentage of the City has been designated a community redevelopment area, including downtown and midtown. As transportation infrastructure projects move forward in these redevelopment areas, there will be opportunities to finance part of their construction through TIF bonds in concert with private development. To create more opportunities for TIF funding, the City should explore changes to TIF legislation that lessen these requirements and consider other factors: for example, instead of blight, the City could designate TIF districts based on an overall ratio of land value to improvement value in an area. Additionally, Omaha should explore the creation of a separate authority with legal powers of land acquisition, assembly, and bonding to be dedicated to development efforts within the city that could administer TIF districts.

Road Pricing and Tolls

Tolls have long been a means of financing transportation infrastructure, although in the US they are conventionally levied on high-capacity, limited-access freeways and the revenue from toll collections is used to service public debt and finance improvements associated with the roadways themselves. Typically, toll levies are authorized by state legislation and often become the responsibility of a stand-alone tollway or turnpike authority. The revenues from tolls are used to supplement the conventional gas tax revenue used to fund many transportation projects.

If Omaha pursues development of the region’s Beltway expressway project, toll programs may be the most feasible option to assist in its financing. These would

allow not only revenue collection, but would also manage the growth of traffic volume by distinguishing this as a premium roadway facility. The City and region, in partnership with the Nebraska Department of Roads and the Iowa Department of Transportation, should also consider the use of tolling for strategic infrastructure such as bridge crossings over the Missouri River to finance future repairs or replacement of these facilities.

Sales Taxes for Transportation

In the wake of recent declines in the conventional ‘user fee’ revenues for transportation facilities (especially motor fuel taxes), metropolitan regions and local governments across the US have increasingly looked to local option sales taxes to fund transportation projects. These often garner political support as a clear and simple solution to immediate problems and are expressed in terms of a relatively small increment of additional cost that is not entirely borne out by residents, as visitors often pay this tax as well.

The following guidelines on the use of sales taxes should be kept in mind if the City of Omaha and its region elect to pursue the creation of such a tax:

- All tax proposals should identify a list of associated projects to be funded, at least in part, with the tax. Sales taxes should not be used as an open-ended revenue source to be applied to transportation projects, as it is difficult to ensure accountability and establish a linkage between the tax and its concrete outcomes, especially over periods of change in political leadership.
- Many referendum-based sales tax proposals do not pass on the first attempt. In these cases, it is necessary to adjust the proposed set of projects or programs that the tax would fund to increase the chances of success for future efforts. It may also be necessary to combine the transportation benefits with another type public infrastructure, such as parks and open space. There are often project candidates representing natural intersec-

tions between transportation and other planning concerns that can make such a strategy easier to present to an electorate.

- The tax needs to have a finite lifespan, and the receipts collected during this lifespan must be able to make significant progress on advancing the projects associated with the tax. Thus it is important for the projects list to remain focused on projects that can feasibly be delivered in a time frame proportional to the sales tax lifespan, assuming that the sales tax will not be renewed and that committed projects must be seen through to completion with one form of funding or another.

Parking Districts

Revenue from metered or priced parking is generally applied more broadly to transportation improvements in the US, especially at the municipal level where it is collected. Parking revenue is often used for transportation-specific sources, although district-based parking where pricing is based on meters or on vehicle permits and revenue is used for improvements specifically in that district should be explored. This can provide mutual benefit for an entire district such as street and sidewalk improvements, and thus lessen those costs for individual developments.

The San Francisco Municipal Transportation Authority, created in 1999 as an amalgamation of the City’s erstwhile transit agency and parking authority, uses a combined revenue system from transit fares, parking and other sources in a more equitable distribution of transportation funding. Its example is not universally applicable, especially to smaller cities with fewer physical constraints and less scarcity of parking facilities, yet it is a worthwhile model to consider due to its integration of revenue from parking.

The City of Baltimore has recently begun funding transit operations to supplement those offered by its larger transit service provider, the Maryland Transit Administration, through an added tax on parking.

The City-funded Charm City Circulator offers service to major destinations in and around the city’s central business district. Service is fare-free and runs at frequencies superior to those on MTA routes.

Demand-Responsive Parking Pricing

Although part of a larger move to better utilize parking revenue, the actual pricing of parking can result in a more effective revenue collection outcome by tailoring price to time-specific demand. This usually results in a series of price levels across different parts of a city and throughout different times of the day, but it uses price as a mechanism of better equating supply with demand (and in so doing offers increased potential for revenue collection, especially in places where parking is priced below a feasible market level). To a large degree Omaha is already practicing this type of pricing: metered street parking carries a higher cost in the entertainment and retail districts of the Old Market and Midtown Crossing than it does in other parts of Central Omaha.

7.3 Policy Recommendations

Capital projects may account for the dominant way that transportation money will be spent in Omaha, but physical improvements must also be supported by reform to local policies on how transportation investments are made, how planning efforts should integrate transportation into other elements of Omaha, and how Omaha needs to work with partner agencies to achieve desired outcomes. In general:

- The City will plan for the realignment of streets or construction of new street segments in areas where growth is hampered by missing or poorly planned streets segments.
- The City will continue to balance new street construction with ongoing street maintenance programs.
- Throughout the city and its jurisdiction, Omaha will

continue to require adequate streets which promote transportation efficiency.

- The City should avoid changes in land use that would generate traffic in excess of the design capacity of surrounding streets. When changes in land use intensity are allowed that exceed expectations and result in traffic problems, the developer of the land use responsible will be required to mitigate traffic impacts.
- The City will ensure the equitable distribution of public goods and services as efficiently as possible. Those who benefit from City services should be required to pay for the services they receive.

Specific policy recommendations are detailed on the following pages.

Maintenance and a “Fix-It First” Approach

The City of Omaha has experienced a steady extension of its regular roadway infrastructure maintenance cycle over the last several years, due largely to declines in revenue from declining property values and tax base in the wake of the 2008 recession. Capital improvement funds have remained committed to construction of new infrastructure and addition to capacity.

A comprehensive street maintenance program can substantially reduce the City’s long term street expenditures while providing the best possible service to the public. A quality maintenance program not only reduces the need for major street improvements but also stretches scarce maintenance dollars. This plan continues the recommendation of a ‘Fix-It First’ policy in which keeping existing infrastructure and maintenance at a state of good repair is prioritized over the addition of infrastructure capacity. This will be a critical policy for the ongoing repair and replacement of Omaha’s bridges, many of which are structurally deficient, functionally obsolete, or both. Taking such an approach reduces future maintenance costs, helping to ease the City’s backlog of maintenance needs and

circumventing future cost increases to maintenance projects and programs.

1. New construction projects must be built in ways which help to control and manage long-term maintenance costs.
2. Major street resurfacing projects must continue to be scheduled on a priority basis. Neighborhood resurfacing projects should be scheduled based on a priority ranking system similar to that used for street improvements.
3. Continued and ongoing analysis should be carried out on all bridges in need of repair, to determine if the bridges should be repaired, replaced, or eliminated.
4. A study of the historical and architectural significance of the city's bridges should be undertaken and efforts made to preserve or record those identified as important.

At the time of this plan development the City of Omaha began the process to develop a comprehensive inventory of infrastructure conditions in order to understand maintenance priorities. It has also advanced maintenance projects that include capacity additions. While there is a valid case to be made for consolidating construction and maintenance efforts in a single project to be executed, this should only be done when there is a demonstrated need for capacity additions or other new roadway construction.

Project Right-Sizing

Another policy recommendation is to ensure that projects are "right sized." Transportation projects that result in roadway widening or other capacity addition sometimes come about from responding to a need to resurface a road, repair crumbling shoulders or to add intersection-specific capacity in the form of turn lanes.

Omaha should take a more systematic approach to define and develop projects based on their response to true need, cost effectiveness, and return on investment-

thus conserving resources to be used on other projects.

Bicycle Project Commitment and Plan Refinement

The recommended bicycle system should be integrated into all capital discussions and plans so that opportunities for adding to this larger desired bicycle network can be identified early and integrated into the project development process.

The City of Omaha should also continue to revise and update this bicycle system map, especially the secondary priority routes that are not part of the core system of capital projects, to ensure that route alignment and special project considerations are consistent with the conditions and needs of the surrounding neighborhoods and built environment. Updating of the map may include a more comprehensive bicycle master plan effort, although it is recommended that such an effort continue to focus its identification of projects to be funded and programmed through a capital improvements budget.

Pedestrian Improvement and Sidewalk Commitment

The City's previous policy on sidewalk construction makes developers or property owners responsible for sidewalks. This policy model is widely used throughout the US and is often favored by public administrators and policy makers as a way of controlling municipal expenses. However, such policies can be difficult to enforce, especially in established neighborhoods where little development activity occurs.

The City of Omaha should continue a certain portion of its capital improvement budget to addressing sidewalk backlog, both in terms of new sidewalks and maintenance of existing sidewalks in priority areas. The city should also utilize all available funding sources to complete the city's sidewalk system.

Complete Streets Policy

Vision

To create great places and enhance our quality of life, the City of Omaha will provide safe, accessible streets for all users. Complete Streets will enhance Omaha's quality of life over the long-term with a well-balanced and connected transportation system that provides for economically sound and connected development patterns, public health and safety, livability, equity, affordability, economic activity, and excellence in urban design and community character.

Complete Streets Principles

COMPLETE STREETS SERVE ALL USERS AND MODES.

The City shall develop the community's streets and right-of-way so as to promote a safe, reliable, efficient, integrated and connected transportation system that will promote access, mobility and health for all users: people traveling as pedestrians and by bicycle, transit riders, motorists and others. City streets and/or street networks shall accommodate emergency responders and freight needs as well, in a manner consistent with this policy.

COMPLETE STREETS REQUIRE CONNECTED TRAVEL NETWORKS.

Complete Streets require connected travel networks. Streets shall be connected to create complete transportation networks that provide travelers with multiple choices of travel routes within and between neighborhoods reducing congestion on major roadways.

COMPLETE STREETS REQUIRE BEST-PRACTICE DESIGN CRITERIA AND CONTEXT-SENSITIVE APPROACHES.

In recognition of context sensitivity, public input and the needs of many users, the City will align related goals, policies and code provisions to create Complete Streets solutions that are appropriate to individual contexts; that best serve the transportation needs of all people using streets and the right-of-way; and that support the land-use policies of the City of Omaha Master Plan.

The City will take a flexible, innovative, and balanced approach to creating context-sensitive Complete Streets that meet or exceed national best-practice design guidelines. Design criteria shall not be purely prescriptive but shall be based on the thoughtful application of engineering, architectural and urban design principles.

COMPLETE STREETS ARE THE WORK OF ALL CITY DEPARTMENTS.

The City shall foster partnerships internally and with the State of Nebraska, public transit agencies, neighboring communities and counties, and business and school districts to develop facilities and accommodations that further the City's complete streets policy and continue such infrastructure beyond the City's borders.

COMPLETE STREETS INCLUDE ALL ROADWAYS AND ALL PROJECTS AND PHASES.

The City shall approach every transportation improvement and project phase as an opportunity to create safer, more accessible streets for all users. The City shall establish a procedure by which Complete Streets is incorporated into the routine planning, design, implementation and operation of all transportation infrastructure upon adoption of this policy.

COMPLETE STREETS REQUIRE APPROPRIATE PERFORMANCE MEASURES.

City shall measure the success of this Complete Streets policy using the following, but not limited to, performance measures:

- Linear feet of new/ reconstructed sidewalks
- Linear miles of new/ restriped on-street bicycle facilities
- Number of new/ reconstructed curb ramps
- Number of traffic calming projects approved and implemented
- Number of crosswalk and intersection improvements

Unless otherwise noted above, within 24 months of adoption, the City shall create individual numeric benchmarks for the performance standards deemed

appropriate. These performance standards shall be tracked and measured annually with the annual report posted on-line.

Applicability and Jurisdiction

Prior to work, projects shall be assessed based on the existing and future context of the affected transportation infrastructure within the overall multi-modal network, as identified by recognized plans including those with pedestrian, bicycle and transit guidelines. The Complete Streets policy will apply to all public and private street design, construction, and retrofit projects managed and implemented by the City of Omaha initiated after the Policy adoption, except in unusual or extraordinary circumstances contained in Exceptions below.

Exceptions

Not every street can be complete for each traveler, and exceptions may be requested for projects. Exceptions should not become common. Requests will be considered by a committee consisting of the Public Works Department, Planning Department, and Parks, Recreation and Public Property Department when:

1. Maintenance activities designed to keep transportation facilities in serviceable condition (e.g. mowing, cleaning, sweeping, spot repair, and surface treatments such as chip seal, or interim measures, on detour routes.)
2. Reconstruction of the right-of-way is due to an emergency.
3. Bicycle, pedestrian, and or motorized vehicles are prohibited by law from using the facility.
4. Contrary to acceptable guidance on public safety ,
5. Cost is excessively disproportionate to the need for probable use.
6. Other factors indicate the absence of need, including future need (e.g. low density or rural area; existing parallel facilities that provide adequate accommodation for other users.) In determining future need, exemptions committee shall consult relevant City and regional long range plans for land use and transportation.

Exclusive of Exceptions 1 and 2 above, the planning

and public works directors shall document and explicitly explain why a transportation project is exempt from this policy. This explanation shall be issued in the form of an official memorandum and a complete streets process checklist. When projects or related contracts require City Council approval, this memorandum shall also be submitted to City Council.

Next Steps

The City recognizes that “Complete Streets” may be achieved through single elements incorporated into a particular project or incrementally through a series of smaller improvements or maintenance activities over time. Additionally, the City recognizes the importance of approaching transportation projects within the context of the larger street network, and that all modes do not necessarily need to receive the same type of accommodation and space on every street.

To carry out this policy, the City of Omaha will take the following next steps:

1. The Public Works and Planning Departments and other relevant departments, agencies, or committees will incorporate Complete Streets principles into all existing plans, manuals, checklists, decision-trees, rules, regulations, and programs as appropriate;
2. The Public Works and Planning Departments and other relevant departments, agencies and committees will review current design standards, including subdivision regulations which apply to new roadway construction, to ensure that they reflect the best available design standards and guidelines, and effectively implement Complete Streets in accordance with this policy;
3. When available, the City shall encourage staff professional development and training on non-motorized transportation issues through attending conferences, classes, seminars, and workshops;
4. City staff shall identify all current and potential future sources of funding for street improvements and recommend improvements to the project selection criteria to support Complete Streets projects;
5. City staff will develop a public and stakeholder

engagement strategy/plan.

Code Amendments

The City of Omaha Master Plan and applicable municipal codes shall be revised to incorporate the principles and provisions of this Complete Streets Policy and be reviewed and updated from time to time. All City of Omaha manuals referenced in the City Code and administrative policy that affect the design of roadways and facilities sited in the right-of-way, which affect the implementation of this policy, shall be reviewed and updated to make them consistent with its goals and support its implementation. To facilitate near-term compliance with this policy, an interim advisory on the design of streets and subdivisions that references national guidelines and manuals shall be issued as administrative policy and also will address the applicability of this policy to private development.

Development and Local Street Network

Many of the recommendations of the Transportation Element, including specific projects, are closely tied with potential economic and land development opportunities and should be advanced hand in hand with those opportunities when they are executed.

Street Network Connectivity

The City of Omaha fully considers the needs of non-motorized travelers (including pedestrians, bicyclists, and persons with disabilities) in all programming, planning, maintenance, construction, operations and project development activities. This includes incorporation of the best available standards in all of the City's practices. The City should adopt the best practice concepts found in the US DOT Policy Statement on Integrating Bicycling and Walking into Transportation Infrastructure.

The City of Omaha should strive to create a well connected street network serving all modes of transportation. A well connected network will provide the greatest access to the community for all users. To achieve a well connected network the City should

implement the following policy recommendations:

- Provide direct connections or shortcuts from residential areas to neighborhood commercial destinations, parks, gathering places, and trails, especially in new or infill development. Connect dead-end streets or cul-de-sacs to pedestrian trails or adjacent streets to encourage pedestrian connectivity.
- Provide frequent, secure crossing opportunities.
- Provide connections over barriers such as railroads, waterways, and freeways.
- Reduce, eliminate, or provide access around sidewalk obstructions, such as utility poles, that are barriers to pedestrian travel.
- Provide a highly connected transportation system within Omaha in order to provide choices for drivers, bicyclists, and pedestrians; promote walking and bicycling; connect neighborhoods to each other and to local destinations such as schools, parks and shopping areas; reduce travel times; improve air quality; reduce emergency response time; increase effectiveness of municipal service delivery; and free up arterial capacity to better serve regional long distance travel needs.
- New residential development should include local streets that encourage pedestrian and bicycle travel by providing short, direct, public right-of-way routes to connect residential uses with nearby existing and planned residential subdivisions, schools, parks and other neighborhood facilities
- New residential developments should minimize the number of cul-de-sacs to the extent practical and only be used to increase the number of lots by accessing land otherwise not accessible through a connected street pattern. Where cul-de-sacs are unavoidable, developments shall incorporate provisions for future vehicular connections to adjacent, undeveloped properties.
- New residential subdivision should have at least

one stub street constructed into each adjacent undeveloped property of 10 acres or more. The design of future alignment of street extensions onto adjacent tracts should benefit the surrounding community. Subsequent development of these adjacent tracts should connect to the original stub street.

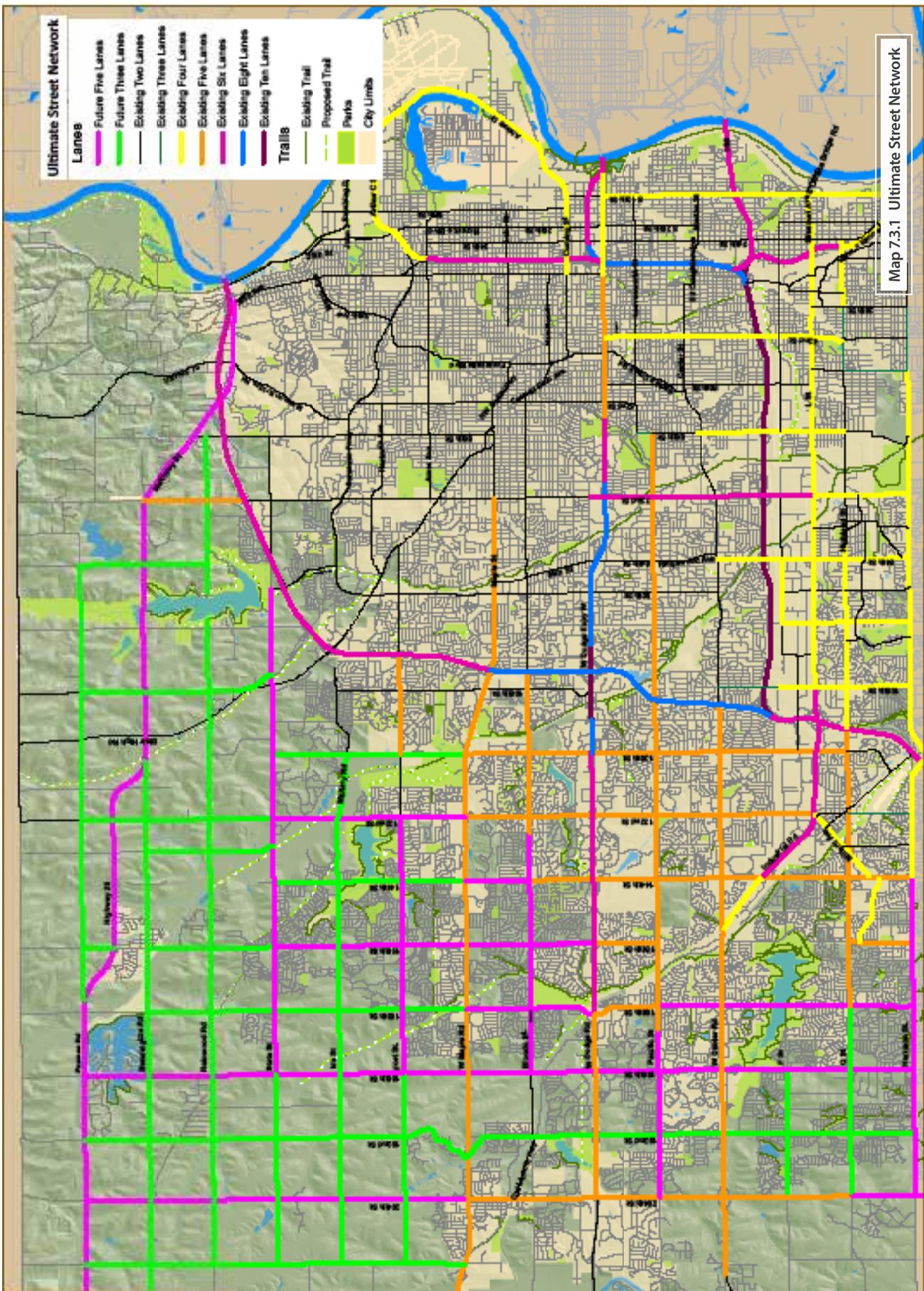
- New residential development should incorporate and continue all collector or local streets constructed to the boundary of the development plan by previously approved but not constructed development or existing development.
- A connectivity index should be used to determine the adequacy of street layout design during the planning stages of a residential development. This is calculated as the ratio of the number of street segments and intersections/cul-de-sacs. The figure for a conventional cul-de-sac subdivision is often 1.0 or less. A minimum Connectivity index of 1.4 to 1.8 represents an acceptable street network and each new subdivision should have an index above the threshold.
- A simple measure of connectivity is the number of street links divided by the number of nodes or link ends (including cul-de-sac heads). The more links relative to nodes, the more connectivity.
- A connectivity index of 1.4 to 1.8 represents an acceptable street network in the Southeast Plan area. The optimal connectivity index for a perfect grid network is 2.5. This is the procedure for calculating the connectivity index:
 6. Count the number of nodes. Nodes are any point of intersection of two or more roads or any cul-de-sac ends. There are 8 nodes in the

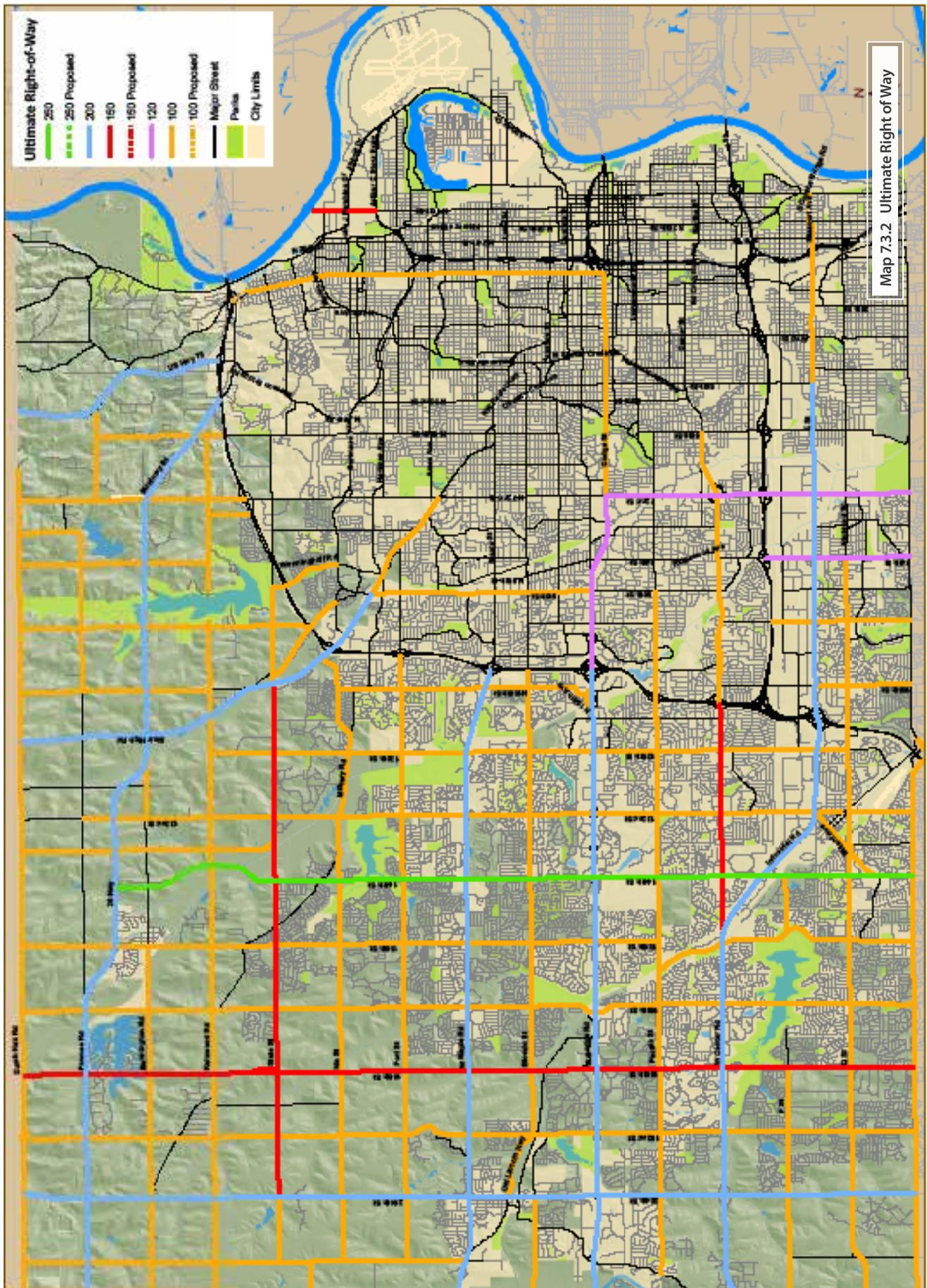
example (counting only the black nodes).

7. Count the number of links. Links are the segments of road connecting nodes. To properly calculate the connectivity index, you must include the first link beyond the last nodes. There are 12 links in the example (ignoring the dashed lines).
8. Use the following formula to calculate the connectivity index: $\text{links} / \text{nodes} = \text{connectivity index}$. The connectivity index of the example is $12/8 = 1.5$. This connectivity index can be improved by removing the cul-de-sacs and connecting the streetends to other streets (follow the dashed lines). There are still 8 nodes (counting the clear circles and ignoring the black cul-de-sac circles), but there are now 14 links. The index is now 1.8. Simple changes in design can bring about significant changes in connectivity index scoring.

Applicability of the Street Design Guidelines

The development of the Transportation Element included a separate effort to develop a street design guidance document. With an emphasis on the link between land use and mobility, the Street Design





Guidelines that accompany the Transportation Element are to be used for coordinating the design of new streets as well as retrofits of existing streets and will follow these general guidelines:

1. The City will promote street systems, such as “dense street networks,” that offer flexibility, provide for better traffic flow, and reduce street right-of-way and paving costs.
2. The City will develop flexible design standards for street sizes based on surrounding land uses patterns and densities.
3. Traffic calming techniques on local residential streets, in both existing neighborhoods and new developments, shall be provided when appropriate, to attain a better balance between street users including pedestrians, bicyclists, transit, and autos. Such traffic calming efforts will support the tenets of the Master Plan and will be in conformance with the City of

Omaha’s Traffic Calming Program.

The Street Design Guidelines, included under separate cover, detail these principles, standards and processes and should serve as a starting point for both design and coordination with other implementing agencies.

Coordination with NDOR and the Securing of Design Exceptions

According to state statute, all public roads in Nebraska must meet the minimum standards of the Nebraska State Highway Design Manual. Because of right-of-way constraints and competing uses of space on urban streets, there will mostly likely be cases where certain design parameters need to use dimensions below minimum standards specified in the Highway Design Manual.

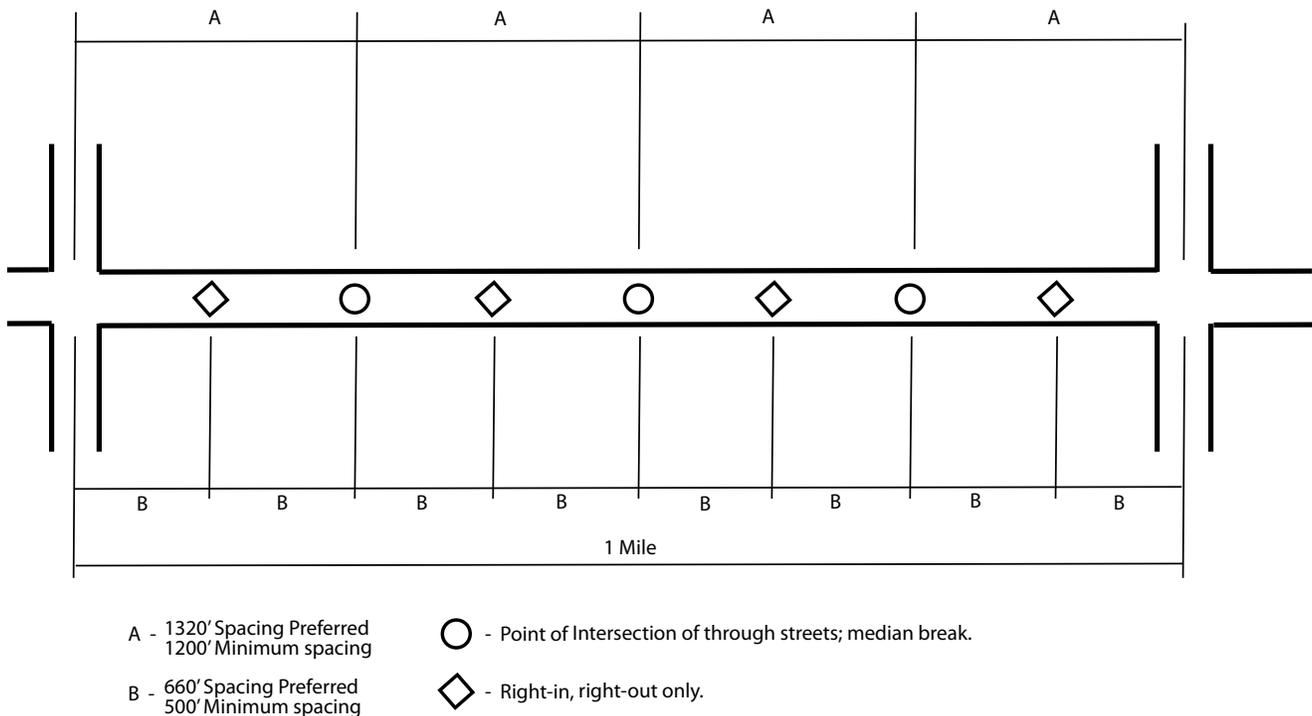


Figure 7.3.1 Arterial Access Implementation Policy

To address this, the Street Design Guidelines are tied to a map of specific areas of Omaha where relaxations from design standards are likely to be needed. This is not intended to constitute a request for relaxations or to suggest that every street in these areas will require a relaxation to be built. It is intended, though, to focus street design discussions on context and environmental characteristics in these areas and to begin laying out a case for why relaxations may be needed.

Coordination with State and Federal Initiatives

Ongoing implementation of the Transportation Element should be coordinated with larger state and federal programs. To ensure this, the Transportation Element recommends a comprehensive review of the prioritized projects list no less frequently than every

three years to review new initiatives and opportunities and to identify those projects or policies recommended as part of the Transportation Element that would position Omaha to benefit from those initiatives. If needed, projects should be assigned a higher priority.

Update Land Use Element

Like many growing cities, Omaha has experienced low density suburban growth in the western portions of the community having an impact on the overall transportation system.

Projects exclusively designed to address automobile congestion are not feasible solutions to the City's mounting congestion and longer commutes. Roadway investments must be balanced with investments in

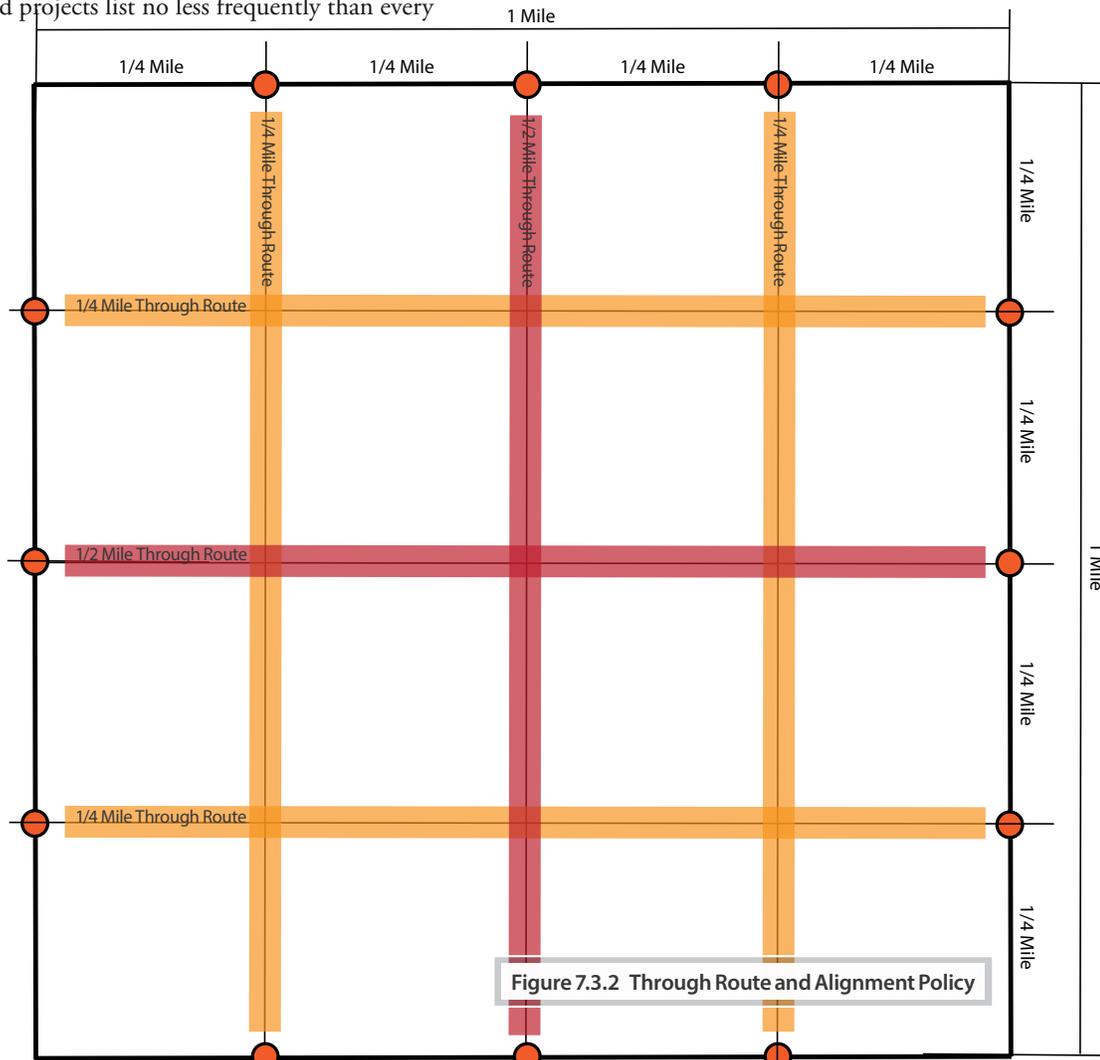


Figure 7.3.2 Through Route and Alignment Policy

other transportation modes. In addition, it is important to link development to sidewalks and greenways, as well as provide adequate connections to transit.

Land use patterns have the greatest effect on trip generation and travel behavior. Compact, mixed-use and walkable developments mitigate traffic generation and thoroughfare impacts by shortening trip distances, capturing a greater share of trips internally, and facilitate transit and non-motorized trip-making. Successful mixed-use areas with multi-modal access can thrive with lower parking ratios, freeing up land and capital for open space amenities and productive, revenue-producing uses.

Many, if not all, of the recommendations included in this plan are related to how the City of Omaha grows and what its land uses will be. Infill development and redevelopment will have the greatest impact in creating a balanced transportation system.

This plan recommends that the land use element be updated to reflect the change in focus within Omaha. A growth framework section to the land use element should be incorporated to accurately depict Omaha's growth goals.

Continued Policy Initiatives

The following language is from the City's previous Transportation Element, and remains important to Omaha's continued improvements to its transportation system.

Ultimate Street Network and Ultimate ROW

Beyond the specific projects mentioned, this Transportation Element will be used as a tool to determine how much money will be needed for improvements over the next several years, how much right of way (ROW) will be available far into the future to accommodate needed improvements, Map 7.3.1. The Ultimate Street Network Map depicts Omaha's future arterial street system to be developed over the

next 20 to 25 years. This map will work in concert with Map 7.3.2, Ultimate ROW map, to ensure efficient expansion of this system.

ROW is a costly aspect of transportation investment, so this map will determine where land should be reserved, even though the improvements may not be made in the near future. This includes both ROW needed for publicly built projects that which will be set aside as areas of the city develop or redevelop.

Arterial Access Implementation Policy

The following criteria have been adopted by the Public Works and City Planning Departments. The purpose is to set standards for access points along major and minor arterial streets as Omaha's street system develops; Figure 7.3.1 depicts this policy below.

Conditions for Street Vacations

Efforts should be undertaken to preserve and build upon the city's connectivity and street networks. No street, alley, or other public right-of-way shall be abandoned without the highest level of scrutiny and concurrence among affected City departments and utility companies. Right-of-way abandonment shall be subject to the following findings:

- The closure will not compromise the integrity of the City's street network, nor lead to a significant loss of vehicular, bicycle, or pedestrian connectivity;
- The closure will not impair the ability to provide utility service;
- The closure will not adversely impact the health, safety and welfare of the community, including access by emergency vehicles; and
- Reasonable alternatives have been investigated and found to be impractical or more detrimental to the public welfare than the proposed street vacation.

Traffic Calming

Traffic calming devices and techniques may be installed

along local residential streets in accordance with the City of Omaha's Traffic Calming Program. It is recommended by this plan that the Traffic Calming Program be evaluated by the Staff Working Group for Implementation (Page 88) for effectiveness since adoption.

Through Routes and Street Alignment

In accordance with the Arterial Access Policy and Omaha's Ultimate Street Network Plan, each mile section will have three through routes in the north / south and east / west direction. Figure 7.3.2 depicts the through route and street alignment policy below.

These routes must be direct in nature with continuous access allowing easy navigation between each arterial streets. Half mile through routes connecting arterial streets will have the most direct routes between arterial streets. These important connections will provide further connectivity in developing areas of the community relieving pressure on the city's arterial street system. The city should modify existing subdivision regulations to fully implement this policy.

Driveways

1. A single parcel or contiguous parcels comprising one development located on collectors or above should be limited to one driveway, unless traffic volume or street frontage warrant additional driveways.
2. On major arterial and minor arterial streets, driveways should be shared between adjacent properties and common ingress/egress easements whenever physically or legally possible. Existing driveways that are safety hazards, reduce capacity, or are substandard should be removed or upgraded in conjunction with any new on-site or street construction.
3. There will be no driveways in the first 500 feet from the intersection of two arterials on lots in new developments. A minimum distance of 660 feet is preferred. This standard is also to be applied to the

redevelopment of existing lots whenever physically or legally possible.

4. On major arterial and minor arterial streets, large developments should consolidate major driveways and align them with driveways on the opposite side of the street. The location of these driveways will be coordinated to conform with future medians (See Arterial Access Implementation Policy).
5. Direct access onto arterials is prohibited for single-family lots. Direct access onto collectors will be allowed in new developments only if necessary due to physical constraints.
6. One-way loop streets should be considered off of collector roads as an alternative to cul-de-sacs.
7. Driveways to residential corner lots should be located as far away from the intersection as is possible. Only one driveway will be allowed for each corner lot if the lot is located at the intersection of a local and a collector street, the driveway should be accessed from the local street.

The driveways policy should be reviewed for effectiveness by the Staff Working Group for Implementation (Page 88) and modified as needed.

Bridges

1. All newly constructed bridges in Omaha's planning jurisdiction must be designed to allow pedestrians and bicycle riders safe passage.
2. The construction of a bridge may be necessary to meet the three through streets per mile requirement of the arterial access policy.
3. The City should seek to coordinate and link the trail master plans of Omaha and Council Bluffs at appro-

priate high use nodes and attractive destinations and attractions on either side of the river.

- a. The City should continue to monitor the future of river navigation. The termination of navigation could eliminate some restrictions for adding pedestrian/bike structures below existing bridges due to the current 52 foot clearance required for navigation. This could enable the use of the Illinois Central pivot bridge to be used for access if it were available.
 - b. The City should support the efforts of local trails organizations as they look for creative funding solutions to bridge the Missouri River.
4. The aesthetics of public bridges should be given equal consideration to the cost and functional design of the bridge. New bridges should be designed with aesthetics in mind.

Mass Transit

In order to provide other options to the automobile, the City must rethink mass transit's role and encourage design which makes other options to the car more attractive. Increasing the role of transit in the city will not only make for a more efficient city, it will open up opportunities to those who don't drive, low-income families, children under 16, and senior citizens.

A successful transit system depends on a concentration of riders and destinations. Potential transit riders are less likely to walk to a transit stop if it is more than one-quarter mile from their home. New construction is currently not being built at high enough densities to provide a pool of riders or allow a bus to operate efficiently. The future land use map shows three "transit corridors": West Center Road, West Dodge Road, and West Maple Road. The purpose of these transit corridors is to develop the necessary densities to support transit.

This high-density development will have other benefits besides increased transit ridership. Transit supportive

development is a more efficient use of land and may curb the need to move the sewer boundary further and further out. Also, attractive transit will reduce household travel costs and auto expenses as well as provide a range of affordable and diverse housing stock. Business in the corridors will benefit since employees and customers will enjoy less congested streets.

To support viable transit service, residential services along the West Maple, West Dodge and West Center corridors need to average eight dwelling units per net residential acre (du/ac). To obtain this density, a variety of residential densities should be encouraged within these corridors: apartments in the mixed-use areas, and a mix of townhomes, duplexes, and single-family homes in the remaining portion of the corridor. In addition, high-density housing outside of these corridors should be limited, not only to reduce traffic congestion but to help encourage high-density housing development within these corridors.

Metro Transit

1. New developments must be designed to accommodate METRO's recommended standards.
2. If development proposals consisting of land uses which METRO attempts to serve are located beyond the 20-year service area, the developer should contact METRO to review how to best serve these developments. These uses are:
 - Colleges and hospitals
 - Apartment units in complexes of 48 units or more
 - Major Employment sites
 - Major shopping centers
 - Senior citizen towers/retirement communities
3. Civic uses and day care facilities are strongly encouraged at METRO's future park and ride lot

locations.

4. Developers of mixed-use projects should contact METRO to review the need for including park and ride stalls.
5. Mass transit service should be provided between the airport and Omaha's major hotels, Downtown and the zoo.

Intercity Passenger Rail

The City should coordinate with the State of Nebraska and Iowa to accommodate higher speed rail service connecting Omaha to other metropolitan regions.

Developing and Redeveloping Areas

In order for transportation investments to not be reactive and counter-productive, it is important that the City and the region begin from a common vision of future growth. Transportation improvements may be necessary in developing or redeveloping areas to

ensure that adequate infrastructure is constructed to accommodate development. At the same time, transportation improvements need to be coordinated with other public facilities such as sewers, parks, fire stations and the like to ensure that they do not encourage growth in areas which are lacking in these other necessary improvements.

1. Transportation projects should be scheduled based on existing and project growth patterns set out in the Urban Development Element and Future Land Use Element.
2. The County, State, and MAPA should continue to consult with the City regarding proposed transportation improvements to ensure that the projects are compatible with the City's Master Plan.
3. Major developments should not be approved if these developments require improvements which are not found in the TIP or CIP, unless the developer is prepared to pay for all of the improvements or the City determines that the proposed development provides community benefits which offset the cost.

Demand Management

The intention behind a Transportation Demand Management Plan is to address congestion by decreasing the volume of vehicle trips on the existing road network, as opposed to expanding the road network. It focuses on maximizing the movement of people, not vehicles, within the transportation system. This can be done by increasing the number of persons in a vehicle, or by influencing the time of travel. Decreasing the volume of vehicle trips is far less costly than providing new transportation facilities and the decrease in trip production will reduce vehicle-generated air pollution. Travel Demand Management relies on incentives or disincentives to make shifts in travel behavior attractive.

The City should support the following:

1. Adopting a regional resolution support voluntary no-drive days. This program was implemented in Denver and Phoenix by requesting persons whose private automobile license plate ends in zero or one travel by means other single occupancy vehicles on Monday, those with license plates ending with two or three select alternative means on Tuesdays, etc.
2. Establishing High Occupancy Vehicle lanes on I-80, West Maple, West Dodge, and West Center Roads for buses, vans, and carpools.
3. Adopting an ordinance that would encourage shared parking.
4. Allowing for a reduction in the parking requirements for developments which provide showers and locker rooms for employees and/or park and ride stalls, or are adjacent to transit routes.
5. Adopting a Transportation Demand Ordinance which would provide incentives for employers with 100 or more employees to submit a commute trip reduction plan which may include:
 - a. Provision of preferential parking or reduced parking charges for high occupancy vehicles, vanpools.
 - b. Increased parking charges for single-occupant vehicles
 - c. Provision of commuter ride matching services to facilitate ride-sharing
 - d. Provision of subsidies for transit fares: IRS Code, Section 162 permits deduction of the costs as an ordinary business expense.
 - e. Provision of vans for vanpools.
 - f. Provision of subsidies for carpooling, vanpooling, bicycling, walking.
 - g. Permitting the use of the employer's vehicles for carpooling or van pooling
 - h. Permitting flexible work schedules to facilitate employees' use of transit, carpools, van pools, bicycling, or walking.
 - i. Cooperation with transportation providers to

- provide additional regular or express service to the work site
- j. Construction of special loading and unloading facilities for transit, carpool, and vanpool users
 - k. Provision of bicycle parking facilities, lockers, changing areas and showers for employees who bicycle or walk to work
 - l. Provision of a program of parking incentives such as rebate for employees who do not use the parking facilities
 - m. Establishment of a program to permit employees to work part- or full-time at home or at an alternative work site closer to their homes
 - n. Establish a program of alternative work schedules such as compressed work week schedules, which reduce commuting and
 - o. Implementation of other measures designed to facilitate the use of high-occupancy vehicles such as onsite day care facilities and emergency taxi services.

Reverse Commuting

Reverse commuting is a term to describe the daily journey of city residents who have jobs in the suburbs. Many of these job sites do not have adequate mass transportation to serve its employees. The best possible way to address this problem is to bring job and shopping opportunities to the inner-city.

1. The city should assist in the development, revitalization or stabilization of commercial and employment centers in low-income areas to help offset the lack of adequate transportation alternatives.

The City should work with METRO Transit to identify low-income neighborhoods which are in need of additional mass transit service and help in the formulation of a plan which would provide adequate service. This service should not be measured based on the number of passengers it serves, but on the number of job placements it helped provide.

7.4 Next Steps

Although this plan outlines several strategic policy approaches to realizing plan goals and shaping the Omaha transportation system to fit its community's needs, there are more concrete policy and legislation-based actions that the City of Omaha should undertake in the short term. These short-term steps are intended to help identify critical deficiencies in bringing the City's infrastructure system to a state of good repair but also to change the status quo approach to project pursuit and development in a way that achieves the Transportation Element's goals.

Staff Working Group for Implementation

The City of Omaha shall develop a Staff Working Group to oversee the implementation of the Transportation Element. Successful models of transportation plan and program implementation have featured a regular group of agency staff representing multiple departments, budgets and interests. Omaha should develop such an inter-departmental group to oversee implementation of the Transportation Element. Particular representation should include the following:

- Department of City Planning
- Department of Public Works
- Department of Parks and Recreation and Public Property
- METRO Transit
- MAPA
- Douglas County Engineers Department
- Douglas County Health Department

The need for Omaha's municipal government departments to work together on implementation of the Transportation Element underscores its focus on linking transportation to land use, economic development, public space and multiple other charges of the City's municipal jurisdiction.

Capital Improvements Program (CIP) Planning

Moving forward, there is a need for the City to develop its own project selection metric system to evaluate potential projects in a more comprehensive context. The four goals established through the Transportation Master Plan process can provide the framework for evaluating projects on an annual basis. The number of metrics used in this plan's process are likely to be too intensive for use in a regular process, but provide a starting point for the City to develop its system that matches its staffing capacity and evaluation needs to populate the CIP thoughtfully.

The Metropolitan Area Planning Agency (MAPA) has recently undertaken a process of advancing and refining its project selection criteria to have a more systematic and defensible approach to projects that are added to its transportation improvement programs. The City of Omaha should develop a similar approach in order to tie implementation of the Transportation Element and the execution of its project recommendations to other parts of its Master Plan.

Additionally, the City should consider assigning CIP dollars annual to specific program areas such as streetscape studies, alternative transportation, and other specialized projects. The City should also anticipate completing a 2017 update of this plan, which will need to include MAPA's transit vision and multimodal corridor study.

Development of a Funding Action Plan

As a follow up to the Comprehensive Infrastructure Study, the City of Omaha should develop an aggressive plan of action to address deferred maintenance projects and bring the transportation system up to date. Similar pushes for funding are experiencing success in other localities, such as Los Angeles' 30/10 Initiative that is streamlining a 30-year transit project into a 10-year project.

Comprehensive Infrastructure Study

This Transportation Element has been developed with a planning-level analysis of Omaha's transportation needs, but did not include a comprehensive assessment of the City's transportation infrastructure system. Omaha needs to develop this kind of an assessment to better understand maintenance needs and to project funding needs for addressing maintenance into the future.

Although a city-wide infrastructure study is a substantial undertaking, it would be an indispensable tool for helping to maintain the existing transportation investments in Omaha. Recently the City of Minneapolis completed an Infrastructure Survey that included 89 bridges, 1,286 miles of roadways, 793 intersections of traffic signals, and 41,000 street lights. Each component was analyzed to determine its existing condition using a pre-defined, statistical metric. For example, the City visually surveyed every street and assigned each a Pavement Condition Index (PCI) score ranging from 0 to 100. These scores were then used to project future roadway conditions based on current funding levels, and analyzed to determine the amount of funding needed to provide necessary maintenance. The study serves as a reference for Minneapolis' system-wide infrastructure management, and allows for a proactive replacement of aged/obsolete infrastructure rather than a reactive approach of making repairs once an element fails.

By conducting a city-wide Infrastructure Survey, City policymakers can make better informed decisions through a proactive approach to infrastructure maintenance, and ultimately save money by expanding the lifecycles of existing investments before problems begin.

Bicycle and Pedestrian Master Plans

The purpose of the Bicycle and Pedestrian Master Plans is to establish goals, objectives, and benchmarks that improve safety and mobility for bicyclists and pedestrians and increase the number of trips taken by these modes. The Bicycle and Pedestrian Master Plans

include policy, existing conditions, a needs analysis, a list of projects and initiatives, and funding strategies to be implemented to complete the plan. This plan will bring together and create a unified vision of Bicycle and pedestrian facilities including Trails, on-street facilities and pedestrian infrastructure. The Transportation Master plan touched on sample projects that would help elevate active transportation, these master plans would increase the granularity of details and propose a network of facilities that would focus specifically on creating a network of functional facilities and specific policies to guide project development and funding.

Traffic Control Infrastructure

The City is currently under contract to develop a Traffic Signal Master Plan. This plan will provide a roadmap to bring our outdated signal system from its current 1970's technology to a state of the art traffic control system that will enable much improved timing plans, monitoring and system maintenance. The City is currently working with a team of outside providers to have much improved access to fiber optics to accomplish this mission. The study is addressing the use of a central operating system that will monitor the function of intersections and notify our maintenance team when something is not functioning properly. It will provide live video feeds to monitor intersection function and help in incident management efforts along major arterials.

One key goal of these efforts is to improve the capacity of our existing roadway network by optimizing signal timing and operation. If we can delay or eliminate the need to widen and/or improve roadways and intersections by improved operations of the signal timings and peak demands, the costs will be a fraction of what geometric improvements would be. In addition there are other benefits including reduced delays and time losses for users, air quality improvements, reduced right of way impacts and others that will all be realized by an improved traffic control and signal plan.

Extensive efforts have gone into ITS for incident management so when an accident happens on I-80, traffic timing plans and controls are in place to provide

alternative routes for traffic to go thereby reducing delays and the potential for secondary accidents. This proposed system will expand that capability for surface routes by providing instant monitoring of major intersections to allow timely adjustments to be put in place to facilitate alternative routing of traffic when an incident occurs. Similar benefits will be available during snow events and special events that alter the flow of traffic.

The City should move forward with this study and ensure that the study includes the following components:

- Inventory of signal head types and light sources (i.e. LED or incandescent sources)
- Inventory of signal heads per intersection
- Inventory of signal timing plans
- The possibility of a need for different timing plans beyond AM and PM weekday peak, mid-day and nighttime
- Review of warrants at 'marginal' intersections where signalization may no longer be needed.
- Signal Coordination with Transit

Other Recommended Studies

- Update the 2004/2007 Transportation Funding study, adding all modes.
- Review and update the Arterial Street Improvement Program (ASIP).
- Downtown Circulation Study, including an evaluation of costs, benefits, and impacts.
- Development of Transportation Oriented Design (TOD) Guidelines and Transit Guidebook.
- Refinement of functional classification of streets, including sub-typologies that will coincide with Area of Civic Importance (ACI) and Major Commercial Corridors (MCC) districts.

Coordination With Metro Transit Development Plan

Metro should use its transit development plan process to take a more thorough approach to route and service

planning, extensively overhauling the ways that service is provided today. As the land use recommendations of the Transportation Element are adopted by the City, Metro should continue aligning transit service with areas of greatest need, potential for ridership generation and ease of transit operations.

In particular, the following should be included in Metro's plan efforts:

- Identification of potential study corridors for enhanced or premium transit service, such as the Dodge Street/West Dodge Road corridor west of the UNMC Campus
- Placement of stops and coordination of stop locations with potential development sites, trails, parks, and schools.
- Frequency of spacing and walk-shed areas
- Development of a TOD Handbook

MAPA Heartland 2050 Regional Vision & Heartland Connections

As this Transportation Element was being developed, MAPA was preparing to undertake a regional visioning process that would incorporate land use, economic development and transportation concerns.

Additionally, MAPA was about to undertake Heartland Connections, the transportation and transit elements of the Heartland 2050 regional vision, representing an integrated multi-modal planning initiative consisting of two key elements. One element includes a regional Bicycle-Pedestrian and Complete Streets Corridor Identification Plan funded through a discretionary FHWA Transportation, Community, and System Preservation (TCSP) grant. The second element will be the Regional Transit vision. The data, analysis, scenarios, and conclusions derived from this process will inter-relate with and inform the overall Heartland 2050 process.

The City of Omaha needs to have a coordinated strategy for participation in this visioning effort, ensuring that regional transportation priorities

reflect the needs of the City and the intent of the recommendations in this Transportation Element. As these efforts by MAPA are completed certain products of this effort may be integrated and updated into this document for implementation.

Transportation Element Evaluation

This document will be evaluated for effectiveness five years after adoption. Additionally, the identified projects identified in this document will be rated against the overall community goals on a yearly basis.

Master Plan as a Guide

The Omaha City Charter establishes the master plan as a general guide for the physical development of the city. Deviations from the Plan may be allowed by the Planning Board or City Council as deemed necessary to further another important master plan objective.

Amendments to the Transportation Element

Approved by Ordinance (No. 34337) October 1997
Amended by Ordinance (No. 34661) September 1998
Amended by Ordinance (No. 34964) July 1999
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Amended by Ordinance (No. 35830) January 2002
Amended by Ordinance (No. 39424) August 2012
Amended by Ordinance (No. 40446) August 2015