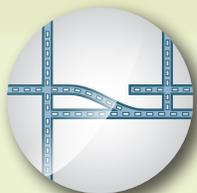


# Metro Area Travel Improvement Study

## Phase 1 Executive Summary

October 2015



**SYSTEM  
PRESERVATION**



**CONGESTION  
REDUCTION**



**MOBILITY &  
ACCESSIBILITY**



**STEWARDSHIP  
& ENVIRONMENT**



**SAFETY**



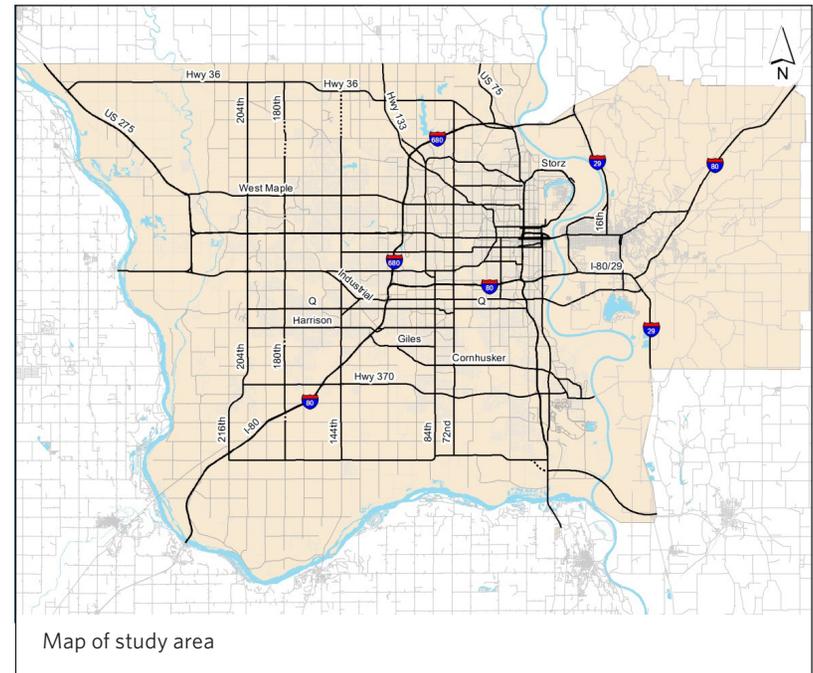
## Overview

The Metro Area Travel Improvement Study (MTIS) is a collaborative effort between the Nebraska Department of Roads (NDOR) and the Metropolitan Area Planning Agency (MAPA). MTIS is a comprehensive transportation study that recognizes future interstate and freeway system needs are intrinsically linked with arterial, local roads and transit system needs and investment decisions in the MAPA region. This approach will help identify the transportation network that will best meet the long-term needs of the community and will take advantage of innovative strategies to guide decisions about funding. MTIS is being conducted in coordination and collaboration with other regional planning studies and projects.

The purpose of MTIS is to:

- Develop a comprehensive, multi-modal plan for the interstate and major roadways in the region
- Prioritize projects for short-term, mid-term, and long-term
- Consider shortfalls in existing sources of local, state, and federal funding

The study area boundary and study area roadways are shown to the right. The study area boundary is based on MAPA's designated Transportation Management Area. Study area roadways include all National Highway System (NHS) routes and non-NHS routes that were considered priority corridors by NDOR and MAPA. The study area includes 83 miles of interstate freeway, 39 miles of other freeways/expressways, 180 miles of state highways and 176 miles of local roads.



Map of study area

## Study Approach

The study is being conducted in phases:

- **PHASE 1:** Existing / Future No-Build Conditions Review (*Complete - Fall 2015*)
- **PHASE 2:** Strategy / Alternative Development and Evaluation (*Beginning - 2016*)
- **PHASE 3:** Alternative Design and Implementation Plan

MAPA is in the process of completing its 2040 Long Range Transportation Plan (LRTP). The technical analyses completed as part of MTIS will help drive development of successor metropolitan transportation plans including a 2050 LRTP. The 2050 LRTP will align with the horizon year of MAPA's Heartland 2050 Plan, a community-driven process that developed future land use scenarios for the metropolitan area.

MTIS will also assist NDOR in developing its long term vision for the Omaha area freeway system. NDOR's last freeway master plan was completed in 1985 and was fully constructed over the following two decades. Although NDOR has continued to make improvements to address localized bottlenecks on the freeway system, the time is now for a new system-wide vision to guide improvements in the decades to come.



## Study Goals and Performance Measures



### SYSTEM PRESERVATION

Achieve state-of-good-repair by effectively maximizing the life span of existing infrastructure.



### CONGESTION REDUCTION

Reduce the growth of peak-period delay on freeways and improve system reliability and overall performance.



### MOBILITY & ACCESSIBILITY

Reduce the growth of peak-period travel times for all modes, and increase transit access and ridership.



### STEWARDSHIP & ENVIRONMENT

Address air quality concerns, consider land use in all improvements, and incorporate economic, social, and environmental criteria in project selection and programming decisions.



### SAFETY

Reduce fatalities and serious injuries.

## Performance Based Planning

MTIS is using a relatively new process called Performance Based Planning. Performance Based Planning is the process of linking performance goals with planning and programming decisions. The overall goal of Performance Based Planning is to:

- Improve the performance of the transportation system;
- Provide for greater accountability in the decision-making process;
- Make the best use of limited resources; and
- Improve public support through greater transparency.

Performance measures serve a critical role in Performance Based Planning through: evaluating system needs; evaluating investment scenarios; selecting and prioritizing projects; performance tracking and reporting; and real-time information management and dissemination.

Performance measurement is a significant component of transportation planning under the Moving Ahead for Progress in the 21<sup>st</sup> Century Act (MAP-21) passed by Congress in 2012. MTIS has incorporated the federal performance measurement guidelines where applicable since final federal rules have not yet been established.

## Current Performance

Phase 1 of MTIS has focused on assessing how the transportation system in the Omaha metropolitan area is performing today, and how it is expected to perform in the Year 2040 if no projects are constructed beyond those contained in the current 5-year plan. The following elements of the current transportation system were evaluated for all study area roadways (except as noted):

- Geometry and operational features (Nebraska freeway system only)
- Pavement condition
- Bridge condition
- Transit infrastructure condition
- Traffic operations
- Safety
- Transit facilities and service
- Pedestrian/Bicycle facilities and service

## Freeway System Geometry and Operational Features

The Omaha metropolitan area freeway system is typical of other systems nationwide. A wide range of physical, geometric, and operational conditions exist because different portions of the freeway system were reconstructed at different times. In general, the assessment of the existing freeway system within the study area indicates that the geometric and operational features of the freeway system are generally in good condition. There are a few key locations that with a few improvements, will greatly improve the overall system rating.



## Pavement Condition

Current pavement conditions in the study area are shown to the right. Interstates and Freeways are the only functional classes of roadways within the study area that currently meet the performance target of 84% “good” or better condition. Pavements deteriorate over time due to traffic loads, severe weather, and other factors. Without preventative maintenance or rehabilitation pavements will deteriorate over time to a point where they are no longer serviceable and require reconstruction. No functional class of pavements is expected to meet the 84% “good” or better condition target beyond 2015 except the Freeway class. If pavement condition is ignored, all the study area roadways will be in fair or poor condition by 2033.

## Bridge Condition

Current bridge conditions in the study area are shown to the right. A total of 393 bridges located within the MTIS study area were included in the analysis. Study area bridges are on average 23 years old. The analysis of the bridge conditions shows that 76% of bridges in the MTIS study area are in good condition, 20% in fair condition, and the remaining 4% are in poor condition. By 2040, study area bridges are expected to deteriorate from the current level of 4% structurally deficient to 30% structurally deficient without further investment in bridge preservation and rehabilitation.

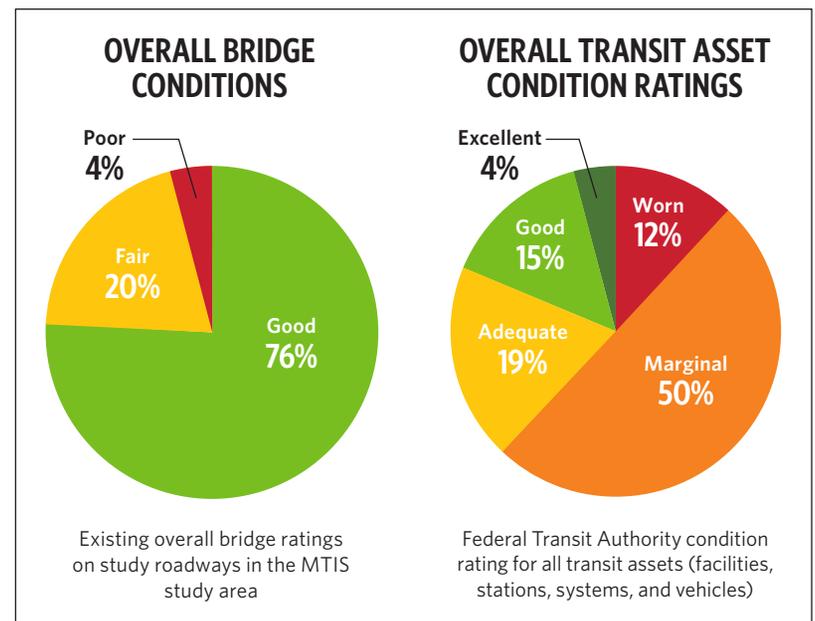
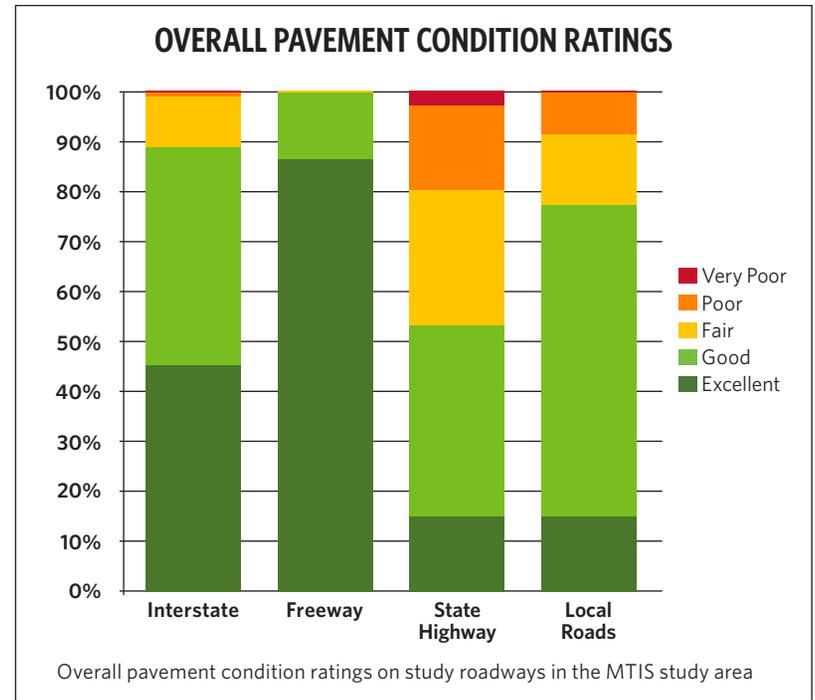
## Transit Infrastructure Condition

Metro is responsible for the operation of fixed route bus and paratransit service within the Omaha metropolitan area. Paratransit provides transportation for people with disabilities who are unable to use the regular, fixed route transit service. Facilities make up the largest portion of Metro’s assets. Today, 83% of Metro’s facilities are in the “marginal” or “worn” condition, indicating that these assets are near or past their useful life. Vehicles are Metro’s second largest asset category, consisting of both revenue vehicles (buses and vans) and non-revenue vehicles. Approximately 49% of Metro’s vehicles are currently in the “marginal” or “worn” condition. The average age of Metro’s bus fleet is 7.8 years with many buses in need of replacement. Current per-capita funding is one of the lowest in the nation at \$20 less than the median of peer communities. The condition ratings for all transit assets combined are shown to the right.

## Transit Facilities and Service

Metro operates both fixed route and paratransit service within the Omaha metro area. Fixed route service includes local, express/commuter, and circulator service. Metro operates service directly within the Omaha city limits and provides service to five adjacent municipal jurisdictions through private contracts. These include Ralston, LaVista, Papillion, Bellevue and Council Bluffs. Combined, Metro fixed route buses serve 100 square miles or approximately 85% of the City of Omaha. The service area includes approximately 580,000 people. Metro implemented significant system changes to its routes on May 31, 2015. These improvements included:

- Adding over 2,300 miles of weekend service
- Extended weeknight service until midnight or later
- More frequent service on highest-ridership routes





## Traffic Growth

Traffic volumes are expected to grow significantly by 2040 at various locations throughout the MTIS study area. Fully-developed urban portions of the metro area will not see as significant levels of traffic growth as the still developing suburban / rural fringes of the study area. The traffic growth ratio map represents how much additional traffic each study roadway is expected to carry in 2040 compared to today. For example, I-80 west of Gretna could carry 1.6 - 2.0 times the amount of traffic it carries today. These growth projections are reflected in the 2040 traffic operations analysis.

## Traffic Operations

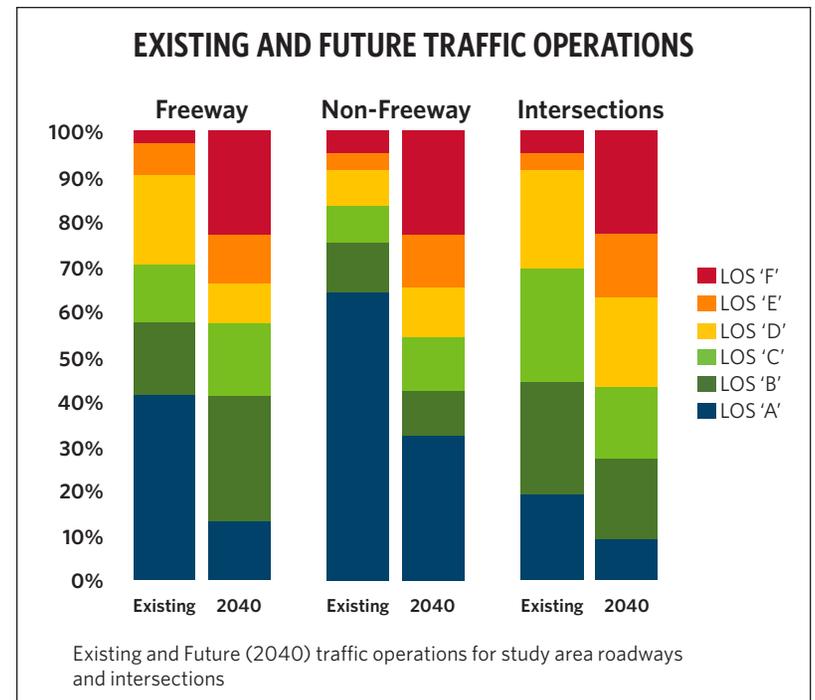
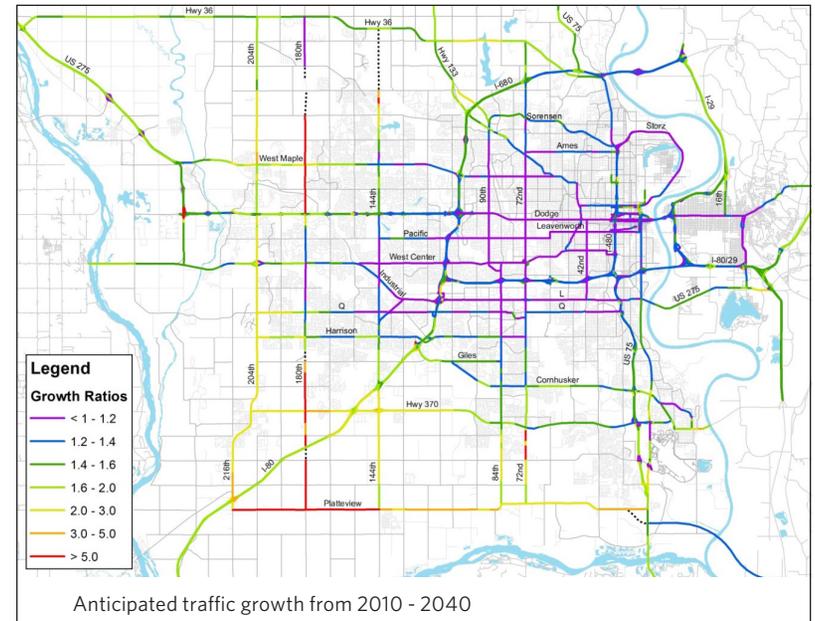
Existing and Year 2040 traffic operations in the study area are shown to the right. Observations of traffic volumes provide an understanding of the general nature of traffic, but are insufficient to indicate either the ability of the roadway system to carry additional traffic or the quality of service provided by the roadway system. For this reason the concept of level of service (LOS) was developed to correlate numerical traffic operational data to subjective descriptions of traffic performance ranging from LOS 'A' (best) to LOS 'F' (worst). The threshold established by transportation agencies for acceptable traffic operations is generally LOS 'D' or better. Today, 90% of the roadways and intersections in the study meet this threshold. By 2040, however, only 65-70% of the roadways and intersections in the study area are expected to be operating at LOS 'D' or better without additional improvements beyond those planned in the next five years.

## Safety

Safety performance refers to the frequency and severity of crashes and is an important performance measure for any transportation system. The 2014 Allstate America's Best Drivers Report ranked Omaha as the 21<sup>st</sup> safest driving city in the U.S. The likelihood of being in a crash in Omaha is 11.4 percent less than the national average. Still, reducing fatal and serious injury crashes in the Omaha metropolitan area is a high priority for NDOR and MAPA. The MTIS Study Team is using screening criteria as a method for identifying locations within the study area with the greatest potential for safety improvement. The identified locations will be further studied in Phase 2 of MTIS.

## Pedestrian/Bicycle Facilities and Service

The MTIS study area has an extensive network of off-street, multi-use trails suitable for both pedestrians and bicyclists. Many of the trails follow rivers, streams, and other natural features. Some trails are short, local facilities providing local recreation or transportation connections. Others are longer, regional trails that connect different parts of the Omaha metro area and support bicycle commuting. Additional facilities are under discussion as part of efforts to make the system more of a continuous and comprehensive network. The City of Omaha has a relatively small inventory of on-street bicycle lanes, located primarily in the central portion of the city and has also developed shared lane ("sharrow") facilities.





## Omaha Metro Area Compared to Other Cities

Like many other metro areas of similar size, the Omaha metro area is facing numerous challenges related to increasing congestion, deteriorating infrastructure, and limited funding sources. However, there are limited sources of actual comparison data. One source is the 2015 Urban Mobility Scorecard which provides a comprehensive analysis of traffic conditions in 471 urban areas across the United States. Out of 101 metropolitan areas analyzed, Omaha ranks 64<sup>th</sup> in Total Hours of Delay, 57<sup>th</sup> in Commuter Stress, and 84<sup>th</sup> in Annual Congestion Cost (#1 ranking was the most congested metropolitan area). Another source is the National Transit Database which shows that the Omaha metro area ranked 220<sup>th</sup> out of 415 urbanized areas with populations over 65,000 in terms of transit trips per capita (#1 ranking was the most transit trips per capita). The MTIS study area enjoys a relatively low level of congestion and convenient auto mobility, but these may be threatened in the future.

## MTIS Going Forward

Phase 1 of MTIS included a comprehensive planning effort that established the framework for later study investment decisions. It included an area wide travel assessment of existing and future no-build conditions, ensuring that the Study Team has a solid base condition for Phases 2 and 3. Phase 2 is scheduled to begin in 2016 and will include developing and testing corridor-level and location-specific strategies to meet the needs identified in Phase 1. The corridor-level and location-specific strategies and alternatives will be developed to a level where comparisons can be made in order to identify viable and feasible improvement strategies. These strategies will then be combined into comprehensive regional-level packages and evaluated against study goals and performance measures. From this evaluation, an overall package will be selected. Subsequent to this, focused corridor-level alternatives will be developed and evaluated to identify recommended corridor-level alternatives. Phase 3 will include additional corridor-level alternative refinement, design, and evaluation.