

Metropolitan Council 2001 Twin Cities Transportation System Audit





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EXECUTIVE SUMMARY

This report, a requirement of Minnesota statutes, consists of the Metropolitan Council's review the performance of the regional transportation system of the Twin Cities Metropolitan Area. It includes a review of the transportation system performance since the last performance audit in 1997, a comparison of the performance to peer urban areas, and a comparison of service to existing standards or benchmarks.

MAJOR FINDINGS AND CONCLUSIONS

Demographic and Development Trends

- ✓ Population is expected to grow by 24% (1.1% per year) from 2000 to 2020, and the number of households is expected to increase by 32% (1.4% per year). This will mean more trips taken, more automobiles on streets and highways, more demand for transit, and more freight to be moved.
- ✓ High concentrations of lower income persons, with low automobile ownership, exist in the core cities where transit service is most extensive. However, entry-level jobs are generally dispersed throughout the region and are not as well served by transit, especially in the reverse-commute direction. Also there are many areas with lower income persons who are not well served by high frequency transit.
- ✓ It is expected that most of the growth in the region in the next 20 years will be within the existing MUSA boundaries.
- ✓ The number of households in "developing" suburbs grew faster during the 1990s (45%) than the central cities and "fully developed" suburbs, which lack large supplies of vacant land and must rely primarily on redevelopment. The number of households in "developing" suburbs overtook the number of households in central cities during the mid-1990s. By 2020, "developing" suburbs will have 36 percent of the region's households compared to 23 percent in the central cities.
- ✓ In 1990 the Twin cities area was ranked 24th of the 25 largest urban areas in population density. The number of persons per acre in the region has been declining steadily, primarily the result of smaller household sizes. This means that it takes a larger transportation network to serve it. In addition, transit service will be less productive than in more dense areas.
- ✓ The region is continuing to become less dense. This is not because housing units are being built less densely. Instead, the number of person in each housing unit (the number of persons per household) declining. This means that on a per capita basis, new development will need more transportation services than equivalent development in the past.
- ✓ The number of jobs in the Twin Cities region grew by 2.1 percent per year from 1990 to 2000, a pace 50 percent higher than the population increase (1.4 percent). The above-population-rate increase in jobs was accommodated by the increase in labor force participation by women and others (such as those over age 65), plus commuters who live outside the seven-county area. The future increase in employment is expected to more closely reflect the growth in population (a 16 percent increase from 2000 to 2020). This has driven such travel factors as the number of trips per capita, the number of miles driven per capita, and the total number of miles driven.
- ✓ The Twin Cities is the urban area with the highest percentage of the population employed (78.3%). An employed person makes over 38% more trips than a person who is not employed. Consequently, the growth in trips has increased faster than the population as a whole and faster than peer regions.
- ✓ Employment occurs in concentrations throughout the region but has its largest concentrations in downtown Minneapolis, downtown St Paul and along the I-494 corridor. This creates a challenge

during peak travel periods to efficiently move people to and from these areas of high job concentration.

- ✓ The central cities and older developed suburbs are net importers of workers while the rest of the region is a net exporter. This creates a transportation issue to move persons from one part of the region to the other.

Travel Trends

- ✓ Indications are that although all travel-related factors grew from 1990 to 2000, the rate of growth in travel-related factors decreased from 1990 to 2000 compared to previous decades, and that that trend will continue
- ✓ The growth in vehicle miles traveled is projected to be much larger than the growth in population or households.
- ✓ The length of trips, which increased 0.6 percent per year from 1970 to 1990, increased by an estimated annual 0.4 percent from 1990 to 2000. It is expected that the average trip length will grow slightly less than that from 2000 to 2020 (a 0.3 percent per year increase).
- ✓ Single occupant vehicle trips are projected to increase much faster than high occupancy vehicle trips.

Highway System

- ✓ From 1995 to 2000, the number of lane miles in the seven county metro area total increased 3.9% (1227 lane-miles). This growth was less than half the increase in the regional population during that same time period (7.2%). Freeway lane miles in the metro area increased by only 3.6%.
- ✓ The region's highway system is still in generally good condition but declined slightly between 1995 and 2000.
- ✓ Vehicle-miles traveled has grown significantly for all road classes. In the seven county metro area, overall VMT grew 17.5% and freeway VMT grew 21.5%. At the same time, the number of lane miles grew 3.9% and freeway lane miles grew 3.6%.
- ✓ The number of functionally obsolete bridges in the region (height or capacity limitations) increased from 191 to 326 between 1995 and 2000. The number of structurally deficient bridges increased from 135 to 168 bridges in that time period.
- ✓ Traffic in the I-394 and I-35W High Occupancy Vehicle (HOV) lanes grew by an average of 21.6 percent between 1996 and 2000 while the traffic in the adjacent mixed use lanes (which are at capacity) declined by 2.6 percent. The HOV lanes slightly fewer persons per lane (94.9 percent) than the mixed use lanes, but do so with only 40.6 percent of the vehicles per lane.
- ✓ Twin Cities crash rates are higher than the national average but fatalities are lower.
- ✓ From 1990 to 2000, the population of the region grew 1.5% per year. Freeway lane miles grew .7% per year from 1990 to 1999, a rate less than half of the population growth.
- ✓ The percentage of trips taken as single occupant vehicle trips continues to increase as both the total number of trips increases and the percentage of trips taken as single occupant trips increases.
- ✓ Twin Cities congestion is increasing substantially faster than congestion in other regions.

- ✓ TTI has estimated that in 1999, 55% of the freeway and 60% of other principal arterial lane miles in the Metro area were congested in the peak period. Growth in Twin Cities congested freeway miles outstripped growth in peer cities.
- ✓ In 1999, 65% of the Metro area's person-miles on freeways and 70% of its person-miles on other principal arterial lane miles occurred in congested conditions in the peak period. Growth in Twin Cities congested freeway miles outstripped growth in peer cities.
- ✓ In 1999, Twin Cities citizens experienced 38,445,000 hours of delay due to the volume of traffic on the roadway system.
- ✓ From 1982 to 1999, per capita delay in the Twin Cities increased more than twelve-fold whereas for the peer cities it increased about five-fold, and the large city averages increased about six-fold.
- ✓ The increasing gap between additional freeway supply (lane miles) and additional demand (VMT) is already causing disproportionate increases in congestion-related measures since much of the freeway system is operating at capacity. These levels of congestion can be expected to increase based on the shortfall of planned lane-miles compared to regional population growth.
- ✓ The Metropolitan Council's Transportation Policy Plan includes plans for approximately 286 new lane miles of freeways by 2025, which represents rate of increase of 0.6 percent per year. The rate of population growth is forecast at 0.8 percent per year and rate of vehicle miles traveled (VMT) increase at 1.4 percent per year.
- ✓ The use of the region's roadway system, measured in vehicle miles of travel (VMT), increased by 38% percent, or 3.8 percent per year over the last ten years.
- ✓ Despite increasing the region's lane miles by 16% from 2000 to 2020, the number of lane miles with congestion is projected to increase 135%
- ✓ For the past three years, Twin Cities residents cited congestion as the biggest problem in the region by an annual study conducted by Metro State University.
- ✓ Forecasts show that the number of lane miles of the system operating under congestion at least one hour per day will increase by 177 percent over the next 25 years even with the planned improvements to the regional highway system. Furthermore, the duration of congestion will increase, with the amount of the system experiencing congestion more than four hours per day per direction will increase by 184 percent.

Transit System

- ✓ About half of transit service is urban local service. This service currently generates about 75% of transit ridership. Express service is currently about 14% of transit service but generates 17% of ridership and is the fastest growing segment of ridership.
- ✓ The region has seen substantial transit ridership growth.
- ✓ Metro Transit has provided the largest amount of ridership growth in the region over the last six years. Opt Out and Contracted services have also seen substantial growth while Metro Mobility and Community-based programs have had stable ridership levels.
- ✓ In 1997, the Metropolitan Council set the goal of doubling overall transit ridership by 2020. At the end of the year 2000, the Council was approximately four million rides per year ahead of this goal.
- ✓ Gross cost per passenger increased at a rate lower than the rate of inflation from 1996 to 2000.

- ✓ The Twin Cities is less dense than its peers, making the provision of transit service less efficient than in peer regions.
- ✓ From 1996 to 2000, passengers per revenue hour for peer systems increased 2.5% while they increased 15.1% for Twin Cities systems overall. As a result, the Twin Cities systems moved from 79% to 89% of the peer average — a remarkable achievement.
- ✓ The Twin Cities cost to provide was 9.4% less expensive than the peer average on a cost per hour of service basis.
- ✓ Twin Cities operating costs per passenger are on par with its peers.
- ✓ Twin Cities total operating funding per capita is 15% lower than the average for its peers or \$17.90 less per capita than the average for the region. The region would have to spend almost \$45 million per year more to reach the average for its peers. Because of the lower density of the region, however, this would still result in a lower level of service than its peers have.
- ✓ The Twin Cities ranks high in the percentage of costs recovered from fares. Fare recovery is 31% higher than the average for the peers.
- ✓ Twin Cities subsidies per capita are 23% lower than average for its peers.
- ✓ The Twin Cities provides a lower number of rides per capita than its peer cities.
- ✓ A trip request may be denied because there are not vehicles available to provide the requested service; these types of denials are called trip denials due to capacity. From 1999 to 2001, the number of trips denied due to capacity declined by 55%.

Intermodal Freight System

- ✓ Measured in terms of its 2001 “Logistics Quotient”, the Twin Cities ranked 9th among the 100 metropolitan areas examined and first overall among its peers cities.
- ✓ In 2000, 91 million tons of freight flowed in and out the region by truck to domestic and international markets. Within the Twin Cities BEA, 37 million tons of freight was carried by truck. An additional 3.4 million tons were shipped by truck/rail intermodal as containerized freight. The total tons shipped had an estimated value of \$192 billion. This represents 63 percent of the total regional freight tonnage.
- ✓ Congestion affects the efficiency of freight mobility in the region and access to freight terminals. Traffic bottlenecks have been identified at approximately 57 locations on the regional highway system.
- ✓ In 2000, a total of 62 million tons of freight was moved in and out of the region by rail with a total value of \$53 billion. The number of at-grade rail crossings with high exposure ratings and hazard ratings increased significantly from 1996 to 2000.
- ✓ The existing two intermodal container terminals have capacity limits. One of the facilities is already at capacity. Containers are the primary means to move international freight. The region's ability to compete in a global market is dependent on the level and cost of intermodal service provided by the railroads.
- ✓ Air cargo traffic through the Minneapolis-St. Paul Airport declined of 3.4 percent during the past five years, while the industry grew almost 50% worldwide. MSP competes with Chicago for air freight traffic generated by the region. New air cargo facilities and additional airport capacity are scheduled

to be open at MSP beginning in 2003, which should resolve existing congestion issues at the airport and allow for expansion of service.

- ✓ Commercial river navigation is the primary mode to move commodities such as grain from the Twin Cities Port to international markets. At current levels of growth, capacity at the existing 43 terminals is projected to be sufficient until 2010.
- ✓ Highway access restrictions serving the terminals at the Port of Savage are part of the near- term capacity issues that need to be addressed.
- ✓ Although overall barge traffic declined by 21% between 1990 and 2000, between 1995 and 1999 tonnage shipped increased by 20%.

Bikeways/Pathways

- ✓ The Twin Cities area has become increasingly involved in including bikeway components into the transportation system. As of 2001, 45 percent of the adopted local comprehensive plans included a bicycle policy section. The use of federal Transportation funds for bikeway facilities increased by 40 percent in the 1997- 2000 time period compared to the previous three-year cycle.

Chapter 1: Purpose

This report presents the results of a comprehensive audit of the Twin Cities transportation system performed in 2001 by the Metropolitan Council. This was done in response to a statutory directive from the Minnesota State Legislature.

Legislative Requirement

In 1996, the Minnesota State Legislature adopted statutes requiring the Metropolitan Council to perform an audit of the Twin Cities transportation system. The statute reads as follows:

473.1466 Performance audit; transit evaluation.

(a) In 1997 and every four years thereafter, the Council shall provide for an independent entity selected through a request for proposal process conducted nationwide to do a performance audit of the commuting area's transportation system as a whole. The performance audit must evaluate the commuting area's ability to meet the region's needs for effective and efficient transportation of goods and people, evaluate future trends and their impacts on the region's transportation system, and make recommendations for improving the system. The performance audit must recommend performance-funding measures.

(b) In 1999 and every four years thereafter, the council must evaluate the performance of the metropolitan transit system's operation in relationship to the regional transit performance standards developed by the council.

This report is in response to this legislative direction.

The Metropolitan Council completed the first full Transportation Systems Audit in 1997 and the first Transit System Audit in 1999. This report is an update of these two previous reports, but primarily the 1997 report.

The purpose of the Transportation System Performance Audit, established by the Minnesota Legislature in 1996, is to evaluate the Twin Cities commuting area transportation systems' ability to meet the regional need for effective and efficient travel of goods and people.

Chapter 2: Summary of Goals of the Transportation System

Two policy documents provide guidance for the development of the regional transportation system:

- Regional Blueprint
- Transportation Policy Plan

Regional Blueprint

The 1996 *Regional Blueprint* is the Council's overarching "action plan" for the Twin Cities region. It contains short- and long-term strategies to enhance economic growth and development, bolster reinvestment, strengthen environmental protection, and build stronger local and regional communities. The goals for the region outlined in the "Blueprint" are:

- Encourage economic growth, increased productivity, and job creation through a regional economic strategy.
- Foster reinvestment in distressed parts of the region, with a focus on supporting and improving local business.
- Expand life cycle housing opportunities and housing choices for lower-income people throughout the region.
- Strengthen the sense of community.
- Preserve the natural environment and incorporate environmental features into the development and redevelopment of the region.
- Provide financially sound public facilities that support business growth and overall regional development.

Transportation Policy Plan

The Transportation Policy Plan takes the goals from the Regional Blueprint and applies them to the region's transportation system. This plan also incorporates other policy documents such as the 2020 Transit Master plan and various Minnesota Department of Transportation planning documents. The policies from the Transportation Policy Plan are:

1. Land Use and Transportation Investments: Regional transportation investments will be coordinated with land use objectives to support and encourage the intensification of development at key nodes and along major transportation corridors within the Metropolitan Urban Service Area.
2. Adequate Transportation Resources: The Metropolitan Council will actively pursue an adequate level of transportation funding to implement this policy plan and address identified but unmet investment needs.

3. Priorities for Transportation Modal Investments: Regional transportation investments will be made on the basis of need and will be consistent with the policies, strategies and priorities of this policy plan.
4. Public Participation: Public participation will be promoted in formulating transportation policy and implementing decisions.
5. Transitways: The Metropolitan Council will strongly pursue the implementation of a regional network of dedicated transitways to provide a travel-time advantage for transit vehicles, improve transit service reliability and increase transit accessibility to jobs.
6. Tailoring Transit Services to Diverse Market Conditions: The Council will make the transit system more compatible with different land use patterns and socioeconomic conditions. The Council will also promote development of more transit-compatible land uses, in line with Smart Growth objectives.
7. Promoting Competition in the Delivery of Services: The Council and other transit providers should promote innovation, efficiency, and greater diversity of options through increased competition in delivering transit services.
8. Increasing Transit Service Attractiveness: The Council will improve transit service coordination and passenger safety, provide financial incentives to transit users, and make the system more visible and user friendly.
9. Transit for People with Disabilities: The Council will provide transit services for persons with disabilities in full compliance with the 1990 Americans with Disabilities Act.
10. Travel Demand Management: The Council supports aggressive use of travel demand management techniques to reduce peak-period vehicle trips.
11. Highway System Objectives: The Metropolitan Council will work with Mn/DOT and local units of government to ensure that the regional highway and street system will be preserved, managed, improved and expanded to support existing and planned land uses and mobility needs consistent with the Blueprint, Smart Growth principles, this plan and approved local and county comprehensive plans.
12. Maintain Competitive Regional Freight Transportation Systems: The Council will promote the preservation and development of various modes and modal connections to adequately serve the movement of freight within the region and provide effective linkages to the logistics system that serves the statewide, national and international markets.
13. Pedestrian Systems: Safe, high-quality, continuous, barrier-free pedestrian facilities shall be developed, maintained and improved to function as an integral part of the region's transportation system.
14. Bicycle Systems: Safe, high-quality, continuous, barrier-free bicycle facilities shall be developed, maintained and improved to function as an integral part of the region's transportation system.
15. Preservation of Linear Rights-of-Way: Linear rights-of-way in the region should be preserved as corridors for public use.

16. Environmental Considerations in Transportation: The investment decisions and operations of transportation projects and facilities are to be consistent with federal, state and regional environmental standards, regulations, plans, programs and policies.
17. Transportation and Land Use Elements in Local Comprehensive Plans: Local comprehensive plans must be consistent with the Transportation Policy Plan and should recognize the special transportation opportunities and problems that various policy and geographic areas present with regard to transportation and land uses adjacent to transportation infrastructure.

The Metropolitan Council's Transportation Policy Plan has been revised since the 1997 Transportation System Performance Audit. The revisions provide a higher level of implementation detail and do not affect the overall policy direction.

Urbanized Area (MUSA)

Within the seven county metro region, a portion of the land has been developed into a fairly contiguous urban development. This area is served by Metropolitan Council sewer service, an area defined as the Metropolitan Urban Service Area (MUSA). The area outside the contiguous urban area is primarily either rural or freestanding cities. As seen in Figure 3.1, the urbanized area within the MUSA occupies a significant portion of the seven-county metro area.

Twin Cities Commuter Shed

Surrounding the metropolitan area are nine Minnesota counties and three Wisconsin counties whose economies, populations, and travel patterns are linked to the Twin Cities metro area. These surrounding counties are primarily rural in nature but have a significant portion of their populations who commute to the Twin Cities or who have businesses that draw employees from the Twin Cities. The 1990 census defined these counties as being part of the Twin Cities commuter shed. This meant that 5% or more of the residents of these outer counties commuted to employment in the metropolitan area.

- Twin Cities Metropolitan Area Counties: Anoka, Carver, Dakota, Hennepin, Ramsey, Scott, and Washington
- Non-Metro Commuting Area Counties:
 - Minnesota: Chisago, Isanti, LeSeur, Mille Lacs, McLeod, Rice, Sherburne, Sibley, and Wright
 - Wisconsin: Pierce, Polk, and St Croix

The travel impacts of these surrounding counties are still small in relation to the metro area's population and employment. The 1990 Travel Behavior Inventory showed that 93% of the trips in the metropolitan area both start and end within the region, while 6% start or end outside the metropolitan area. However, these surrounding areas are growing at higher rates than the core urban area and exert increasing demand for transportation services.

Both the 2000 Census and the 2000 Travel Behavior Inventory will provide updated information on the Twin Cities commuter shed. This updated information will be included in the 2005 Transportation Audit.

This audit is intended to account for the growth trends in this expanded region (defined as the "commute shed".) However, other than being concerned with the sufficiency of the transportation systems in the outlying counties to support their growth, the audit has not been concerned with the transportation needs in these areas. Rather, the emphasis has been on comprehensively evaluating the condition and performance of the metro region's transportation system and the specific needs of its businesses and residents for efficient and reliable transportation.

Twin Cities Peer Cities

Three sets of peer cities are used in this audit to compare conditions in the Twin Cities with conditions in other United States regions.

For highways, the best source for comparisons of travel and congestion trends over time between urban areas is the Urban Mobility Report produced for the FHWA by the Texas Transportation Institute. Data for the Twin Cities area is compared to data for the 11 peer cities chosen for the 1997 Performance Audit. These cities are Baltimore, Buffalo Cincinnati, Cleveland, Dallas, Denver, Milwaukee, Pittsburgh, Portland, Seattle, and St. Louis.

Also, the Twin Cities falls into the TTI 's report classification of a Large Urban Area. These areas are defined as urban areas with populations between one million and three million people. This definition is also used for some comparisons with other regions.

For transit, a set of peer cities and urban areas has been selected based primarily on population, urban area size and economic comparability. These cities are Baltimore, Buffalo Cincinnati, Cleveland, Dallas, Denver, Milwaukee, Pittsburgh, Portland, Seattle, and St. Louis. Houston is also included for the transit peer systems because of its comparable all-bus system.