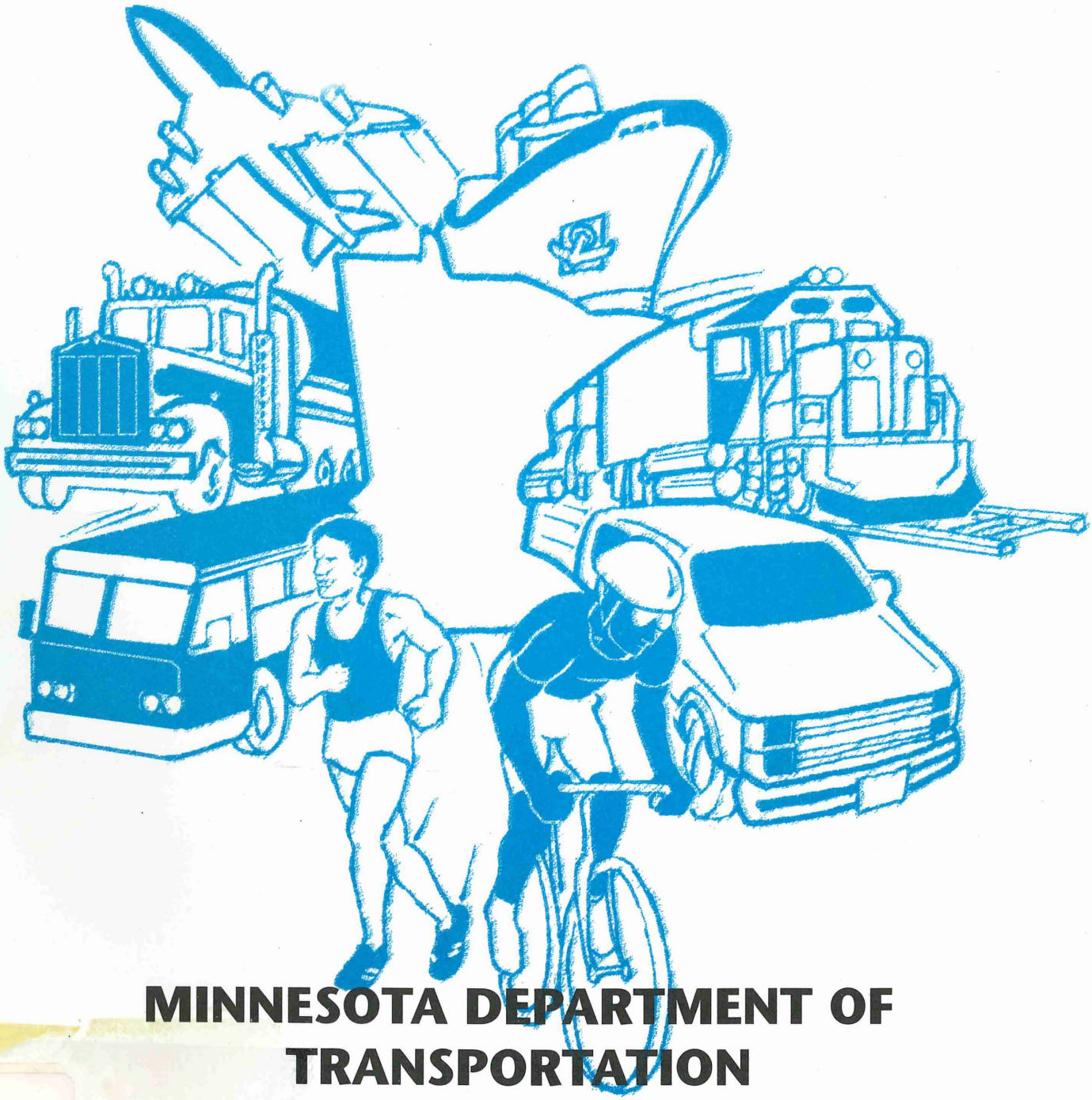
DEVELOPING A COORDINATED TRANSPORTATION NETWORK



MINNESOTA DEPARTMENT OF TRANSPORTATION

AGENCY PERFORMANCE

1998 Agency Performance Report

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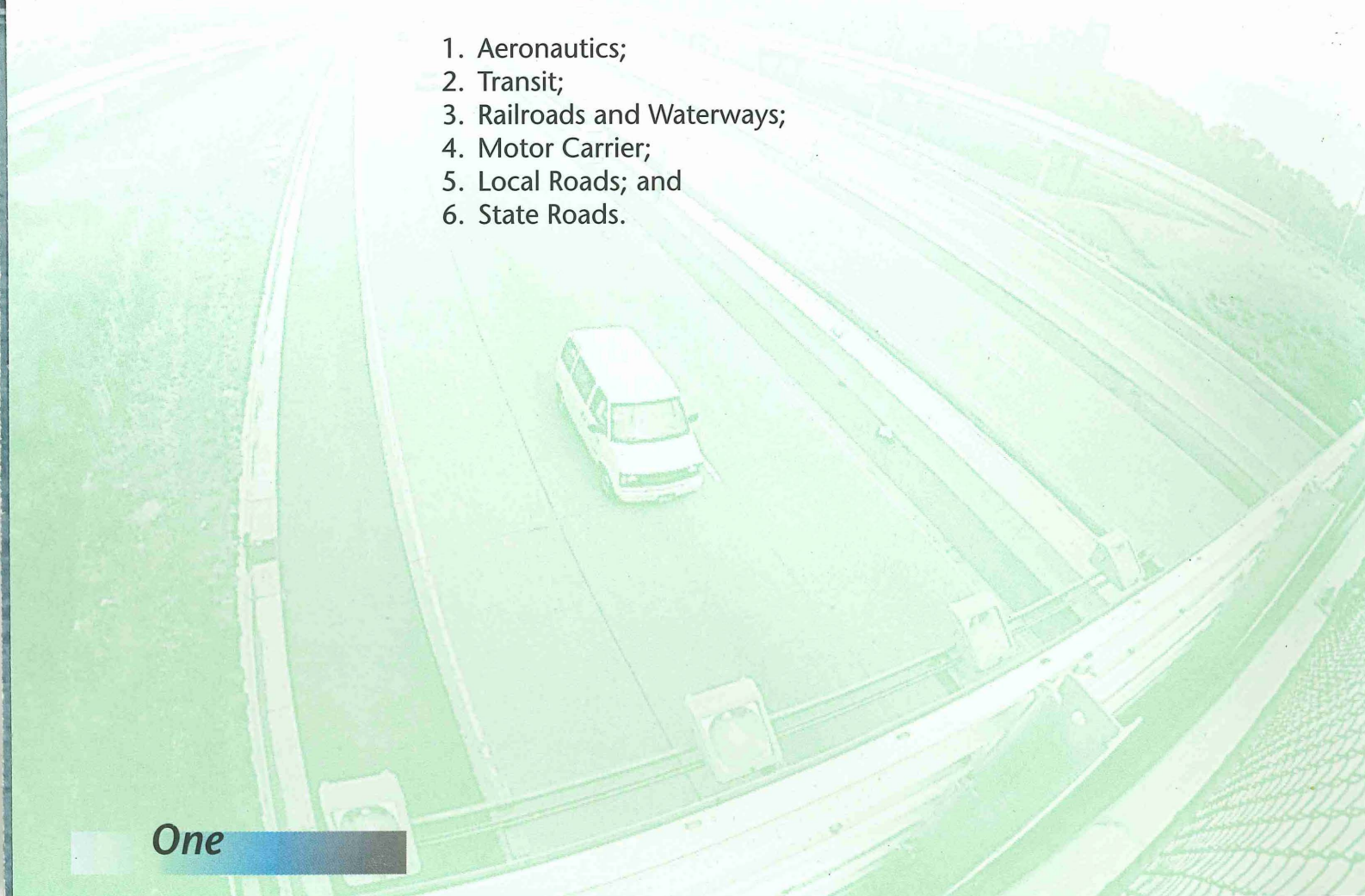
1998 Agency Performance Report

Performance measurement has become an integral part of Mn/DOT efforts to enhance overall efficiency and effectiveness of the transportation network. The measures are based on extensive market research and focus groups and establish a mix and balance of physical performance and public values to guide business and investment decisions.

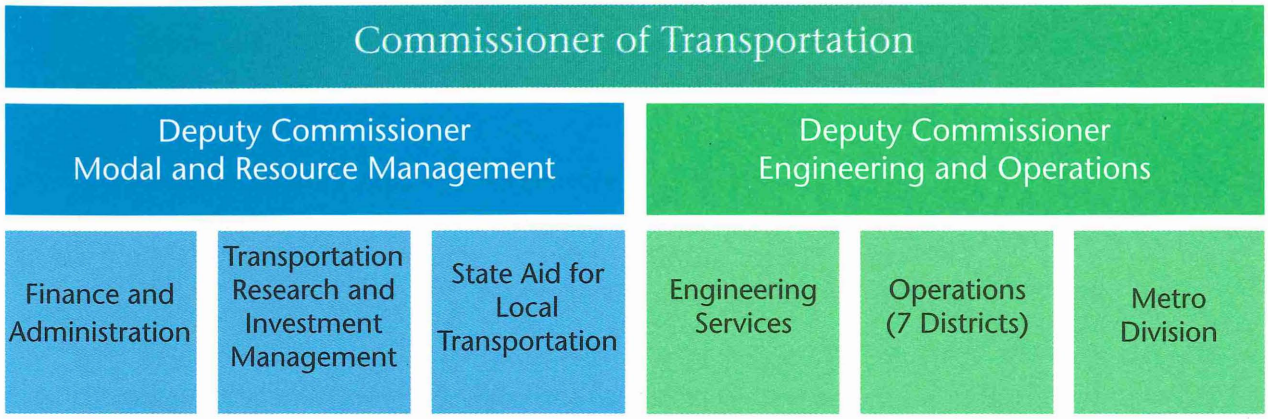
This report summarizes the recent program performance activities of the Minnesota Department of Transportation (Mn/DOT). It includes background information on the Department and more specific performance data and measures for each of the Department's major programs of:

1. Aeronautics;
2. Transit;
3. Railroads and Waterways;
4. Motor Carrier;
5. Local Roads; and
6. State Roads.



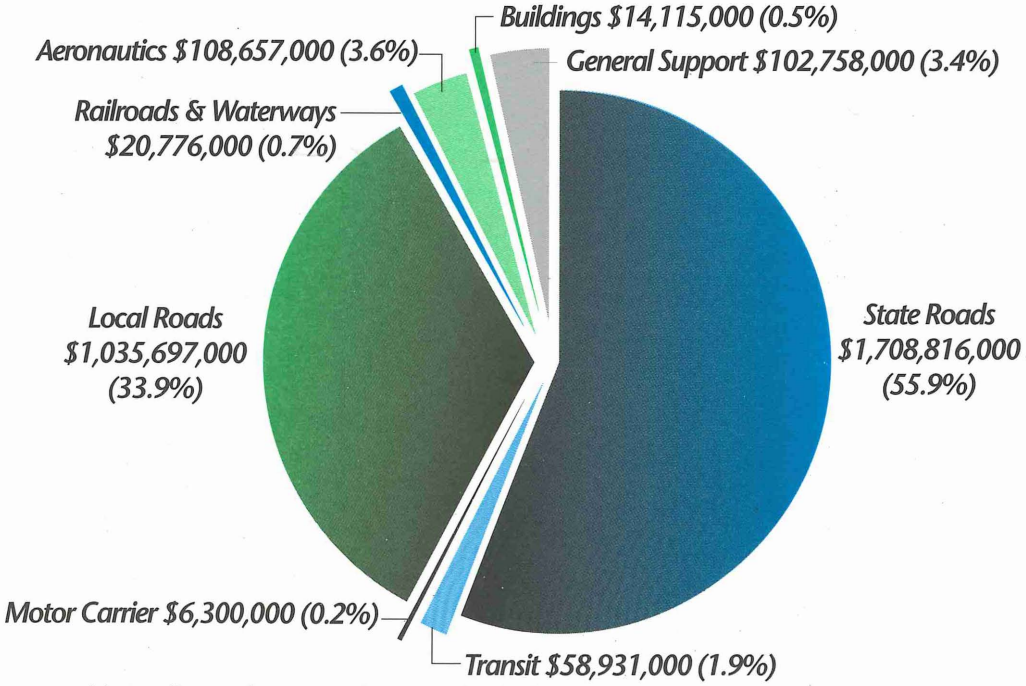
Background

Mn/DOT is an organization of approximately 5,000 employees responsible for a variety of transportation products and services throughout the State. The Organization is divided into two bureaus and six divisions as illustrated in the following chart:



The Department manages a biennial budget of nearly $3.1 billion, utilizing a mix of federal and state funds divided among the following programs:

1998-1999 PROJECTED EXPENDITURES BY PROGRAM



Note: General support is comprised of: support services; human resources; information resource management; financial management; effective leadership and other departments.

Department Mission

Mn/DOT was established and operates in accordance with statutory authority (outlined in Minnesota Statutes, Section 174.01, Subdivision. 2),
". . .to provide a balanced transportation system, including aeronautics, highways, motor carriers, ports, public transit, railroads and pipelines. . ."

Further, Mn/DOT is sanctioned to function as the
". . .principal agency of the State for the development, implementation, administration, consolidation, and coordination of state transportation policies, plans, and programs."

Mn/DOT's **vision** is: A coordinated transportation network that provides safe, user-friendly access and movement and responds to the values of Minnesota's citizens.

Mn/DOT's fundamental purpose is to lead and to act to develop a coordinated transportation network by doing the following:

- *Preserve, manage and improve the State's highway system;*
- *Promote and support the transit, air, rail, waterways, bicycle and pedestrian systems;*
- *Promote non-travel alternatives; and*
- *Promote and support connections among transportation systems.*

Mn/DOT's vision and mission are being accomplished through the following directions:

1. *Safeguard what exists. Maintain a commitment to the State's existing transportation systems.*
2. *Make the network operate better. Help increase Minnesota's economic competitiveness by improving the transportation systems.*
3. *Make Mn/DOT work better. Continuously improve management of Department resources to deliver quality service.*

Recent Accomplishments

In recent years Mn/DOT has:

- *Improved its overall transportation system;*
- *Improved mobility for its citizens and economy;*
- *Increased spending to improve the transportation infrastructure without raising taxes;*
- *Pursued many innovative transportation policies; and*
- *Improved Department operational efficiency and financial management.*

Since 1991, the Department has made significant strides in:

1. *Decentralizing decision making by moving authority and accountability to the areas and people who are closest to the part of the State being served;*
2. *Directing the central office focus toward statewide initiatives and programs;*
3. *Directing research and providing services for operating local offices and districts;*
4. *Developing a commitment to excellence through employee development, training and diversity;*
5. *Strengthening the Department's commitment to quality, better understanding of those being served and development of performance measures to track progress;*
6. *Providing reliable and predictable funding and delivery of products and services;*
7. *Developing partnerships and becoming more multi-modal and intermodal in focus and by supporting telecommunications in innovative ways;*
8. *Reengineering human resource practices to provide for better employee recruitment, selection, career management, retention and performance management;*
9. *Understanding how the private sector works so that the Department can stay competitive in the delivery of products and services;*

Specific accomplishments include:

Achieving *cost savings that, along with slightly higher state and federal funding, avoided a projected $216 million deficit for 1998-99 and substantially increased funding available for State highway construction;*

Establishing *realistic budget projections that allow high confidence in the ability to complete State transportation projects on time and in budget;*

Creating *"Area Transportation Partnerships" to bring important transportation decisions closer to citizens and communities impacted;*

Completing *the State's first Statewide Transportation Plan;*

Promoting *intergovernmental and public-private partnerships for the delivery of government services;*

Becoming *a national leader in developing and testing Intelligent Transportation Systems for traffic and incident management, transit and transportation information;*

Improving *traffic and congestion management in the Twin Cities metropolitan area.*

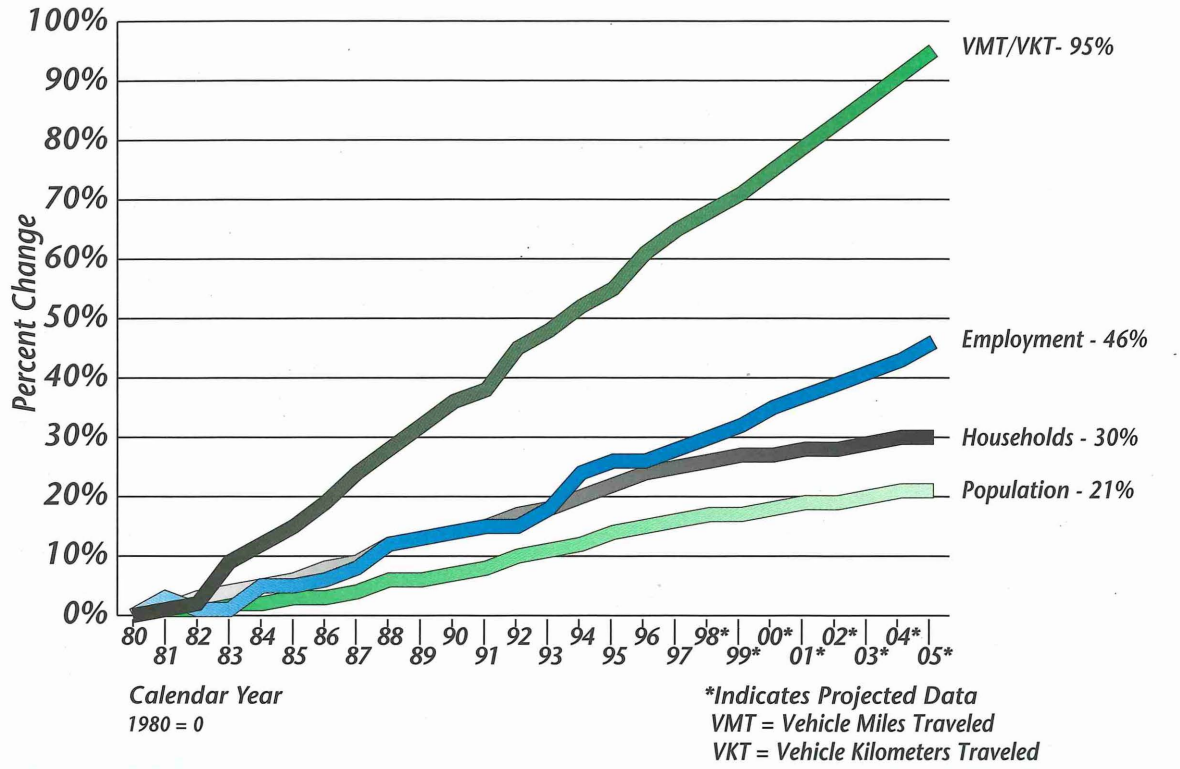
Preparing for the Future

Many challenges remain as the State's infrastructure continues to age in the face of growing traffic volumes, increasing demand for transportation services and an expanding economy.

Vehicle miles/kilometers traveled continues to increase, growing more quickly than the State's population, number of households and employment. Between 1980 and 1997, annual vehicle miles/kilometers of travel increased at a significantly higher rate (65%) than employment (28%), households (25%) and population (16%). A similar trend is shown in the following chart, where vehicle miles/kilometers traveled are projected to increase about 95% between 1980 and 2005, with lesser increases expected in employment (46%), household (30%) and population (21%).

The following graph illustrates these trends:

MINNESOTA TRENDS
1980 – 2005*



The Department has a number of initiatives underway to deal with this growing transportation demand, the need to optimize resources and improve the quality of transportation products and services. The following summarizes just a few of these initiatives.

Customer Focus. Improving the understanding of customer needs and requirements is a cornerstone of performance improvement. The Department is actively involved in conducting research to provide products and services desired by the citizens and businesses of the State. For example, during the summer of 1998, the Commissioner created the Minnesota Freight Advisory Committee, a partnership between Mn/DOT and shippers representing major industries in the State to provide guidance to the Department on freight transportation issues.

Business Process Improvements. A number of initiatives are underway to streamline business processes and enhance competitiveness of products and services. For example, an activity based costing and management effort has been initiated to provide more comprehensive data on the specific costs of transportation products and services. Business planning is being conducted in functional areas to align market segment needs with on-going product and services delivery. Procurement practices have been reformed and there are new cooperative purchasing practices in place. Quality improvement projects and assessments are being undertaken in many areas. In addition, Mn/DOT has completed a first round of draft long range plans designed to identify highway system deficiencies and needs. These plans use a specific set of performance measures and targets to identify areas for investment priority over the next twenty years based on realistic forecasts of available funding.

Research and Technology. A comprehensive research program has been established to assist the Department in managing the transportation system more efficiently and effectively. For example, the world's largest and most technologically advanced pavement research facility, Mn/ROAD, officially opened in August 1994. Mn/ROAD's goal is to extend pavement life, improve the quality of Minnesota's road system and its value to the State economy, while reducing future taxpayer costs. Already, results are paying off by improving the Department's ability to more accurately manage spring load restrictions.

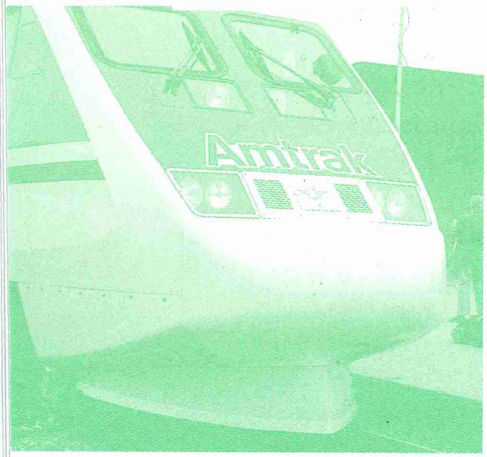
Taking advantage of space age technology is also helping the Department better meet customer needs. Some examples are: implementing Intelligent Transportation Systems; developing projects in the areas of traffic and incident management and transit; and disseminating transportation information to keep the flow of people and goods moving safely.

Another example is the Connecting Minnesota project, a statewide fiber-optic "backbone" for high-speed telecommunications throughout Greater Minnesota and the Twin Cities metropolitan area. The result of a landmark partnership agreement between private sector developers and state government, the project will create a fiber-optic backbone along the right-of-way of 1,800 miles of freeways and state highways. It will connect rural Minnesota to more urbanized areas of the State. Minnesota schools, libraries, state and local governments will receive a portion of the telecommunications capacity at little or no cost to taxpayers.

Other examples of implemented research projects that address strategic directions are the Salt Solutions project (Research Report 1998-20) and the High Strength Concrete Bridge Girders project (Research Report 1998-09).

The Salt Solutions program, an effort to reduce the total usage of salt and sand on Minnesota highways, began in Mn/DOT's Duluth District during the 1996-1997 snow and ice season. The Department expanded the program statewide for the 1997-1998 winter season. In the Duluth District alone, the Salt Solutions project resulted in a one year savings of $177,000. Further analysis in the Twin Cities metropolitan area also revealed that accidents were also reduced, suggesting that the salt and sand effort did not adversely affect road safety.

The second research project resulting in cost savings was the use of high strength concrete bridge girders. The use of these girders on the Lexington Avenue Bridge over Interstate 35W in Blaine resulted in a reduction from 34 to 28 beams, with an estimated savings of $80,000. It is estimated that an additional $65,000 was saved in 1998 through the use of this type of girder. Expanded use of high strength concrete bridge girders will produce further savings in the future.



Transportation Choices and Alternatives. A key element in Mn/DOT's mission recognizes the need for transportation choices and alternatives.

The Department:

- *Is continuing to work with local communities to expand transit and improve aviation services;*
- *Is examining the feasibility of commuter rail passenger service in the Twin Cities metropolitan area;*
- *Has established a telecommuting center in Cambridge, Minnesota;*
- *Has developed a number of bikeway and pedestrian projects to address overall mobility and accessibility requirements; and*
- *Continues to examine road pricing alternatives and opportunities through research and public outreach.*

Human Resources. A number of human resource reengineering efforts are underway to ensure that the Department is able to attract and retain a diverse and high quality workforce into the next century. Four new classifications for Transportation Worker have been established to combine existing Technician, Maintenance Worker and Bridge Worker classes. The Transportation Worker classification is designed to establish a more flexible, multi-skilled workforce to better meet our customers' needs.

A new individual performance management system is being implemented throughout the Department to strengthen communications between supervisors and employees, while promoting career planning and skills development. In addition, a number of targeted recruitment programs have been implemented to help us find needed technical employees currently in short supply and to increase diversity within the Department. Further, new training and certification programs are part of the Department's emphasis on continuous learning.

These are just a few of the initiatives underway in Mn/DOT to prepare for the future. The remainder of this report summarizes Mn/DOT performance in its major program areas.

PROGRAM GOALS:

The Aeronautics program has the following goals:

- *To promote aviation safety;*
- *To support development and maintenance of a system of airports;*
- *To establish and operate a system of navigation aids;*
- *To foster the development of aviation.*

PROGRAM PERFORMANCE:

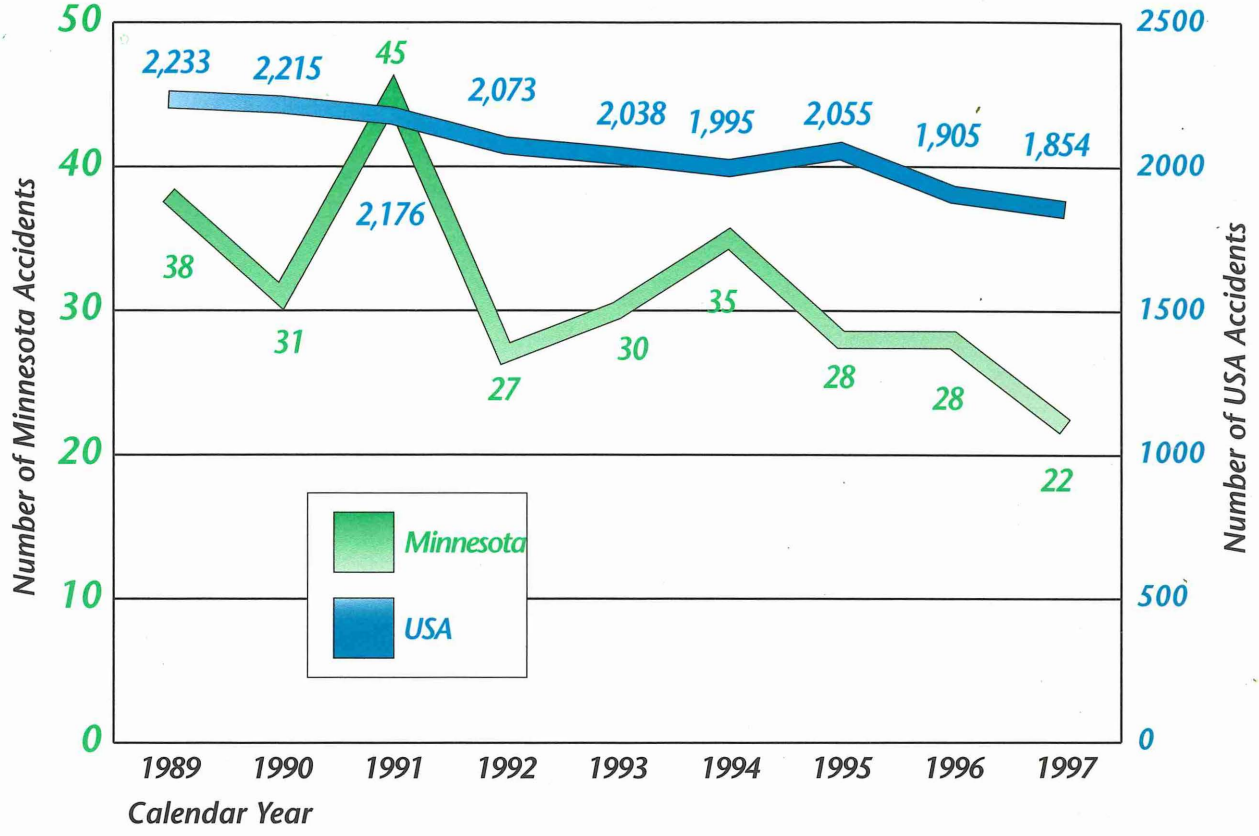
A number of measures have been identified to track performance toward program goals including:

- *Number of aircraft accidents;*
- *Total annual attendance at pilot safety seminars;*
- *Airport pavement condition rating;*
- *Percent of time that aircraft navigational aids are operational;*
- *Number of students participating in aviation education activities.*

Aviation safety is consistently a top priority for the aviation program. However, because of the number of interrelated factors that are beyond the control of the Department, it is impossible to specifically measure the effectiveness of individual activities. Factors such as weather, pilot decision-making, mechanical problems with aircraft, and airport maintenance all influence safety performance. Recognizing this, the Department focuses its activities on elevating an awareness of the importance of aviation safety; providing current weather information to pilots to enhance their decision-making; and inspecting landing areas to see that they are maintained in safe condition. Comparing Minnesota's accident history with the national trend, one will see a faster rate of improvement in our State. This is an indicator that our programs and activities have a positive impact on aviation safety in Minnesota.

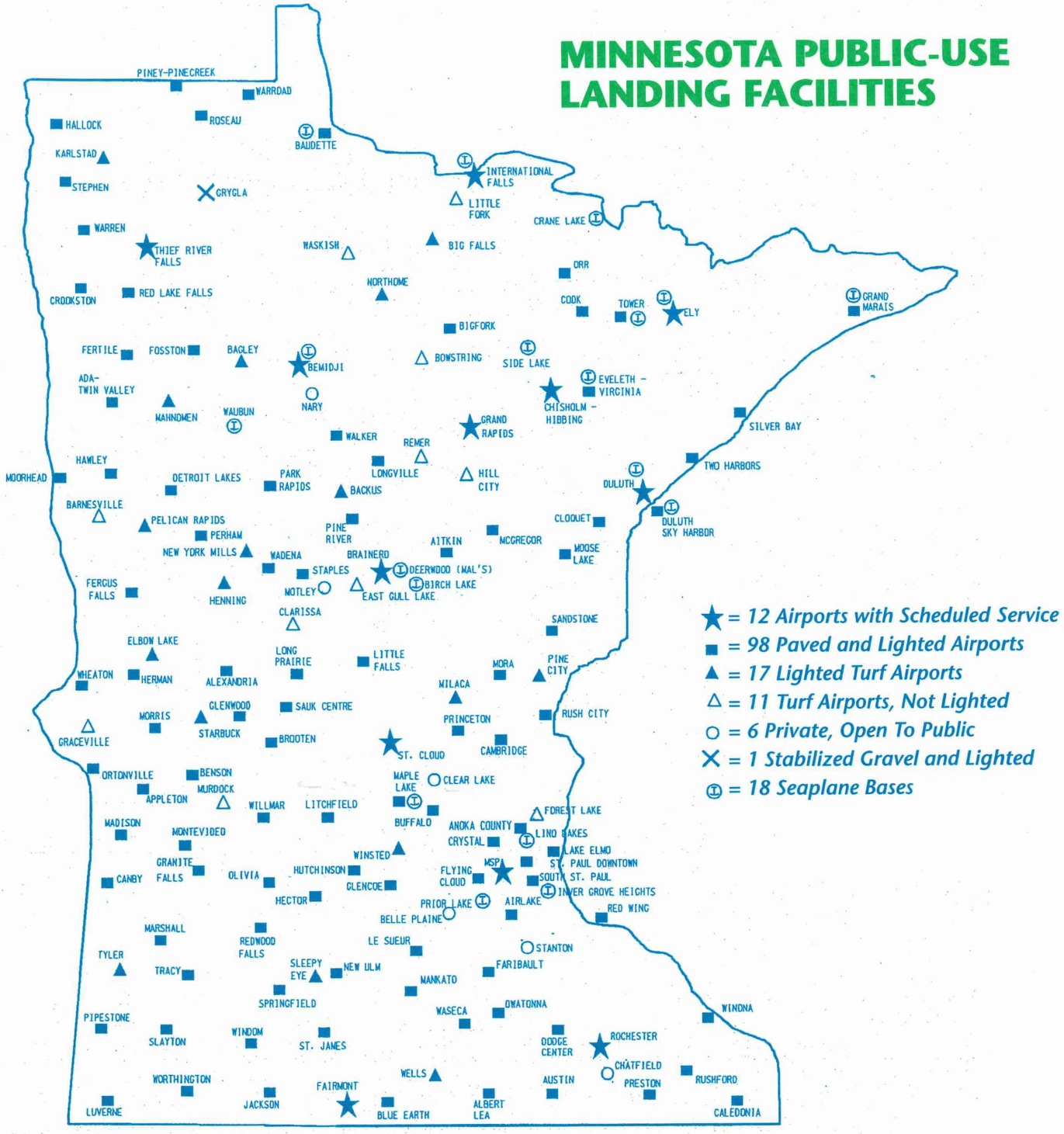
See the following graph of Aircraft Accident History.

AIRCRAFT ACCIDENT HISTORY



Data Sources:
Mn/DOT Office of Aeronautics;
National Transportation Safety Board (NTSB), 1997 NTSB Aviation Statistics, Table 10.

The following map shows the locations of airports in Minnesota:



PROGRAM GOALS:

The Transit program has the following goals:

- *To provide access to transit for persons who have no available alternative mode of transportation;*
- *To provide transit services throughout the state to meet the needs of transit users;*
- *To maintain a state commitment to public transportation;*
- *To increase the efficiency and productivity of public transit systems.*

PROGRAM PERFORMANCE:

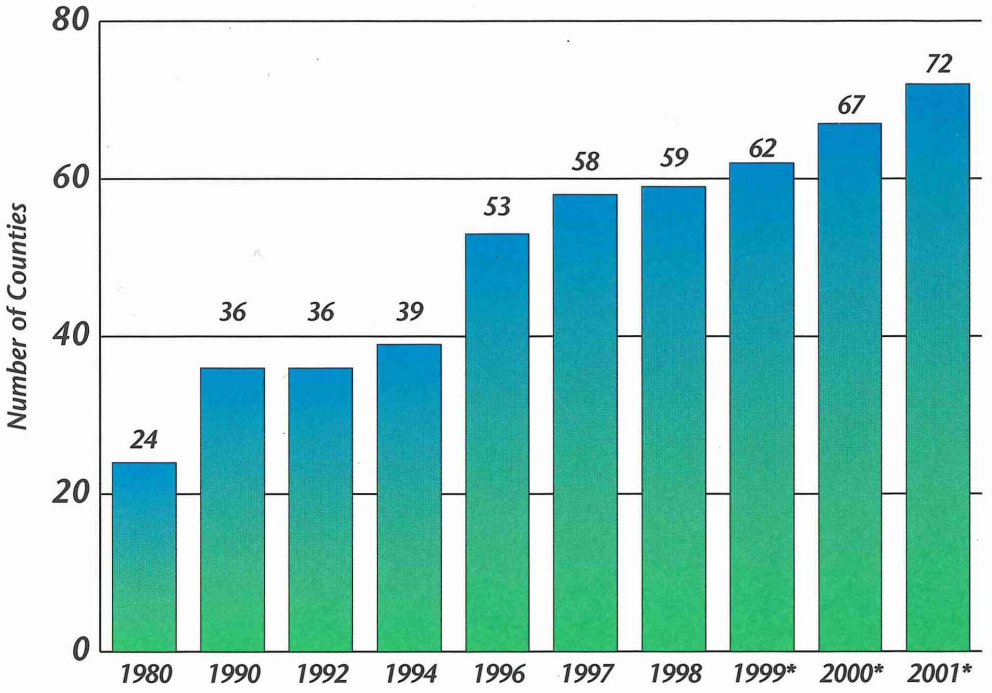
A number of measures have been identified to track performance toward program goals including:

- *Number of regional centers served by public transit in Greater Minnesota;*
- *Number of rides on existing public transit systems in Greater Minnesota;*
- *Public satisfaction with availability of transit options.*

Providing transit service in Minnesota has been achieved through a longstanding partnership among federal, state and local governments. The people who benefit from this joint effort, especially in rural areas, are typically older, disabled or economically disadvantaged.

In 1997, seventy Greater Minnesota (outside the 7 county Twin City metropolitan area) transit systems provided over 8,518,000 trips for people going to work, accessing medical services, traveling to retail outlets, enjoying local recreational functions, getting to a variety of appointments and reaching congregate meal sites. The increasing number of Greater Minnesota counties with county-wide transit serving the public, including people with disabilities, shows progress in closing transit service gaps (see chart).

Greater Minnesota Counties With County-Wide Transit Service



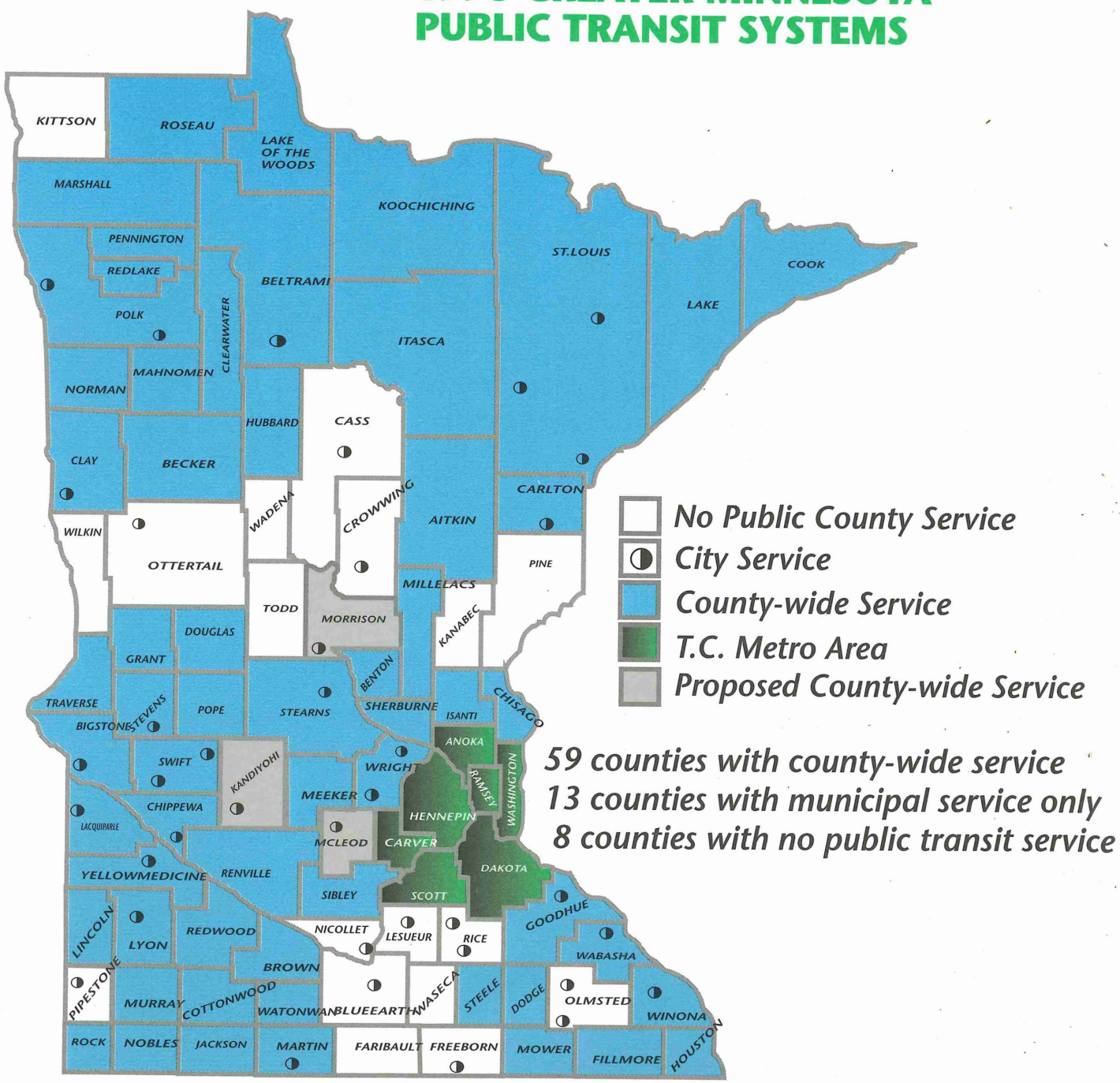
Fiscal Year

**Indicates Projected Data*

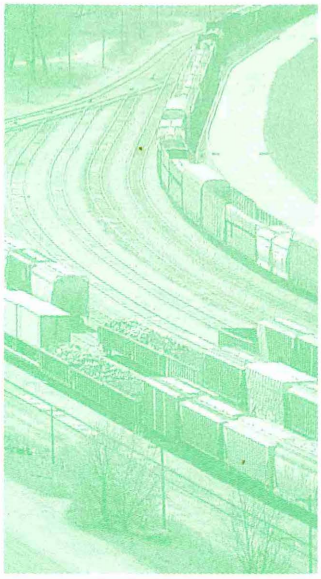
Data Source: Mn/DOT Office of Transit

While the Department Transit Office administers transit service in the Greater Minnesota counties, it should be noted that the 7 metropolitan counties (Anoka, Carver, Dakota, Hennepin, Ramsey, Scott & Washington) are served by public transit administered by the Metropolitan Council.

The following map shows county-level transit service:



Railroads & Waterways



PROGRAM GOALS

The Railroads and Waterways program has the following goals:

- *To identify and develop safety improvements at railroad grade crossings;*
- *To develop statewide railroad and waterway plans that guide future investment of state and federal funds and establish a framework for policy development;*
- *To develop agreements and provide loans or grants to public port authorities, regional railroad authorities, railroads and shippers to improve rail and water facilities through the Port Development Assistance program and the Minnesota Rail Service Improvement (MRSI) program;*
- *To manage passenger rail planning activities;*
- *To develop strategies to improve freight productivity.*

PROGRAM PERFORMANCE

A number of measures have been identified to track performance toward program goals including:

- *Number of safety projects implemented;*
- *Number of crashes at railroad-highway grade crossings;*
- *Number of Minnesota Rail Service Improvement and Port Development Assistance projects funded.*

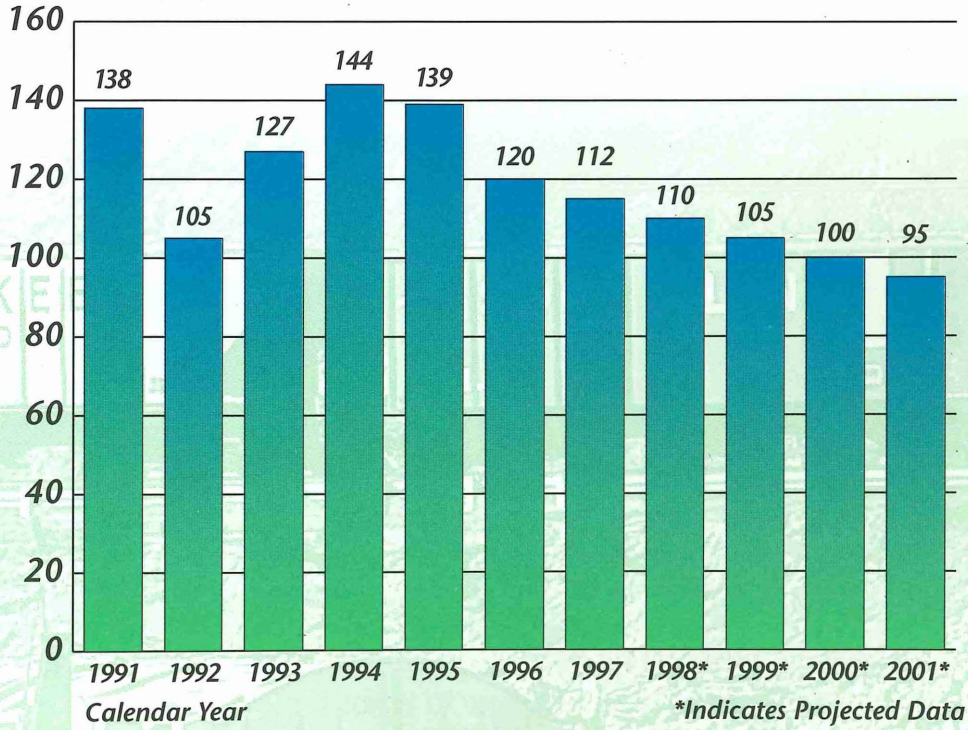
Mn/DOT's efforts to improve safety at railroad-highway grade crossings have been successful. Grade crossing crashes in Minnesota have been reduced from a high of 400 vehicle-train crashes and 50 deaths in 1972 to 112 vehicle-train crashes and 6 deaths in 1997. This has been accomplished in large measure by the installation of signals at crossings with high vehicular traffic where the exposure to trains is high.

However, safety at railroad-highway grade crossings, especially at crossings with low vehicular traffic volume, continues to be a serious problem. Of the six fatal grade crossing crashes in Minnesota in 1997, three occurred at signalized crossings and three occurred at grade crossings with low vehicular traffic volumes. In addition, one out of six personal injury and property damage grade crossing crashes occurs at crossings with low vehicular traffic counts.

Mn/DOT continues efforts to reduce railroad-highway grade crossing crashes by identifying those locations that would most benefit from safety improvements.

The following provides additional information and trend line data for the measure on crashes at railroad-highway grade crossings:

CRASHES AT RAILROAD-HIGHWAY GRADE CROSSINGS



Data Source: Mn/DOT Office of Freight, Railroads and Waterways

PROGRAM GOALS

The Motor Carrier program has the following goals:

- *To reduce the number of unsafe motor carriers operating on Minnesota highways;*
- *To improve motor carrier compliance with safety and hazardous materials regulations;*
- *To improve hazardous materials shipper compliance with regulations.*

The program is administered by the Office of Motor Carrier Services. The Office works with providers of commercial transportation to improve and enhance the safety of their operations. The program is designed to help achieve Minnesota's need for a safe, efficient and economically viable transportation system. It has three core business areas:

- *Issuing credentials to carriers based on their safety performance;*
- *Evaluating the transportation safety management practices and regulatory compliance of carriers and shippers;*
- *Providing technical assistance, training and information.*

PROGRAM PERFORMANCE:

A number of measures have been identified to track performance toward program goals.

Examples include:

- *Average reduction in number of out-of-service violations after conducting a safety performance review;*
- *Average increase in safety compliance scores issued to special transportation service providers;*
- *Percent of customers satisfied with information given by Motor Carrier Services for education and technical assistance;*
- *Percent of customers satisfied that this information was important to their transportation safety programs.*

This program is responsible for implementing Minnesota laws and federal safety regulations governing segments of the for-hire and private motor carrier industry in Minnesota. It regulates for-hire carriers of freight and passengers, private carriers who transport their own goods, building movers, hazardous material and hazardous waste transporters, special transportation providers of service to the elderly and disabled and limousine operators.

Motor Carrier Services conducts compliance reviews (CRs) under the Motor Carrier Safety Assistance Program (MCSAP), a grant program administered by the Federal Highway Administration (FHWA). A compliance review is an in-depth audit of an interstate motor carrier's records to determine compliance with applicable federal safety and hazardous materials regulations. It is designed to determine if a carrier has the safety management practices needed to ensure that the commercial vehicle operations are safe. Reviews conducted under the state program are called Minnesota Carrier Reviews (MCRs).

The FHWA has increasingly relied on Minnesota to conduct complex reviews on large carriers.

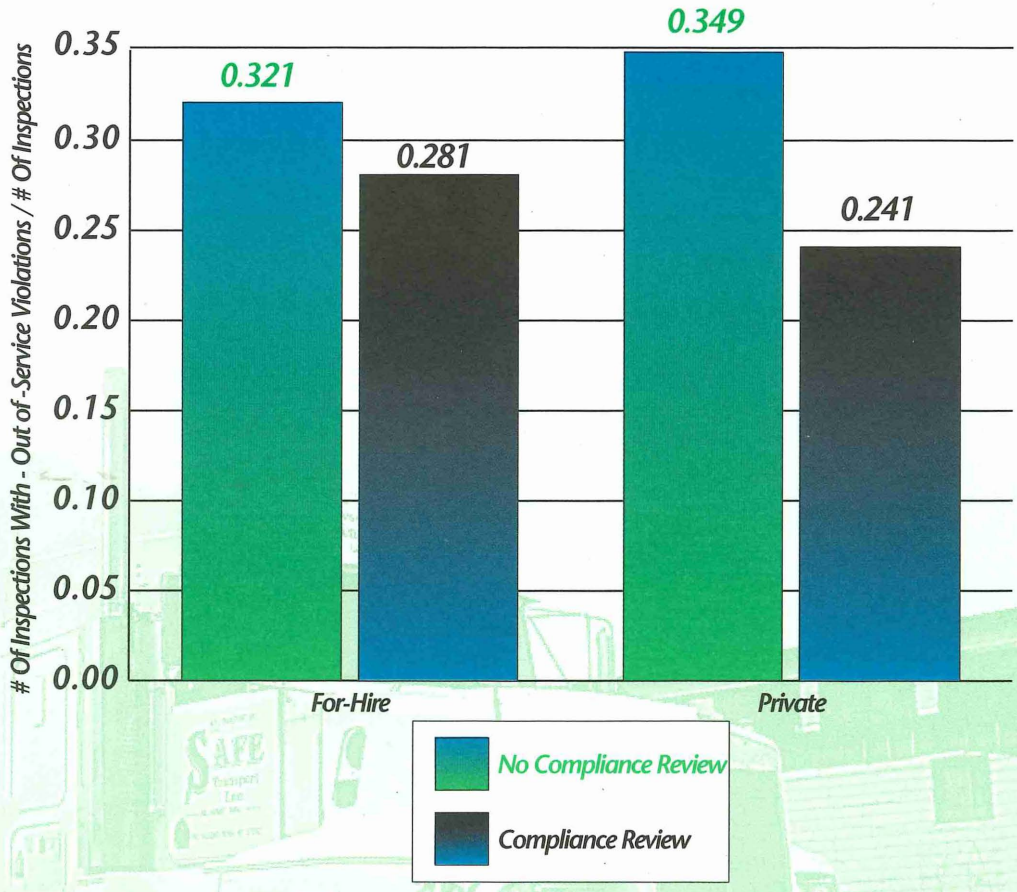
Additionally, the number of enforcement cases against noncompliant motor carriers has increased significantly. These modifications have resulted in an increased time and resource commitment per motor carrier. Consequently, the number of reviews declined in fiscal year 1998.

This program does not include any roadside enforcement activities. Its main focus is to prevent motor vehicle crashes, hazardous materials incidents, breakdowns and violations. It works in cooperation with roadside enforcement activities conducted by other agencies, which detect and penalize motor carrier violations. Both components are necessary to achieve a comprehensive commercial transportation safety program in Minnesota.

In 1995, the University of Minnesota was hired to study the effectiveness of the Compliance Review (CR) program. Using an interstate freight carrier's for-hire, private, or exempt classification, together with its known fleet size, appeared to be the most reasonable way to establish sub-populations of carriers for measuring change in out-of-service rates. The findings showed a significant decrease in out-of-service rates for a majority of Minnesota-based interstate freight carriers in the year following a CR when compared to similar carriers never reviewed.

The following graph shows out-of-service rate comparisons for for-hire motor carriers and for private motor carriers. Whether a carrier is characterized as for-hire or private, a "positive effect" on the out-of-service rate occurs after a compliance review for the majority of fleet sizes. Findings from the study show for-hire carriers with a fleet size of six or more vehicles have a 12% reduction in out-of-service rates and private carriers have a 31% reduction after receiving a compliance review. Additionally, exempt carriers with more than one vehicle showed a 37% reduction in out-of-service rates following a compliance review.

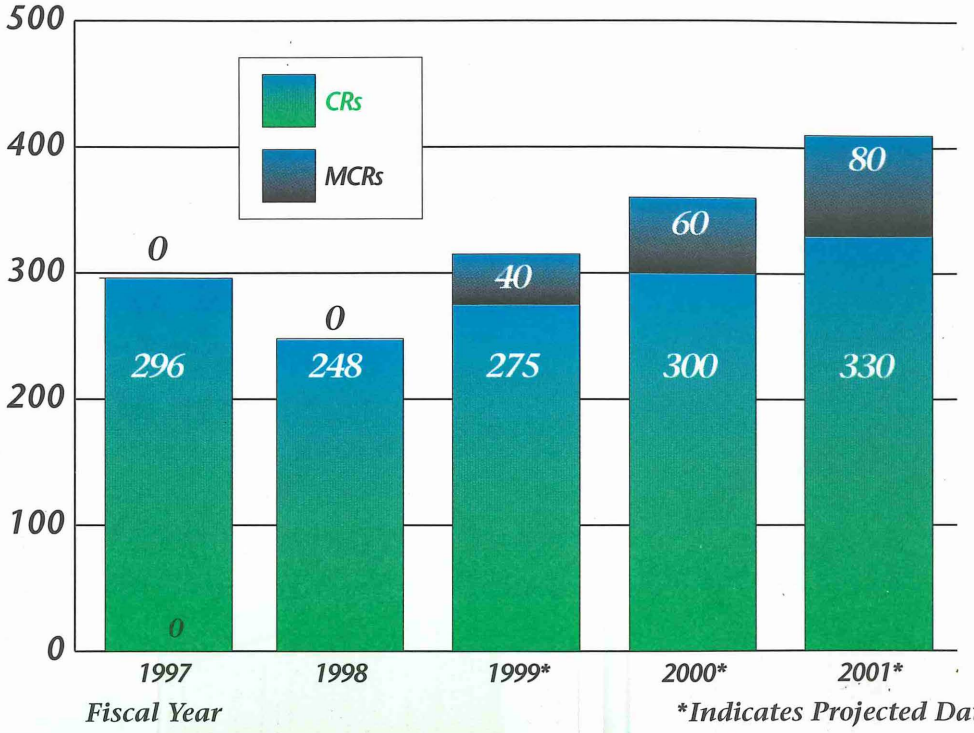
OUT-OF-SERVICE RATE COMPARISON
(six or more vehicles)



The following graph shows the number of compliance reviews performed by the Office of Motor Carrier Services and projections for the next three fiscal years.

COMPLIANCE REVIEWS & MINNESOTA CARRIER REVIEWS PERFORMED

by Office of Motor Carrier Services



Data Source: Mn/DOT Office of Motor Carrier Services

PROGRAM GOALS:

The Local Roads program has the following goals:

- *To provide transportation systems that enable efficient movement of people and goods without disruption;*
- *To provide safe trips through sound engineering and maintenance.*

The Division of State Aid for Local Transportation allocates and distributes County State Aid Highway (CSAH) and Municipal State Aid Street (MSAS) funds to counties and to cities with populations over 5,000. CSAH funds comprise 29 percent, and MSAS funds comprise 9 percent of the Highway User Tax Distribution Fund, as provided in the State Constitution. The State Aid for Local Transportation Division, with the help of the State Aid Rules Committee established in statute, promulgates the rules and standards that govern state aid operations. The State Aid for Local Transportation Division ensures compliance with these rules by providing overall policy direction, assuring training and educational opportunities, measuring performance, and approving construction plans and project funding requests. The counties and cities select the construction projects and maintenance activities on which to spend their annual allocations.

PROGRAM PERFORMANCE:

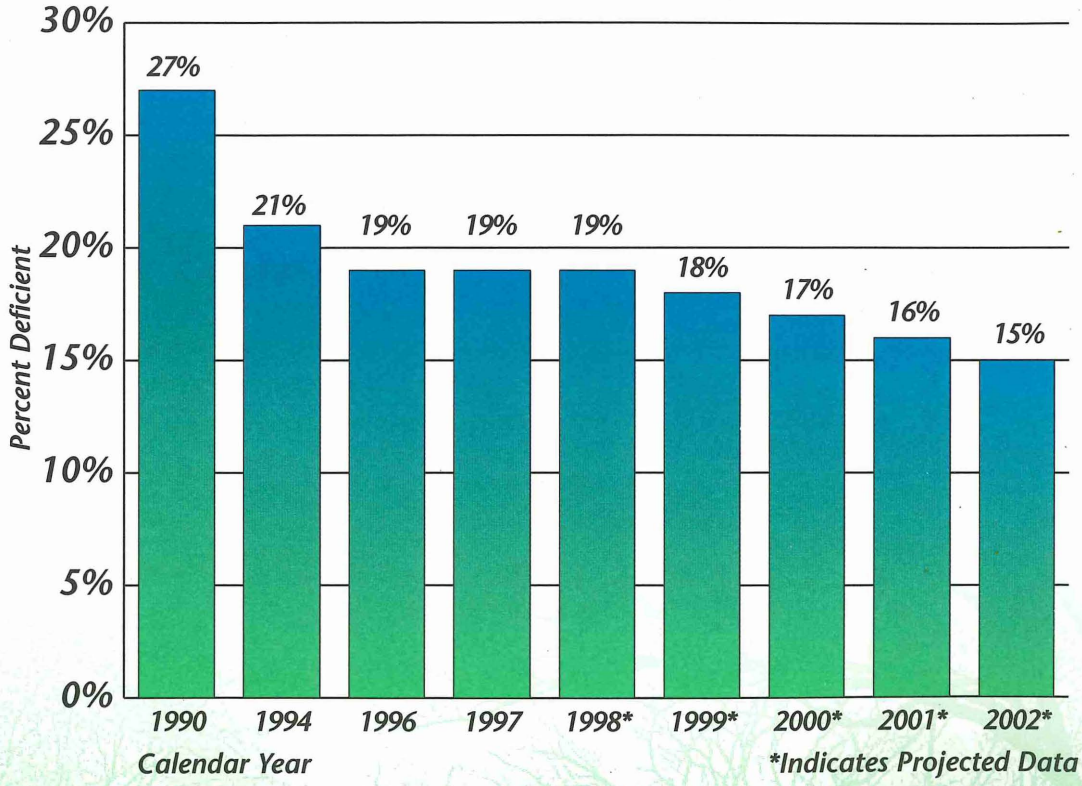
A number of measures have been identified to track performance toward program goals including:

- *Percent of the County State Aid Highway (CSAH) system carrying unrestricted loads year- round;*
- *Percent of deficient bridges on local roads;*
- *Crash rates on the Municipal State Aid Street (MSAS) system and the CSAH system.*

One significant program administered by the State Aid for Local Transportation Division is replacement or rehabilitation of deficient local bridges. There are currently 2,802 deficient bridges on the county, city and township systems. This is approximately 19% of 14,959, the total number of local bridges. The 1998 legislature authorized $34 million in bridge bonding, which will result in the replacement of more than 500 bridges and will lower the percent of deficient bridges to 17% by the end of calendar year 2000.

DEFICIENT BRIDGES ON LOCAL ROADS

Total of 14,959 Bridges on Local Roads



Data Sources: Mn/DOT Office of Bridges and Structures and Mn/DOT Division of State Aid for Local Transportation

PROGRAM GOALS:

Through the State Roads program, Mn/DOT designs, constructs, maintains and operates the State's highway infrastructure. This program strives to meet the increasing demands being placed on the trunk highway system. The investment priorities at Mn/DOT are to safeguard what exists and to make the network operate better. In order to do these things, Mn/DOT must stay on top of travel demand trends.

The State Roads Program has the following goals:

- ***Condition of Infrastructure***
  To maintain an infrastructure that meets customer expectations;
- ***Safety***
  To minimize incidents and crash rates within our ability to influence infrastructure, partnerships/education, full range of solutions and driver behavior;
- ***Time/Directness***
  To maintain a predictable travel time for length of trip so that customer expectations are met;
- ***Access/Basic Levels of Service***
  To provide services that meet personal travel and shipping needs.

These are performance outcomes in Mn/DOT's "Family of Measures."

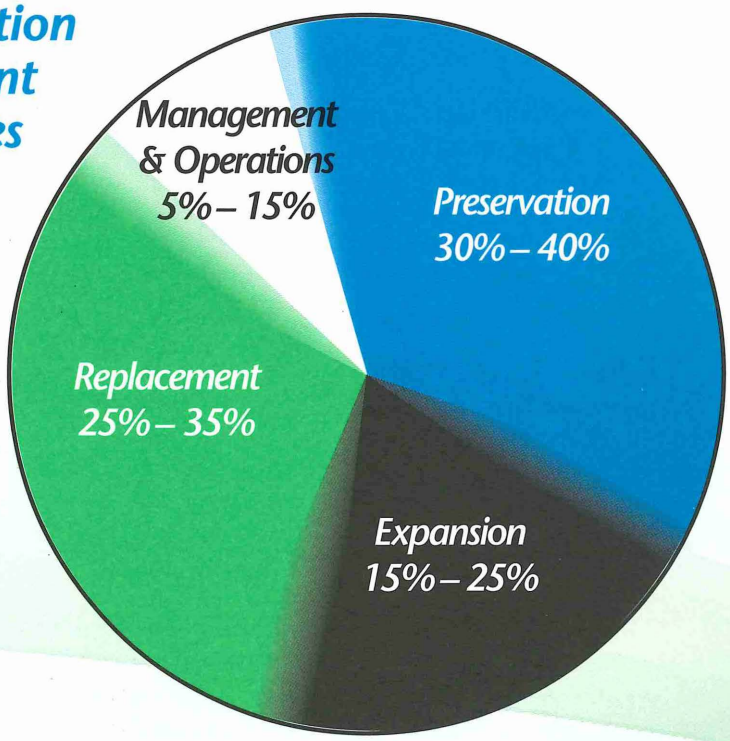
The State's highway system provides essential access to family, friends, jobs, health care, government services, schools, entertainment and recreational opportunities. In addition, it provides a life line that carries food, clothing and emergency services. The Department's principles for determining transportation investment priorities emphasize preservation and management of existing systems over capital improvements. Safety is a key criterion that Mn/DOT uses to evaluate project alternatives.

INVESTMENT GUIDANCE:

Mn/DOT has identified an investment guidance for four categories of state road construction. These priorities are intended to provide direction to meet trends and the day-to-day demands for transportation services. The priorities in the State Road Construction Program are:

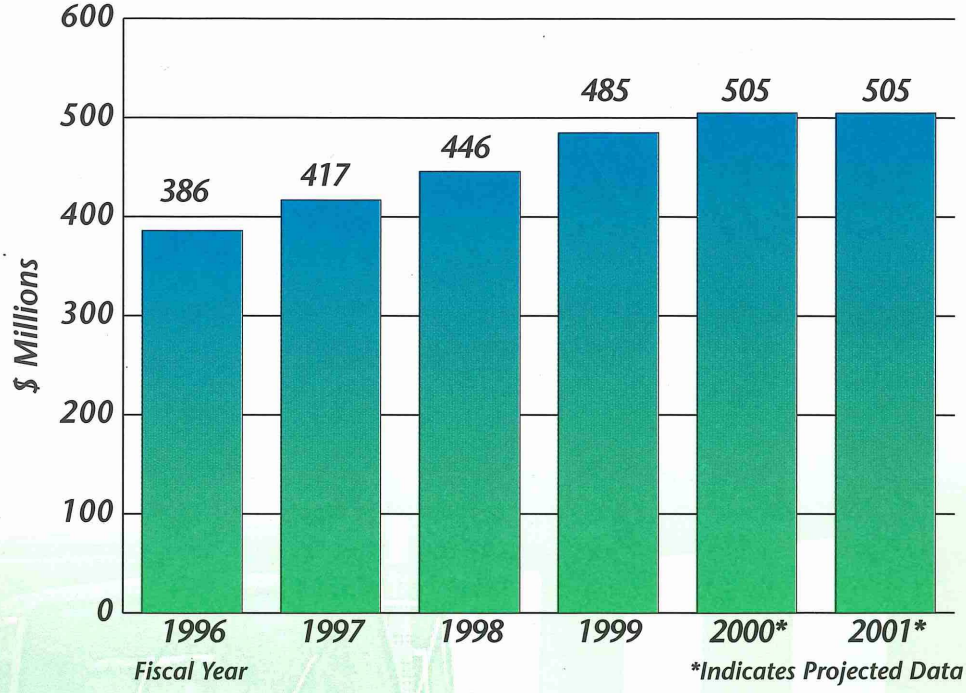
- ***Preservation;***
- ***Management and Operations;***
- ***Replacement;***
- ***Expansion.***

State Road Construction Investment Guidelines



Because of the robust economy, state trunk highway and federal highway revenues have increased over the past few years. This positive growth trend, coupled with improved Department operational efficiencies and good fiscal management, will allow an increased funding level in fiscal year 2000-2001 for the State Road Construction Program. The following graph illustrates this trend:

STATE ROAD CONSTRUCTION PROGRAM



These state and federal funding changes increase the amount, complexity and importance of investments in the State Roads program and its support structure. The Department continues to adopt operational techniques to improve safety, freeway travel times, driver communication systems and emergency response. These investments are analyzed using a benefit-cost analysis to ensure the highest possible return to citizens.

PROGRAM PERFORMANCE:

A number of measures have been identified to track performance toward program goals including:

- *Trunk highway pavement quality index (PQI);*
- *Bridge structural condition rating;*
- *Percentage of Minnesotans satisfied with the safety of Minnesota's roadways;*
- *Percentage of Minnesotans feeling safe while driving or riding through highway work zones;*
- *Percentage of Minnesotans satisfied with trip time;*
- *Number of Twin City Metro Area freeway miles congested in a.m. and p.m. peaks by direction daily;*
- *Miles of trunk highway spring weight restrictions;*
- *Percentage of Minnesotans satisfied with travel information (winter driving, construction, congestion).*

These measures are used to monitor performance, set targets for future service levels and guide overall planning, budgeting and investment decisions. Data collection for these measures has begun. As data collection continues, the need for more or different measures may arise.

MARKET RESEARCH:

The University of Minnesota's Center for Survey Research conducts a survey every year. This annual study is comprised of a variety of topics, submitted by state agencies. One topic investigated and explored in the survey is transportation. Recently, the transportation questions in the survey have focused on public satisfaction issues that are related to Mn/DOT's "Family of Measures." As data gathered from the survey questions change, performance measures related to the subject matter may be modified. For example, the following two questions were asked in the most recent survey (1997) and have been asked in previous years. The results obtained are shown:

- *How satisfied have you been when driving or riding through highway construction areas this past summer in Minnesota?*

Percent very or somewhat satisfied with driving or riding through highway construction:

1988	1989	1994	1996	1997
59%	63%	76%	72%	78%

- *How satisfied are you with the condition of Minnesota's major highway routes?*

Percent very or somewhat satisfied with the condition of Minnesota's major highway routes:

1988	1990	1993	1994	1997
79%	82%	68%	84%	78%

Mn/DOT is also moving toward a performance based planning process that will establish performance targets for roadways and bridges. The following sections identify specific measures for the condition of pavement and bridges, safety and travel time.

CONDITION OF INFRASTRUCTURE:

Pavement:

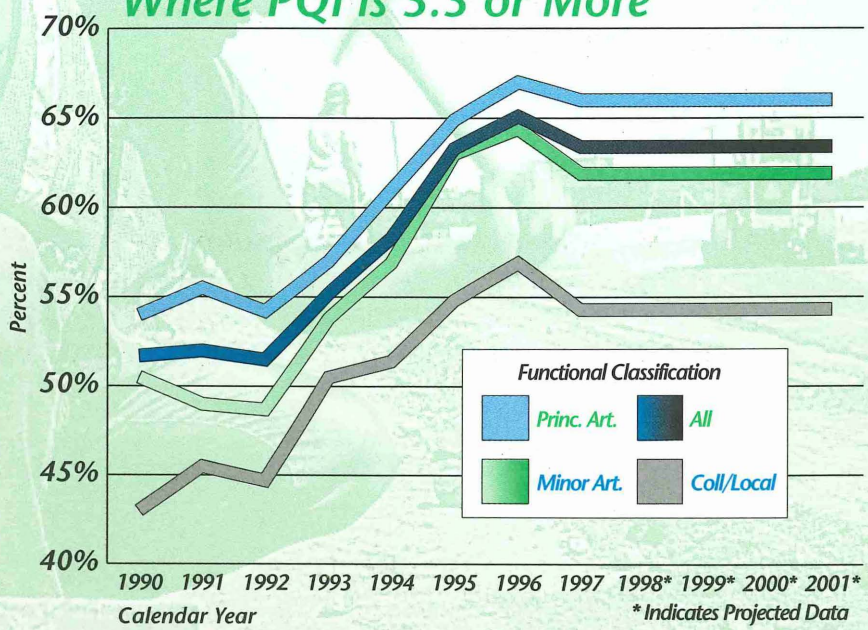
Pavement Quality Index (PQI) is an indicator of the overall quality of a highway's driving surface. PQI is a composite of the rideability average and surface condition (i.e., cracking, spalling and rutting). It does not measure the adequacy or remaining life of the underlying pavement structure.

PQI ranges on a scale from 0 to 4.5. The American Association of State Highway and Transportation Officials (AASHTO) classifies roadways with a 2.5 PQI as being "Fair" and in need of some form of rehabilitation. Mn/DOT classifies roadways with a PQI of 2.8 or less as "Poor", 2.9 - 3.2 as "Fair", 3.3 - 3.6 as "Good", and 3.7 - 4.5 as "Very Good". Mn/DOT, when funds permit, attempts to schedule projects when PQI is estimated or forecasted to be 2.8 or less.

The data reflect that the Department is consistently maintaining principal arterial classification roads at a higher level of service. The past two years also reflect the highest percentage of roads in GOOD or VERY GOOD condition. This illustrates the Department's efforts to maintain the existing road system at an acceptable level with its current resources.

PERCENT OF ROADWAY MILES/KILOMETERS

Where PQI is 3.3 or More



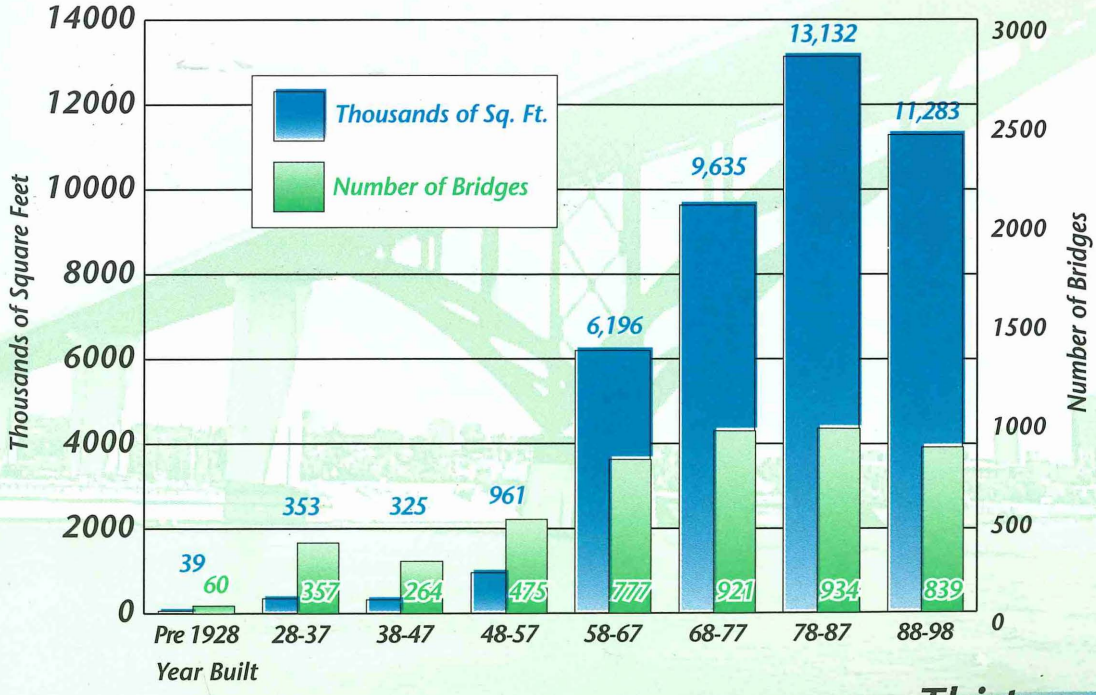
Data Source:
Mn/DOT Office of Construction Materials and Engineering

Bridges:

Minnesota is facing a growing problem as the bridges built after the 1940s reach replacement age. On average, bridges are replaced when they are about 60 years old. Replacing bridges from the pre-World War II era, when approximately 175 bridges were built per decade, has been a major focus of current investments. After 1950, the number of bridges built per decade increased to approximately 780 as our transportation system was significantly expanded. Many of these bridges will begin to reach replacement age during the next 20 years. The problem is compounded by the fact that the bridges built since 1950 are on average about four times the size of their predecessors. Given this looming problem, we believe it is important to continue to maintain our investment in bridge replacement and preservation.

An emerging issue is that a number of steel bridges built during the 1950s, 1960s and 1970s have developed fatigue problems. Typically these problems are identified when cracks are detected during the routine annual inspection of bridges. Fatigue cracks are caused by repeated stress on the bridge due to heavy truck loads. When cracks are discovered, Mn/DOT maintenance personnel take prompt steps to repair and arrest the problems. The following graph illustrates the area of bridges by the decade in which they were built:

AGE OF TRUNK HIGHWAY BRIDGES
(Number and Area of Bridges by Decade Built)

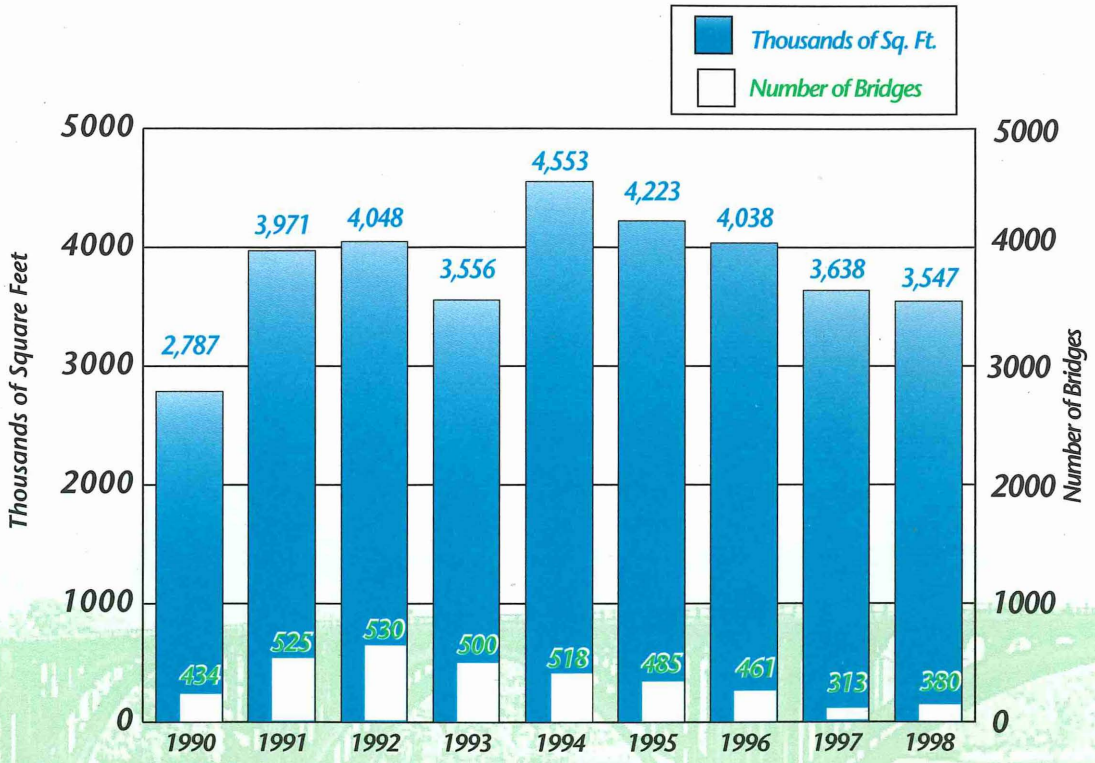


The need to address the deficient bridge situation was supported by the 1997 report from the Legislative Auditor entitled "Highway Spending." A key finding of that report was that, "Most bridges are currently in good condition, but there is a backlog of structurally deficient bridges and an emerging problem with steel fatigue in some bridges."

The following graph illustrates that the area of deficient trunk highway bridges is being reduced:

NUMBER AND AREA OF DEFICIENT TRUNK HIGHWAY BRIDGES

(Square Feet of Deficiencies Per Year)

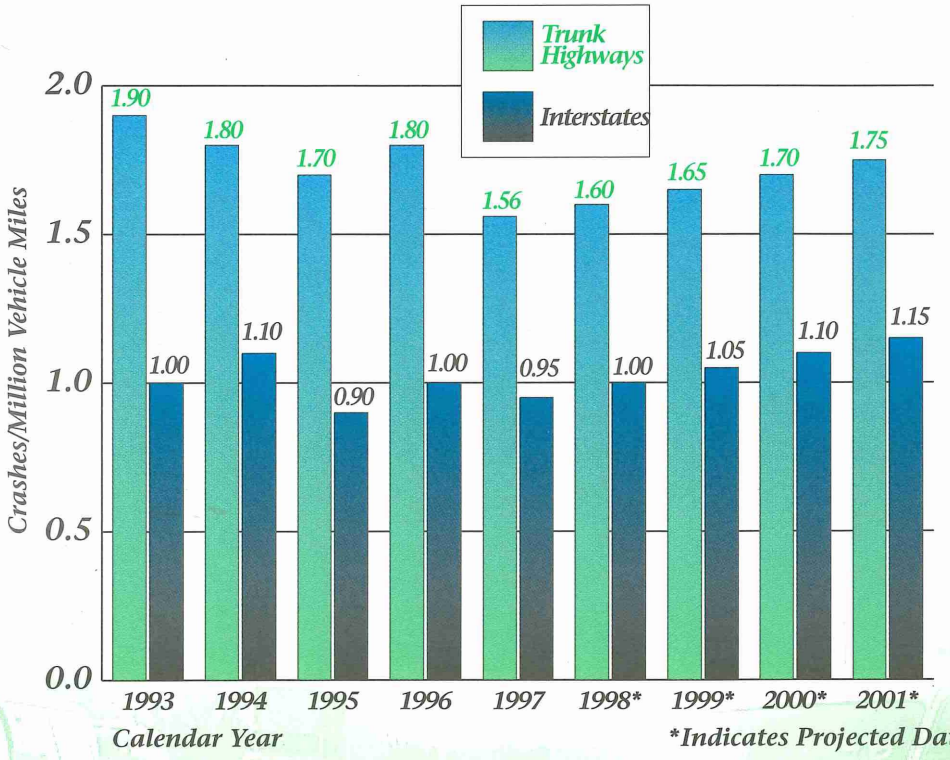


Data Source: Mn/DOT Office of Bridges and Structures

SAFETY:

Crash rate is one of the critical measures used for highway safety. This measure reflects the crash history of a roadway using the actual numbers of crashes and traffic volumes. This measure is intended to be used as a baseline for comparison of highway corridors and intersections across the State . The Department district offices are responsible for making the comparisons and addressing any locations that indicate a potential safety problem. The Department anticipates that this, and other efforts, including the safety goals set by the Office of Motor Carrier Services and the Office of Railroads and Waterways, will cause overall safety to be improved.

CRASH RATE on Interstate and Trunk Highways



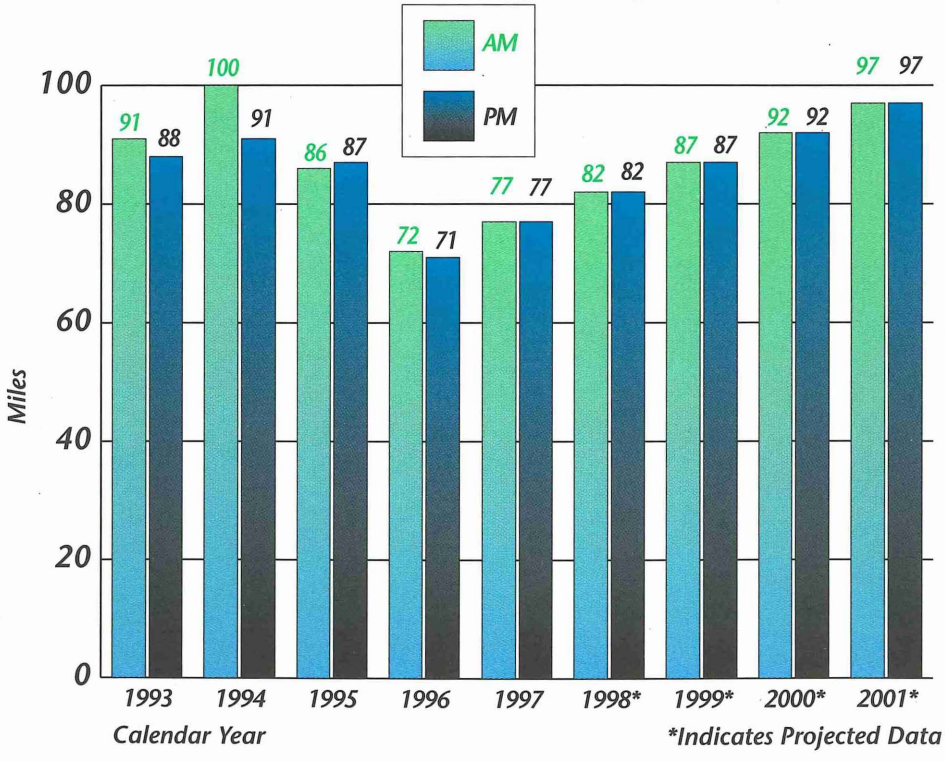
Data Source: Minnesota Department of Public Safety

TIME/DIRECTNESS
(Twin Cities Metro Area):

The Department is attempting to maintain a predictable travel time so that customer expectations are met.

Although the recent trend appears positive, the Department believes this is the short-term result of new roads and bridges, ramp metering and motorist information programs. This indicator measures how many miles of roadway are slowed to less than 45 miles per hour for 45 minutes or longer during rush hour. Below that speed, road capacity drops, congestion worsens significantly and trip times become very unpredictable. This indicator uses "directional" miles, so one mile of divided highway is counted as two miles. The total Twin Cities area freeway system is about 500 directional miles.

AVERAGE DAILY CONGESTION
500 Directional Miles of Twin City Freeways



Note:Twin City Metropolitan Area (TCMA) includes 7 counties: Anoka, Carver, Dakota, Hennepin, Ramsey, Scott and Washington.
Stratified by hours: AM peak = 6:00-9:00; PM peak = 3:00-7:00.

Data Source: Mn/DOT Traffic Management Center

The target or goal through the year 2001 is to keep average daily congestion below 100 miles. Mn/DOT awareness of congestion levels will make it clear when action needs to be taken and what traffic management techniques to utilize.

Recurrent traffic congestion (traffic that is only constrained by roadway characteristics) is only 40% of the congestion problem. Sixty percent of congestion is caused by incidents such as crashes, stalls and construction activities. Data for average daily congestion does not include delay from incidents.

There is less congestion on the Metro freeway system today than was expected in 1986 projections due to the following factors:

1) *The rapid deployment of ramp metering;*
2) *Expansion of the Highway helper Program resulted in a reduction of the amount of traffic congestion by quickly removing stalled vehicles and occupants from driving lanes;*
3) *The increasing public awareness of the Motorist Information Program traveler advisories via radio, television and changeable message signs.*

To continuously improve service to high occupancy vehicle and transit facilities, Mn/DOT participates in an interagency cooperative effort, "Team Transit," which plans and implements infrastructure changes that promote transit use and ridesharing.

Unfortunately, the largest gains made by the implementation of the ramp metering program to reduce traffic congestion come when the program is first brought on line. Much of the freeway system is already covered with ramp metering and the program can only maintain those gains and manage bottlenecks, not eliminate them. Many parts of the system suffer from capacity constraints that current practices of ramp metering will not be able to solve. The Department will need to consider a variety of congestion management options along with ramp metering to deliver an efficient and effective transportation system.

For more information regarding the 1998 Agency Performance Report Contact:

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District/Area Transportation Partnerships