

The Minnesota Department of Transportation (MnDOT) has used a data-driven approach to managing its transportation assets for more than 20 years. This focus on asset management enables us to evaluate the services we provide and guide the development of plans, projects, and investment tools so we can provide a transportation network that keeps Minnesota economically competitive while providing a quality of life that leads to thriving communities and successful businesses. Maintaining the performance and value of our transportation assets is key to providing a safe and reliable level of service for Minnesota's citizens.

## What is Asset Management?

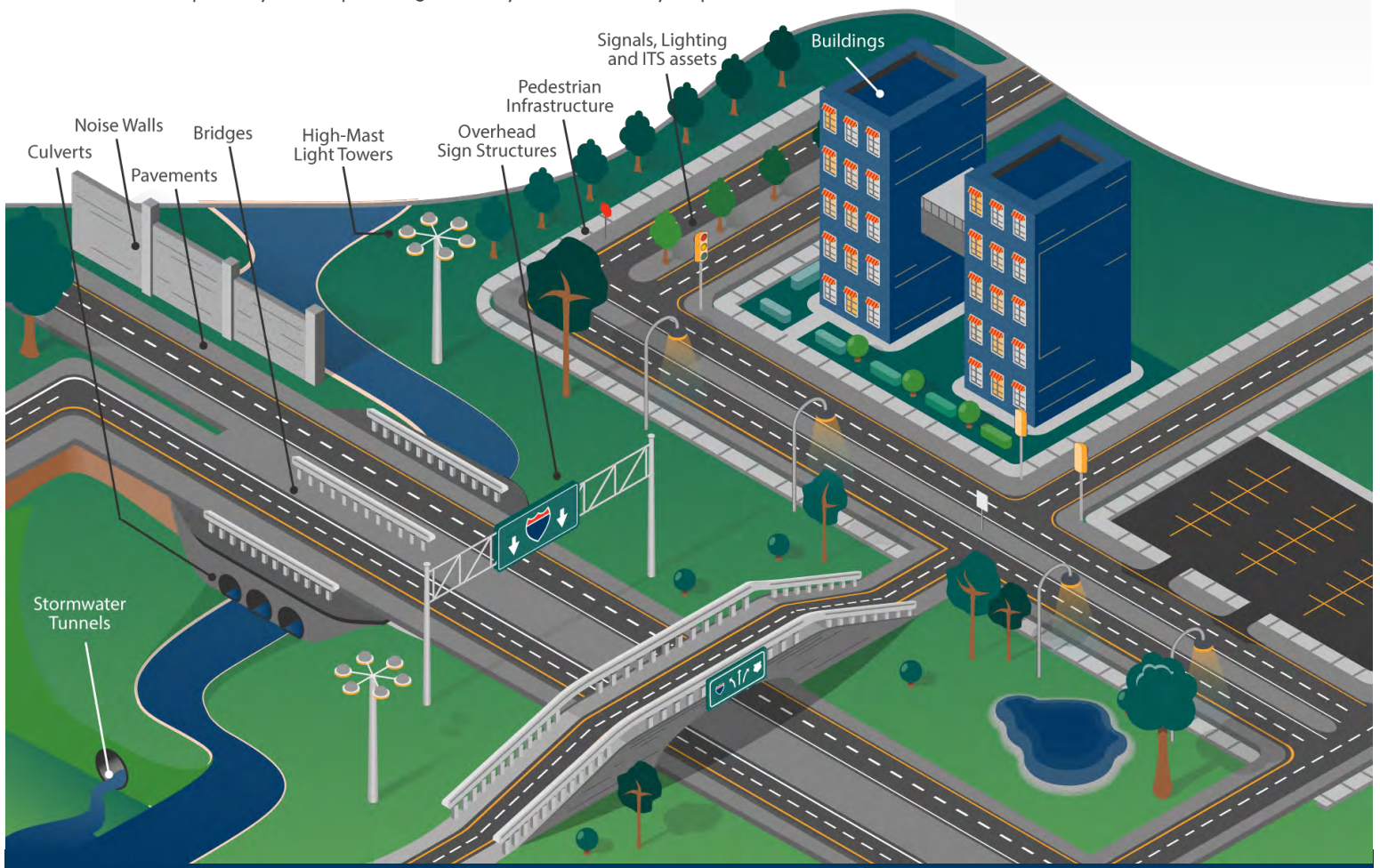
At MnDOT, asset management is the effective use of available resources to make the right investment decisions, while considering the various trade-offs involved in decision-making processes. This meaning is aligned with the definition for asset management outlined in federal legislation.

## What is a TAMP?

A Transportation Asset Management Plan (TAMP) is a risk-based investment plan detailing how available revenue will be used to preserve asset performance and value over the next 10 years. It is required for the pavements and bridges on the National Highway System (NHS), but our plan extends beyond the federal requirements to include the highest-priority assets illustrated below. The TAMP enables us to reduce risks and to keep the system operating as safely and efficiently as possible.

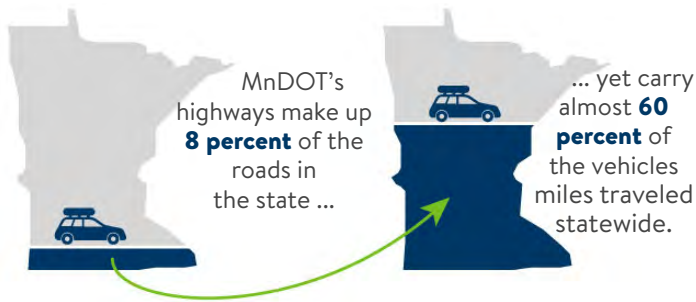
## MnDOT's Key Asset Management Objectives

- Achieve performance targets
- Minimize life-cycle costs
- Integrate maintenance and capital investments
- Consider risk in decision making
- Make informed tradeoff decisions
- Use quality data to drive decisions



## What We Have

Minnesota's state highway system includes **4,800 bridges** and **14,000 roadway miles** of Interstates, US Highways, and Minnesota Highways.



In addition to pavements and bridges, we're responsible for maintaining many other highway assets with a current replacement value of nearly **\$49 billion**. Managing these assets effectively requires a strategic and systematic approach to asset management. We follow a preservation-driven investment program that considers expected funding levels, desired performance levels for each asset, and risk.

Our pavement and bridge conditions have deteriorated over time due to limited resources, making it a challenge to maintain conditions and limiting our ability to invest in other performance areas. Construction practices, unexpected weather events (such as the flooding events in 2010 and 2012), and traffic usage all contribute to how our assets perform and when they'll need work.

## Our Asset Management Approach

Our strategy recognizes that regular, on-going low-cost investments in long-life assets (such as pavements and bridges) are needed to postpone the need for the more expensive repairs that are needed when an asset is not maintained. Our preservation strategy is very similar to the periodic maintenance schedule followed by most car owners.

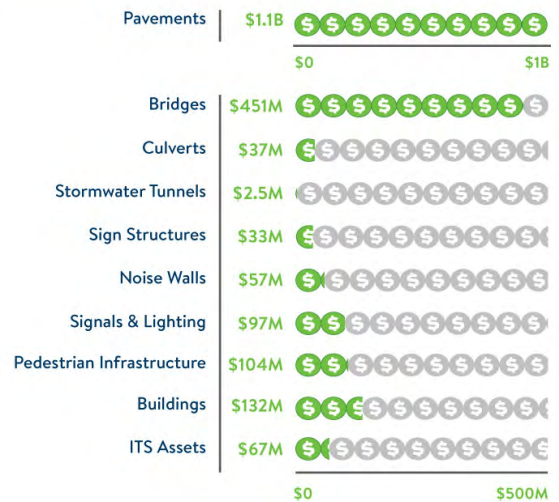
A commitment to low-cost maintenance activities (such as oil changes and tire rotations) enable car owners to maximize the life of their vehicles and avoid unexpected, and costly, repairs.



## Our Challenge

We faced several challenges as we developed our TAMP investment strategy. For example, approximately 60% of our pavement network is over 50 years old – older than the typical design life. Our bridges are also aging, with approximately 40% built before the mid-1970s. As these assets age, it costs more to

### ADDITIONAL FUNDING NEEDS TO MEET 2027 STATE PERFORMANCE TARGETS



maintain them due to increasing deterioration. We can extend the service life of our pavements and bridges by using a variety of maintenance and rehabilitation treatments, although not always at the lowest long-term cost.

Our on-going efforts to monitor asset conditions and to forecast changes in condition over time are key factors to being able to be proactive in how we manage the system. Over the next 10 years, we estimate that \$9.8 billion in revenue will be available for capital investment on the state highway system—approximately \$980 million per year. This estimate assumes no new major sources of revenue will be introduced.

The investments outlined in the TAMP consider available revenue, predicted performance, risks, and life cycle strategies to achieve the best possible outcome. Since our focus is on the preservation and maintenance of the existing state highway system, our TAMP outlines planned 10-year investments of \$4.0 billion in pavements and \$1.1 billion in bridges. An additional \$1.2 billion investment is planned for other assets included in the TAMP over the 10-year period.

Even with this level of investment in asset management, our 10-year projections show that we can not achieve our state performance targets for the assets we maintain. We estimate that over the next 10 years we will need approximately \$2.1 billion in additional funds to achieve our state targets for assets included in our TAMP.