2016
Transportation System Performance Evaluation

METROPOLITAN COUNCIL

Note to Met Council: Please provide us with the acknolwedgement information that must be included here -- federal funding used, Council Members, etc.

Prepared by:

METROPOLITAN COUNCIL

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Executive Summary

This report is a comprehensive review of the Twin Cities transportation system as prepared by Metropolitan Council in 2016. The Minnesota State Legislature adopted statutes in 1996 requiring the Metropolitan Council to produce this report (previously called the Transportation System Audit). This report was prepared to inform the 2018 update of the region's long-range transportation plan, the *2040 Transportation Policy Plan* (*2040 TPP*).

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2040 Transportation Policy Plan: Updated Regional Transportation Benchmarks

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Minnesota has a long and respected history of performance-based transportation planning, operations, and decision-making. The *2040 TPP* advances this philosophy and identifies six goals for the regional transportation system, including a framework for how to achieve them. The goals identified in the *2040 TPP* include:

- Transportation system stewardship
- Safety and security
- Access to destinations
- Competitive economy
- Healthy environment
- Leveraging transportation investment to guide land use

The 2040 TPP goals and objectives respond to Thrive's policy direction and tie to the regional outcomes it identifies.

These goals can directly contribute to the vision in *Thrive MSP 2040*, the Metropolitan Council's long term comprehensive development guide for the seven-county Twin Cities area that provides the vision for our region's future. The *2040 TPP* goals and objectives respond to *Thrive's* policy direction and tie to the regional outcomes it identifies. The *2040 TPP* links each goal with one or more of the Thrive outcomes:

- Stewardship
- Prosperity
- Equity
- Livability
- Sustainability

Consistent with Minnesota practice and U.S. Department of Transportation requirements, the Council is also working to develop performance measures and targets to evaluate the effectiveness of our region's actions on achieving these goals and outcomes. When relevant, these performance measures are now incorporated into the Transportation System Performance Evaluation.

Scope of this Report

This document reviews the changing demographics of the region, focusing on population and employment changes from 2000 to 2015. The review of demographics includes 2000 and 2010 US Census data, as well as 2015 American Community Survey data. The various modes of transportation (highways, transit, freight, bicycle and pedestrian, aviation) are reviewed within their own chapters. Comparisons to peer regions are made where applicable. Each modal chapter includes an existing system description, a review of the system performance where data is available, and a discussion of issues and trends for that system, called Findings and Conclusions.

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Change to "Conclusions"

Findings and Trends

The Region

The Twin Cities region has been gaining population and households steadily since 1970, as shown in **Figure ES-1**. Growth in population has outpaced growth in households leading to a slight increase in average household size.

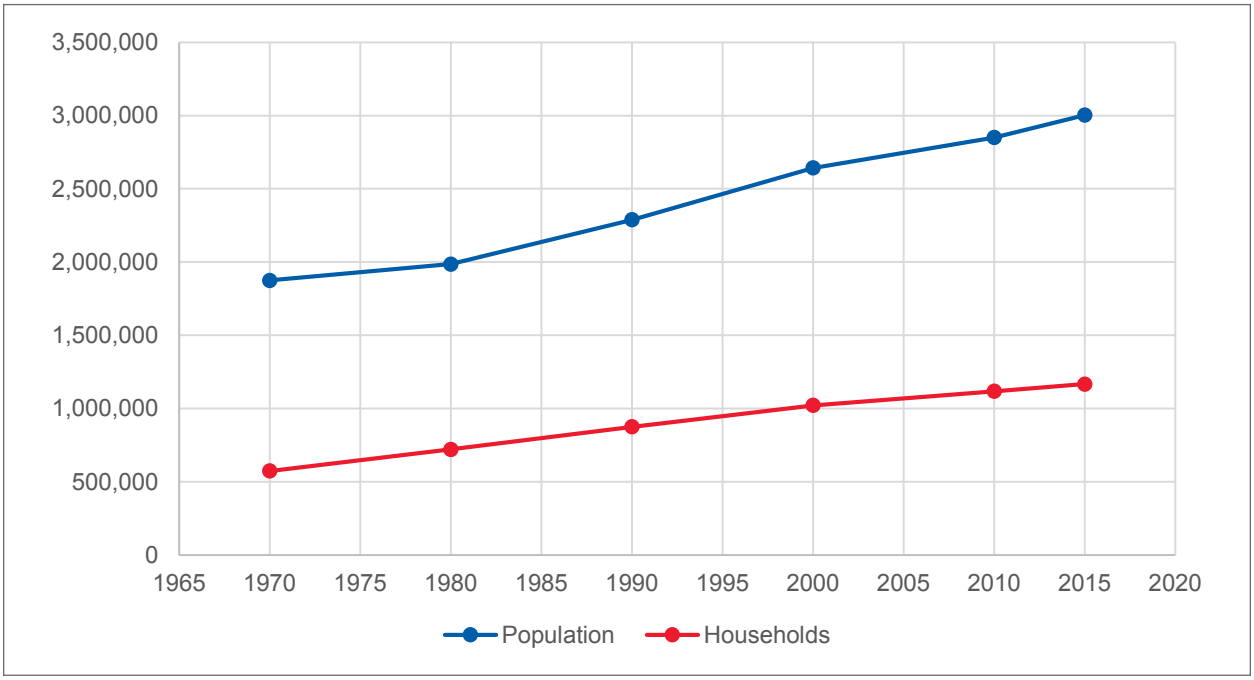

Figure ES-1: Population and Households in Twin Cities Region

Population in the central cities has remained steady, but the regional percentage of households located there has dropped as new households formed or moved to the developing areas over the last 45 years. **Figure ES-2** shows this trend slowed starting in the year 2000, and Minneapolis and Saint Paul added nearly 45,000 people since 2010.

better/too late to change vertical axis labels to every 10 or 20%??

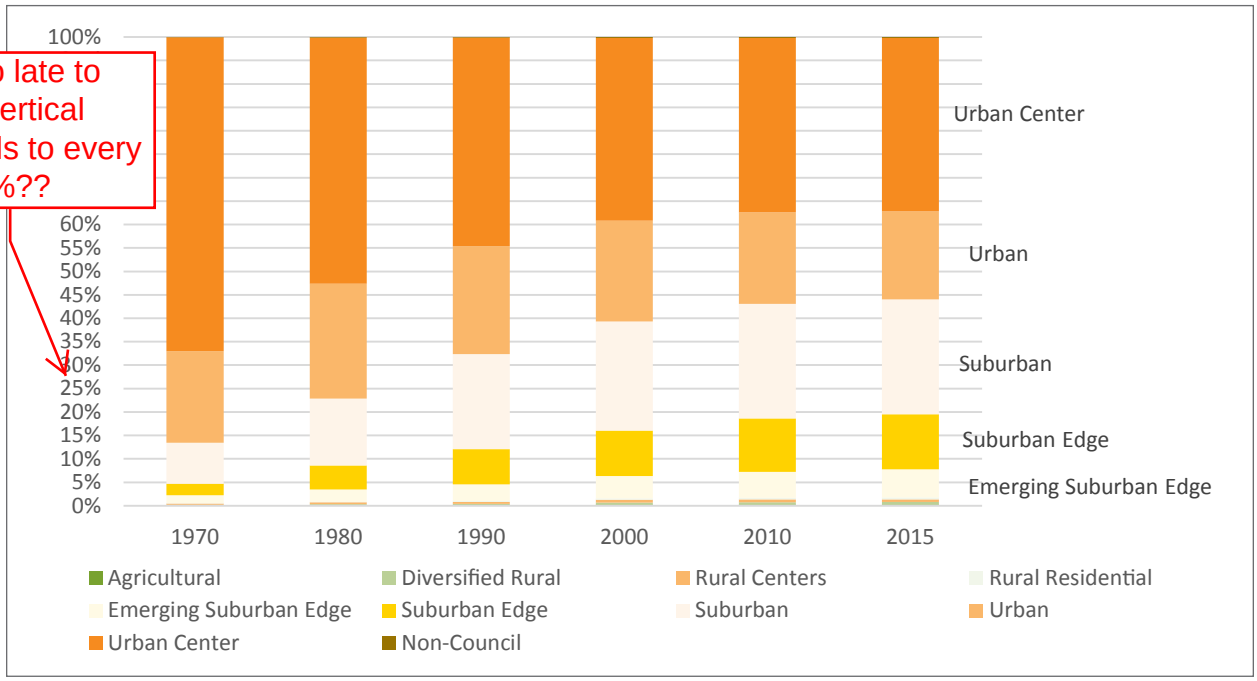

Figure ES-2: Percent Households by Framework Area

With recent high-rise multi-family and infill development, the downtown areas of Minneapolis and St. Paul have the densest areas of population in the region. The central cities are more densely developed than the suburbs. There are pockets of dense development in the outer-ring suburbs, but **Figure ES-3** shows overall, density falls dramatically while moving outward from the downtown areas and central cities.

With recent high-rise multi-family and infill development, the downtown areas of Minneapolis and St. Paul have the densest areas of population in the region.

When analyzed by community designation, there is also an inverse relationship between population density and vehicle miles traveled. As population density decreases by community designation, average vehicle miles traveled per household increases (except in rural centers). In a related fashion, transit commute percentages by community designation increase as population density increases. There is more information on this in Chapter 2.

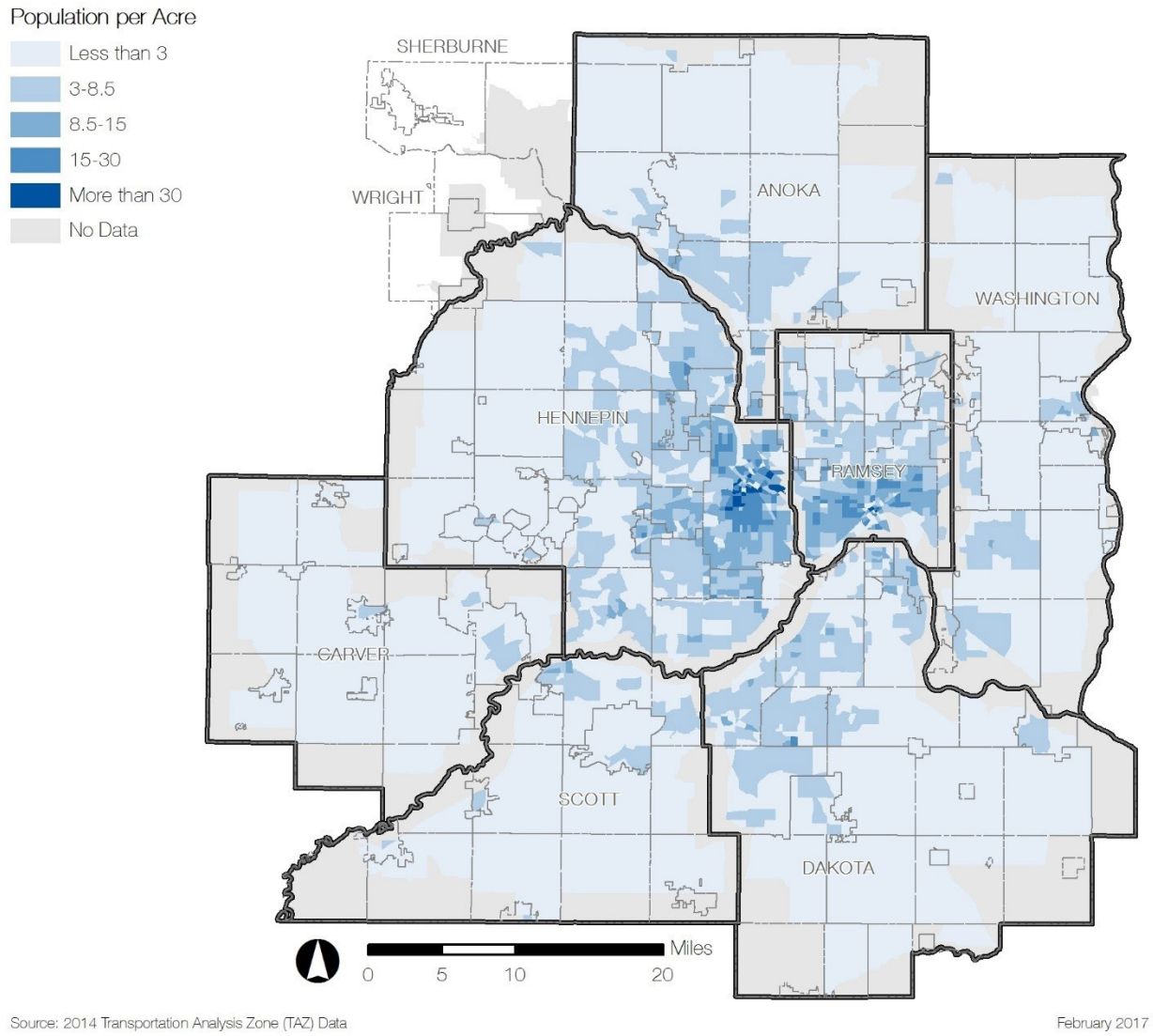

Figure ES-3: 2014 Population Density of Twin Cities Region

The downtown areas of Minneapolis and St. Paul have the highest concentrations of jobs in the Twin Cities region. **Figure ES-4** also shows that outside of the downtown areas, employment density varies greatly. There are several other large job clusters located along major highway corridors, especially in the southwest quadrant of the region.

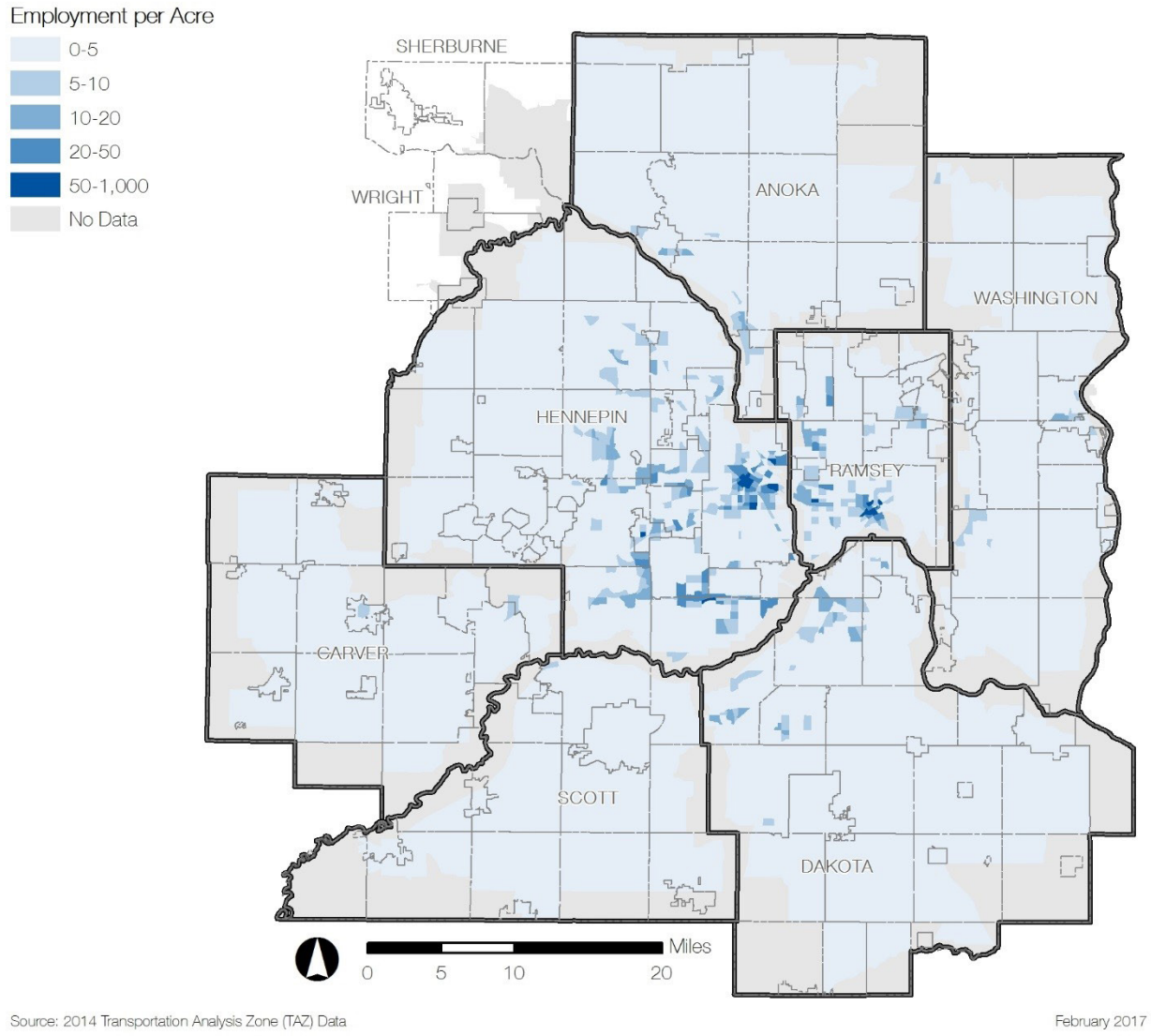

Figure ES-4: Employment Density of the Twin Cities Region

Employment growth has been strong in the region over the last 15 years, especially when acknowledging the impacts from for two economic recessions. However, the recovery has not been geographically balanced. **Figure ES-5** shows from 2000 to 2015, employment fell 3 percent in urban centers, while increasing more than 2 percent in the suburban edge and emerging suburban edge. Over 49 percent of jobs in the region are in suburban areas, compared to just below 46 percent in urban areas.

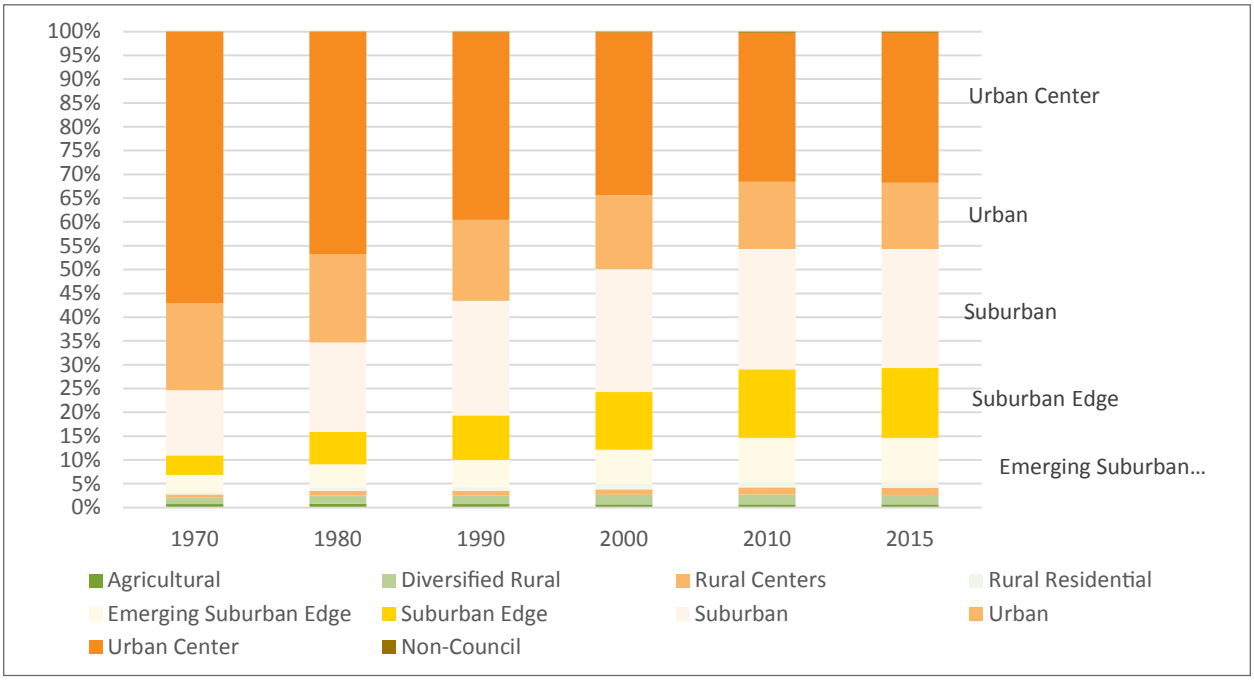

Figure ES-5: Percent Employment by Framework Area

The Highway System

Although the number of peak period commuters has steadily increased, system management strategies such as MnPASS lanes and ramp meters have allowed the region to maintain consistent levels of highway system performance reliability without a significant increase in roadway lane-miles.

Roadway pavement quality in the Twin Cities Region has generally not met Ride Quality Index (RQI) targets since around 2001. However, the percentage of regional principal and non-principal arterials with a good or very good rating has increased slightly since 2009. Additionally, as illustrated in **Figure ES-6**, the percentage of regional principal and non-principal arterials with a poor or very poor rating has generally decreased since 2009. More information is available in the Highway chapter.

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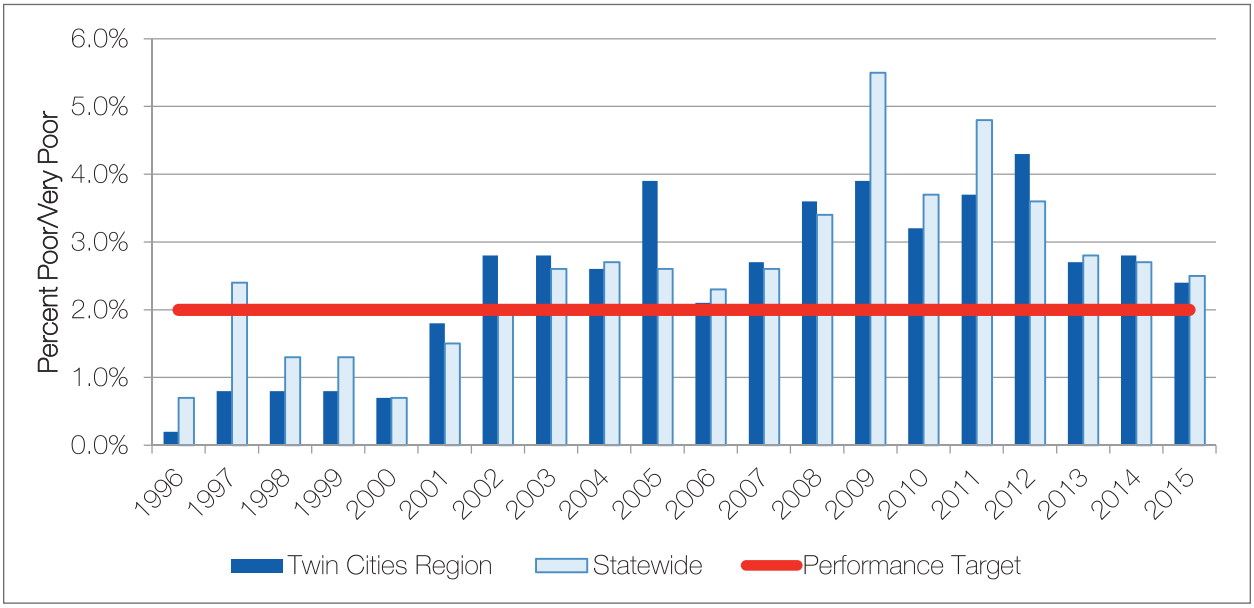

Figure ES-6: Principal Arterials - RQI in Poor/Very Poor Category

The percentage of non-principal arterial bridge area in poor condition increased to a 10-year high in 2015, reaching approximately 7 percent and this trend should be monitored by MnDOT and Metropolitan Council.

In 2015, all MnDOT targets for bridge condition were met for both principal and non-principal arterial bridges in the Twin Cities Region, demonstrating better performance than the statewide averages. The percentage of non-principal arterial bridge area in poor condition increased to a 10-year high in 2015, as shown in **Figure ES-7**, reaching approximately 7 percent and this trend should be monitored by MnDOT and Metropolitan Council. More information is available in the Highway chapter.

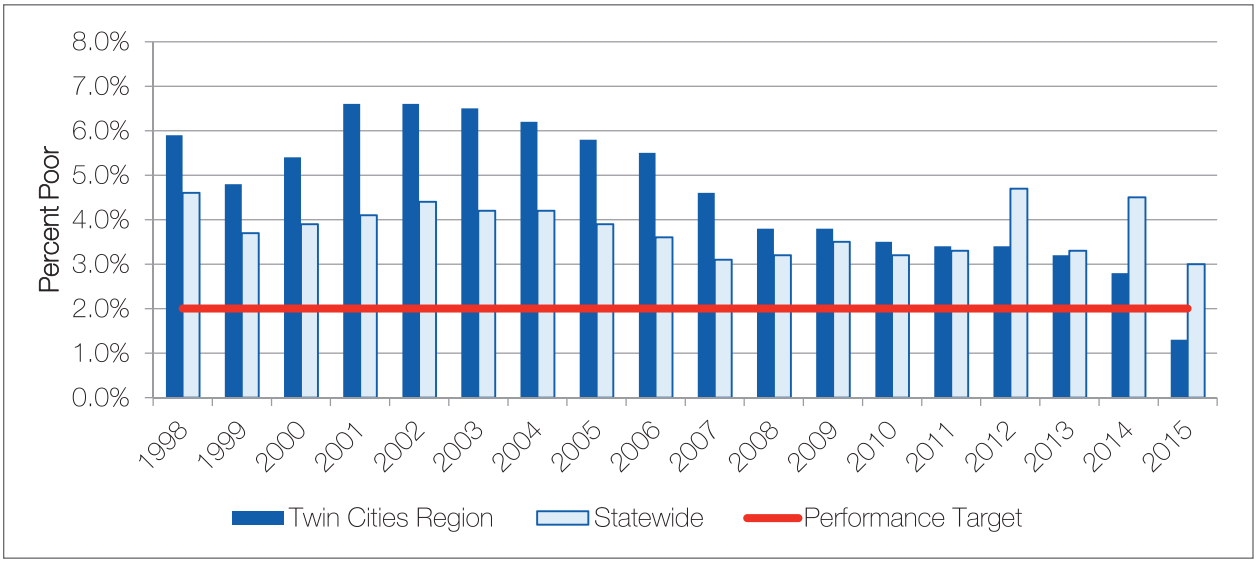

Figure ES-7: Percent Principal Arterial Bridge Area in Poor Category[1]

Annual VMT has generally increased each year, with the exception of a slight reduction in 2012. Figure ES-8 also shows that since 2000, VMT has increased at a much slower pace compared to the 1990s. VMT per person in the Twin Cities generally exceeds the average for peer cities.

1 Source: Texas Transportation Institute

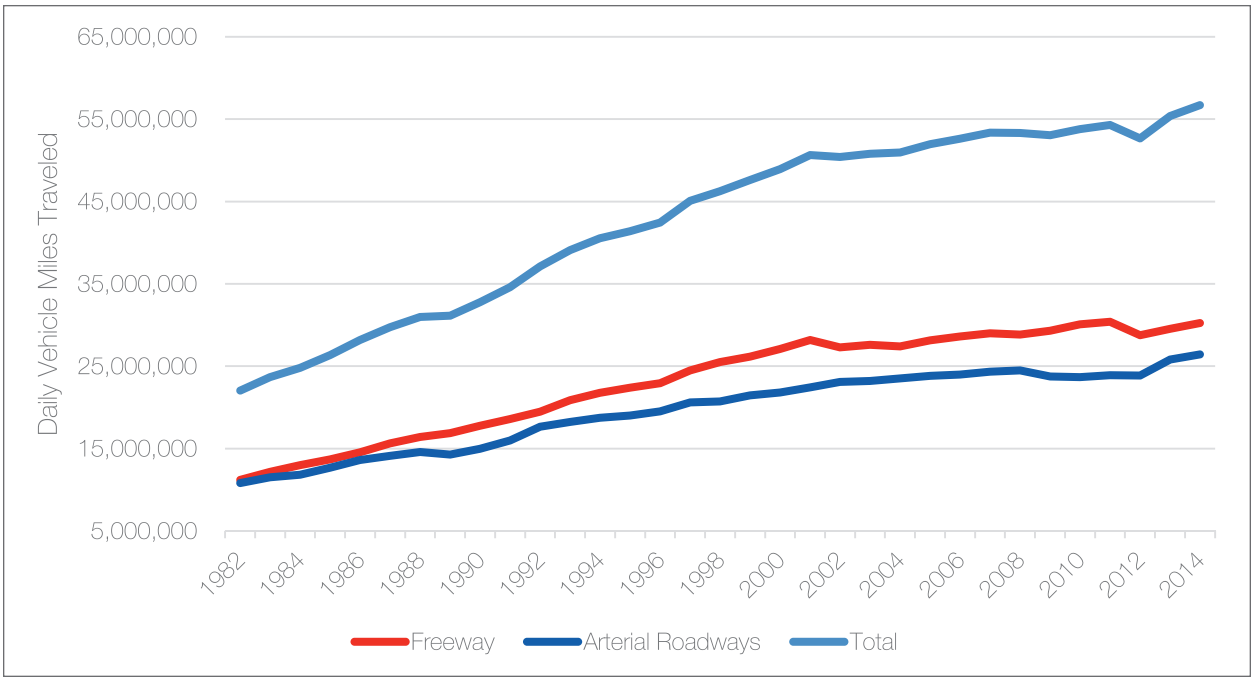

Figure ES-8: Daily Vehicle Miles Traveled – Twin Cities Region

The Transit System

The Twin Cities is home to five public transit providers, and the University of Minnesota Twin Cities transit service.

There are currently six modes of public transit service in the Twin Cities area: commuter rail, light rail transit, bus rapid transit (BRT), regular-route bus, dial-a-ride, and vanpool. The Twin Cities is home to five public transit providers, and the University of Minnesota Twin Cities transit service.

System ridership has increased over time as additional transit options have been added to the system. However, as illustrated in Figure ES-9, bus ridership has been on a decline both in absolute numbers and percentage of system ridership. There are several likely reasons for declining bus ridership. These include:

- Restructuring of the bus network connecting to the METRO Green Line in 2014, resulting in a shift of riders from bus to rail that becomes particularly pronounced in 2014 and 2015 (see **Figure ES-9**)
- Lower fuel prices, creating less of a cost incentive to ride transit
- Growth in the express bus market that occurred during significant regional park-and-ride expansion has tapered off in the last few years
- Construction on the Nicollet Mall and the temporary relocation of bus routes that resulted in a less convenient option for some riders

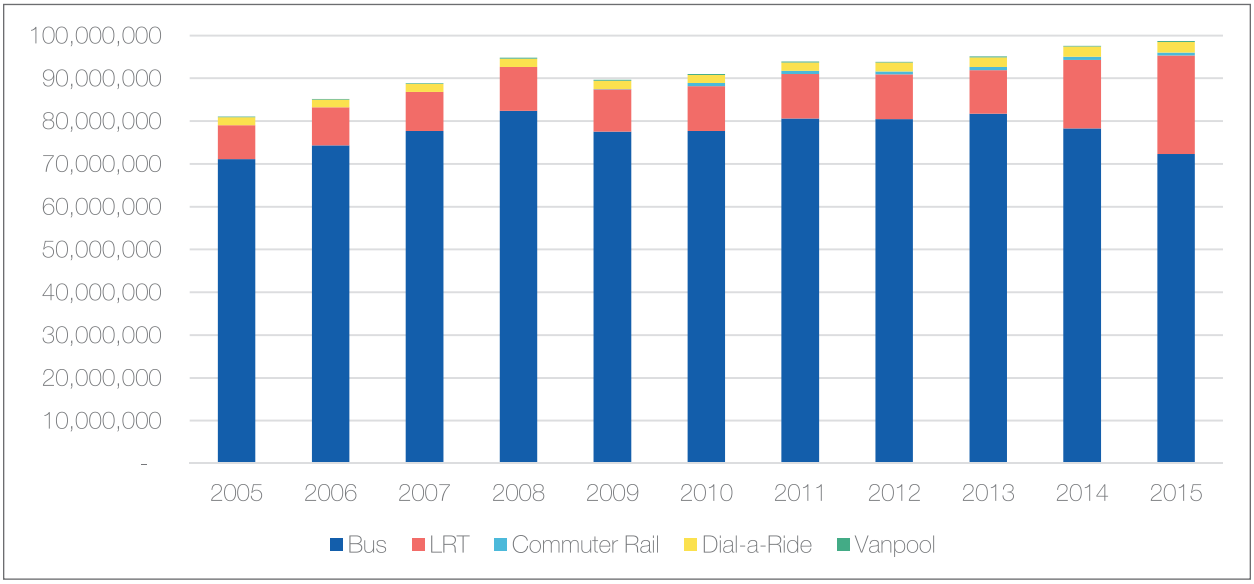

Figure ES-9: Twin Cities Annual Ridership by Mode (2005-2015)

Despite some of these challenges, there have also been a number of success stories in transit where investments result in improved transit performance. The transit chapter includes a more thorough discussion of the following case studies:

- The A Line bus rapid transit project, complete with enhanced stations with off-board fare collection, improved customer information, fewer stops and new buses, opened in 2016 and immediately experienced a 33 percent increase in ridership in the corridor over 2015 levels.
- The METRO Green Line light rail project open in 2014 as the region's second light rail line and ridership is already exceeding ridership projections out 15 years. The line as also experienced over $5 billion of urban development by the end of 2016.
- The METRO Red Line bus rapid transit project opened in 2013 but a major improvement is under construction with plans to open in 2017. The Cedar Grove Transit Station currently a requires a significant detour off Cedar Avenue for the Red Line buses. A new center-median station with skyway connection will save an estimated 10 percent of the cost and attract an estimated 15 percent more riders by providing a significantly faster travel time for riders.
- On the local bus system, the Route 11 was recently upgraded to high-frequency service from south Minneapolis through downtown to northeast Minneapolis. Early indications are that ridership on this route has increased 20 percent over the same time the previous year.

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The region has also spent a significant amount of time and resources expanding the park-and-ride system over the last 10+ years and the result was increased demand for much of the last decade. However, demand growth has tapered off in the last few years, as seen in **Figure ES-10**, and the percent of spaces that are full on an average day has been nearly constant since 2010. The current capacity was built to support population growth for 2030, but tweaks to the system will still likely need to occur to adapt to changing demographics over time.

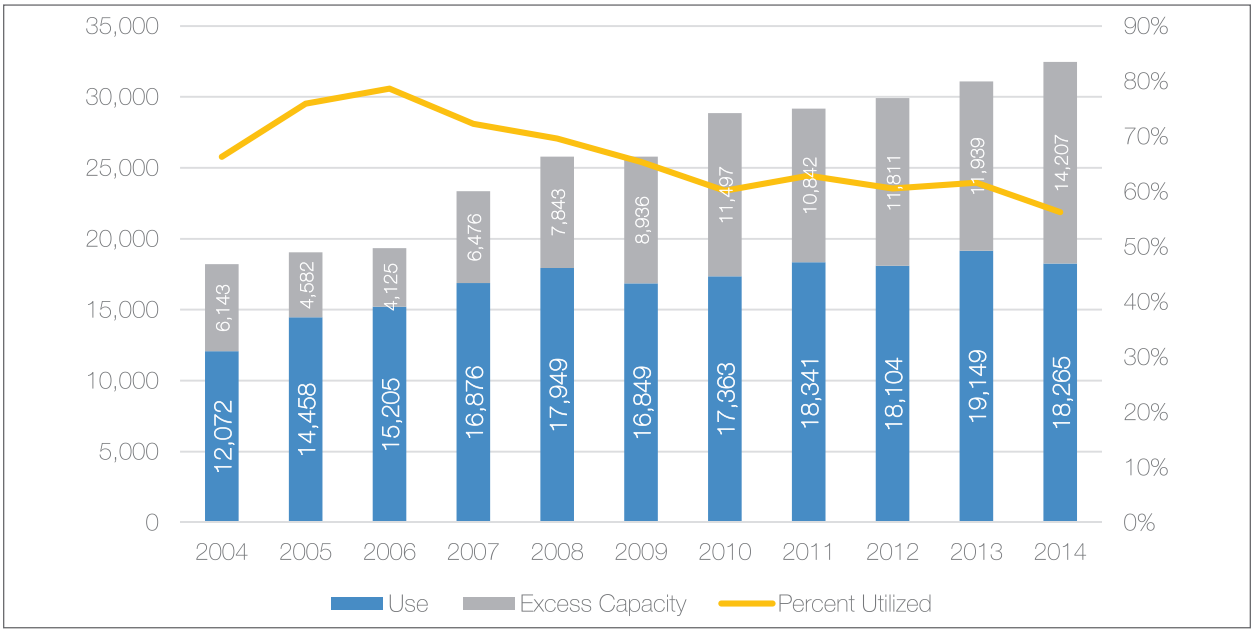

Figure ES-10: Twin Cities Transit System Park-and-Ride Utilization

Regional fare recovery has been declining over time leading to increasing subsidies per passenger as shown in **Figures ES-10** and **ES-11**. A few major contributing factors to this trend include:

- Increasing Metro Mobility ridership driving up its share of regional subsidy
- Declining bus ridership
- Increasing costs without increasing fares (have not had a fare increase since 2008)

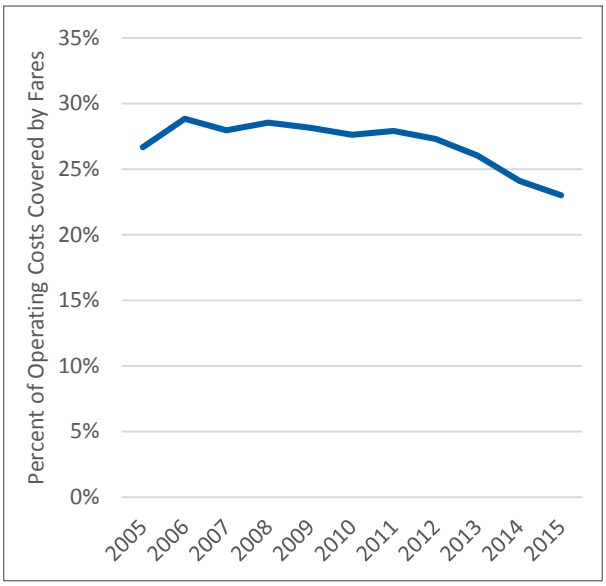

Figure ES-11: Fare Recovery (2005-2015)

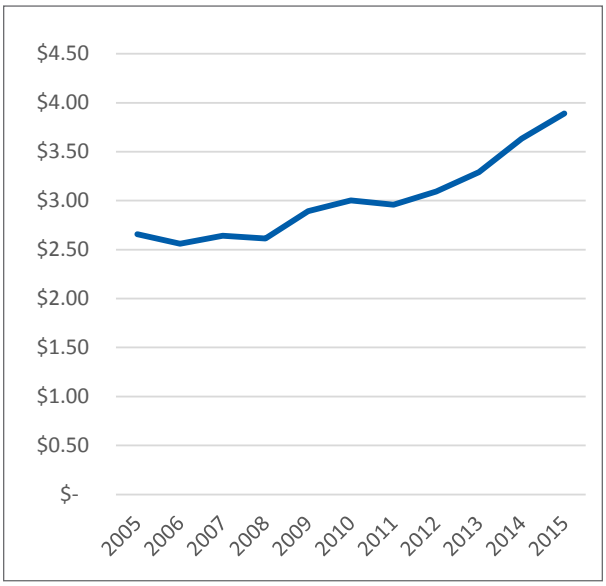

Figure ES-12: Subsidy per Passenger (2005-2015)

The Freight System

Rail continues to carry a significant percentage of freight, moving approximately 25 percent of all freight tonnage into and out of the region in 2012.

Freight shipments to and from the region have recovered from recession levels, and **Figure ES-13** shows total tons of freight shipping to and from the region in 2012 exceeded 2007 levels by 6 percent. Growth in total value has exceeded the growth of freight over those same five years, growing at 13.2 percent. Trucking remains the dominant mode for freight, with trucks carrying 87 percent of total freight value into and out of the region in 2012. Rail continues to carry a significant percentage of freight, moving approximately 25 percent of all freight tonnage into and out of the region in 2012.

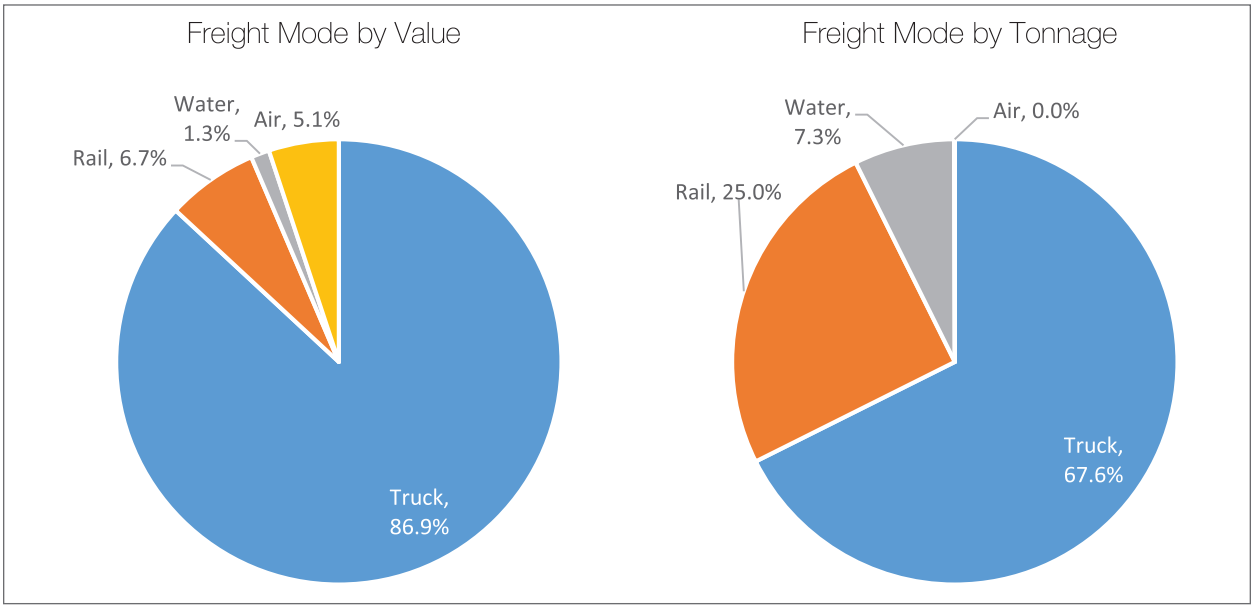

Figure ES-13: 2012 Regional Freight Modal Split by Value and Tonnage (Estimates Based on Multiple Data Sources)

The Bicycle and Pedestrian System

Bicycling and walking have become increasingly important in the Twin Cities for commuting to work or school, running personal errands, and traveling to entertainment and activity venues. The region has a strong infrastructure and policy foundation on which the regional bicycle and pedestrian systems are based, and the potential to further expand biking and walking in the region for transportation is significant.

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According to the 2010 TBI, 6.1 percent of all trips made within the seven-county region are done by walking, and 1.6 percent of all trips are made by bicycle. Between 2000 and 2010, the share of walking trips within the region increased 0.4 percentage points and the share of bicycling trips in the region increased by 0.5 percentage points.

The Regional Bicycle Transportation Network shown in **Figure ES-14** consists of more than 1,300 miles of existing, planned, or anticipated on- and off-road bicycle facilities.

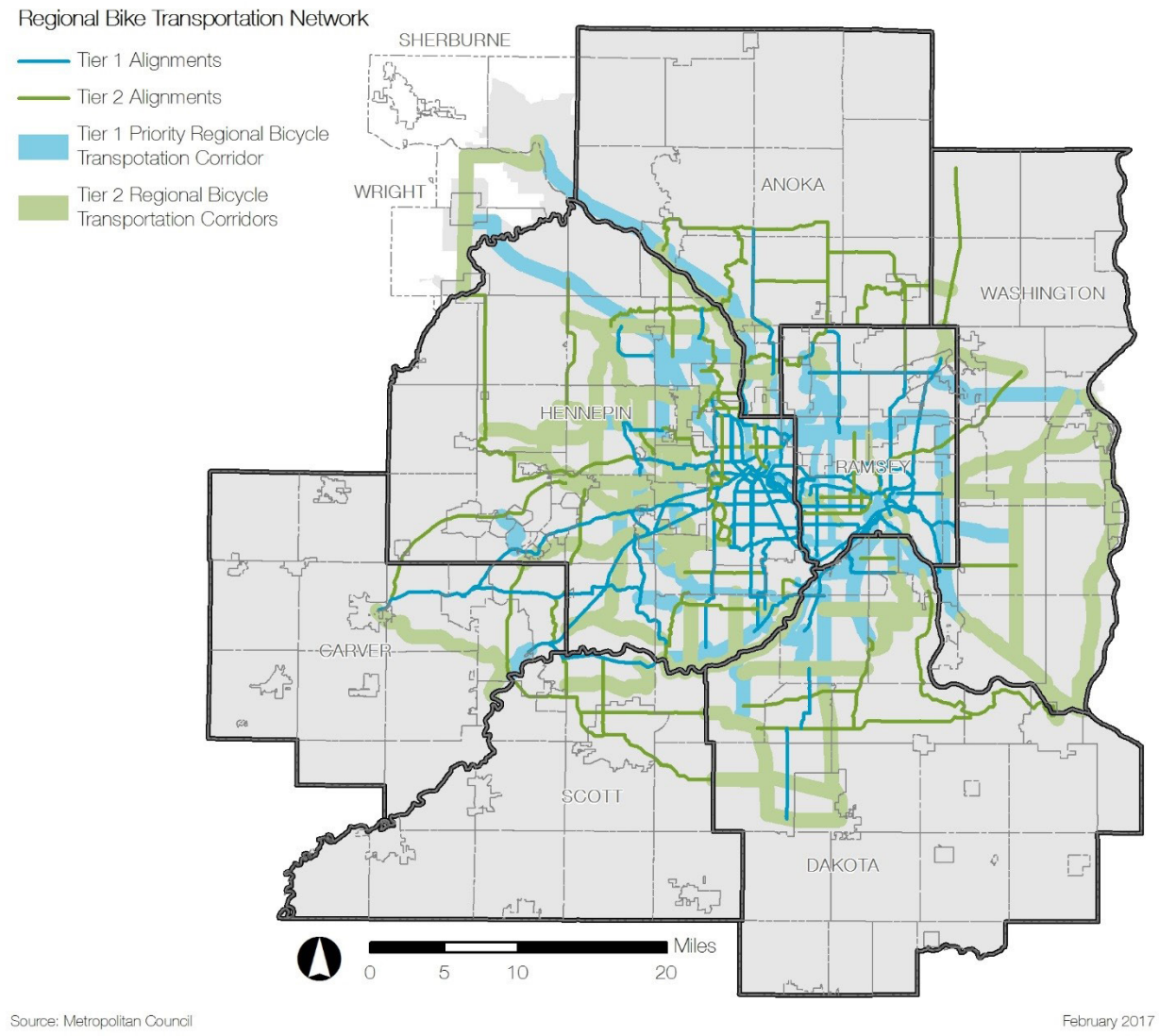

Figure ES-14. Regional Bicycle Transportation Network

The Aviation System

The Twin Cities region aviation system is shown in **Figure ES-15** and consists of eleven airports, one commercial airport and ten general aviation airports, that provide aviation services to the region.

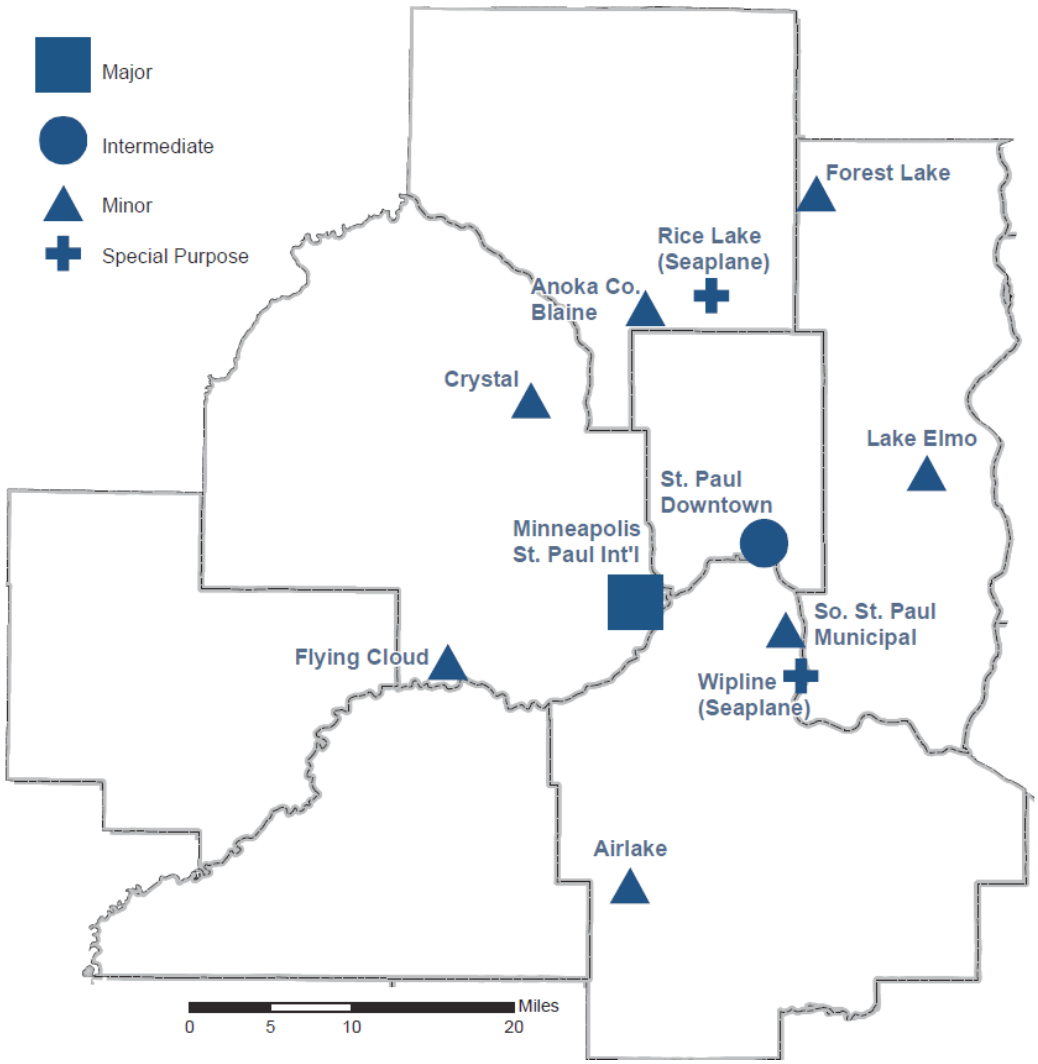

Figure ES-15: Regional Airports by System Role

Since 2010, MSP has experienced a steady increase in passenger enplanements (14 percent) with a corresponding decrease in aircraft operations (7 percent). This trend is consistent with the airline industry trend to focus on productivity and use fewer flights with greater capacity (larger airplanes or simply putting more seats on existing airplanes) to serve major destinations.

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