4.1 OVERVIEW

Our region’s transportation system works extremely well for the majority of users. Eighty-four percent of commuters in our planning area drive alone to work\(^1\), and the average commute time regionally is an enviable 20.5 minutes\(^2\), which is well below state and national averages. Two major interstate highways, I-81 and I-90, pass through Onondaga County and intersect just north of the City of Syracuse. These facilities, along with additional interstates (I-690 and I-481) and a dense network of State, County, and local roads, make it possible for commuters in private vehicles to get from one part of the region to the other efficiently. Freight transportation also benefits from our relatively uncongested Interstate facilities and other major roadways.

The region is also served by a number of multimodal transportation hubs: passenger and freight air service are provided at Hancock International Airport, intermodal freight containers are handled at the CSX DeWitt Rail Yard, and Amtrak passenger rail and intercity bus service, as well as local Centro bus service, are provided at the Regional Transportation Center. Just outside of the SMTC’s MPA, in the City of Oswego, is the deepwater Port of Oswego that handles freight from around the globe.

Centro is the only fixed-route public transit service in the Syracuse area and is operated by the Central New York Regional Transportation Authority (CNYRTA). Centro carries nearly 10 million passengers annually, including passengers on fixed-route services, as well as paratransit and special services for local schools and special events. All Centro bus routes operate out of the Transit Hub in Downtown Syracuse.\(^3\)

\(^1\)American Community Survey, 2014-2018 Estimate. Table B08006.  
\(^3\)Amtrak passenger rail service, intercity bus service, and local Centro bus service are provided at the William F. Walsh Regional Transportation Center.
Bicycle and pedestrian facilities are primarily located within the City of Syracuse and the adjacent towns, as well as some villages in the region. The City of Syracuse and most of the region’s villages have developed extensive sidewalk networks, but few sidewalks exist outside of these areas. However, several suburban communities, such as DeWitt, Cicero, and Camillus have started to incorporate pedestrian facilities along their commercial corridors. These pedestrian facilities need to be continuous in order to meet the needs of pedestrians in terms of both safety and convenience. This is especially true for individuals with mobility or vision impairments, for whom a gap in the sidewalk network could become a barrier to travel. To this end, the City of Syracuse and NYSDOT continue to improve the accessibility of pedestrian resources on their facilities by bringing intersections into compliance with the American’s with Disabilities Act (ADA) standards (see Section 4.8.2 for more information on ADA Transition Plans). In addition to its extensive sidewalk network, the City continues to expand its on-road bicycle facility network. Outside of the City, the only on-road bicycle facilities that currently exist are the route markings for New York State Bicycle Routes 5 and 11 (which are for wayfinding only and do not include dedicated bicycle infrastructure), and marked bicycle lanes on Fly Road in the Town of DeWitt and Milton Avenue in the Village of Solvay. Trail networks have been expanding over the past few years and there are currently three prominent trails in the MPA: the Onondaga Lake Trail (‘Loop the Lake’), the Onondaga Creekwalk, and the Erie Canalway Trail.

Our transportation system works very well for most people in our region, but we know there are still improvements we can make, especially in bicycle and pedestrian facilities and transit.
has also completed a number of recent studies with municipalities in our region that emphasized bicycle and pedestrian mobility, as well as transit enhancement, such as: Armory Square Mobility Plan (2019); Erie Boulevard Transit Mobility Enhancement (2019); Carrier Park Mobility Plan (2018); Connections to Township 5: Bicycle and Pedestrian Assessment (2018); Erie Boulevard East Pedestrian Study (2018); Skaneateles Multi-Use Corridor Study (2018); Central DeWitt Mobility Study (2017); and Western Lights Pedestrian Access Study (2017). All of these are available on the SMTC website.

4.1.1 Transportation system performance reporting

The FAST Act places a strong emphasis on performance measurement using specific objectives, performance measures, and targets. States and public transportation providers must establish targets within one year of the effective date of the final rule, after which MPOs shall coordinate with their respective State and public transportation provider within 180 days to establish the required targets. The MPO can either agree to support the target set by the State or public transportation provider, or establish a quantifiable target specific to the MPO planning area. Section 2.1 of this document lists each of the Federal rulemakings. SMTC has chosen to support all applicable targets set by the NYSDOT and the CNYRTA.

Once targets are established, future project investments must show that progress is being made to achieve individual targets. The LRTP must include a system performance report that describes the condition and performance of the transportation system with respect to the required performance targets, and reports on progress achieved in meeting the targets in comparison with baseline data and previous system performance reports.

With guidance from the LRTP SAC, performance measures were also identified for the LRTP objectives that are not federally-required. These “local” objectives and performance measures highlight additional concerns that the SMTC member agencies and the public have about the transportation system in our region.

The remainder of this chapter identifies the elements of our existing transportation system and the current function of that system in the
context of the goals and objectives described in Chapter 2. Performance measures, baseline conditions, and targets are identified throughout the chapter. The federally-required performance measures include the following:

- Freight movement reliability (see Table 4.1)
- Safety (See Table 4.3)
- Interstate and National Highway System reliability (See Table 4.8)
- Pavement and bridge conditions (See Table 4.9)
- Transit asset management (See Table 4.10)

4.2 FREIGHT

4.2.1 VOLUMES AND VALUE

Freight shipments represent the economy in motion and thus play an integral economic role at both the national and regional levels. The Bureau of Transportation Statistics forecasts an increase in total tonnage shipped in the U.S. from nearly 18 billion tons in 2015, with a value of more than $19 trillion, to over 25 billion tons in 2045, worth an estimated $37 trillion.³

The SMTC published a Freight Transportation Profile for the MPA in 2017 that assists staff and member agencies in the development of plans and programs. The Freight Transportation Profile provides an overview of the freight transportation system in our region, identifies tons and value of commodities traveling through the system, and tracks the primary shipping modes (i.e., air, rail and truck).

The Freight Transportation Profile also summarizes data from the FHWA’s Freight Analysis Framework (FAF), the Brookings Institution’s Metro-to-Metro report, and IHS/Global Insight TRANSEARCH data.⁴ According to the TRANSEARCH data, inbound freight shipments to Onondaga County consisted of 13.5 million tons of freight, valued at

⁴ FAF is an FHWA data source based in part on the 2007 Commodity Flow Survey; Metro-to-Metro is a freight data collection compiled in 2013 as part of the Brookings Institute’s Global Cities Initiative; TRANSEARCH is a proprietary freight planning tool based on a national database of commodity flows. These data sources were the most current available at the time that SMTC created the Freight Transportation Profile (2017). The NYSDOT recently purchased an updated TRANSEARCH data set that contains 2018 data, which will be made available to MPOs.
In 2012, 13.5 million tons of freight were shipped into Onondaga County and 10.5 million tons of freight were shipped out of the county.

A total of 162,345 tons of air cargo landed at Syracuse’s Hancock International Airport in 2018, which was a 7.45 percent increase from 2017. The top three air cargo destinations from Syracuse are Memphis, Louisville, and Buffalo.

4.2.2 FACILITIES

Within the MPA, freight primarily moves via railways and the interstate highways. Air cargo arrives at and departs from Syracuse’s Hancock International Airport. Freight travels through and within our region on interstates, arterials, collectors, and local roadways. To help prioritize investments for planning and capital programming, the SMTC has identified a set of “primary freight corridors,” which are shown

New York State Freight Plan

The NYSDOT adopted its first State Freight Plan in August 2019 to address the state’s multimodal freight network of highways, railways, marine highways, pipelines, airports, and seaports. The Freight Plan helps state agencies, authorities, and partners address infrastructure, regulatory, policy, and operational needs. It identifies goals and performance measures, defines the State Freight Core Highway network, and categorizes short-, medium-, and long-term freight improvement needs. Several MPOs, including the SMTC, participated in the development of the state’s plan.

The Freight Plan includes a summary of SMTC’s highway, air terminal, maritime, rail, and intermodal rail terminal facilities. It also identifies the following corridors within SMTC’s planning area, either partially or entirely, as part of the State Freight Core Highway Network: I-90, I-690, I-81, I-481, and NY 481. The Freight Plan also commits various funds (including NHFP funds) to four highway projects and one rail project in the SMTC planning area to be developed in the short term. Unfunded illustrative projects that are considered medium- and long-term highway projects are also identified, including six such project in the SMTC’s planning area: the I-81 viaduct, various bridge replacement projects, an interchange (I-81 at NY 31) safety project, and a freeway incident management technology project.
on Figure 4.1. These corridors were identified through discussions with various SMTC member agencies. Primary freight corridors were selected based on their functional class, their average traffic volumes, and their proximity to major freight generating businesses.

Ensuring that trucks can access our region efficiently means monitoring pavement and bridge condition ratings along primary freight corridors and strategically investing in these routes. Capital improvements to this roadway network will also increase reliability and maintain low levels of congestion on these corridors.

### 4.2.3 Freight movement – issues and opportunities

Efficient freight movement faces few obstacles in the region, none of which have been identified as seriously impeding economic development. One recurring issue though is the number of roads and bridges with height and/or weight restrictions (this is also a safety concern, and is included in the next section of this document). An example is the elimination (since 2011) of all commercial traffic on the portion of NYS Route 370 known as the Onondaga Lake Parkway, due to a low-clearance railroad bridge. In this case, alternative routing is relatively convenient. However, such detours can mean delays and also may mean damage to vehicles and infrastructure in the event that an oversized truck attempts to use a restricted facility. Future investments should work to reduce the number of height- and weight-restricted facilities in the MPA to eliminate this recurring issue.

Freight movement is most efficient when the roadways traveled by freight are reliable and uncongested. Federal rulemaking defined the Truck Travel Time Reliability (TTTR) Index on the Interstate system as the measure to assess performance associated with the National Highway Freight Program. (See “Congestion measures defined” on page 74 for a full description of the TTTR.) The NYSDOT has established 2-year and 4-year targets for TTTR on the Interstate system, and the SMTC agreed to support these targets. As shown in Table 4.1, the TTTR index for the Interstate system in the SMTC MPA is currently 1.27, which is below the adopted targets.

Reliability and congestion were also assessed in the SMTC’s most recent CMP update, completed in 2019. The CMP analysis focused on
a subset of roadways within the urban area including, but not limited to, the Interstate system. For freight-related reliability and congestion measures, the CMP analysis was further refined to a “CMP Freight Network,” which is highlighted on Figure 4.1.

The CMP used Total Excessive Delay (TED) per mile to assess the level of congestion on road segments. The CMP defined congestion as 40,000 or more person-hours per mile of TED (approximately representing the 90th percentile value for the CMP corridors) on a segment over an entire year, and found that 97 percent of the mileage on the CMP Freight Network is considered “uncongested.”

Table 4.1: Freight system performance measures and targets

<table>
<thead>
<tr>
<th>Objective</th>
<th>Performance measure</th>
<th>New York State Baseline</th>
<th>SMTC MPA</th>
<th>2020 target</th>
<th>2022 target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintain a high degree of reliability for truck travel.</td>
<td>Truck Travel Time Reliability (TTTR) index on the Interstate system</td>
<td>1.38</td>
<td>1.27</td>
<td>2.00</td>
<td>2.11</td>
</tr>
<tr>
<td>Maintain adequate infrastructure conditions on primary freight corridors.</td>
<td>Percent of mileage on the CMP Freight Network with a TTR under 4.00</td>
<td>NA</td>
<td>99%</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Maintain adequate infrastructure conditions on primary freight corridors.</td>
<td>Percent of primary freight corridor mileage with pavement in good condition*</td>
<td>NA</td>
<td>63%</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Maintain adequate infrastructure conditions on primary freight corridors.</td>
<td>Percent of primary freight corridor mileage with pavement in poor condition*</td>
<td>NA</td>
<td>10%</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Reduce congestion on the CMP Freight Network.</td>
<td>Percent of mileage on CMP Freight Network with TED per mile less than 40,000 person-hours/mile</td>
<td>NA</td>
<td>97%</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

Notes:
- TTTR index is the required performance measure for the National Highway Freight Program (NHFP) per federal rules. The SMTC agreed to support the targets established by NYSDOT for freight performance via Policy Committee Resolution No. 2018-14 on December 11, 2018.
- The 2018 condition value for TTTR is provided by the University at Albany Visualization and Informatics Lab (AVAIL). AVAIL’s calculation of the TTTR utilizes truck travel time data, except where truck-only data is too sparse for meaningful calculation, in which case all vehicle travel time data are used.
- NA: All other performance measures (other than TTTR) listed in table were defined by the LRTP SAC and are not federally required. Targets have not been set by the SAC at this time.
- * “Rated” miles only. Freight corridors outside the traditional scope of pavement ratings (e.g. ramps) were not included. For this analysis, Good pavements have a Surface Score of 7-10, and Poor pavements have a Surface Score of 1-5. Ratings are from 2017 and 2018. See the SMTC’s Bridge and Pavement Condition Management System Report for more details.
FIGURE 4.1: PRIMARY FREIGHT CORRIDORS IN THE SMTC MPA

Legend
- Hancock International Airport
- Regional Transportation Center
- CSX DeWitt Rail Yard
- Primary freight corridor - Interstate
- Primary freight corridor - other
- CMP Freight Network (NPMRDS Available)

Data Source: SMTC, 2019
The MPA’s opportunities for expanding freight movement derive from its location. As mentioned in Section 3.2.4, New York State has dedicated funding to expand operations at the existing CSX DeWitt Rail Yard. The region is at the crossroads of I-81 and I-90 (New York State Thruway), and the Port of Oswego is about 40 miles away. A project to expand the port’s rail car storage capacity was recently completed.

4.3 SAFETY

Improving roadway safety for drivers, transit riders, pedestrians, and bicyclists requires cooperation among facility owners. Transportation planners, engineers, law enforcement officers, and emergency medical service providers also serve important roles in reducing the frequency and severity of crashes through the Five Es: engineering, education, enforcement, emergency response, and evaluation. The SMTC plays an important role in this endeavor; as the MPO, the SMTC conducts cooperative studies and analysis on behalf of its member agencies to inform their development of data-driven safety solutions to reduce crash frequency and severity.

4.3.1 RECENT TRENDS

The safety, security, and resiliency of the transportation system is of utmost importance to the SMTC and its member agencies. The MPO seeks to advance the objectives of reducing serious injuries and fatalities for all users of the transportation system, including non-motorized users such as bicyclists and pedestrians. The SMTC consistently reviews crash data, either through the lens of corridor studies or through specific, safety-focused planning efforts. The New York State Department of Transportation maintains an Accident Location Information System (ALIS) database that catalogs information about crashes throughout the state, which the SMTC frequently monitors and uses.

Figure 4.2 illustrates crash data (total crashes) for New York State and the SMTC MPA from 2014 to 2018, and Table 4.2 includes crash rates for New York State and the SMTC MPA. Statewide, outside of a large jump in 2015, fatal crashes have been trending down, but the number of fatal crashes in the SMTC MPA is trending up over the last five years. Bicycle crashes in the MPA are down, and statewide crashes have also been trending down over the last three years, following a

<table>
<thead>
<tr>
<th>Crash statistic</th>
<th>New York State</th>
<th>SMTC MPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1,671.78</td>
<td>2,316.46</td>
</tr>
<tr>
<td>Fatal</td>
<td>4.89</td>
<td>6.35</td>
</tr>
<tr>
<td>Serious Injury</td>
<td>48.24</td>
<td>68.43*</td>
</tr>
<tr>
<td>Bicycle</td>
<td>30.08</td>
<td>20.34</td>
</tr>
<tr>
<td>Pedestrian</td>
<td>75.51</td>
<td>43.83</td>
</tr>
</tbody>
</table>


*Serious Injury data is not available at the sub-County level in the ITSMR database. Since the SMTC MPA includes towns outside of Onondaga County, MPA-level data cannot be obtained for the Serious Injury category. The number in this table represents ALIS data.
large dip in 2015 and then a spike in 2016. Pedestrian crashes both in the MPA and the state show an upward trend outside of large dips in 2016 for the MPA and 2015 for the statewide numbers.

The total number of crashes shown in Figure 4.2 are undercounted prior to 2018. The TSSR database notes that due to a change in the Police.
Accident Report form in 2018, additional “property damage” crashes were captured, compared to prior years. Outside of this spike, total crashes did not change much year-to-year, but trend slightly downward in the MPA and slightly upward in the state. However, we cannot make definitive conclusions about this data.

### 4.3.2 Serious injuries and fatalities from crashes

On March 15, 2016, the Federal Highway Administration (FHWA) published the final rule for the HSIP and Safety Performance Management (Safety PM) Measures in the Federal Register. The NYSDOT Highway Safety Improvement Program (HSIP) annual report documents the statewide safety performance targets. All LRTPs adopted or amended after May 27, 2018, must include performance targets for the safety-related measures.

Starting in February 2018, the SMTC has annually agreed to support the NYSDOT statewide targets for the safety-related performance measures. Table 4.3 summarizes the adopted performance targets, along with the 2011-2015 SMTC baseline data and the most recently-

<table>
<thead>
<tr>
<th>Table 4.3: Safety performance measures and targets (serious injuries and fatalities)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goal: Increase the safety, security, and resiliency of the transportation system</strong></td>
</tr>
<tr>
<td><strong>Objective</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Reduce serious injuries and fatalities.</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td>Reduce the number of fatalities and serious injuries from crashes involving a pedestrian or bicyclist.</td>
</tr>
</tbody>
</table>

**Data sources:** Fatalities: FARS (Fatality Analysis Reporting System), Serious Injuries: NYSDOT ALIS (Accident Location Information System). VMT: NYSDOT. Note that the 2014-2018 VMT figure provided by NYSDOT includes changes to roadway functional classification implemented in 2018, which resulted in fewer miles of local roads and an accompanying decrease in the VMT estimate.

Note: All performance measures in Table 4.3 are required per the final rule for the HSIP and Safety Performance Management Measures. The SMTC agreed to support the safety targets established by NYSDOT via Policy Committee Resolutions: 2018-02 on February 16, 2018; 2018-15 on December 11, 2018; and 2019-09 on December 12, 2019. NYSDOT targets represent a statewide total. SMTC baseline conditions were reported in System Performance Report, Addendum to 2050 Long Range Transportation Plan, adopted via Policy Committee Resolution 2018-18 on December 11, 2018.
County and City Safety Assessments

The Onondaga County Department of Transportation (OCDOT) wants to reduce fatal and serious injury crashes on its road network, and improve its ability to secure HSIP funds and any competitive funds offered through NYSDOT-sponsored solicitations (e.g. PSAP). OCDOT’s road network includes approximately 800 miles of roadways, 113 signalized intersections, and hundreds of County-to-County unsignalized intersections. SMTC reviewed approximately 8,000 crashes that occurred during a 3-year period (2015-2017) and developed an approach to identify 12 ‘hot spot’ locations and six systemic ‘emphasis areas’ (Intersections, Lane Departure, Vulnerable Users, Speed, Age-Related, and Driver Behavior) based on fatal and serious injury crash patterns. SMTC summarized additional crash findings for the hot spot locations, and identified high risk roads unique to each emphasis area. The hot spot crash pattern summaries and the high risk road emphasis area maps inform decisions about where to prioritize safety improvements and safety issues to address, and support funding requests. The SMTC is currently progressing a similar safety assessment for the City of Syracuse.

available (2014-2018) data. Per Federal rulemaking, (i.e., Title 23, Part 490.207 of the Code of Federal Regulations) the safety performance measures are to be calculated as five-year rolling averages, ending in the year for which the target is established.

4.3.3 Height- and weight-restricted bridges

Height- and weight-restricted bridges may pose safety concerns in certain situations, and reducing the number of these bridges in the MPA is one of the objectives identified in the LRTP. The current number of these bridges is listed in Table 4.4.

Weight-restricted bridges are relatively straightforward: bridges with either an R-posting, which indicates a lack of sufficient reserve weight capacity, or a posted load limit, listed in tons. Reconstruction of a structure or some of its elements can potentially remove weight restrictions. There is no universal, comprehensive definition of a height-restricted bridge – this designation can be interpreted in a number of ways. There are different recommendations for clearance depending on the type of facility a structure crosses, whether it crosses the National Highway System, and whether the structure is covered by several different exemptions.
4.3.4 DESCRIPTION OF PROGRESS

As shown in Table 4.3, the number of fatalities and the fatality rate per 100 million vehicle miles traveled (VMT) remained relatively consistent between the two analysis periods (2011-2015 to 2014-2018). The MPA experienced 195 more serious injuries during the 2014-2018 period as compared to the 2011-2015 period. The number of non-motorized fatalities and serious injuries declined slightly. Reducing fatalities and serious injuries has been and will continue to be of the utmost importance for SMTC and its member agencies. SMTC considers safety issues when developing local and regional plans, studies, and initiatives; recent examples include the Onondaga County Safety Assessment and the Bicycle Safety Education Campaign. Recent programming of capital funds to safety-related projects is also noted below.


The NYSDOT released a five-year Pedestrian Safety Action Plan on June 20, 2016. The multi-agency initiative provides funds to improve safety for pedestrians through infrastructure improvements, public education efforts, and enforcement. Within SMTC’s MPA, NYSDOT implemented numerous projects at signalized intersections and uncontrolled crosswalks for a total cost of approximately $3.2M. Additionally,
NYSDOT anticipates constructing pedestrian improvements on Erie Boulevard East between Bridge Street and East Genesee Street by 2021.

In 2018, the NYSDOT established a $40M fund and solicited requests for up to $5.0M in funds from local road owners to implement PSAP countermeasures. Projects funded pursuant to this call for pedestrian projects are eligible to receive up to 100 percent federal HSIP funding. The NYSDOT awarded approximately $1.6M to the City of Syracuse to improve multiple locations along city roadways by 2021.

In total, state and city roadways in the MPA will receive approximately $4.8M towards new systemic pedestrian safety improvements. Once complete, the PSAP countermeasure improvements will contribute to a safer pedestrian environment at numerous locations, which should help reduce the occurrence of pedestrian crashes within the MPA during the coming years.

Safety funds in the TIP. HSIP funds represented approximately three percent of total FHWA funds programmed in the 2014-2018 TIP and in the 2017-2021 TIP. The current 2020-2024 TIP increases the programmed HSIP funds to 5.7 percent of the total FHWA funds available for programming. Although HSIP is one fund source dedicated to safety improvements, safety projects may program multiple funding sources.

In total, the SMTC programmed approximately $51.2M (includes HSIP and other fund sources) for safety-related projects in the 2017-2021 TIP and in the 2020-2024 TIP. The $51.2M is in addition to the $4.8M programmed for the PSAP projects previously discussed, which results in a combined total of $56.0M towards safety improvements. Of the $51.2M, sponsors have constructed projects that total about $14.2M. Projects currently underway will total approximately $31.2M when constructed, and projects that have yet to start will total approximately $6.9M when construction is complete.

Many projects listed in the 2020-2024 TIP, including project types not classified as a safety project, will improve safety. For example, a sidewalk project on Route 11 is categorized as a "bicycle/pedestrian" project but will improve safety for users as well. Of those classified as safety projects, the Onondaga Lake Parkway Safety Improvement
project will address a significant safety issue within the community that has existed for generations. The safety project will address bridge strikes at a low-clearance railroad (CSX) bridge that exists over a state-owned facility (NYS 370), as well as lane departures into oncoming traffic. Bridge strikes have occurred at this location throughout the decades, and have resulted in serious injuries and fatalities. This project is currently underway as of the writing of this LRTP, and $11.1M is currently programmed to address related safety concerns.

4.4 ACCESSIBILITY & MOBILITY

At the regional level, accessibility refers to the degree to which people can get to jobs, stores, schools, needed services, and other destinations. Mobility is a factor in gauging accessibility; mobility is measured by how quickly a person can get from one place to another.

Our system of roads, trails, bus routes, bike routes, and sidewalks has evolved over the past 200 years to ensure both interregional and regional accessibility. Improvements in the last 50 to 60 years have tended to favor passenger vehicle mobility. As a result, our transportation system provides efficient access for this mode throughout the region; although, in some cases, the unintended consequence of wider, faster roads has been to make it harder for people without cars to get from place to place.

4.4.2 CONGESTION

The SMTC completed a new Congestion Management Process (CMP) Status Update in 2019. A CMP is an essential component of the regional transportation planning process. Per FHWA, “the development of objectives for the CMP responds to the goals and vision for the region established early in the transportation planning process.” The CMP objectives were derived from the goals and objectives developed for the LRTP in 2015, and were updated in 2019 to better reflect the applicable performance measures. The CMP includes commonly-used measures of congestion and presents a more detailed examination of congestion in the region than the LRTP.

The CMP analysis focused on roadways that the SMTC categorized as “primary commuter corridors” inside the urban area, which are


- Maintain or exceed 90% reliability on the CMP network over the lifespan of the LRTP.
- Limit congestion levels to 10% on CMP network segments.
- Increase the percentage of transit ridership by 5% in the next 10 years.
- Maintain or exceed 90% on-time performance of transit buses over the next 10 years.
- Increase the percentage of commuting trips made by bicycling or walking by 5% in the next 10 years.
facilities that met at least one of the following criteria: 1) on the National Highway System (NHS); 2) any arterials (principal or minor) with over 10,000 AADT; and 3) connecting roadways (arterials) between the facilities that met the previous two criteria (with preference to the higher-volume arterial if more than one connection exists). The CMP analysis used data from the National Performance Management Research Data Set (NPMRDS), which was not available for every segment identified as a primary commuter corridor. Figure 4.3 shows the primary commuter corridors both on and off the National Highway System (NHS), and also highlights the segments for which 2018 NPMRDS data was available; the highlighted segments were considered the “CMP Network” for analysis. (Secondary commuter corridors include some arterials that did not meet the criteria above, as well as some major collectors. These were not included in the CMP analysis.) The 2019 CMP Update utilized four measures to assess congestion: Total Hours of Excessive Delay (TED) per mile; Truck Travel Time Reliability (TTTR); Travel Time Index (TTI); and Level of Travel Time Reliability (LOTTR). See page 62 for a full description of congestion measures.

The 2019 CMP concluded that, overall, there is very little congestion on the primary commuter corridors inside the Syracuse urban area. There are a few isolated locations that experience congestion, but most of our road network consistently operates very well for drivers. This is evidenced by 88 percent or more of the CMP Network mileage considered uncongested and/or reliable based on the various congestion-related performance measures. For example, as noted in

6 The NPMRDS is a FHWA-procured and -sponsored archived speed and travel time data set, and its associated location referencing data, covering the National Highway System (NPMRDS Descriptive Metadata Document 1.1, page 4). In order to establish the Highway Performance Monitoring System (HPMS), the FHWA contracted with INRIX, a leading firm in the collection of vehicle-probe based data in 2017 to provide real time travel data to States and MPO’s. The data is collected in 5-min epochs by GPS probes from commercial vehicles, connected cars and mobile applications (http://inrix.com/press-release/npmrds). To make use of the extensive amount of available data on the National Highway System, and an expanded network that the NYSDOT has obtained from INRIX, the NYSDOT contracted with SUNY Albany’s Avail Labs to assist in establishing performance measures per requirements set forth by the Federal government. Avail Labs created an online tool that allows users to measure and analyze regional and segment level congestion in a much more concise manner than in previous congestion reports.
**Congestion measures defined**

**Travel Time Index (TTI):** It’s the ratio of travel time during the peak period to the time necessary to make the same trip at free-flow speeds. A TTI value of 1.3 indicates that a 20-minute trip in free-flow conditions requires 26 minutes during the peak period. The TTI is a useful measurement because it provides an easily calculated and understandable congestion measure that identifies recurring peak period bottlenecks.

**Total Excessive Delay (TED) Per Mile:** The TED measure represents the total hours of delay resulting from traffic congestion on the network during the entire year. FHWA defines excessive delay as the extra amount of time spent in congested conditions defined by speed thresholds that are lower than a normal delay threshold. For this measure, the threshold is 20 miles per hour (mph), or 60% of the posted speed limit, whichever is greater, during all hours for the entire year. Excessive delay is totaled and is then weighted by vehicle volumes and occupancy to be expressed as the annual hours of excessive delay on a per capita basis, thus measuring person-hours of delay rather than vehicle-hours. The total is divided by the TMC segment length (in miles) to get TED/Mile for comparison across the network. This measure identifies regularly congested (a.k.a. recurring congestion) higher-volume road segments.

**Level of Travel Time Reliability (LOTTR):** Travel time reliability refers to the consistency or dependability in travel times, as measured from day-to-day and/or across different times of the day ([https://ops.fhwa.dot.gov/publications/tt_reliability/TTR_Report.htm](https://ops.fhwa.dot.gov/publications/tt_reliability/TTR_Report.htm)). For example, if driving a certain route always takes about the same amount of time, that segment is reliable. It may be congested most of the time, not congested most of the time, or somewhere in between, but the conditions do not differ very much from time period to time period. On the other hand, if driving that route takes 20 minutes on some occasions but 45 minutes on other occasions, the route is not reliable. The LOTTR is defined as the ratio of the longer travel times (80th percentile) to a “normal” travel time (50th percentile), using the NPMRDS data. Data are collected during all time periods between 6:00 a.m. and 8:00 p.m. A segment is considered reliable if its LOTTR is less than 1.5 during all time periods analyzed. This measure identifies road segments with highly variable (unreliable) and non-recurring congestion.

**Truck Travel Time Reliability (TTTR):** The TTTR measure assesses travel time reliability for trucks traveling on a road segment. As stated in the LOTTR definition above, travel time reliability refers to the consistency or dependability in travel times. The TTTR ratio is generated by dividing the longer travel times (95th percentile) by the “normal time” (50th percentile) for each segment. Reporting is divided into five periods: the four periods used for the LOTTR measure are shown above plus overnights for all days (8:00 p.m.-6:00 a.m.). The time periods cover all hours of the day. This measure identifies road segments with highly variable (unreliable) and non-recurring congestion.
FIGURE 4.3: PRIMARY COMMUTER CORRIDORS IN THE SMTC MPA

Legend

- Hancock International Airport
- Regional Transportation Center
- CSX DeWitt Rail Yard
- Primary commuter corridor - National Highway System
- Secondary commuter corridor - National Highway System
- Primary commuter corridor - other
- Secondary commuter corridor - other
- NPMRDS Available

Data Source: SMTC, 2019
Table 4.6, 96 percent of the CMP Network mileage has TED below the threshold to be considered congested (less than 40,000 person-hours/mile).

Although our congestion is relatively minor, the CMP does suggest some strategies to reduce congestion even further, such as: implementing traffic signal coordination or signal optimization; promoting ride sharing options with the “safety net” of a guaranteed ride home; providing buses with traffic signal priority; and encouraging employers to allow flexible work schedules.

4.4.3 TRANSIT RIDERS

Rider & Non-Rider Surveys. In 2017, the SMTC worked with Centro to conduct an extensive survey of both bus riders and people who did not use Centro’s bus service (“non-riders”). These surveys were intended to help Centro plan for future service and better understand their potential market in Onondaga County. The rider survey was administered on Centro buses and included questions about the types of trips riders make, common destinations, time spent on the bus, how riders receive information about Centro, and satisfaction with Centro service. One finding of this survey was that, when asked to list places to which they ride the bus most often, roughly one-third of respondents said that they take the bus to DestinyUSA. This was by far the most popular single destination for all riders, regardless of their neighborhood, income level, or race.

Most respondents (91 percent) said that the existing Centro system met their needs, and three-fourths of riders said that they did not consider the Transit Hub (and the need to transfer from one bus to another for many trips) a deterrent to riding transit. When asked to identify the biggest issue with existing bus service, bus frequency was the problem identified by the most respondents, often mentioned in the context of night and weekend service. Many respondents also identified transit access issues in the northern suburbs: Liverpool, North Syracuse, Mattydale, Hancock International Airport, and Baldwinsville.

The target population of the non-rider survey was people living in Onondaga County who could reasonably use Centro (i.e. people who live relatively close to existing routes) but who did not use transit at the
time of the survey. Ten thousand surveys were mailed and 1,125 were returned. Three-fourths of respondents were residents of suburban towns and villages and one-fourth were city residents. Forty percent of respondents indicated that, while they did not use bus service at the time of the survey, they might use transit if service issues could be resolved. Of the service issues these respondents identified, the one that came up the most was frequency. Other major issues were the length of trips by bus, the need to have access to a car during the day (while at work or school), and the lack of a bus line near the respondent’s home. Lack of bus service near “home” is a bigger problem than lack of bus service near “work.” More than twice as many responses indicated that there is no bus service near where people live than those that indicated that there is no bus service near where people work.

The non-rider survey’s results suggest that a substantial number of people in our region might use transit if service was more frequent and if bus service were integrated with some of the other transportation options that have become available in our region in recent years, such as Transportation Network Companies (TNCs), which can make it easier to get between home and a bus stop.

**Current service performance measures.** As the non-rider survey results indicate, infrequent bus service is an obstacle to people using transit. Bus frequency is measured in terms of “headways”: the length of time between buses on a route. In our region, the James Street corridor has the lowest average headway in the region: 7.5 minutes during the morning peak period (with buses running on multiple lines).

Centro adjusts its service standards, like vehicle headways, based on population density. For this purpose, “urban” areas are defined as having 3,600 people per square mile and “suburban” areas as having 1,800 to 3,600 people per square mile. Figure 4.4 shows the parts of our region that fall into each of these categories. Note that there are large parts of the SMTC’s official Urban Area (based on 2010 Census data) that do not meet the Centro definition of urban or suburban population density.

One of the objectives identified for the LRTP is to “provide essential transit service to ‘urban’ and suburban’ areas,” and the SMTC has
developed performance measures for accessibility to bus routes with essential transit service in urban and suburban areas. Essential transit service was defined as bus routes with an average peak headway of up to 30 minutes in urban areas and up to 40 minutes in suburban areas, and “accessibility” was also adjusted according to population density (a half-mile distance to a bus route in urban areas, and a mile in suburban areas).7

In our region, access to essential transit is fairly high, particularly for urban residents. Ninety-one percent of urban residents have access to essential transit during the morning peak period, and 85 percent have access to essential transit during the evening peak period. For suburban residents, these numbers are similarly high. The proportions of suburban residents with access to essential transit are 81 percent during the morning peak period and 89 percent during the evening peak period. Outside of peak periods, these numbers drop considerably: 42 percent of urban residents and 36 percent of suburban residents have access to essential transit during the off-peak hours.

Another way to think about transit service, particularly as it applies to commuters, is to measure the degree to which transit routes that meet peak headway standards overlap with major commuter routes. In our region, 47.1 miles of transit routes with 30-minute average peak headways overlap with primary commuter corridors. Extending this analysis out to bus routes with 40-minute average peak period headways, a total of 75.9 miles of primary commuter corridors overlap with these routes.

Transit oriented development (TOD) zoning can reduce parking requirements and allow higher densities than would otherwise be permitted. As of this writing there are no TOD districts in the MPA. However, the City of Syracuse recently completed a comprehensive overhaul of its zoning ordinance and map, which proposes to reduce (and remove in some areas) parking requirements and increase density in many parts of the city, including along primary transportation

7It is not possible to calculate distances between specific homes and bus lines. This metric uses the best available proxy: whether or not a large proportion (50 percent) of a block group’s land area is near good transit.
FIGURE 4.4: URBAN AND SUBURBAN POPULATION DENSITY IN THE MPA, BASED ON CENTRO SERVICE STANDARDS

Legend
- Centro 'Urban' (3,600 or more people per sq. mi.)
- Centro ‘Suburban’ (1,800 - 3,600 people per sq. mi.)
- Less than 1,800 people per sq. mi.
- 2010 Census Urban Area

Data Source: 2018 American Community Survey 5-Year Estimates
corridors, in mixed-use districts, and near transit stops. (The final draft “ReZone Syracuse” ordinance was completed in December 2019 and the City of Syracuse is currently undertaking a Generic Environmental Impact Statement process.) The SMTC will continue to coordinate with the City and Centro to identify how TOD and bus rapid transit (BRT) concepts can work synergistically to create transit-oriented nodes throughout the city.

**Syracuse Metropolitan Area Regional Transit Study Phase 1 (SMART 1).** One implication of the responses to the non-rider survey is that a major improvement in transit service is needed to attract more riders to transit – an improvement such as enhanced transit service, with very low headways and shorter trip times. One approach to this would be to develop a bus rapid transit (BRT) system in the City (see page 28 for additional background on a possible BRT system in our region). In 2018, the SMTC’s SMART study completed its evaluation of BRT options along two key corridors: the Syracuse University to the Regional Transportation Center corridor, and the James Street/South Avenue corridor, connecting the Eastwood neighborhood to Onondaga Community College. Throughout this project, the SMTC engaged in a public outreach process in order to get as much input, feedback and community involvement as possible.

The BRT concept identified in the SMART Study as the locally-preferred alternative would provide much shorter headways than on most Centro routes: either 15-minute headways throughout the day, or a mix of 10-minute headways during peak hours and 20-minute headways for the remainder of the day. While this “mixed traffic” BRT concept would not create separate lanes for buses, it would reduce trip times along BRT corridors by consolidating bus stops, reducing layover times at the Transit Hub, and adding transit signal prioritization for buses (transit signal prioritization reduces the amount of time buses spend stopped at traffic signals). The SMART study’s preferred alternative is projected to increase total daily ridership within the two corridors served by 600 to 1,000 additional rides taken.

**Work Link study.** After service frequency, the transit service issue mentioned most frequently by respondents to the rider survey was off-peak service: nights and weekends, when bus service is much less
frequent or completely unavailable. Limited service at night and on weekends means that workers who depend on transit are shut out of many second- and third-shift jobs.

In 2017, the SMTC finalized the Work Link study, which focused on transportation options for low-income workers. This project focused on transit’s effectiveness in getting workers to jobs, particularly second- and third-shift jobs. The Work Link Study found that transit routes were generally doing a very good job of reaching employment centers: 78 percent of the more than 250,000 jobs in the county area within a quarter-mile of a bus route. However, while some employment centers are along a transit route, they may see very few buses throughout the day. As Figure 4.5 shows, most suburban employment centers have good transit coverage in the morning commute period (6:00 to 8:00 a.m.). In the off-peak periods, transit service drops off considerably. After 10:00 p.m., bus service to most employment centers is minimal or non-existent, and no buses run after midnight. For workers who rely on transit service, most second- and third-shift jobs are inaccessible.

The SMTC explored several alternatives to fixed-route transit to help fill in these gaps in transit service for low-income workers. The project’s final recommendations included:

- Support Providence Services of Syracuse, a local non-profit organization that is currently working to provide shuttle service to workers based in the City of Syracuse. With additional funding, Providence Services can scale up its vanpool system and market its services to potential clients.
- Offer subsidized rides through a transportation network company, such as Uber or Lyft. This strategy has been used successfully in Florida. In Onondaga County, JOBSPlus! is currently operating a pilot project that offers rides through Lyft to workers who face transportation barriers to employment.
- Create a pool of vehicles using vans owned by local human service agencies to share vans when they are not being used.
- Experiment with pilot projects, like a neighborhood car-sharing program, employer-sponsored vanpools, and car ownership programs.
4.4.4 Pedestrians and cyclists

As of June 2020, there are 23.8 miles of on-road bike facilities in the MPA, the majority of which are found in the City of Syracuse. This includes the Syracuse University Connective Corridor, which features a separated two-way bicycle lane or “cycle track.” There are 41 miles of signed bike route on New York State Bike Route 5 (along NYS Route 31) and 50 miles on New York State Bike Route 11 (primarily on NYS Route 11).

The City of Syracuse has been upgrading its streets to accommodate cyclists. Its long-term strategy for improvements is outlined in the Syracuse Bicycle Plan, which describes a variety of improvements designed to create bikeable corridors throughout the city. In July 2019, the City launched a bike share system with Gotcha Bike, which currently has 35 hubs and 100 bicycles in circulation, with 200 additional bikes on-order (intending to have 200 total bikes available for use at any given time). The system is currently averaging just over 100 rentals per day.
As shown on the SMTC’s 2020 Bike Suitability Map, many of the major roadways within the MPA are considered to have “average” to “good” suitability for cycling (on a poor-average-good-excellent scale), though they may not all have dedicated bicycle infrastructure. The majority of roads in the MPA with wide shoulders, particularly outside of the City of Syracuse, generally accommodate cyclists. Some roads, in areas that are more congested, may benefit from dedicated bicycle infrastructure. In 2013, the SMTC and NYSDOT prepared a Bicycle Commuter Corridor Study to identify preferred corridors for future investments in bicycle lanes and other infrastructure for cyclists, as well addressing some “pinch points” such as intersections and bridges, to encourage more commuting by bicycle. Recommendations for improvements were intended to be implemented as facility owners maintain and improve their roadways.

There are 841 miles of sidewalk in the MPA. Nearly 70 percent of the region’s sidewalks (586 miles) are within the City of Syracuse. Most villages in the region have robust sidewalk networks; a total of 174 miles of sidewalk (21 percent of the region’s total) are in villages. Most towns do not have many miles of sidewalk. There are only 80 miles of sidewalks in the MPA in towns outside of villages, and more than half of this mileage is in two towns: DeWitt (24 miles) and Salina (20 miles).

A well-maintained sidewalk network can contribute to increased property values, decreased reliance on the automobile and health benefits through increased physical activity. At the same time, sidewalks can be expensive to construct and to maintain and may not be appropriate for every thoroughfare in the planning area. The SMTC’s Sustainable Streets Project identifies “priority zones” in which efforts to provide pedestrian infrastructure are expected to yield the greatest benefits. The SMTC will work with its member agencies to ensure that, as improvements are made to the traveled way in these priority zones, improvements are also being made to pedestrian access.

Not including privately-maintained walkways adjacent to the public right-of-way (such as in parking lots or internal to school campuses) or the Radisson Walkway system in the Town of Lysander.

New York’s Complete Streets legislation

In August 2011, Governor Andrew Cuomo signed New York State’s “Complete Streets” law (S5411A-2011). This law requires transportation projects undertaken, overseen, or funded by the NYSDOT to consider the needs of various users, including motorists, pedestrians, cyclists, transit riders, and citizens of all ages and abilities (including children, the elderly, and the disabled). Although the law requires projects funded with state or federal funds to comply, it does not provide any additional funding for designing or incorporating complete street design features into a project. Currently, there is no national Complete Streets policy and locally funded projects are exempt from this law in New York State.
Sidewalks and snow removal. Of the 18 villages in the MPA, 15 do some degree of snow clearance from their sidewalks. Only two towns have a snow clearing program: Camillus and Cicero. In a phone survey of towns and villages in the MPA, most municipalities that reported having a snow clearing program described it as “supplemental” since property owners have primary responsibility for keeping their sidewalks clear. These supplemental programs cover approximately 93 miles of sidewalk in villages (53 percent of all village sidewalks in the MPA) and nine miles of sidewalks in towns (11 percent of all town sidewalks).

In January 2019, the City of Syracuse initiated its first ever municipal snow removal program: a pilot project that hired a private contractor to clear snow from 40 miles of sidewalk along high-priority streets. The City worked with the SMTC to identify priority routes with the greatest

Table 4.5: Total sidewalk mileage in the MPA and snow removal programs

<table>
<thead>
<tr>
<th>Location</th>
<th>Total sidewalk miles</th>
<th>Sidewalk with snow removal</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Syracuse</td>
<td>586</td>
<td>96</td>
</tr>
<tr>
<td>Towns</td>
<td>69</td>
<td>9</td>
</tr>
<tr>
<td>Villages</td>
<td>168</td>
<td>94</td>
</tr>
</tbody>
</table>

Table 4.6: Accessibility and mobility performance measures

**Goal:** Provide a high degree of multi-modal accessibility and mobility for individuals to include better integration and connectivity between modes of travel.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Performance measure</th>
<th>2015 condition</th>
<th>2020 condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce congestion on primary commuter corridors.</td>
<td>Percent of mileage on CMP Network with TED per mile less than 40,000 person-hours/mile</td>
<td>NA</td>
<td>96%</td>
</tr>
<tr>
<td>Provide essential transit service to “urban” and “suburban” areas.</td>
<td>Percent of urban population within 1⁄2 mile of a route with up to a 30-minute weekday peak period headway</td>
<td>77%</td>
<td>91% (AM Peak) 85% (PM Peak)</td>
</tr>
<tr>
<td></td>
<td>Percent of suburban population within 1 mile of a route with up to a 40-minute weekday peak period headway</td>
<td>70%</td>
<td>81% (AM Peak) 89% (PM Peak)</td>
</tr>
<tr>
<td></td>
<td>Number of transit route miles that overlap commuter routes and meet minimum weekday peak headway standards.</td>
<td>30 min. avg. headway</td>
<td>49.7 miles</td>
</tr>
<tr>
<td></td>
<td></td>
<td>40 min. avg. headway</td>
<td>64.1 miles</td>
</tr>
<tr>
<td>Provide higher-quality transit service to TOD nodes.</td>
<td>Number of TOD nodes with access to high quality service</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Provide more on-road bicycle facilities.</td>
<td>Centerline miles of roads with bike infrastructure</td>
<td>15.6</td>
<td>23.8</td>
</tr>
<tr>
<td>Provide more trails to connect destinations.</td>
<td>Miles of multi-use trails that connect destinations</td>
<td>66.5</td>
<td>68.2</td>
</tr>
<tr>
<td>Provide more pedestrian facilities.</td>
<td>Total public sidewalk mileage</td>
<td>812.0</td>
<td>841.0</td>
</tr>
</tbody>
</table>

Data sources: CENTRO, SMTC GIS files
potential for conflicts between vehicles and pedestrians—particularly young children walking to school. Like village snow clearing programs, the City’s snow clearing program is considered supplemental: individual property owners will continue to be responsible for the condition of their sidewalks. The sidewalk snow clearing initiative ensures that continuous corridors are open to pedestrians through the winter months, even if individual property owners neglect their responsibility. The program was expanded in the 2019/2020 winter to include a total of 77 miles of sidewalk.

The Downtown Committee has been providing this kind of supplemental snow clearance on 19 miles of downtown sidewalk for many years. Together, the Downtown Committee and the City of Syracuse clear 96 miles of sidewalk, or about 16 percent of the City’s sidewalks. With the addition of the City’s pilot program, there are just under 200 miles of sidewalk in the MPA with some form of snow clearance service.

### 4.4.5 Air Travel

The Syracuse Hancock International Airport provides passenger and air cargo service to destinations across the northeast (see Section 4.2.1 for air cargo information). The airport is located approximately 7 miles north of downtown Syracuse, and the main entryway—Colonel Eileen Collins Boulevard—connects directly to I-81 approximately three miles north of the interchange with the New York State Thruway (I-90).

In November 2018, Hancock International saw the completion of a $45 million upgrade to its passenger terminal. The renovation modernized the airport’s lobby space and added energy-efficient lighting throughout the airport. With nearly one million passenger enplanements on certified commercial U.S. air carriers in 2019, the Federal Aviation Administration classifies Hancock as a small primary service commercial hub.9 In 2019, the top three single airport destinations from Syracuse by total passengers were Chicago O’Hare, Atlanta, and Charlotte Douglas International airport in North Carolina.10

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10 Bureau of Transportation Statistics T-100 Market Data, Air Carrier Activity Information System, 2019.
4.4.6 **INTERCITY BUS AND RAIL TRAVEL**

Intercity bus service is limited within the SMTC MPA, and does not play a substantial role in moving people within the MPA. Current intercity bus service providers in the MPA include Amtrak, Greyhound, Trailways, and MegaBus, which all operate out of the Walsh Regional Transportation Center (RTC). The RTC is open 24 hours a day, 7 days a week, and is operated by Centro, which also offers connections via their Syracuse, Oswego, and Auburn routes. Frequent destinations to and from the RTC include Rochester, Niagara Falls, Boston, New York, Washington, D.C., and Philadelphia.  

Carriers operating out of the RTC do not report their ridership to Centro. However, Amtrak keeps track of ridership out of their stations. In 2018, 127,000 people traveled through the RTC via Amtrak.

Birnie Bus Service, Inc. also offers intercity travel via bus. They offer service from the Syracuse area to the Turning Stone Resort and Casino in Verona, New York, with pick-ups at Western Lights Plaza, the Centro Hub, and Shop City in Eastwood (seats are limited and offered

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**What about transportation network companies?**

Transportation network companies (TNCs) – commonly known as ride-hailing or ride-booking apps – began operating in Upstate New York in mid-2017 after being authorized by State lawmakers in April 2017. In December 2019, Uber released their latest list of top 10 destinations over the previous year, with Destiny USA at the top of the list for the second time. Four of the destinations are Syracuse University dorms. The remainder of the list includes the Walmart in DeWitt, the Regional Transportation Center, Marriot Syracuse Downtown, Sheraton Syracuse University, and an SU-area bar. Notably, Uber did not include the Hancock International Airport on their published list in 2019, although an Uber spokesperson indicated that this was likely the top destination in the region. (https://www.syracuse.com/news/2019/12/uber-releases-top-10-syracuse-destinations-in-2019.html) The company does not release data on the actual number of trips. Lyft released a very similar list of top 10 destinations in January 2018, after operating in the region for about six months. That list included the airport in the number-one spot, with Syracuse University, Destiny USA, the RTC, Marriot Downtown Syracuse, and a few local bars and restaurants completing the list. (https://www.syracuse.com/news/2018/01/lyfts_new_manager_talks_rideshare_goalsShares_top_10_destinations_in_syracuse.html)
on a first come/first served basis). In addition, they offer a weekday line that travels both eastbound and westbound between Little Falls and Syracuse. Service picks up in Chittenango (at the Route 5 Tops plaza), Fayetteville Towne Center, and in Syracuse in the University area as well as the Centro Hub. Some weekend service is also available.

Continuing to invest in the MPA’s intermodal facility for inter-city bus service will improve the quality of inter-city bus travel. In 2020, the SMTC completed the Regional Transportation Center/Market Area Access Study, which identified opportunities to improve access to the RTC for all modes of travel, with a focus on bicycle and pedestrian accommodations.

4.5 ENVIRONMENTAL IMPACTS OF TRANSPORTATION

As discussed in Chapter 3, the general trend over the past 50 to 60 years has been for development to spread into rural areas. Development can work with the natural environment to enhance it, but historically development has meant the loss and fragmentation of habitat, the degradation of landscapes, and the loss of farmland, and open space. Transportation facilities affect the natural environment both directly, in how they interact with resources like wetlands and riparian areas, and indirectly, by facilitating access to previously undeveloped areas.

4.5.1 ENVIRONMENTAL MITIGATION

Environmental mitigation ensures consistency of transportation planning with applicable federal, state and local energy conservation programs, environmental goals, and objectives. The SMTC’s LRTP is a policy-level document that contains several projects in the later (mid-term) years for which mitigation activities may be appropriate, particularly those that are considered “non-maintenance” projects (see Chapter 6 for a more detailed discussion of potential future projects). However, most of the projects included in this LRTP are maintenance or “replacement in kind” projects that will not increase the capacity of the transportation system. For future projects that may increase system capacity, such as a road widening or interchange improvement, specific mitigation measures will be examined at the project phase via

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What is VMT?

Vehicle miles traveled, or VMT, is often used to summarize how much driving people are doing. Unlike other measures, like commute times or how people get to work, VMT encapsulates all kinds of trips by everyone in a given geographic area. Per capita VMT is an even better measure, since it provides a rough idea of the total number of miles an average person drives in a year.
the State Environmental Quality Review Act (SEQRA) and National Environmental Policy Act (NEPA) processes and are, therefore, beyond the scope of the LRTP.

The SMTC's 2020-2024 TIP document includes maps showing the geographic extent of currently-programmed projects in relation to national register of historic places cultural resources, parks and wetlands. The projects on the current TIP are anticipated to have minimal impact on these resources and will be further researched within the necessary engineering and design phases. Environmental assessments, as required, for each programmed project in the TIP will be conducted by the respective project sponsor.

4.5.2 Stormwater management

As part of the Central New York Stormwater Coalition, CNY RPDB has undertaken a multi-year, Municipal Separate Storm Sewer (MS4s) system features mapping and data collection project. The SMTC developed the region's first interactive digital municipal storm sewer system map for this project, in addition to creating the project's data collection methodology.

The resulting publicly-available map (https://cnyrpdb.maps.arcgis.com/home/index.html) serves as an important compliance tool for tracing the origin of non-stormwater discharges from MS4 systems to receiving lakes and streams, should they occur. Transportation infrastructure such as roadway drainage ditches, swales and culverts comprise a substantial amount of the MS4 system. Although these features are key safety components responsible for moving stormwater runoff away from roadways, they also serve as conduits for pollution. Understanding where these features are located, if they are properly functioning, and/or are in need of maintenance, repair or replacement will support stormwater management goals and public safety concerns. This project has yet to focus on mapping culverts and roadside ditches or overland flow (this is an anticipated future project phase). However, catch basins are mapped which could help crews identify the location of clogged basins in a flooding event.
### 4.5.3 VMT, EMISSIONS, AND ENERGY USE

Nationally, per capita VMT has grown in recent years, after nearly a decade of decline. In 1985, annual per capita VMT was 7,500 miles. By 2005, it had peaked at more than 10,000 miles. The rate of growth had begun to slow in the early 2000s, before declining notably from about 2006 to 2013 (during the recession). More recently, per capita VMT was rising again (pre-COVID-19) reaching about 9,800 in 2018.\(^{12}\)

At the regional level, the transportation system’s greatest environmental impact has been to support a pattern of low density, car dependent suburban development. As a result of this land use pattern, the vast majority of the region’s commuters find it most efficient to drive themselves to work daily and to drive to complete daily tasks. The net result was a 38 percent increase in total vehicle miles traveled (VMT) per capita in our urbanized area between 1990 and 2010.\(^{13}\) However, estimates indicate that, more recently, our VMT per capita has remained steady, at about 10,200 miles (annually) from 2011 to 2017, although this is still higher than the national average.\(^{14}\) The SMTC’s

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\(^{12}\) State Smart Transportation Initiative. "Per capita VMT drops for ninth straight year; DOTs taking notice"

\(^{13}\) Based on Highway Performance Monitoring System estimates provided by the NYSDOT and decennial Census data for urbanized area population, 1990 and 2010.

\(^{14}\) NYSDOT MPA VMT estimates, 2007-2011 ACS Population Estimate, 2013-
Travel demand model predicts that per capita VMT for the Syracuse MPA will increase by about 3.5 percent from 2017 to 2050 (see Section 5.3.1 for a detailed discussion of VMT and the SMTC’s travel demand model).

As long as people are driving fossil fuel-powered vehicles, VMT will translate into vehicle emissions, including carbon monoxide and greenhouse gases. At the same time, it is important to note that while total VMT has increased over time, improvements in vehicle exhaust systems and automobile fuels, and the increased use of alternative fuels, have all meant that air quality in the Syracuse region has actually been improving.

The SMTC utilized the Motor Vehicle Emission Simulator (MOVES 2014b) model, developed by the U.S. EPA’s Office of Transportation and Air Quality, to estimate existing on-road mobile source emissions using the VMT outputs from the SMTC’s regional travel demand model. (More detail on the emissions analysis can be found in Appendix D.) This analysis indicates that about 19,900 tons of carbon monoxide (CO) are emitted annually in the SMTC MPA (or about 55 tons per day). Reducing VMT will reduce on-road mobile source emissions. Both objectives can be accomplished by increasing the percentage of commute trips made by bicycling, walking, and transit.

As more electric and alternatively fueled vehicles come into use,
on-road mobile source emissions will continue to decrease. Increasing the number of available stations for alternative fueling and electric charging in the MPA will support this trend. As of May 2020 there are 54 electric charging locations with 154 charging hook-ups available in the MPA, along with 8 other alternative fueling stations (including compressed natural gas, biodiesel, ethanol and propane). In addition, the Central New York Electric Vehicle Charging Station Plan was completed in May 2016 by the Central New York Regional Planning and Development Board, an SMTC member agency, in collaboration with Clean Communities of Central New York, Energetics, the New York State Energy Research and Development Authority, and the NYSDOT. This group was one of several along the New York State Thruway that developed plans for deployment of electric vehicle charging stations that could support intra-regional travel.

4.6 RELIABILITY

4.6.1 TRAVEL TIME RELIABILITY FOR DRIVERS

From the point of view of the individual using the transportation system, predictability and reliability are critical. Regardless of how long a trip takes, whether it’s a five-minute walk to a nearby convenience store or a 40-minute commute by bus, it is important that people be able to rely on the trip taking this amount of time.

Because it is related to traffic volumes and delays, system reliability is addressed in the SMTC’s Congestion Management Process. Reliability was measured in the CMP, in part, using the Level of Travel Time Reliability (LOTTR) performance measure. See page 74 for a description of LOTTR. This analysis indicated that 78.3 miles of road segments (or about 12 percent of the CMP Network mileage) would be considered unreliable based on LOTTR, leaving about 88 percent of the CMP Network segment mileage considered reliable. Obstacles to achieving reliability are usually temporary conditions, such as construction, accidents, or special events. Efficient management and operation of the existing system can maintain or improve reliability and limit the need for capacity expansion such as road widening. For example, a transportation system that uses elements like intelligent transportation systems can improve reliability for its users, even when
unexpected and unpredictable events arise. An electronic message sign that warns of an accident or construction ahead can encourage drivers who would otherwise sit in traffic to use alternative routes.

Transportation demand management, or TDM, can also help decrease congestion and improve reliability. As the name suggests, TDM focuses on reducing the demand for roadway capacity rather than increasing its supply. TDM strategies include carpooling/ridesharing, off-peak commuting, increased transit use, and denser land uses. Park-and-ride lots offer drivers another convenient means of leaving their vehicles behind and using transit. In 2010, Park-and-Ride lot utilization was 23 percent, based on observations conducted as part of the Central New York Regional Transportation Agency’s (Centro’s) Transit Park-

Table 4.8: System performance (reliability) measures and targets

<table>
<thead>
<tr>
<th>Goal: Improve the reliability of the transportation system and promote efficient system management and operations.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Objective</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Maintain a high degree of reliability on the Interstate system, non-Interstate NHS, and other primary commuter corridors.</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Improve transit on-time performance</td>
</tr>
<tr>
<td>Improve utilization of transit vehicles</td>
</tr>
<tr>
<td>Increase the use of park-and-ride lots</td>
</tr>
<tr>
<td>Implement TDM strategies</td>
</tr>
</tbody>
</table>

Current condition

|                                                                                                                         |                                                                  |                | 90%    |         |             |             |             |
|                                                                                                                         |                                                                  |                | 38%    |         |             |             |             |
|                                                                                                                         |                                                                  |                | 23%    |         |             |             |             |

Notes:
- “Reliable” segments of the system are those for which the Level of Travel Time Reliability (LOTTR) is less than 1.5 during all four time periods analyzed. Interstate and non-Interstate NHS LOTTR are required performance measures for the National Highway Performance Program (NHPP) per federal rules.
- The SMTC agreed to support the targets established by NYSDOT for Interstate and non-Interstate NHS performance via Policy Committee Resolution No. 2018-14 on December 11, 2018.
- Only the four-year target is required for Non-Interstate NHS.
Recent ridership data shows that 211 riders board and 167 alight daily from Centro’s 12 Park-and-Ride facilities located within Onondaga County. The Syracuse Transit System Analysis includes ideas for improving the design of selected park-and-ride lots to make them more efficient and visually appealing. Implementing improvements of this kind can increase utilization of these facilities.

**4.6.2 Transit reliability**

Centro’s Service Standards and Guidelines indicate that Centro’s on-time performance target (a measure of trips completed as scheduled) is 90 percent or greater. A review of the arrival time data from November 1, 2018 to September 30, 2019 found the average on time performance of all transit routes was 90 percent.

Centro also seeks to improve the utilization of transit vehicles by reaching their vehicle load guidelines. Vehicle load is a metric expressed as the ratio of passengers on-board to the number of seats available on a vehicle, at the vehicle’s maximum load point. The vehicle fleet used is matched to the ridership patterns and volumes served by each garage facility. Due to the variety of service area characteristics, vehicle types, amenities, and seating configurations, a “typical” vehicle load standard is difficult to identify. The Service Standards and Guidelines indicate a target maximum load of 100 percent of seating capacity, on average, for off-peak trips and up to 130 percent of seating capacity for the peak hour. On an average day, Centro overall operates at about 40 percent of utilization. During an average AM and Peak hour, a certain line(s) operate at over 100 percent capacity.

The SMTC’s most recent CMP evaluated reliability of the CMP Network segments that are utilized by Centro bus routes, using the TTI, TED, and LOTTR performance measures. The CMP analysis found 92 percent of the mileage of the CMP Transit Network to be uncongested based on TTI, and 93 percent of the mileage to be uncongested based on the TED measure. Using the LOTTR measure on the CMP Transit Network, 84 percent of the mileage was found to be reliable.

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15 This was a one-time data collection effort as part of a study, and has not been a recurring item.
4.7 SYSTEM PRESERVATION

Ensuring that our transportation system is in a state of good repair typically uses three-fourths of the region’s approximately $300 million dollar (over 5 years) federal transportation allocation. There are approximately 4,000 centerline16 miles of road and 550 roadway bridges in the MPA. There are also 305 miles of active railroad, 841 miles of sidewalk, and 66 miles of off-road trails in our region. Heat, sunlight, salt (in the case of roads and bridges), and repeated freeze-thaw cycles as well as wear and tear from vehicles and snowplows degrade the condition of these assets over time.

The MPA includes 109 miles of Interstate roads, and 179 miles of non-Interstate NHS pavements.17 Additionally, within the MPA, there are 256 bridges (with approximately four million square feet of total deck area) that carry the NHS. As shown in Table 4.8, the MPA has a smaller percentage than the statewide average of NHS bridge deck area in Good condition, but also has a smaller percentage than the statewide average in Poor condition.

The LRTP addresses preservation of the transportation system and identifies infrastructure needs within the Syracuse metropolitan region, and projects funding for pavement and bridge condition improvements over the next 30 years. The five-year Transportation Improvement Program (TIP) for the MPA directly allocates funds to major pavement and bridge repair/rehabilitation/replacement efforts; Chapter 6 of this document provides additional details.

4.7.1 BRIDGES AND PAVEMENT

FHWA published the Pavement and Bridge Condition Performance Measures Final Rule in January 2017. This rule, which is also referred to as the PM2 rule, established six performance measures for pavement and bridge conditions. The four pavement condition measures represent the percentage of lane-miles on the Interstate and non-Interstate NHS that are in Good condition or Poor condition. The two bridge condition performance measures indicate the percentage of bridges by deck area

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16 A linear centerline mile of road is a continuous line of pavement along the center of the length of pavement, regardless of the number of traffic lanes.
17 BPCMS, 2018-2019 (ramps not included)
on the NHS that are in Good or Poor condition.

The SMTC annually compiles pavement ratings and bridge conditions in a single document, the Bridge and Pavement Condition Management System (BPCMS) report. The BPCMS provides an overview of bridge and pavement conditions, describes what constitutes Good, Fair, and Poor bridge and pavement ratings, and it includes performance measure calculations consistent with federal regulations.

**Pavement rating.** Prior to the PM2 rule, pavement was rated on a scale of 1-10, based on the frequency and severity of surface cracking. The PM2 rule specifies that pavement condition is rated based on cracking, faulting (concrete) or rutting (asphalt), and International Roughness Index (IRI) or the Present Serviceability Rating (PSR – only for routes with speed limits less than 40 mph). Pavements are rated Good, Fair, or Poor based on the values of these individual metrics. Pavement in Good condition suggests that no major investment is needed. Pavement in Poor condition suggests major reconstruction investment is needed in the near term.

Given that the collection of these metrics requires specialized equipment, the NYSDOT leads the data collection effort statewide. NYSDOT collects these metrics on the entirety of the State system every year, and on the entirety of the federal-aid system (regardless of ownership) over the course of two years. Although not currently available to MPOs, it is anticipated that this data collected by NYSDOT will become the basis for scoring performance within the SMTC MPA.

As a separate effort for local planning, the SMTC also rates all roads owned by the City of Syracuse and all federal-aid eligible roads owned by Onondaga County using the pre-PM2 1-10 scale, and will likely continue to do so for the foreseeable future.

**Bridge rating.** All public roadway bridges are inspected by the NYSDOT, with every bridge inspected at least once every 24 months. The NYSDOT then reports condition data to FHWA. The performance measures assess the condition of four bridge components: deck, superstructure, substructure, and culverts. Ratings are done on a scale of zero to nine. For each component, ratings are: less than or equal to
4 - Poor; 5 or 6 - Fair; greater than or equal to 7 - Good. If the lowest rating of the four metrics is greater than or equal to seven, the structure is classified as good. If the lowest rating is less than or equal to four, the structure is classified as poor. The bridge condition measures are expressed as the percent of NHS bridges in good or poor condition. The percent is determined by summing the total deck area of good or poor NHS bridges and dividing by the total deck area of the bridges carrying the NHS. Deck area is computed using structure length and either deck width or approach roadway width.

Bridges in good condition suggest that no major investment is needed. Bridges in poor condition are safe to drive on; however, they are nearing a point where substantial reconstruction or replacement is needed.

**Pavement and bridge condition targets and reporting requirements.** Performance for the PM2 measures is assessed over a series of four-year performance periods. The first performance period began on January 1, 2018 and runs through December 31, 2021. NYSDOT must report baseline performance and targets at the beginning of each period and update performance at the midpoint and end of each performance period.

NYSDOT established statewide PM2 targets on May 20, 2018. The SMTC was then required to establish PM2 targets no later than November 16, 2018. The SMTC agreed to support NYSDOT’s PM2 performance targets on December 11, 2018 via SMTC Policy Resolution No. 2018-14. By adopting NYSDOT’s targets, the SMTC agreed to plan and program projects that help NYSDOT achieve these targets.

The federal performance measures are new and, therefore, performance of the system for each measure and associated targets have only recently been assessed and developed. Accordingly, this first LRTP system performance report highlights performance for the baseline period of 2017. NYSDOT will continue to monitor pavement and bridge condition performance and report to FHWA on a biennial basis. Future system performance reports will discuss progress towards meeting the targets since this initial baseline report.
Table 4.9 presents baseline performance for the pavement and bridge condition performance measures for New York and for the SMTC planning area as well as the two-year and four-year statewide targets established by NYSDOT and adopted by the SMTC.

Additionally, the SMTC established the objective of preserving and maintaining ancillary transportation structures. The performance measure associated with this objective is the percent of large culverts with a condition rating less than 5. According to the NYSDOT, large culverts have an opening measured perpendicular to the centerline of the culvert greater than or equal to 5 feet, including multiple pipe structures where the clear distance between pipes is less than half of the smaller pipe diameter. Structures having an opening measured along the centerline of the roadway greater than 20 feet, including multiple pipe structures where the clear distance between pipes is less than half of the smaller pipe diameter, are categorized as bridges and inventoried and inspected under New York State’s Bridge Inventory and Inspection Program, and are included in the bridge performance measures listed above. The SMTC obtained a list of large culverts in the MPA from the NYSDOT. According to the most recent inspection, 33.6% of culverts have a condition rating less than 5 in the MPA.

On or before October 1, 2020, NYSDOT will provide FHWA and the SMTC a detailed report of pavement and bridge condition performance covering the period of January 1, 2018 to December 31, 2019. NYSDOT and the SMTC will also have the opportunity at that time to revisit the four-year PM2 targets.

4.7.2 Pedestrian facilities and trails

The SMTC’s inventory of sidewalks in the City of Syracuse includes a block-level rating of the sidewalk’s compliance with City ordinances (i.e., sidewalks should be a continuous strip of concrete, running

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19 The frequency of inspection required for each culvert is determined by the overall General Recommendation given as a result of the inspection. An Annual Inspection is required if the General Recommendation is 1 or 2. A Biennial Inspection is required if the General Recommendation is 3 or 4. A Quadrennial Inspection is required if the General Recommendation is 5, 6 or 7. Ratings are current through CY 2019.
### Table 4.9. Infrastructure condition performance measures and targets

**Goal: Strategically preserve our existing infrastructure and focus future investment in areas that are already served by significant public infrastructure investments**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Preserve and maintain pavement</strong></td>
<td>Percent of Interstate pavements in good condition</td>
<td>52.2%*</td>
<td>69.7%**</td>
<td>46.4%*</td>
<td>47.3%</td>
</tr>
<tr>
<td></td>
<td>Percent of Interstate pavements in poor condition</td>
<td>2.7%*</td>
<td>7.4%**</td>
<td>3.1%*</td>
<td>4.0%</td>
</tr>
<tr>
<td></td>
<td>Percent of non-Interstate NHS pavements in good condition</td>
<td>20.4%</td>
<td>46.7%**</td>
<td>14.6%</td>
<td>14.7%</td>
</tr>
<tr>
<td></td>
<td>Percent of non-Interstate NHS pavements in poor condition</td>
<td>8.3%</td>
<td>24.2%**</td>
<td>12.0%</td>
<td>14.3%</td>
</tr>
<tr>
<td><strong>Preserve and maintain bridges</strong></td>
<td>Percent of NHS bridges (by deck area) in good condition</td>
<td>22.8%</td>
<td>17.9%</td>
<td>23.0%</td>
<td>24.0%</td>
</tr>
<tr>
<td></td>
<td>Percent of NHS bridges (by deck area) in poor condition</td>
<td>10.6%</td>
<td>10.4%</td>
<td>11.6%</td>
<td>11.7%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preserve and maintain ancillary transportation structures</td>
<td>34%</td>
<td>34%</td>
</tr>
<tr>
<td>Preserve and maintain pedestrian facilities</td>
<td>57%</td>
<td>59%</td>
</tr>
<tr>
<td>Assist communities in creating, maintaining, and utilizing asset management systems.</td>
<td>0</td>
<td>2 (in-progress)</td>
</tr>
</tbody>
</table>

*Source: NYSDOT BDIS, ratings from 2018 and 2019. An NHS bridge is defined as a structure carrying the National Highway System.*

Note: Interstate and non-Interstate NHS pavement conditions and NHS bridge conditions are required performance measures per federal rules. The SMTC agreed to support the targets established by NYSDOT for pavement and bridge conditions via Policy Committee Resolution No. 2018-14 on December 11, 2018.

*These values were calculated by NYSDOT and agreed to by the SMTC on December 11, 2018. These may differ compared to values published by the Federal Highway Administration, which utilized a different calculation methodology.*

**This information is based on 2017 and 2018 data collected using the NYSDOT Surface Score Scale, and cannot be directly compared to the performance targets because the targets involve the newer condition rating system required by the Federal guidance. However, this was the most recent data made available to the SMTC at the time the LRTP Update was completed. Consistent with the NYSDOT Transportation Asset Management Plan (2019), for this analysis “Good” pavements have a Surface Score of 7-10, and “Poor” pavements have a Surface Score of 1-5. See the SMTC’s Bridge and Pavement Condition Management System Report for more details.*
through driveways).\textsuperscript{20} Based on this inventory, 347 miles (out of a total of 586 miles), or 59 percent, of the City’s sidewalks currently fall into the “very good compliance” or “perfect compliance” categories. At this time, no similar compliance rating data are available for sidewalks outside of the city.

The City of Syracuse has expressed an interest in taking responsibility for sidewalk maintenance throughout the city. Currently, maintenance of City sidewalks is the responsibility of the owner of the property adjacent to the sidewalk (this is also true in most other municipalities in the MPA). In his 2020 State of the City address, City of Syracuse Mayor Ben Walsh stated that the current system of sidewalk maintenance “creates frustration with city government; hardship on residents; and, sometimes, ill-will between neighbors.”\textsuperscript{21}

Other Upstate New York cities that have taken over the responsibility for sidewalk maintenance have developed a source of revenue dedicated to sidewalk maintenance. The City of Ithaca imposes fees on property owners based on a combination of land use and sidewalk frontage length. The City of Syracuse should consider developing a similar revenue source, as well as an efficient means of periodically evaluating, and tracking improvements in, sidewalk conditions.

\textbf{4.7.3 Asset management}

Although the MPO does not maintain any formal asset management systems for purposes of recommending maintenance on or tracking improvements to individual transportation systems owned by member agencies, the SMTC remains one of the preeminent sources for spatially referenced transportation-related data in the region, and routinely issues reports on the condition of the system. The annual Bridge and Pavement Condition Management System report serves as an example of the SMTC’s access to asset data in action. As a collaborative planning agency, the MPO is uniquely positioned to foster data-sharing relationships between member agencies in order to coordinate infrastructure maintenance planning.

\textsuperscript{20} For more information on sidewalk ratings, see Chapter 4 of the SMTC’s Sustainable Streets: Sidewalk Reference Manual.

Member agencies have leveraged the SMTC’s data in efforts to develop and/or improve their own asset management systems to track infrastructure improvements. After recognizing the value in pavement condition data collected by the SMTC, the City of Syracuse requested the MPO’s assistance in developing a pilot program for recommended pavement maintenance prioritization, improving on their existing decision-making process. Additionally, the City of Syracuse is seeking the SMTC’s input in developing a program for long-term sidewalk maintenance. Advancing efforts like these fit the objective identified in this LRTP of assisting communities in creating, maintaining, and utilizing asset management systems.

4.7.4 TRANSIT ASSET MANAGEMENT

As a recipient of federal transit funding, federal law requires that CNYRTA develop and implement a Transit Asset Management (TAM) plan per regulations established by the Federal Transit Administration (FTA). TAM is a business model that prioritizes funding based on the condition of transit assets to help achieve or maintain transit networks in a State of Good Repair (SGR). The FTA establishes SGR standards as well as performance measures and targets for four transit asset categories: rolling stock, equipment, infrastructure, and facilities.22

As a Tier I provider, Centro must report on the SGR measures for the following three (out of four) asset categories:

- Rolling stock (revenue vehicles): Percent of vehicles that have either met or exceeded their Useful Life Benchmark (ULB)
- Equipment (including non-revenue service vehicles): Percent of vehicles that have either met or exceeded their ULB
- Facilities: Percent of facilities rated below condition 3 on the FTA’s Transit Economic Requirements Model (TERM) scale

The infrastructure category (rail fixed guideway, track, signals and systems) does not apply to Centro because it is a bus-only transit property.23

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22 CNYRTA TAMP, November 1, 2018, Section 3 – Federal TAM Requirements, pp. 11-16.
23 CNYRTA TAMP, November 1, 2018, Section 3 – State of Good Repair Performance Measures, pp. 11.
Pursuant to these requirements, CNYRTA’s Board of Members adopted the TAM plan via Resolution No. 2373.24 The final TAM plan (dated November 1, 2018), identifies local transit asset performance measures and targets, outlines the CNYRTA’s asset management approach, and guides TAM strategies that are achievable with available funds. The TAM plan states that Centro will review it annually to ensure that it complies with FTA requirements. (According to 49 CFR Part 625 Subpart E Subsection 625.55 (a) (2), transit agencies are to provide two reports annually to the National Transit Database (NTD): a data report, and a narrative report.) Additionally, Centro’s TAMP also states that it will conduct a bi-annual transit asset inventory, and that Centro will update the TAMP every four years as required per 49 CFR Part 625 Subpart 625.29 (a).

**Performance Targets and Baseline Conditions.** Public transportation providers set transit asset targets annually (per 49 CFR 625 Subpart D Subsection 625.45 (b) (2)) and must provide the targets to each MPO in which the transit provider’s projects and services are programmed in the MPO’s Transportation Improvement Program (TIP). FTA Planning regulations do not require MPOs to update their TIPs or MTPs annually. Furthermore, MPOs are not required to update their TAM targets when a State DOT or transit provider updates its TAM targets.²⁵

MPOs may choose to set targets after transit agencies set initial targets, and again when updating subsequent LRTPs. On February 16, 2018, the SMTC Policy Committee agreed to support Centro’s 2018 TAM Targets via Resolution 2018-03. On December 11, 2018, the SMTC Policy Committee amended the LRTP and agreed to support (via Resolution No. 2018-16) the updated (2018) TAM plan’s 2019 TAM Targets and the TAM plan performance measures (via addendum). (Federal rulemaking requires that LRTPs adopted or amended after October 1, 2018, include TAM performance targets.)

The TAM plan created by CNYRTA summarizes assets across all of their subsidiaries, covering a four-county service area that includes

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²⁴ CNYRTA TAMP, November 1, 2018, Section 1, pp. 5.
²⁵ FTA TAM FAQ webpage: https://www.transit.dot.gov/TAM/gettingstarted/htmlFAQs
SMTC’s planning area as well as the Herkimer-Oneida Counties Transportation Study (HOCTS) planning area. The TAM plan does not identify assets by sub geographies, such as individual counties or MPO planning areas. CNYRTA established targets for the TAM performance measures, inclusive of assets in all subsidiaries. The SMTC agreed to support the targets as identified by CNYRTA; these targets and baseline conditions - inclusive of all CNYRTA subsidiaries - are indicated in the SMTC’s 2018 addendum to the LRTP.

As outlined in the TAM plan, Centro’s targets are to ensure that all rolling stock and equipment continues to be in a state of good repair, with no rolling stock or equipment older than its ULB and all facilities receiving a 3.0 TERM rating or better. According to the TAM plan, the average age of Centro’s rolling stock or equipment does not exceed its useful life benchmark (14 years in the case of large buses, 8 years in the case of autos/trucks, and minibuses - which are also known as cutaways, and vans). Additionally, the average rating of Centro’s facilities scored above the minimum benchmark equipment rating (3.0) on the FTA’s five-point scale. The Transit Asset Management Targets, along with baseline performance conditions, are shown in Table 4.10.

**Description of Progress.** The LRTP directly reflects the goals, objectives, performance measures, and targets as they are described in other public transportation plans and processes, including the 2018 TAM plan. According to the TAM plan, Centro’s asset management policy states that they are committed to manage capital assets and maintain its system in a state of good repair to support safe, efficient, and reliable transit across the organization.

Centro continually improves the management of its fleet and facility conditions to provide safe, reliable, and sustainable transportation options. The TAM plan identifies priority projects to improve Centro’s TAM capabilities, and specifies, by reference, the lifecycle management activities outlined in the Fleet and Facilities Maintenance Plan (FMP) for each department that is responsible for the operations and/or maintenance of assets. The CNYRTA annually monitors and reviews the TAM plan and the FMP based on changing environment or business needs. Additionally, annual NTD reporting requirements also address
Table 4.10: Transit asset management performance measures and targets

**Goal: Strategically preserve our existing infrastructure and focus future investment in areas that are already served by significant public infrastructure investments.**

**Objective: Maintain transit assets in a State of Good Repair (SGR).**

<table>
<thead>
<tr>
<th>Performance measure</th>
<th>Asset category &amp; Class</th>
<th>2018 TAM Plan Baseline Condition</th>
<th>2018 TAM Plan Target Condition</th>
<th>FY18 Target</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Fleet size</td>
<td>Avg. Vehicle age</td>
<td>Default ULB</td>
</tr>
<tr>
<td>Percent of revenue vehicles by asset class that have met or exceeded their ULB</td>
<td>Rolling stock</td>
<td>Over the road</td>
<td>12</td>
<td>4.54</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bus</td>
<td>188</td>
<td>7.083</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cut-a-way</td>
<td>36</td>
<td>4.083</td>
</tr>
<tr>
<td>Percent of non-revenue vehicles that have met or exceeded their ULB</td>
<td>Equipment</td>
<td>Auto</td>
<td>21</td>
<td>5.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Truck</td>
<td>12</td>
<td>4.083</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Performance measure</th>
<th>Asset category</th>
<th>TERM Average Rating (1-5 scale)</th>
<th>Benchmark</th>
<th>Percent exceeding TERM Basis Rating</th>
<th>FY18 Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of facilities rated below 3.0 on TERM scale</td>
<td>Facilities</td>
<td>Admin/maintenance</td>
<td>3.26</td>
<td>3</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>Passenger parking</td>
<td></td>
<td>3.765</td>
<td>3</td>
<td>0%</td>
</tr>
</tbody>
</table>

Source: Central New York Regional Transportation Authority, Transit Asset Management Plan, November 1, 2018.

ULB – Useful Life Benchmark
TERM – Transit Economic Requirements Model
TERM Rating Condition Descriptions:
- Excellent 4.8-5.0 No visible defects, near-new condition
- Good 4.0-4.7 Some slightly defective or deteriorated components
- Adequate 3.0-3.9 Moderately defective or deteriorated components
- Marginal 2.0-2.9 Defective or deteriorated components in need of replacement
- Poor 1.0-1.9 Seriously damaged components in need of immediate repair

Notes:
- All performance measures in Table 4.9 are required per the FTA’s final Transit Asset Management rule. The SMTC agreed to support the TAM targets established by the Central New York Regional Transportation Authority (CNYRTA) via Policy Committee Resolution 2018-16 on December 11, 2018. The System Performance Report, Addendum to 2050 Long Range Transportation Plan, adopted via Policy Committee Resolution 2018-18 on December 11, 2018, previously reported FY17 performance for the TAM measures.
- The TAM plan (dated Nov. 1, 2018) created by CNYRTA summarizes assets across all of their subsidiaries, covering a four-county service area that includes the SMTC’s planning area as well as the Herkimer-Oneida Counties Transportation Study (HOCTS) planning area. The TAM plan does not identify assets by sub-geographies, such as individual counties or MPO planning areas. CNYRTA established targets for the TAM performance measures, inclusive of assets in all subsidiaries. The SMTC agreed to support the targets as identified by CNYRTA; these targets and baseline conditions, inclusive of all CNYRTA subsidiaries, are indicated in the SMTC’s 2018 addendum to the LRTP.
SGR performance targets for the upcoming year and provide a description of changes in condition from the prior year.

As shown in Table 4.10, the average age of Centro’s rolling stock and equipment assets do not exceed the ULB or fall below the SGR benchmark for facility assets. However, some assets, when considered independently, may require investment or replacement. Identifying assets to improve helps to inform Centro’s transit asset management strategies and balance investment needs that are achievable with available funds.

Each year, Centro develops a capital plan document, which is used for investment prioritization. Centro’s capital plan document also helps inform the development of SMTC’s TIP and HOCTS’s TIP. According to the TAM plan, projects are first prioritized as follows:

- Bus Replacements (due to increased maintenance costs of older vehicles and potential safety concerns from vehicles that have been subjected to the harsh winter environment)
- Preventive Maintenance
- Facilities Rehabilitation (exception made for safety concerns)
- Equipment

As discussed in the LRTP Financial Plan (see Chapter 6), Centro and SMTC prioritized $88.9M in capital expenditures in the SMTC 2020-2024 Transportation Improvement Program (TIP) to target specific transit assets categories within the SMTC planning area. These funds are anticipated to be spent during the five-year period on equipment replacement, other capital project needs, preventative maintenance, and purchase of new rolling stock.

The expenditure of $88.9M should align with needs identified through the annual NTD reviews during the coming years, and will help Centro maintain progress towards TAM performance targets and address the SGR of capital assets. Centro will continue to review, monitor, and adjust needs as necessary to maintain its system in a state of good repair to support safe, efficient, and reliable transit in the communities across the four-county region it serves.
4.8 EQUITY

4.8.1 TIP SPENDING AND PLANNING ACTIVITIES

The SMTC is committed to adhering to both the spirit and letter of Title VI of the Civil Rights Act of 1964 in its planning activities. (See Section 1.1.5 for a detailed description of Title VI.) In February 2015, the SMTC prepared its Title VI and Limited English Proficiency Plan. This plan includes an evaluation of where in the region the SMTC has funded transportation projects through its current Transportation Improvement Program (TIP) and where in the region the greatest concentrations of minority residents live. As this analysis demonstrates, while minority residents make up only about a fifth of the region’s total population, 46 percent of all TIP funds have been allocated to portions of the region with above average proportions of minority residents. The SMTC’s December 2018 Environmental Justice Analysis draws similar conclusions from its analysis of TIP spending in Priority Target Areas, which are shown on Figure 4.6. This analysis defines Priority Target Areas based on geographic areas with higher than average proportions of residents who are identified (by the U.S. Census) as low income and/or being non-White, or Hispanic.26 The Environmental Justice Analysis concludes that the SMTC’s planning activities have been distributed throughout the region, in both Priority Target Areas and non-target areas.

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26 The Priority Target Areas were identified by combining individual concentration factors of minority and low-income population variables. Census tracts designated as Concentration areas were given a value of 1, while tracts designated as High Concentration were given a value of 2. Minority Concentration areas were defined as tracts with a minority population above the MPA-wide average percentage (21%) up to and including the 75th percentile (36%). Minority High Concentration areas were assigned to tracts with a percentage above the 75th percentile. For low-income population, areas were determined by HUD, Division of Community Planning and Development Block Grant Program guidelines. A tract is labeled by HUD as low-income when its median household income does not exceed 50% of the MPA median household income. Tracts whose median household income does not exceed 80% of the value are considered moderate-income. For the Environmental Justice analysis, SMTC used the labels of High Concentration and Concentration in place of the low-income and moderate-income tract designations. Priority areas were assigned by the following values: High Priority – cumulative score of 3 or 4; Medium Priority – cumulative score of 2; Low Priority – cumulative score of 1.
FIGURE 4.6: ENVIRONMENTAL JUSTICE PRIORITY TARGET AREAS

Legend
- High Priority
- Medium Priority
- Low Priority

Data Source: SMTC, 2018
4.8.2 Facility Conditions

Another approach to measuring the degree to which transportation funds are being utilized in an equitable manner is to compare the condition of existing facilities in the identified Priority Target Areas to the condition of facilities throughout the MPA. Key facilities to examine include road pavement, pedestrian infrastructure, and transit facilities. Accessibility is also considered.

Pavement and bridge conditions. Pavement conditions in Priority Target Areas can be compared to pavement conditions throughout the SMTC’s area. Of the FAE centerline mileage within Priority Target Areas, 9 percent had excellent pavement scores, 45 percent were good, 26 percent fair and 20 percent were poor as compared to the non-EJ priority areas where pavement scores were 14 percent excellent, 41 percent good, 27 percent fair and 17 percent poor. Meanwhile, 22 percent of the bridge deck area in the EJ priority areas were considered good, 70 percent fair, and 8 percent poor, compared to in the non-EJ target areas where bridge decks area was 19 percent good, 68 percent fair, and 13 percent poor.27

Sidewalks. As described in Section 4.7.2, the SMTC has inventoried the extent to which sidewalks in the City of Syracuse comply with City ordinances. Comparing the average compliance rating of sidewalks within Priority Target Areas with the rest of the city, 90 percent of city sidewalks are within Priority Target Areas, and the percentage of sidewalks in those Priority Target Areas with very good or perfect compliance is 57 percent, slightly lower than the 59 percent of sidewalks in very good or perfect compliance city-wide.

In June 2020, the City of Syracuse completed and adopted its Americans with Disabilities Act (ADA) Transition Plan.28 Under the City’s on-going sidewalk policy, the City has had an active corner and sidewalk replacement program (since the 1980s) and continues to

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upgrade required facilities in the City right-of-way annually. Through their Transition Plan, the City identified 6,733 curb ramps, rating 41 percent as either accessible (meaning they may need additional improvements, such as detectable warnings at curb ramp locations, or improved width) or fully accessible (designed to current standards), with 22 percent being rated as not accessible (meaning there is significant discontinuity such as steps, no ramps, more than 100 feet of unpaved walkway, heaving, vertical displacement, other severe stress, and/or flooding). Addressing the 22 percent is a key priority for the City of Syracuse. Intersections serving local government facilities (city offices, schools, community centers, etc.) will be addressed first, followed by intersections serving commercial and employment centers (Central Business District, hospitals, university areas) and finally intersections serving other areas (parks, historic sites, etc.). Centro bus stops and shelters, and similar facilities, are the responsibility of Centro (and/or other providers), who also need to ensure that their facilities meet the required ADA standards.

The SMTC examined the accessibility of pedestrian resources on State facilities using data from NYSDOT, as a part of the 2016 Update to the NYSDOT ADA Transition Plan. As a part of the Plan, NYSDOT regularly updates the inventory of infrastructure that needs upgrades to ensure compliance with ADA standards. According to the Plan, based on projected federal and state transportation resources, NYSDOT estimates that by 2027, approximately two-thirds of the state’s population that is currently within one-quarter mile of an inaccessible sidewalk or curb ramp will see that facility corrected and brought into compliance. On State facilities within the SMTC MPA, there were 6.98 miles of access-limited sidewalks and 146 access-limited curb ramps in 2017.29

**Bus Shelters.** The vast majority of Centro’s bus shelters are located in Priority Target Areas (98 out of 126 total shelters in the MPA), and the average rating for these shelters is 3.4 on a scale of 1 ("poor") to 5 ("new"). This is comparable to the average rating for shelters not located in Priority Target Areas: 3.5 out of 5.

29 NYSDOT’s ADA Transition Plan (2016 Update) defines “access-limited” locations as those having a rating of 2 (Not Accessible) or 3 (Partially Accessible).
4.8.3 Access to Jobs

In the City of Syracuse, the neighborhoods with the highest poverty levels also have the lowest levels of education, the highest unemployment rates, and the lowest levels of car ownership. Without a car, many job seekers must limit their job searches to places and work times that they can reliably reach by bus. Centro's transit service is extensive, with more than 100 routes and over 18,000 riders daily. But in a mid-sized metropolitan area, no fixed-route transit system can run to all of the region's job sites without being extremely inefficient. As a result, gaps in the transit system are unavoidable. One measure of transit's effectiveness is the degree to which low-income workers can reach employment centers by bus.

In 2019, the SMTC analyzed travel time by bus between the Transit Hub in Downtown Syracuse and jobs in the region that require no more than a high school diploma. According to this analysis, 33.5 percent of all such jobs are within a 25-minute bus trip of the Transit Hub. Centro and the SMTC are committed to ensuring that this number increases through both adjustments to the transit system and by encouraging more job creation in areas that can be easily accessed by transit.

As noted in Section 4.4.3, one local not-for-profit organization's mission is specifically focused on providing transportation to low-income workers: Providence Services. Additionally, Onondaga County job training agency JOBSPlus! is partnering with employers to offer transportation to work through Lyft. Other transportation options for commuters who do not own their own vehicles include:

- Greater Syracuse HOPE, in partnership with Jubilee Homes, provides transportation to workers who are underserved by public transportation;
- CenterState CEO, with support from the Alliance for Economic Inclusion, operates the CommuteCNY program, which offers vanpool services to connect workers from underserved areas to workplaces in remote locales;

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This analysis reflects outputs from the IBI Group's Conveyal transit modeling tool, given the following parameters: number of jobs requiring no more than a high school diploma that are accessible by way of a 25-minute bus ride from the Transit Hub on a normal weekday.
The not-for-profit Oswego County Opportunities offers a wide variety of services to residents of Oswego County, including a fixed-route transit system;

In 2020, Centro was awarded $5 million in federal funds to expand mid-day and second- and third-shift service to employment centers.

### Table 4.11: Equity performance measures

**Goal: Ensure that transportation system performance improvements are distributed equitably.**

<table>
<thead>
<tr>
<th>Objective</th>
<th>Performance Measure</th>
<th>2015 condition</th>
<th>2020 Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improve transit service between employment centers and priority target areas (as identified in SMTC’s Environmental Justice Analysis).</td>
<td>Proportion of the region’s jobs requiring no more than a high school diploma accessible within a 25-minute bus trip of the Transit Hub.</td>
<td>NA*</td>
<td>33.5%</td>
</tr>
<tr>
<td>Improve transportation options for off-peak commuters without cars.</td>
<td>Range of commuting options available to workers and job-seekers in the MPA</td>
<td>See Section 4.8</td>
<td></td>
</tr>
<tr>
<td>Ensure that pavement condition ratings within priority target areas are at or above ratings for remainder of MPA.</td>
<td>Percent of pavements in “Good”*** condition</td>
<td>Priority Target area:</td>
<td>40%</td>
</tr>
<tr>
<td></td>
<td>Percent of pavements in “Poor” condition</td>
<td>Remainder of MPA:</td>
<td>48%</td>
</tr>
<tr>
<td></td>
<td>Miles of access-limited sidewalk in the MPA</td>
<td>NA</td>
<td>6.98 miles</td>
</tr>
<tr>
<td></td>
<td>Number of access-limited ramps in the MPA</td>
<td>NA</td>
<td>146 ramps</td>
</tr>
</tbody>
</table>

*This performance measure was developed for this LRTP. Pre-2020 data is not available.

**For the purposes of this performance measure, a rating of 7 or higher (encompassing both “Good” and “Excellent” pavements) was considered “good”.”