

**APPENDIX I**  
**PERFORMANCE MEASURES IN THE SHEBOYGAN METROPOLITAN**  
**PLANNING AREA TIP**  
**(Amended January 2020)**

## **PERFORMANCE MEASURES IN THE SHEBOYGAN METROPOLITAN PLANNING AREA TRANSPORTATION IMPROVEMENT PROGRAM (TIP)**

### **Introduction**

As part of recent federal transportation legislation (MAP-21 and the FAST Act), it is a requirement to incorporate performance-based planning and programming into the development of Metropolitan Planning Organization (MPO) Long-Range Transportation Plans (LRTPs) and Transportation Improvement Programs (TIPs). The Statewide and Nonmetropolitan Transportation Planning; Metropolitan Transportation Planning; Final Rule further defined that the TIP shall include, to the maximum extent practicable, a description of the anticipated effect of the TIP toward achieving the 23 CFR 490 performance measure targets identified in the metropolitan transportation plan, linking investment priorities to those performance targets (23 CFR 450.326(d)).

Federal funding is provided for a wide range of transportation-related activities, including projects on higher function local streets and highways not on the State Trunk Highway system, and local safety improvements. These programs are funded through the federal “Fixing America’s Surface Transportation” (FAST) Act.

23 USC 150: National performance measure goals are:

- **Safety** – To achieve a significant reduction in traffic fatalities and serious injuries on all public roads;
- **Infrastructure Condition** – To maintain the highway infrastructure asset system in a state of good repair;
- **Congestion Reduction** – To achieve a significant reduction in congestion on the National Highway System;
- **System Reliability** – To improve the efficiency of the surface transportation system;
- **Freight Movement and Economic Vitality** – To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development;
- **Environmental Sustainability** – To enhance the performance of the transportation system while protecting and enhancing the natural environment; and
- **Reduced Project Delivery Delays** – To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies’ work practices.

More information on the national performance measure goals can be found at the Federal Highway Administration (FHWA) website link listed below:

<https://www.fhwa.dot.gov/tpm/about/goals.cfm>

MAP-21/FAST Act Performance Measures (as established in 49 USC 625 and 23 CFR 490) are:

- Transit
  - Rolling Stock: The percentage of revenue vehicles (by type) that exceed the useful life benchmark (ULB)
  - Equipment: The percentage of equipment that exceeds the ULB
  - Facilities: The percentage of facilities (by group) that are rated less than 3.0 on the Transit Economic Requirements Model (TERM) Scale
  - Infrastructure: The percentage of track segments (by mode) that have performance restrictions. Track segments are measured to the nearest 0.01 of a mile. (This performance measure does not apply to the Sheboygan Metropolitan Planning Area)
- Safety
  - Number of fatalities
  - Fatalities per 100 million vehicle miles traveled
  - Number of serious injuries
  - Serious injuries per 100 million vehicle miles traveled
  - Number of non-motorized fatalities and non-motorized serious injuries
- Infrastructure
  - Percentage of pavements on the Interstate System in Good Condition
  - Percentage of pavements on the Interstate System in Poor Condition
  - Percentage of pavements on the non-Interstate National Highway System (NHS) in Good condition
  - Percentage of pavements on the non-Interstate NHS in Poor condition
  - Percentage of NHS bridges classified as in Good condition
  - Percentage of NHS bridges classified as in Poor condition
- System Performance on the NHS
  - Interstate Travel Time Reliability Measure: Percent of person-miles traveled on the Interstate that are reliable
  - Non-Interstate NHS Travel Time Reliability Measure: Percent of person-miles on the non-Interstate NHS that are reliable
- Freight Movement
  - Freight Reliability Measure: Truck Travel Time Reliability (TTTR) Index

- CMAQ – Congestion Reduction
  - Peak Hour Excessive Delay (PHED) Measure: Annual Hours of PHED Per Capita (This performance measure does not apply to the Sheboygan Metropolitan Planning Area)
  - Non-Single Occupancy Vehicle (SOV) Travel Measure: Percentage of Non-SOV Travel (This performance measure does not apply to the Sheboygan Metropolitan Planning Area)
  - Emissions Measure: Total Emission Reductions

## **Sheboygan MPO Performance-Based Planning and Programming Processes**

### **Long-Range Transportation Plan**

The Bay-Lake Regional Planning Commission, as the designated MPO for the Sheboygan Metropolitan Planning Area, has been using performance measures in its planning process for several years. The Update to the *Year 2045 Sheboygan Area Transportation Plan (SATP)* addressed performance measures as a new requirement as a part of the federal MAP-21 transportation legislation, which continued in the FAST Act. MPO staff has been tracking and updating data on an annual basis or as it becomes available. The national performance measure goals identified in the introduction have been incorporated into the policies and performance measures monitored in the Update to the *Year 2045 SATP*. The Update to the *Year 2045 SATP* was approved on April 26, 2019, and can be viewed at the following page on the Sheboygan MPO website:

<https://baylakerpc.org/sheboygan-mpo/long-range-transportation-planning/year-2045-sheboygan-area-transportation-plan-satp>

The Update to the *Year 2045 SATP* involved a performance-based planning process.

### **Transportation Improvement Program (TIP)**

The Sheboygan MPO has always used appropriate scoring criteria for ranking and selecting projects for the Surface Transportation Block Grant (STBG) – Urban program in the TIP. The ranking criteria for this federal program use scoring systems that are tied to goals and policies in the Update to the *Year 2045 SATP*. The TIP evaluates short-range projects based on criteria that include: plan consistency, current or potential demand (capacity needs), functional classification (including traffic volume within two of the classifications), pavement condition, multimodalism, and safety. Transit improvements and bicycle and pedestrian transportation improvements also have parallel criteria which allow projects in these categories to compete for funding. While not officially included as a criterion, preservation of existing systems has been emphasized in the project selection process over past funding cycles. Projects are scored based on a set number of points for each criterion, resulting in a project ranking and recommendation list for STBG – Urban projects in the TIP. The *Sheboygan Metropolitan Planning Area TIP: Calendar Years 2020 – 2023* was approved on October 25, 2019, and it, along with any amendments to that document, can be viewed at the following page on the Sheboygan MPO website:

## **Sheboygan MPO Performance Measures**

According to the requirement for the federal performance measure management process, targets are set for national performance measures on a schedule based on when the measures were finalized. In this case, the Wisconsin Department of Transportation (WisDOT) must report to the U.S. Department of Transportation (USDOT) on the progress in achieving the targets for each measure. WisDOT sets its performance measure targets first (in coordination with the MPOs), and then, the MPOs can choose to either set their own targets or support the targets that WisDOT has adopted (or a combination thereof) within 180 days of WisDOT setting its targets. In Wisconsin, for most performance measure targets, most MPOs have chosen to follow and support WisDOT and its targets.

## **Transit Asset Management Targets**

The U.S. Department of Transportation established four performance measures for transit asset management (TAM). The Sheboygan MPO worked with the one transit operator in the Sheboygan Metropolitan Planning Area (Shoreline Metro) to establish targets for three of the four measures (rolling stock, equipment and facilities; infrastructure only relates to rail transit, which does not exist locally). A 2019 TAM Plan was developed for Shoreline Metro in the process of setting these targets, and covers the period from October 1, 2019, through September 30, 2020. The Sheboygan Transit Commission approved the targets for Shoreline Metro on October 22, 2019. The Sheboygan MPO Technical and Policy Advisory Committees recommended approval of the targets for the MPO at their September 5, 2019, joint meeting. The Bay-Lake Regional Planning Commission approved the targets for the Sheboygan MPO on September 13, 2019. The TAM targets are:

- Rolling Stock: The percentage of revenue vehicles (by type) that exceed the useful life benchmark (ULB). This target allows for **28 percent** of revenue vehicles and **0 percent** of non-revenue vehicles to pass beyond useful life.
- Equipment: The percentage of equipment that exceeds the ULB – In the case of Shoreline Metro, “equipment” was characterized as the most significant equipment, or non-vehicle items with a replacement value of \$50,000 or more. These items include a scrubber, a hoist and a bus wash, all located at the Shoreline Metro bus garage. This target allows for **100 percent** of Shoreline Metro’s most significant equipment to pass beyond its useful life.
- Facilities: The percentage of facilities that are rated less than 3.0 on the Transit Economic Requirements Model (TERM) Scale. Shoreline Metro’s facilities include: its administration, maintenance and storage facility (bus garage), and its transfer facility/station. This target allows for **50 percent** of facilities to pass beyond useful life.
- Infrastructure: The percentage of track segments (by mode) that have performance restrictions. This performance measure does not apply to the Sheboygan Metropolitan Planning Area, as there is no rail transit in the area.

## Safety Targets

The USDOT established five performance measures for the Highway Safety Improvement Program (HSIP) within the National Performance Management Measures. WisDOT established statewide calendar year 2020 targets for each of the five HSIP performance measures in accordance with 23 CFR 490.209, which were approved at the state level on August 31, 2019. The WisDOT statewide targets are:

- Number of fatalities < 564.7 (a 2 percent reduction from the 2014 – 2018 annual average);
- Rate of fatalities < 0.888 per 100 million vehicle miles traveled (VMT, a 2 percent reduction from the 2014 – 2018 annual average);
- Number of serious injuries < 2,907.0 (a 5 percent reduction from the 2014 – 2018 annual average);
- Rate of serious injuries < 4.585 per 100 million VMT (a 5 percent reduction from the 2014 – 2018 annual average); and
- Number of non-motorized fatalities and non-motorized serious injuries < 344.7 (a 5 percent reduction from the 2014 – 2018 annual average).

The Bay-Lake Regional Planning Commission, as MPO for the Sheboygan Metropolitan Planning Area, agreed to support the statewide safety targets, which were approved by formal resolution on December 13, 2019. This followed several months of measuring these numbers and rates for the Sheboygan Metropolitan Planning Area, and coming to the conclusion that the area had lower incidences and rates for the above measures than statewide averages. Commission MPO staff will work closely with WisDOT and will plan and program projects so that they contribute toward the accomplishment of WisDOT's calendar year 2020 HSIP targets.

## Pavement Condition Targets

The USDOT established four performance measures for pavement condition on the National Highway System (NHS). WisDOT established 4-year (2021) statewide targets for the Interstate system, as well as 2-year (2019) and 4-year (2021) statewide targets for the non-Interstate NHS in accordance with 23 CFR 490, Subpart C, which were approved at the state level on May 18, 2018. The WisDOT statewide targets are:

- Interstate – Percentage of pavements in “good” condition: 4-Year Target  $\geq 45$  percent;
- Interstate – Percentage of pavements in “poor” condition: 4-Year Target  $\leq 5$  percent;
- Non-Interstate NHS – Percentage of pavements in “good” condition: 2-Year Target  $\geq 20$  percent and 4-Year Target  $\geq 20$  percent; and
- Non-Interstate NHS – Percentage of pavements in “poor” condition: 2-Year Target  $\leq 12$  percent and 4-Year Target  $\leq 12$  percent.

The Bay-Lake Regional Planning Commission, as MPO for the Sheboygan Metropolitan Planning Area, agreed to support the statewide pavement condition targets, which were approved

by formal resolution on October 26, 2018. This followed limited time measuring pavement condition for Interstate and non-Interstate NHS segments in the Sheboygan Metropolitan Planning Area, and coming to the conclusion that the area had higher percentages of Interstate and non-Interstate NHS pavement in “good” condition as well as lower percentages of Interstate and non-Interstate NHS pavement in “poor” condition than statewide averages. Commission MPO staff will work closely with WisDOT and will plan and program projects so that they contribute toward the accomplishment of WisDOT’s 4-year (2021) Interstate pavement condition targets as well as WisDOT’s 2-year (2019) and 4-year (2021) non-Interstate NHS pavement condition targets.

### **Bridge Condition Targets**

The USDOT established two performance measures for bridge condition on the NHS. WisDOT established 2-year (2019) and 4-year (2021) statewide targets for the NHS in accordance with 23 CFR 490, Subpart D, which were approved at the state level on May 18, 2018. The WisDOT statewide targets are:

- Percentage of NHS bridges by deck area in “good” condition: 2-Year Target  $\geq 50$  percent and 4-Year Target  $\geq 50$  percent; and
- Percentage of NHS bridges by deck area in “poor” condition: 2-Year Target  $\leq 3$  percent and 4-Year Target  $\leq 3$  percent.

The Bay-Lake Regional Planning Commission, as MPO for the Sheboygan Metropolitan Planning Area, agreed to support the statewide bridge condition targets, which were approved by formal resolution on October 26, 2018. This followed limited time measuring the condition of NHS bridges by deck area in the Sheboygan Metropolitan Planning Area. The percentage of NHS bridges by deck area in “poor” condition in the Sheboygan Metropolitan Planning Area was lower than the statewide average. However, the percentage of NHS bridges by deck area in “good” condition in the Sheboygan Metropolitan Planning Area was also lower than the statewide average (one of only two performance measures in which the metropolitan planning area fared worse than statewide averages). In spite of this below average statistic, MPO staff thought it would be best to support the statewide targets at this early stage in the target setting process until more robust data are available over time. Commission staff will work closely with WisDOT and will plan and program projects so that they contribute toward the accomplishment of WisDOT’s 2-year (2019) and 4-year (2021) NHS bridge condition targets.

### **Travel Time Reliability Targets**

The USDOT established two performance measures for overall travel time reliability on the NHS. WisDOT established 2-year (2019) and 4-year (2021) statewide targets for the percentage of person-miles traveled that are reliable on the Interstate, and also established a 4-year (2021) statewide target for the percentage of person-miles traveled that are reliable on the non-Interstate NHS in accordance with 23 CFR 490, Subpart E, which were approved at the state level on May 18, 2018. The WisDOT statewide targets are:

- Percent of person-miles traveled that are reliable on the Interstate: 2-Year Target (2019)  $\geq 94.0$  percent and 4-Year Target (2021)  $\geq 90.0$  percent; and
- Percent of person-miles traveled that are reliable on the non-Interstate NHS: 4-Year Target (2021)  $\geq 86.0$  percent.

The Bay-Lake Regional Planning Commission, as MPO for the Sheboygan Metropolitan Planning Area, agreed to support the statewide travel time reliability targets, which were approved by formal resolution on October 26, 2018. This followed limited time measuring the travel time reliability of the Interstate and the non-Interstate NHS in the Sheboygan Metropolitan Planning Area. The percentage of person-miles traveled that are reliable on the Interstate in the Sheboygan Metropolitan Planning Area was higher than the statewide average. However, the percentage of person-miles traveled that are reliable on the non-Interstate NHS in the Sheboygan Metropolitan Planning Area was lower than the statewide average (the second of two performance measures in which the metropolitan planning area fared worse than statewide averages). Again, in spite of this below average statistic, MPO staff thought it would be best to support the statewide targets at this early stage in the target setting process until more robust data are available over time. Commission staff will work closely with WisDOT and will plan and program projects so that they contribute toward the accomplishment of WisDOT's 2-year (2019) and 4-year (2021) travel time reliability targets on the Interstate and of WisDOT's 4-year (2021) travel time reliability target on the non-Interstate NHS.

### **Freight Reliability Targets**

The USDOT established one performance measure for freight reliability, which is the Truck Travel Time Reliability Index on the Interstate. WisDOT established 2-year (2019) and 4-year (2021) statewide targets for the Truck Travel Time Reliability Index on the Interstate in accordance with 23 CFR 490, Subpart F, which were approved at the state level on May 18, 2018. The WisDOT statewide target is:

- Truck Travel Time Reliability Index on the Interstate: 2-Year Target (2019)  $\leq 1.40$  and 4-Year Target (2021)  $\leq 1.60$ .

The Bay-Lake Regional Planning Commission, as MPO for the Sheboygan Metropolitan Planning Area, agreed to support the statewide freight reliability targets, which were approved by formal resolution on October 26, 2018. This followed limited time measuring truck travel time reliability on the Interstate in the Sheboygan Metropolitan Planning Area. The Truck Travel Time Reliability Index on the Interstate in the Sheboygan Metropolitan Planning Area was lower than the statewide average. Commission staff will work closely with WisDOT and will plan and program projects so that they contribute toward the accomplishment of WisDOT's 2-year (2019) and 4-year (2021) freight reliability targets on the Interstate.

### **Emission Reduction Targets**

The USDOT established three performance targets applicable to air quality nonattainment and maintenance areas. Two of these (Peak Hour Excessive Delay and Non-SOV (Single Occupant Vehicle) Travel) are only applicable in urbanized areas with a population over one million. The



only performance target in air quality nonattainment and maintenance areas that is applicable to the Sheboygan Metropolitan Planning Area involves emission reductions. In Wisconsin, three precursor pollutants are measured for emission reductions: volatile organic compounds (VOCs), oxides of nitrogen (NO<sub>x</sub>), and fine particulate matter (PM 2.5). WisDOT established 2-year (2019) and 4-year (2021) statewide targets for VOCs, NO<sub>x</sub> and PM 2.5 in accordance with 23 CFR 490, Subpart H, which were approved at the state level on May 18, 2018. The WisDOT statewide targets (in kilograms per day per \$1,000,000 of expenditure) are:

- VOCs: 2-Year Target (2019) = 12.154 kg., and 4-Year Target (2021) = 30.123 kg.
- NO<sub>x</sub>: 2-Year Target (2019) = 90.354 kg., and 4-Year Target (2021) = 150.388 kg.
- PM 2.5: 2-Year Target (2019) = 9.043 kg., and 4-Year Target (2021) = 13.820 kg.

In this case, the Sheboygan Metropolitan Planning Area is only responsible for either setting its own 4-year (2021) emission reduction targets or supporting WisDOT's statewide 4-year (2021) emission reduction targets for the precursor pollutants noted above. The Bay-Lake Regional Planning Commission staff consulted with WisDOT staff on where the metropolitan planning area stood relative to all nonattainment and maintenance areas in Wisconsin in regard to emission reductions for the precursor pollutants noted above. USDOT guidance recommends that states and MPOs use FHWA's "CMAQ Public Access System" to set emission reduction targets for precursor pollutants. Unfortunately, there are few CMAQ projects from the Sheboygan Metropolitan Planning Area that are accounted for in the "CMAQ Public Access System." There would be other ways to set targets for the metropolitan planning area, such as using previously calculated emission reduction estimates for projects that were awarded funding in the past two cycles that do not appear in the "CMAQ Public Access System," or assuming that the metropolitan planning area would have approximately 10 percent of the statewide emission reductions (since northeastern Wisconsin typically receives about 10 percent of the CMAQ funding in any given cycle). However, the first option is not advised by USDOT, and the second option is faulty because there are projects in this 10 percent that are outside the Sheboygan Metropolitan Planning Area. For these reasons, the Bay-Lake Regional Planning Commission, as MPO for the Sheboygan Metropolitan Planning Area, agreed to support the statewide 4-year (2021) emission reduction targets, which were approved by formal resolution on October 26, 2018. Commission staff will work closely with WisDOT and will plan and program projects so that they contribute toward the accomplishment of WisDOT's 4-year (2021) statewide emission reduction targets.

### **Linkage of Investments to Established Performance Measures**

Federal planning requirements for MPOs for the LRTP and for TIPs mandate inclusion of a description of the effects of these planning documents toward meeting the transportation system performance targets that were established. The next section links projects with investment priorities to those with transit asset management, highway safety, pavement condition, bridge condition, travel time reliability, freight reliability, and emission reduction benefits to the transportation system. Projects programmed in the four years covered by the TIP will assist WisDOT in achieving the various performance targets.

## **Analysis of Transit Capital Projects in the TIP in Regard to Transit Asset Management**

There are three transit capital projects programmed in the *Sheboygan Metropolitan Planning Area TIP: Calendar Years 2020 – 2023*:

- Roof Replacement for the Transit Administration and Maintenance Facility in 2020 (funded through the FTA Section 5339 program);
- Replacement of one (1) 35-Foot Fixed-Route Bus in 2020 (funded through the Volkswagen Diesel Emissions Environmental Mitigation Trust); and
- Various Improvements at the Transit Administration and Maintenance Facility in 2023 (involving only local funding at this time).

The first project will improve the overall condition of the facilities component of Shoreline Metro's transit assets. The second project will improve the overall condition of the rolling stock component of Shoreline Metro's transit assets. The third project is likely to improve equipment and/or facilities components of Shoreline Metro's transit assets. All of these projects will take place within the timeframe of the *2020 – 2023 TIP*.

## **Analysis of Projects in the TIP in Regard to Safety**

### **Infrastructure Projects**

The *2020 – 2023 TIP* contains two projects that will improve safety on the transportation system.

- Construction of a roundabout at the intersection of State Highway 28 and County Highway EE is scheduled for 2020. This project will be funded with STBG funding as well as with state matching funds. Roundabouts typically reduce the rate of angle and injury crashes, and the lower speeds will likely result in less severe crashes.
- Installation of median cable guard on Interstate Highway 43 from County Highway V to County Highway EE/Weeden Creek Road is scheduled for 2021. This project will be funded with HSIP funding as well as with state matching funds. Median cable guard reduces head-on crashes on freeways and expressways by keeping motorists in their direction of traffic rather than veering off through the median into the opposing direction of traffic.

In addition, one reconstruction project (with no increase in capacity), three signal timing projects, one design project leading to resurfacing, one design and right-of-way acquisition project leading to reconstruction, one design project leading to milling and overlay of the existing asphaltic pavement, and one design project leading to replacement and preservation of several bridges have been programmed in the *2020 – 2023 TIP*, all of which should improve safety on the transportation system. Also, five of the eight categories of “grouped” street and highway projects in the *2020 – 2023 TIP* involve various forms of highway safety.

## **Surface Transportation Block Grant (STBG) – Urban Projects**

The 2020 – 2023 TIP currently contains no STBG Urban projects that are programmed for construction. One STBG Urban project was selected in late 2019 for the 2020 – 2025 funding cycle, and the 2020 – 2023 TIP may be amended in early 2020 if the selected project(s) fall within the range of that TIP. The STBG Urban program uses ranking criteria to set priorities for funding. The criteria include: plan consistency; current or potential demand (capacity needs); functional classification (including traffic volume within two of the classifications); pavement condition; multimodalism; and safety. Transit improvements and bicycle and pedestrian transportation improvements also have parallel criteria which allow projects in these categories to compete for funding. While not officially included as a criterion, preservation of existing systems has been emphasized in the project selection process over past funding cycles. Projects are scored based on a set number of points for each criterion, resulting in a project ranking and recommendation list for STBG – Urban projects in the TIP.

## **Bicycle and Pedestrian Safety Projects**

The 2020 – 2023 TIP contains projects that promote bicycle and/or pedestrian safety. Safety education takes place under the Sheboygan County Non-Motorized Transportation Pilot Program (NMTTP) level of effort for program oversight project, which includes some funding for education and outreach. Safety education can also take place under the Sheboygan County NMTTP marketing and branding project. Finally, one construction project and one enhancements “grouped” project are also expected to improve bicycle and pedestrian safety.

## **Analysis of Projects in the TIP in Regard to Pavement Condition**

The 2020 – 2023 TIP contains two projects that will improve the pavement condition of the transportation system.

- Construction of a roundabout at the intersection of State Highway 28 and County Highway EE is scheduled for 2020. This project will be funded with STBG funding as well as with state matching funds.
- Reconstruction with no increase in capacity on Superior Avenue from North Taylor Drive to North 29<sup>th</sup> Street in the City of Sheboygan is scheduled for 2020. This project will exclusively be financed with local funds.

Four other projects involve: design which will lead to resurfacing of a portion of Interstate Highway 43 from Wilson Lima Road to State Highway 42; design and right-of-way acquisition leading to reconstruction of County Highway EE/Weeden Creek Road from County Highway OK/South Business Drive to County Highway KK/South 12<sup>th</sup> Street; design leading to milling and overlay of the existing asphaltic pavement on State Highway 32 from County Highway D to State Highway 28; and design leading to replacement and preservation of several bridges on State Highway 32 from County Highway D to State Highway 28. All of these projects will take place outside the period covered by this TIP.

In addition, three of the eight categories of “grouped” street and highway projects in the 2020 – 2023 *TIP* involve preventive maintenance on the Interstate highway system, other parts of the NHS, and on the state trunk connecting highway system, which can also improve pavement condition in the area.

### **Analysis of Projects in the TIP in Regard to Bridge Condition**

The 2020 – 2023 *TIP* currently contains one project that will improve the condition of transportation system bridges, but beyond the range of that *TIP*; the project involves design leading to replacement and preservation of several bridges on State Highway 32 from County Highway D to State Highway 28. It is possible that the 2020 – 2023 *TIP* will be amended in 2020 to add one or more projects that will improve the condition of transportation system bridges.

In addition, three of the eight categories of “grouped” street and highway projects in the 2020 – 2023 *TIP* involve preventive maintenance on the Interstate highway system, other parts of the NHS, and on the state trunk connecting highway system, which could also improve bridge conditions in the area.

### **Analysis of Projects in the TIP in Regard to Travel Time Reliability**

The 2020 – 2023 *TIP* contains at least three projects that will improve travel time reliability on the transportation network. All of these projects involve “addition of radio communication infrastructure, installation of video detection, conducting intersection turning movement counts, and retiming and coordinating traffic signals.” In addition, all of these projects involve design in 2020 and implementation in 2021, and each project is funded through the CMAQ program as well as with local matching funds.

- Signal timing on Taylor Drive from Indiana Avenue to Superior Avenue.
- Signal timing on State Highway 23/Kohler Memorial Drive/Erie Avenue from North Taylor Drive to North 9<sup>th</sup> Street.
- Signal timing on State Highways 28 and 42/14<sup>th</sup> Street/Calumet Drive from Indiana Avenue to North Avenue.

It is also possible that other programmed projects may indirectly improve travel time reliability on the transportation network, especially if they are located on the NHS in the metropolitan planning area.

### **Analysis of Projects in the TIP in Regard to Freight Reliability**

The same projects that will improve travel time reliability on the transportation network will also improve freight reliability on that network.

It is also possible that other programmed projects may indirectly improve freight reliability on the transportation network, especially if they are located on the NHS in the metropolitan planning area.

## **Analysis of Projects in the TIP in Regard to Emission Reductions**

The 2020 – 2023 *TIP* contains three projects that will lead to emission reductions on the transportation network. The projects include the following:

- Signal timing on Taylor Drive from Indiana Avenue to Superior Avenue (design in 2020 and implementation in 2021).
- Signal timing on State Highway 23/Kohler Memorial Drive/Erie Avenue from North Taylor Drive to North 9<sup>th</sup> Street (design in 2020 and implementation in 2021).
- Signal timing on State Highways 28 and 42/14<sup>th</sup> Street/Calumet Drive from Indiana Avenue to North Avenue (design in 2020 and implementation in 2021).

The three projects listed above involve “addition of radio communication infrastructure, installation of video detection, conducting intersection turning movement counts, and retiming and coordinating traffic signals.” Each of the three projects is funded through the CMAQ program as well as with local matching funds.

It should also be noted that CMAQ projects from previous *TIP* cycles will also contribute to emission reductions in the metropolitan planning area; these projects included a small employment transportation carpool program.

Finally, it should be noted that the 2020 – 2023 *TIP* may be amended in early 2020 to incorporate additional CMAQ projects.

## **Conclusion**

The *Sheboygan Metropolitan Planning Area Transportation Improvement Program (TIP): Calendar Years 2020 – 2023* implements a variety of projects that assist in either meeting locally established performance targets (in the case of Transit Asset Management) or in assisting the MPO in supporting statewide performance targets established by WisDOT (in the case of all other targets, including targets in the areas of safety, pavement condition, bridge condition, travel time reliability, freight reliability, and emission reductions). Future LRTPs and TIPs are expected to continue to improve the linkage between performance targets and recommended projects over the years to come.