

2023

Appendix G

Transportation Performance
Management

Madera County Transportation Commission

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How the FTIP Addresses Federal Requirements for Performance Measures

Background

Federal rules require that the Federal Transportation Improvement Program (FTIP) “be designed such that once implemented, it makes progress toward achieving the performance targets established under § 450.306(d).” Also, the FTIP “shall include, to the maximum extent practicable, a description of the anticipated effect of the FTIP toward achieving the performance targets identified in the metropolitan transportation plan, linking investment priorities to those performance targets.”ⁱ

The Moving Ahead for Progress in the 21st Century Act (MAP-21, 2012) established new requirements for metropolitan planning organizations (MPOs) to coordinate with transit providers, set performance targets, and integrate those performance targets and performance plans into their planning documents by specified dates. The most recent federal transportation legislative package, the Infrastructure Investment and Jobs Act of 2021 (IIJA), carries forward these performance-based planning requirements. Beginning in 2018, federal rules required that state departments of transportation and MPOs implement federally defined transportation system performance measures. In response, FHWA and FTA worked with state, regional, and transit agencies to identify performance measures that meet the requirements.

In California, Caltrans is directly responsible for submitting statewide performance targets and periodic progress reports to federal agencies. MPOs are required to establish targets for the same performance measures for their respective metropolitan planning areas within 180 days after the state establishes each target. MPOs may elect to support the statewide targets, establish alternative quantitative targets specific to their region, or use a combination of both approaches. Furthermore, each MPO must incorporate these short-range performance targets into their planning and programming processes, including the regional transportation plan (RTP) and FTIP.

FHWA Performance Measures

The federal performance measures defined by the Federal Highway Administration (FHWA) are categorized into three performance management (PM) focus areas. Each focus area includes an associated set of metrics for which statewide and regional targets must be set.

PM 1: Transportation Safety

Motor Vehicle Collisions

- Number of motor vehicle collision fatalities
- Rate of motor vehicle collision fatalities per 100 million VMT
- Number of motor vehicle collision serious injuries
- Rate of motor vehicle collision serious injuries per 100 million VMT

Non-Motorized Fatalities and Serious Injuries

- Number of non-motorized fatalities and serious injuries

PM 2: National Highway System (NHS) Pavement and Bridge Condition

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NHS Pavement Condition

- Percentage of Interstate System pavement in 'good' condition
- Percentage of non-interstate NHS pavement in 'good' condition
- Percentage of Interstate System pavement in 'poor' condition
- Percentage of non-interstate NHS pavement in 'poor' condition

NHS Bridge Condition

- Percentage of NHS bridges in 'good' condition
- Percentage of NHS bridges in 'poor' condition

PM 3: NHS Performance, Interstate System Freight Movement, and CMAQ Program Performance

NHS Performance

- Percent of Interstate System mileage reporting reliable person-mile travel times
- Percent of non-interstate NHS mileage reporting reliable person-mile travel times

Interstate Freight Movement

- Percent of Interstate system mileage reporting reliable truck travel times

CMAQ Program Performance

- Annual hours of peak-hour excessive delay per capita
- Total emissions reduction by criteria pollutant (PM10, PM2.5, Ozone, CO)
- Percent of non-single occupancy vehicle (SOV) travel

FTA Performance Measures

In addition to the three PM focus areas defined by FHWA, the Federal Transit Administration (FTA) established performance measures and reporting requirements for transit asset management (TAM) and transit safety.

Performance metrics for TAM focus on the maintenance of our regional transit system in a state of good repair. Transit safety performance monitoring is focused on assessment of the number of transit incidents resulting in fatalities or serious injuries and transit system reliability.

FTA issued the TAM Final Rule (49 CFR §625 et seq.), effective October 1, 2016, to implement MAP-21 transit asset management provisions. This final rule mandates a National TAM System, defines 'State of Good Repair' (SGR), and requires transit providers to develop TAM plans. The Metropolitan Transportation Planning Final Rule (23 CFR §450.206) outlines the timelines and processes by which states, MPOs, and transit providers must coordinate in the target setting process.

The FTA PM focus areas and associated metrics are as follows:

Transit Asset Management (TAM)

- Equipment: Share of non-revenue vehicles that meet or exceed useful life benchmark
- Rolling Stock: Share of revenue vehicles that meet or exceed useful life benchmark
- Infrastructure: Share of track segments with performance restrictions

- Facilities: Share of transit assets with condition rating below 3.0 on FTA Transit Economic Requirements Model (TERM) scaleⁱⁱ

Transit Safety

- Number of transit-related fatalities
- Number of transit-related injuries
- Number of transit system safety events
- Transit system reliability

Public Transit Agency Safety Plan

On July 19, 2018, the FTA published the Public Transportation Agency Safety Plan (PTASP) Final Rule (49 CFR §673.15) regulating how Chapter 53 grantees would have to implement federally mandated safety standards. The rule's effective date was July 19, 2019, and the compliance date was initially set for July 20, 2020. Considering the extraordinary operational challenges presented by the COVID-19 public health emergency, FTA issued a Notice of Enforcement Discretion effectively extending the PTASP compliance deadline from July 20, 2020 to December 31, 2020. The MPO's initial transit safety targets are to be set within 180 days of receipt of the safety performance targets from the transit agencies. The MPO then revisits its targets based on the schedule for preparation of its system performance report that is part of the Metropolitan Transportation Plan (MTP). The first MTP or FTIP update or amendment to be approved on or after July 20, 2021, is required to include the MPO's transit safety targets. See FTA's COVID-19 FAQs page for more information about the Notice.ⁱⁱⁱ

The final rule specifically requires transit agencies receiving federal funds to develop a safety plan and annually self-certify compliance with that plan. The National Public Transportation Safety Plan identifies four performance measures that must be included in the transit agency safety plans: number of fatalities, number of injuries, safety events, and system reliability. Each transit agency must make its safety performance targets available to MPOs to assist in the planning process and to coordinate, to the maximum extent practicable, with the MPO in selecting regional transit safety targets.

How the Madera County Transportation Commission Addresses Each Performance Management Focus Area

Transportation Safety (PM 1)

MPOs can elect to support the statewide targets, adopt region-specific targets, or do a combination of the two options. MPOs are required to report and document with Caltrans annually, 180 days after statewide safety targets are officially adopted. The safety performance management targets (PM 1) are set annually. These targets must also be incorporated into their RTP and TIP development.

Caltrans used a three-step process to set safety performance targets: (1) estimating the existing trends to determine where we are now, based on collision and injury, (2) determining what external factors will impact the target to forecast future trends, and (3) to estimate targets based on forecasted fatality reductions from safety plans. The need to forecast future collision trends is necessary since safety performance targets are set a year in advance when at least two years of collision data is unknown.

Caltrans set safety performance targets in August 2021 for the 2022 calendar year as shown in Table 1 below. MCTC adopted regional targets in February 2022. MCTC used Caltrans’ methodology to set targets for the region. MCTC has elected to support the 2020 Caltrans statewide safety performance targets (SPMTs), which are based on the principles of “Towards Zero Deaths (TZD) by 2050, by planning and programming projects that contribute to these goals. Table 2 shows the PM 1 targets for the MCTC planning region for 2022.

Table 1 Safety Performance Targets

Performance Measure	Data Source	5-Yr. Rolling Average Target for 2022	Annual Percentage Change for 2022
Number of Fatalities	FARS	3,491.8	-3.61%
Rate of Fatalities (per 100M VMT)	FARS & HPMS	1.042	-2.00%
Number of Serious Injuries	SWITRS	16,704.2	1.66%
Rate of Serious Injuries (per 100M VMT)	SWITRS & HPMS	4.879	1.66%
Number of Non-Motorized Fatalities and Non-Motorized Severe Injuries	FARS & SWITRS	4,684.4	-3.61% for Fatalities and 1.66% for Serious Injuries

Note: The targets highlighted in gray are set in coordination with Office of Traffic Safety (OTS).

Table 2 Transportation Safety (PM1) Targets

Performance Target	Data Source	5- Yr. Rolling Average (2022) for Madera	Percent Reduction (2022)	Numerical Target (2022)
Number of Fatalities	FARS	29.6	3.61%	28
Rate of Fatalities (per 100M VMT)	FARS & HPMS	4	2.0%	3.9
Number of Serious Injuries	SWITRS	84	1.66%	82.7
Rate of Serious Injuries (per 100M VMT)	SWITRS & HPMS	11.3	1.66%	11.1
Number of Non-Motorized Fatalities and Non-Motorized Severe Injuries	FARS & SWITRS	14	3.61 % for Fatalities and 1.66% for Serious Injuries	12

Many of the projects programmed in the FTIP serve to improve transportation safety to some extent. For some projects, safety is the primary objective, and for others, safety may be a single component of a more expansive scope.

Additional safety related efforts in Madera County, which are not presented in the FTIP, are by Madera County and the City of Chowchilla. Madera County is currently working on finalizing a systemic safety analysis report program and the City of Chowchilla is in the process of developing a Local Roadway Safety Plan.

Three statewide funding programs dedicated to transportation safety are employed by MCTC including:

1. Active Transportation Program (ATP)
2. Highway Safety Improvement Program (HSIP)
3. State Highway Operations & Protection Program (SHOPP) Collision Reduction

ATP

The ATP provides funding for bicycle and pedestrian projects. Since people are more vulnerable to safety risk while walking or biking as compared to traveling in a motor vehicle, any project that promotes the safe use of bicycling or pedestrian modes is likely to generate safety benefits. The ATP further emphasizes safety by allotting points for project applications that specifically seek to reduce the rate or number of pedestrian and bicyclist fatalities and injuries.

HSIP

The HSIP directly addresses transportation safety. The program's stated purpose is to "achieve a significant reduction in traffic fatalities and serious injuries on all public roads, including non-State-owned public roads and roads on tribal land." Successful project applications specifically seek to reduce collision related fatalities and injuries. The program is designed to focus local investments to locations and corridors that demonstrate the greatest need for safety improvement to implement lower cost countermeasures.

SHOPP Collision Reduction

SHOPP is the State Highway System's "fix-it-first" program that funds roadway repairs and preservation, emergency repairs, safety improvements, and some highway operational improvements on the State Highway System (SHS). SHOPP funding is limited to capital improvement projects that do not add new roadway capacity (no new highway lanes) to the SHS, though some new auxiliary lanes may be eligible for SHOPP funding.

The Collision Reduction program is one of eight categories that make up the SHOPP, and its objective is to reduce the number or severity of collisions. The SHOPP Collision Reduction category consists of two sub-programs:

- *201.010 - Safety Improvements*: Reactive approach based on analysis of collision history
- *201.015 - Collision Severity Reduction*: Proactive approach targeted to reduce the potential for traffic collisions based on past performance of roadway characteristics

201.010 – Safety Improvements

The SHOPP Collision Reduction Safety Improvements sub-program is designed to reduce the number or severity of collisions on the SHS. Projects with a safety index above 200 qualify as a safety improvement project. Projects may be individual locations where the collision history indicates a pattern potentially correctable by a targeted safety improvement, such as unsafe traffic (school zone signals included), wet pavement corrections, curve corrections, shoulder widening, left-turn channelization, etc. All proposed projects will be verified by the Caltrans Office of Traffic Safety Programs in the Division of Traffic Operations before being certified as a safety improvement project.

This program also provides funding for safety improvements at sites identified in regional monitoring programs for the reduction of motor vehicle collisions, such as locations at high risk for wrong-way,

multilane, cross-median, cross-centerline, and run-off-the-road collisions. The program also provides funding for non-motorized safety improvements, such as pedestrian and bicycle facilities.

The Safety Improvements program does not provide funding for relocating existing highways or projects that would add new through lanes or upgrade existing highways to a higher classification, such as conventional to expressway, regardless of the safety benefits. This program also does not include projects where the prime purpose is reducing congestion.

Highway improvement projects along an existing alignment to improve standards of width, grade, alignment, or other geometric improvements, are considered new highway construction and are included in the Caltrans STIP programs.

201.015 - Collision Severity Reduction

This sub-program is focused on upgrading existing highway safety features within the roadbed's clear recovery area to reduce the number and severity of collisions. Eligible projects may include new guardrail end treatments and crash cushions, rumble strips, glare screen, rock fall mitigation, overcrossing pedestrian fencing, crosswalk safety enhancements, and improvements that prevent roadway departure.

The Collision Severity Reduction program is designed to be proactive in enhancing safety on the State Highway System. As such, this program is not subject to a safety index analysis but will define projected collision severity reduction performance quantitatively. Projects will be prioritized based on the projected collision severity reduction benefits provided.

2022 SHOPP Collision Reduction Numbers (Statewide)

A total of 733 projects are included in the 2022 SHOPP that was adopted by the CTC in March 2022. The 2022 SHOPP is valued at \$17.9 billion, which includes reservation amounts for several programs, including the Collision Reduction Program. The SHOPP Collision Reduction Program currently has 116 programmed safety projects totaling \$1,447,532,000. The SHOPP reserves \$1,188,000,000 for the 201.010 Safety Improvement program. The reserved amount will address future safety improvements as they are identified.

MCTC's Funding Programs

In the 2023 TIP, there are \$6,664,000 in Federal and Local Funds directed to projects that have a primary purpose of improving roadway safety for all users (Table 3). Funding for safety-focused projects account for 1.6 % of all the dollars in the 2023 TIP, and 9.3% of all projects in the 2023 TIP have a primary purpose of improving road safety. Locally there have been studies to improve the safety of the streets and roads funded by SB 1. These projects are not included in the FTIP but they are important for future project selection prioritization. The Safety Projects in Table 3 are investments in pedestrian and bike safety projects which include \$8,130,000 from Federal and Local funding sources. In addition to the state safety investments directed to projects throughout the region, a sampling of other significant road safety investments in the 2023 TIP include:

Table 3 Summary of Safety Projects in the 2023 FTIP

Category	Number of Projects	% of Projects	Total Project Cost (All Years)	% of Total Project Cost	Funding in the 4-Year Element	% of Funding in the 4-Year Element
Primarily Safety Projects	8	9.3	6,664,000	1.6	5,883,000	2.1
Other Projects with Safety Components	6	7.0	70,241,000	17.1	41,876,000	14.8
Non-Safety Projects	72	83.7	333,878,000	81.3	235,183,000	83.1
Total FTIP Investments	86	100	410,783,000	100	282,942,000	100

Transportation projects that are primarily focused on other non-safety objectives, such as congestion reduction or operational improvements, can often contribute to a safer roadway environment. Table 3 also shows other project investments, not primarily for safety, in the TIP, which are expected to reduce fatalities or serious injuries for all modes, as well as projects that result in safer travel environments specifically for bicyclists and pedestrians. There are 14 projects programmed in the 2023 TIP, accounting for nearly \$76,905,000 in investments, are anticipated to reduce traffic fatalities and/or serious injuries (Table 3) these projects account for 16.3% of all projects in the FTIP.

Safety Project Highlights

MCTC is committed to the support and achievement of the statewide safety targets. The following SHOPP Minor A and B grouped projects were programmed in the prior FTIP and have been constructed:

- SR 145: In Madera County, in Madera from Avenue 13 to Sixth Street. Upgrade and install Americans with Disabilities Act (ADA) curb ramps and sidewalks.
- SR 49: In Madera County, near Oakhurst at Junction Drive. Construct Americans with Disabilities Act (ADA) curb ramps and access to Accessible Pedestrian Signals (APS) buttons.
- Intersection Improvements: County of Madera; Construct Roundabout at Road 274 and Road 225 in North Fork.

The 2023 FTIP lists many projects that will primarily enhance safety for all users at the local level. These projects are expected to improve safety for pedestrian and bicyclists by constructing pedestrian paths, bike facilities, sidewalk constructions, and pedestrian bridges. These projects are funded via CMAQ and local funding and are listed by local jurisdiction:

- The City of Chowchilla pedestrian improvements are located at Riverside Avenue, 8th Street, & Kings Avenue.
- The City of Madera projects for pedestrian and bicycle safety and intersection improvements:
 - Tulare/Cleveland/Raymond Road - Construction Bike/Pedestrian Facilities

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- Construct Bike/Pedestrian Facilities - Cleveland Avenue to Fresno River on MID
- Sidewalk Construction Along Schnoor Avenue Between Sunset Avenue and Fresno River
- Pedestrian Facilities around Washington School
- Madera County CMAQ, HIP, TTP funding is allocated for the construction of a Bicycle and Pedestrian Path on Road 225 and Creek Drive to Road 228.

Projects that are primarily focused on other non-safety objectives and are also expected to contribute to a safer roadway environment are located mainly in the CMAQ and STIP category. For instance:

- Widening projects in the City of Madera, Olive Avenue, and Madera County on Lake Street, are funded under Regional Choice with Local and RSTP Exchange funds. The projects will provide congestion and safety benefits by improving the continuity and remove the need to periodically change lanes which will also reduce number of collisions.
- The SR 99 Avenue 7 to Avenue 12 widening and safety project is funded with STIP, Regional Improvement Program, IIP, SB 1, SR 99 Bond, Measure T, and future funds. It will alleviate the congestion faced during peak periods, which will make it safe for drivers and freight traffic through this main corridor in the Madera region.
- City of Madera:
 - Intersection Improvements at the Intersections of 4th Street, Lake Street, and Central Avenue
 - Two new traffic signals: Cleveland Avenue and Granada Drive and on D Street and South Street.

National Highway System (NHS) Pavement & Bridge Condition (PM 2)

MCTC elected to support the statewide PM2 targets by planning and programming projects that contribute towards the targets. Local projects that aim to maintain the local streets and roads utilize a mix of different funding sources also contribute to the overall health of the roadway system. Funding from the local measure, Measure T, is also used to maintain the local road network.

Madera County has 3.8 lane miles of locally maintained NHS and zero (0) bridges on the NHS. The local NHS segment are within the jurisdiction of the City of Madera. Of the 3.8 locally owned NHS lane miles: 81.1% miles were reported in Fair condition and 18.9% in Poor condition as of the latest draft CA Transportation Asset Management Plan (TAMP). The baseline condition for the locally owned NHS in Madera County is Fair and will continue in that category for the target’s 4-year cycle. Fair condition is not reported in the targets; therefore, it is not shown in Table 4. There are no NHS bridges in the Madera Planning Region that need to be reported.

Table 4 NHS Pavement and Bridge Condition (PM 2) Targets

Performance Measure	Target
Percentage of Interstate System pavement in ‘Good’ condition	N/A
Percentage of non-interstate NHS pavement in ‘Good condition	0
Percentage of Interstate System pavement in ‘Poor’ condition	N/A

Percentage of non-interstate NHS pavement in 'Poor' condition	10.5
Percentage of NHS bridges in 'Good' condition	N/A
Percentage of NHS bridges in 'Poor' condition	N/A

MCTC, as well as all other MPOs in California worked with Caltrans to develop the Transportation Asset Management Plan (TAMP) and reported anticipated financial information for pavement. This information was paired with statewide deterioration rates and statewide unit costs to develop estimated targets that fit each region's needs. These 4- and 10-year targets were developed in 2021. The TAMP is currently in draft form and is anticipated to be adopted in 2022, formalizing the targets. The excel tool developed by Caltrans was used to calculate the necessary funding needed to maintain the pavement and bridge assets. Figure 1 shows the pavements' asset condition and funding scenarios that led to the pavement targets. Similarly, Figure 2 shows the needs assessment along with the TAMP targets for pavement.

Figure 1. Asset Condition for 4- and 10- year investment

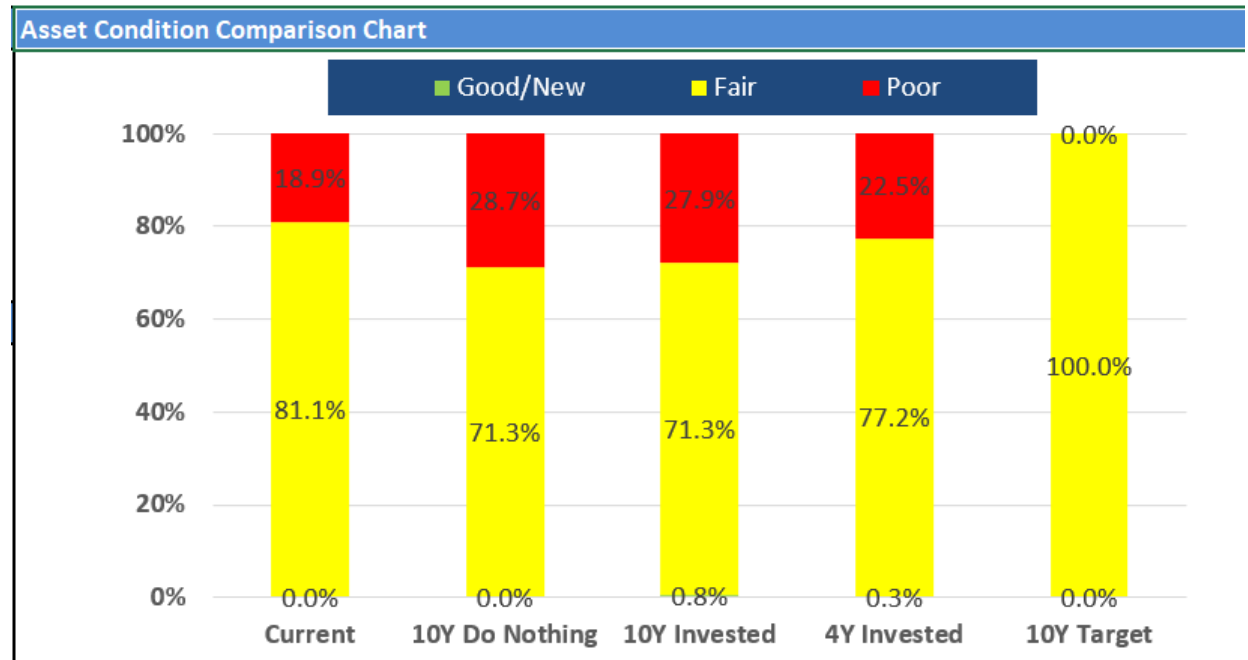


Figure 2. 10 Years Need Assessment for Pavement

10Y Needs Assessment			
Total Cost of Work			
Treatment	Invested	Cost Gap	Total
Fix Fair to Good	\$ -	\$ -	\$ -
Fix Poor to Good	\$ 63,510	\$ 1,706,951	\$ 1,770,461
Add New	\$ -	\$ -	\$ -
Risk Mitigation	\$ -	\$ -	\$ -
Maintenance	\$ -	\$ -	\$ -
Total	\$ 63,510	\$ 1,706,951	\$ 1,770,461

The following section describes the funding sources and programs that have been used to fund PM 2 related projects in the MCTC region.

Many of the projects programmed in the FTIP serve to improve or maintain pavement and bridge non-NHS condition throughout the Madera region.

The following section describes the funding sources and programs that have been used to fund PM 2 related projects in the MCTC region.

Local Funds

Cities and counties spend billions of dollars each year maintaining local roads and bridges. Funding for these efforts is derived from a myriad of sources. In a survey of California jurisdictions, for local funds alone, there are more than a hundred different sources of taxes and fees reported that are used on pavement improvement projects.^{iv} Some examples of local funding sources include:

- Local sales taxes
- Development impact fees
- General funds
- Various assessment districts – lighting, maintenance, flood control, special assessments, community facility districts
- Traffic impact fees
- Traffic safety/circulation fees
- Utilities (e.g., stormwater, water, wastewater enterprise funds)
- Transportation mitigation fees
- Parking and various permit fees
- Flood control districts
- Enterprise funds (solid waste and water)
- Investment earnings
- Parcel/property taxes
- Indian reservation roads
- Indian gaming funds

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- Vehicle registration fees
- Vehicle code fines
- Underground impact fees
- Transient occupancy taxes
- Capital Improvement Program (CIP) reserves/capital funds

Local Funds are typically used for non-regionally significant road maintenance, safety, and bridge projects. Even so, some of the PM 2 projects in the FTIP are funded through Local Funds.

State Funds

HUTA

The Highway Users Tax Account (HUTA), more commonly known as the state gas tax, is still the single largest funding source for cities and counties.

SB 1

California doubled down on PM 2 when it approved Senate Bill 1 on April 28, 2017. SB 1 increased several taxes and fees to raise more than \$5 billion annually in new transportation revenues. Moreover, SB 1 provides for inflationary adjustments, so that purchasing power does not diminish as it has in the past. SB 1 prioritizes funding towards maintenance, rehabilitation, and safety improvements on state highways, local streets and roads, and bridges and to improve the state's trade corridors, transit, and active transportation facilities.

Many SB 1 funds are not captured in the FTIP because this document focuses on federally funded and regionally significant projects, while SB 1 is a non-federal fund source that tends to pay for non-regionally significant road maintenance, safety, and bridge projects. Even so, some of the PM 2 projects in the FTIP are funded through SB 1.

Federal Funds

HBP

The Highway Bridge Program (HBP) provides federal aid to local agencies to replace and rehabilitate deficient, locally owned, public highway bridges. The HBP is intended to remove structural deficiencies, the Bipartisan Infrastructure Law (BIL) revises the terminology to "classified in poor condition," from existing local highway bridges to keep the traveling public safe." The HBP provides about \$288 million annually for bridge projects. Off-system bridges are usually funded at 100% HBP, while on system bridges are funded at 88.53% HBP. An exception to the federal participating rate is "high-cost" bridges, in which sponsors enter into agreements with Caltrans Local Assistance and agree on a federal participating rate which may not equal 100% or 88.53%.

BFP

Bridge Formula Program (BFP) is a new program established under the Bipartisan Infrastructure Law (BIL) to provide funding to replace, rehabilitate, preserve, protect, and construct bridges. It is a complement to the discretionary Bridge Investment Program (see below). The Bridge Formula Program under BIL provides 4.25 Billion to the State of California, of which States are required to reserve 15 percent of their formula funds under this program for use on off-system bridges. For funds used on locally owned off-system bridges, the Federal share is 100%.

SHOPP

The SHOPP was described in the section above under PM 1. Two of the eight categories of the SHOPP that address PM 2 are Bridge Preservation and Roadway Preservation.

Although the SHOPP is a program, it is often thought of as a fund source as well. The FTIP lists the fund source for most SHOPP projects as “SHOPP Advance Construction.” Caltrans blends funds from HUTA, SB 1, and federal highway funds into SHOPP, and the “SHOPP Advance Construction” designation serves as a placeholder for what may be federal or state funds.

SHOPP Roadway Preservation

The SHOPP Roadway Preservation category includes the following programs:

- 201.120 – Roadway Rehabilitation
- 201.121 – Pavement Preservation
- 201.122 – Pavement Rehabilitation
- 201.150 – Roadway Protective Betterments
- 201.151 – Drainage System Restoration
- 201.170 – Signs and Lighting Rehabilitation

The 2022 SHOPP has 306 Roadway Preservation projects totaling \$9,874,173,000 which includes future need/contingency dollars. The SHOPP does not have a reservation for Roadway Preservation.

SHOPP Bridge Preservation

The SHOPP Bridge Preservation category includes the following programs:

- 201.110 – Bridge Rehabilitation and Replacement
- 201.111 – Bridge Scour Mitigation
- 201.112 – Bridge Rail Replacement and Upgrade
- 201.113 – Bridge Seismic Restoration
- 201.119 – Capital Bridge Preventative Maintenance Program
- 201.322 – Transportation Permit Requirements for Bridges

The 2022 SHOPP has 117 Bridge Preservation projects totaling \$2,422,402,000 which includes future need/contingency dollars. The SHOPP does not have a reservation for Bridge Preservation.

Table 5 Summary of NHS Pavement and Bridge Condition Programs & Projects in the 2023 FTIP

Category	# of projects	% of projects	Total Project Cost	% of Total project cost	Funding in the 4-year element	% of funding in the 4-year element
Pavement Condition Projects	4	4.7	78,751,000	19.2	29,278,000	10.3
Bridge Condition Projects	12	14.0	14,410,000	3.5	12,010,000	4.2

Total Pavement and Bridge Condition Projects	16	18.6	93,161,000	22.7	41,288,000	14.6
Non-Pavement and Bridge Condition Projects	70	81.4	317,622,000	77.3	241,654,000	85.4
Total FTIP Investments	86	100	410,783,000	100	282,942,000	100

National Highway System Pavement and Bridge Projects Highlights

Our region has invested in maintenance and rehabilitation of many of our major roadways and bridges both on and off the NHS. The following projects are some of the highlights.

SHOPP Lump Sum Grouped projects for pavement and resurfacing funds have been programmed for the rehabilitation of pavement and bridge preservation.

Local and HBP funds have been programmed for bridge rehabilitation and reconstruction of bridges in the City of Chowchilla, the City of Madera, and Madera County.

STIP, Measure T, SHOPP, SB 1, Regional Improvement Program, and SR 99 bond funds have been programmed to improve the system reliability and help with congestion on SR 99, these improvements are also expected to help with pavement condition on the NHS.

NHS Performance, Interstate System Freight Movement, and CMAQ Program Performance (PM 3)

The efficient development, management, and operation of Madera County’s surface transportation are among the primary goals that guides MCTC’s planning and programming. MCTC has elected to plan and program projects that support the statewide PM 3 targets. Many of the projects programmed in the FTIP serve to improve NHS performance, interstate freight movement, and CMAQ program performance.

PM3 statewide targets were adopted as the MCTC targets in 2018. The state and MPOs are going to work on the next cycle PM3 targets this year. The Performance Measures applicable to this region and the current state targets are included in Table 6.

Table 6 NHS Performance, Interstate System Freight Movement, and CMAQ Program

Performance Target

Performance Measure	Target	Applicable in Madera County?
NHS Performance		
Percent of Interstate System mileage reporting reliable person-mile travel times	65.6%	N/A
Percent of non-Interstate NHS mileage reporting reliable person-mile travel times	74% (1%)	
Interstate Freight Movement		
Percent of Interstate system mileage reporting reliable truck travel times	1.67	N/A
CMAQ Program Performance		
Annual hours of peak-hour excessive delay per capita	Targets for 6 major UA differ	N/A
Total emissions reduction by criteria pollutant (PM10, PM2.5, Ozone, CO)		*
VOC (Kg/day)	970.87 (+2%)	
CO (Kg/day)	7,000.54 (+2%)	
NOx (Kg/day)	1,788.43 (+2%)	
PM10 (Kg/day)	2,479.83 (+2%)	
PM2.5 (Kg/day)	922.34 (+2%)	
Percent of non-single occupancy vehicle (SOV) travel	Targets for 6 major UA differ	N/A

Note: MCTC is exempted from setting targets for the performance measures marked as “N/A”. These measures only apply to regions with urbanized areas that contain a population greater than one million. There are no Interstates traversing Madera County.

*New State and Regional targets will be set in the coming months and will be updated accordingly.

The MCTC region is currently meeting its targets.

Many of the projects programmed in the FTIP serve to improve NHS performance, interstate freight movement, and CMAQ program performance.

The following are funding sources and programs that help fund Non-Interstate and Interstate improvement projects:

SHOPP Mobility

The SHOPP Mobility category includes following three programs:

201.310 – Operational Improvements

201.315 – Transportation Management Systems

201.321 – Weigh Stations & Weigh-In-Motion Facilities

201.310 – Operational Improvements

The primary purpose of this program element is to improve traffic flow on existing State highways by reducing congestion and operational deficiencies at spot locations. Operational improvement projects do not expand the design capacity of the system.

Examples of Operational Improvements projects include, but are not limited to:

- Interchange modifications (not to accommodate traffic volumes significantly larger than what the existing facilities were designed for)
- Ramp modifications (acceleration - deceleration/weaving)
- Auxiliary lanes for merging or weaving between adjacent interchanges
- Curve corrections/improve alignment
- Signals and/or intersection improvements
- Two-way left-turn lanes
- Channelization
- Turnouts
- Shoulder widening

201.315 – Transportation Management Systems

The primary purpose of this program element is to improve traffic flow on existing State highways by addressing system-wide congestion through system management techniques. Transportation Management Systems facilitate the real time management of the State highway system by providing accident and incident detection, verification, response, and clearance. These systems provide State highway system status information to travelers.

Examples of Transportation Management System projects include, but are not limited to:

- Traffic sensors
- Changeable message signs
- Close circuit television cameras
- Ramp meters
- Communications systems
- Highway advisory radio
- Traffic signal interconnect projects
- Traffic management systems housed in Transportation Management Centers (TMCs), including the necessary software and hardware (excluding facilities)
- TMC interconnect projects

201.321 – Weigh Stations & Weigh-in-Motion Facilities

The primary purpose of this SHOPP Mobility program element is to provide for Commercial Vehicle Enforcement Facilities (commonly called Weigh Stations) and Weigh-in-Motion (WIM) systems. The Weigh Stations are needed to support the Commercial Vehicle Enforcement Plan; Truck safety, size and weight regulations are enforced by the California Highway Patrol reducing truck related accidents or incidents and protection our highways from premature damage. The WIM sites provide data for federally required data systems and special studies, design and maintenance strategies, size and weight policies, enforcement and planning strategies, and the traffic and truck volumes publications.

The 2022 SHOPP features 65 Mobility projects programmed totaling \$1,748,406,000 which includes future need/contingency dollars. The SHOPP does not have a reservation for Mobility.

SB 1 Trade Corridor Enhancement Program (Including National Highway Freight Program)

The purpose of the Senate Bill 1 (SB 1) Trade Corridor Enhancement Program (TCEP) is to provide funding for infrastructure improvements on federally designated Trade Corridors of National and Regional Significance, on California's portion of the National Highway Freight Network as identified in California Freight Mobility Plan, and along other corridors that experience high volumes of freight movement. The Trade Corridor Enhancement Program also supports the goals of the National Highway Freight Program, the California Freight Mobility Plan, and the guiding principles in the California Sustainable Freight Action Plan.

This statewide, competitive program will provide approximately \$300 million per year in state funding and approximately \$515 million in National Highway Freight Program funds if the federal program continues under the next federal transportation act.

Eligible applicants apply for program funds through the nomination of projects. All projects nominated must be identified in a currently adopted regional transportation plan (RTP). The Commission is required to evaluate and select submitted applications based on the following criteria:

- Freight System Factors – Throughput, Velocity, and Reliability
- Transportation System Factors – Safety, Congestion Reduction/Mitigation, Key Transportation Bottleneck Relief, Multi-Modal Strategy, Interregional Benefits, and Advanced Technology
- Community Impact Factors – Air Quality Impact, Community Impact Mitigation, and Economic/Jobs Growth
- The overall need, benefits, and cost of the project
- Project Readiness – ability to complete the project in a timely manner
- Demonstration of the required 30% matching funds
- The leveraging and coordination of funds from multiple sources
- Jointly nominated and/or jointly funded

Truck Travel Discussion

Truck travel mobility, and the goods movement that it provides, is essential to the economic vitality in the central San Joaquin valley. Nearly all freight movement in the Central Valley is provided by trucks. Therefore, a reliable and efficient good movement systems is necessary to support economic vitality in Madera County and the greater San Joaquin Valley. As such, transportation projects that support efficient truck travel, such as shoulder improvements, auxiliary lanes, traffic flow improvement, and intelligent transportation systems (such as signal synchronization of the urban areas) have been included on the 2021 FTIP to support our freight mobility. MCTC continually looks for ways to prioritize investment improvements and strategies to increase the efficiency and reliability of the region's goods movement system

CMAQ

The Congestion Mitigation and Air Quality (CMAQ) program supports improving air quality and relieving roadway congestion. The purpose of the CMAQ program is to fund transportation projects or programs that will contribute to attainment or maintenance of the National Ambient Air Quality Standards (NAAQS) for ozone, carbon monoxide (CO), and particulate matter (both PM10 and PM2.5).

Table 7 below shows the summary of the NHS performance, non-interstate reliability projects, and CMAQ Program Performance Projects in the 2023 FTIP.

Table 7 Summary of the NHS Performance, Interstate System Freight Movement, and CMAQ Program Performance Projects in the 2023 FTIP

Category	# of projects	% of Projects	\$ Total Project Cost	% of Total Project Cost	\$ in 4 years	% of funding in the 4-year element
Non-Interstate Reliability Projects	4	4.7	166,782,000	40.6	138,300,000	48.9
Interstate Reliability Projects	N/A	N/A	N/A	N/A	N/A	N/A
Truck Travel Time Projects	N/A	N/A	N/A	N/A	N/A	N/A
Regional Choice	6	7.0	122,247,000	29.8	157,742,000	55.8
CMAQ Projects	32	37.2	18,759,000	4.6	16,220,000	5.7
Non-PM3 Projects	48	55.8	237,356,000	57.8	125,200,000	44.2
Total FTIP Investments	86	100	410,783,000	100	282,942,000	100

Note: Included in Regional choice projects are the four non-interstate reliability projects.

PM 3 Project Highlights

Programmed projects which support improving air quality and relieving congestion in Madera County include construction of pedestrian and bicyclists' facilities, shoulder paving, alley paving, and new traffic signals under the CMAQ program.

Measure T funds have been programmed for operational improvements on the SR 99/SR 233 interchange. STIP, Measure T, SHOPP, SB 1, Regional Improvement Program, and SR 99 bond funds have been programmed to improve the system reliability and help with congestion on other SR 99 projects.

Transit Asset Management (TAM)

Table 8, below, provides a summary of the performance measures designated for Transit Asset Management (TAM).

Table 8 Description of the Transit Asset Management Performance Measures

<i>Transit Asset Management Performance Measures</i>		
Asset Category	Performance Measurement	Asset Class Examples
Rolling Stock - (revenue service vehicles) (Age)	Percentage of revenue vehicles within a particular asset class that have met or exceeded useful life benchmark (ULB).	40-foot bus, 60-foot bus, vans, automobiles, locomotives, rail vehicles
Equipment – (non-revenue) service vehicles (Age)	Percentage of vehicles that have met or exceeded their ULB.	Cranes, prime movers, vehicle lifts, tow trucks, vans, automobiles
Infrastructure-rail fixed-guideway track, signals, and systems (Condition)	Percentage of track segments, signal, and systems with performance restrictions.	Signal or relay house, interlockings, catenary, mechanical, electrical and IT systems
Stations/Facilities (Condition)	Percentage of facilities within an asset class, rated below 3 on the Transit Economic Requirements Model scale.	Stations, depots, administration, parking garages, terminals, shelters

The TAM targets provided below were produced collaboratively with transit agencies based on their agency TAM plans and local targets. In developing the targets, MCTC reviewed and considered the various local and regional transit operators’ TAM plans (including identified goals, objectives, measures, and targets), thereby incorporating them into the metropolitan planning process.

This section presents the 2018 TAM performance measures and targets adopted by Madera Metro, CATX, and MCC, the three Transit Operators in the MCTC planning region. TAM targets for the region were developed in coordination with the public transit agencies and then a weighted average was calculated for the region. The three transit operators are expected to update their TAM plans in 2022. Once set, MCTC will coordinate and set regional targets.

Table 9 Transit Asset Management Targets

Reporting Entity	Rolling Stock	Equipment	Facilities	Infrastructure
	<i>% of revenue vehicles > ULB</i>	<i>% of non-revenue vehicles > ULB</i>	<i>% of facilities < TERM scale 3</i>	<i>% of track segments with restrictions</i>
City of Madera	15.94	N/A	N/A	N/A
Madera County	9.81	N/A	N/A	N/A
City of Chowchilla	6.45	N/A	N/A	N/A

Regional Target based on Weighted Avg.	32.19	N/A	N/A	N/A
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The three public transportation reporting entities provided their targets to MCTC as shown in Table 9. The MCTC regional targets are presented in tabular form to account for the differences in targets and standards among the providers of public transportation. Targets represent the thresholds for the maximum percentage of assets at or exceeding acceptable standards. In most cases for the target-setting process, providers set targets that were approximately equivalent to their current performance. In future years, staff will work with the providers of public transportation to collate performance.

MCTC will continue to work with the region’s transit operators and county transportation commissions to seek ways to improve the methodology, data collection, and analysis for future RTP updates, and to continue engaging in a regional discussion about transit state of good repair and the need for additional funding.

The three transit operators in the MCTC region have developed and adopted TAM plans and targets, which are available from the transit agencies. TAM category projects may also be supported by state, local, and other federal funding sources (e.g., FTA Section 5337 State of Good Repair, FTA 5307, FTA 5339 formula funds, and FHWA flexible funds such as CMAQ and STBG). The funding and the program of projects in the FTIP will enable local transit operators to achieve their respective transit asset management performance targets.

Table 10 Summary of Transit Asset Management Projects in the 2023 FTIP

Category	Number of Projects	% of Projects	Total Project Cost	% of Total Project Cost	Funding in the 4-Year Element	% of Funding in the 4-Year Element
Transit Asset Projects	21	24.4	7,811,000	1.9	7,811,000	2.8
Non-Transit Asset Projects	10	11.6	5,066,000	1.2	23,880,000	8.4
Total FTIP Investments	86	100	410,783,000	100	282,942,000	100

There are 31 projects in the 2023 FTIP with \$31,105,000 in FTA funds. Section 5307 funding totals \$24,373,000, and 77% of the investment. Funding from section 5311 is \$5,066,000 and 16% of the total. Finally, \$1,666,000 are from section 5339. Local funds for transit are expected to be \$13,047,000.

Transit Asset Management Project Highlights

The FTIP includes funding from multiple FTA sources for projects that support TAM and maintaining a state of good repair. Examples of these projects include rural and urban capital assistance programs, rolling stock acquisition, maintenance, and overhauls, bus fleet rehabilitation and replacement, track and rail yard maintenance and improvements and maintenance of passenger facilities. For the Madera region key projects that address TAM include:

- New transit vehicles for the City of Madera and Madera County

- Electric infrastructure for Madera County
- A charging station for the City of Madera

Public Transportation Agency Safety Plans (PTASP)

Transit safety targets must be set every four years and be included in the MCTC Regional Transportation Plan (RTP). The goals, objectives, performance measures, and targets from the transit providers' safety plans must also be integrated into the RTP, either directly or by reference.

The National Public Transportation Safety Plan identifies four performance measures that must be included: fatalities, injuries, safety events, and system reliability. Definitions for transit safety performance measures are as described in the NTD Safety and Security Manual.

Transit providers may choose to establish additional targets for safety performance monitoring and measurement. The following table documents existing performance targets set by transit operators in the MCTC region. The only transit provider required to set performance targets in this planning region is the City of Madera. MCTC reached out and provided technical assistance and Table 11 shows the targets for the Madera Metro.

Table 11 Public Transportation Agency Safety Plans Targets

Mode of Service	Fatalities	Fatalities (per 10 million VRM)	Injuries	Injuries (per 10 million VRM)	Safety Events	Safety Events (per 10 million VRM)	System Reliability
Madera Metro Fixed Route	0	0	2	0.93	7	3.26	0
Demand Response "Dial-A-Ride"	0	0	0	0	0	0	0

Table 12 Summary of Transit Safety Projects in the 2023 FTIP

Category	Number of Projects	% of Projects	Total Project Cost	% of Total Project Cost	Funding in the 4-Year Element	% of Funding in the 4-Year Element
Transit Safety Projects	3	3.5	1,884,000	0.5	1,884,000	0.7
Non-Transit Safety Projects	28	32.6	5,066,000	1.2	23,880,000	8.4

Madera County Transportation Commission
 Transportation Performance Measures - 2023 FTIP

Total FTIP Investments	86	100	410,783,000	100	282,942,000	100
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Note: Some projects identified for TAM may also benefit Transit Safety.

There are 3 projects in the FY 2023 FTIP with \$1,884,000 in §5307 and CMAQ funding that specify the maintenance or replacement of transit assets. These safety investments represent 0.5% of the total transit investments in the Madera region. Although, the only transit provider required to prepare a PTASP is the City of Madera, Madera County also invests in safety related investments with its fleet.

Transit Safety Project Highlights

The FTIP includes funding from multiple FTA sources for projects that support transit safety. Examples of these projects include bus replacement, bus pullouts, bulb-outs, bus stop improvements, light rail crossing improvements, train control, grade separations. For the Madera region key projects that address transit safety include:

- Vehicle replacements
- Bus Stop shelters
- Preventative Maintenance

Footnotes

ⁱ [23 CFR § 450.326 \(c, d\)](#)

ⁱⁱ The TERM scale is a measure of condition used in the National Transit Database (NTD). This is the five-point scale that agencies use to report the condition of their facility assets. An asset is deemed to be in good repair if it has a rating of 3, 4, or 5 on this scale.

ⁱⁱⁱ MPO Frequently Asked Questions, Public Transportation Agency Safety Plan Final Rule, FTA <https://www.transit.dot.gov/regulations-and-programs/safety/public-transportation-agency-safety-program/mpo-frequently-asked#SPTQ4>

^{iv} California Statewide Local Streets and Roads Needs Assessment, October 2018, pg. 39.

<https://www.savecaliforniastreet.org/wp-content/uploads/2018/10/2018-Statewide-Final-Report-1.pdf>

^v Chapter 6 Highway Bridge Program, January 2019.

<https://dot.ca.gov/-/media/dot-media/programs/local-assistance/documents/lapg/g06.pdf>