

# Performance Management

The Moving Ahead for Progress in the 21st Century Act (MAP-21) transformed the Federal-aid highway program by establishing new requirements for performance management to promote the most efficient investment of Federal transportation funds. Performance management increases the accountability and transparency of the Federal-aid highway program and provides for a framework to support investments in projects that work towards achievement of transportation performance outcomes for key national transportation goals.

MAP-21 and subsequent federal rulemaking established federal regulations that requires states to develop a Transportation Asset Management Plan (TAMP) and implement Performance Management. These Federal regulations require states to utilize nationally-defined performance measures in setting targets. These Federal regulations also requires Metropolitan Planning Organizations (MPOs) to set their own regional targets or elect to adopt the state targets.

The Federal performance measures are split into three Performance Management (PM) groupings:

- PM1: Safety;
- PM2: Pavement and Bridges on the National Highway System (NHS); and
- PM3: System Performance, Freight, Congestion Mitigation Air Quality (CMAQ).

## Performance Management 1 (PM1): Safety

The Moving Ahead for Progress in the 21st Century Act (MAP-21, P.L. 112-141) and subsequent federal rulemaking established five performance measures related to Safety. The measures are:

- Number of fatalities;
- Number of serious injuries;
- Rate of fatalities per 100 million vehicle miles traveled;
- Rate of serious injuries per 100 million vehicle miles traveled; and
- Number of non-motorized fatalities and serious injuries.

Federal regulations required Caltrans to establish and report annual targets related to each of these five performance measures by August 31 of each year. For each performance measure, Metropolitan Planning Organizations (MPO's) shall establish a target within six months after Caltrans establishes targets (February 27) by either: 1) Agreeing to support the statewide safety target for that performance measures; or 2) Establishing a quantifiable target for that performance measure for their metropolitan planning area. Annual targets will be expressed as five-year rolling averages of the five consecutive calendar years ending in the year for which the targets are established.

### State and Regional Targets

On August 31, 2017, Caltrans had set the 2018 PM1 safety targets. In the 2018 RTP and 2019 FTIP, MCAG applied the statewide percentage reduction targets to the regional averages to set the Merced Region 2018 safety targets.

On August 31, 2018, Caltrans had established the 2019 PM1 safety targets. On February 27, 2019, MCAG submitted the 2019 MPO PM1 Target Report, which indicated our region's support of the 2019 Caltrans statewide safety performance management targets (SPMT's).

### Regional Investments to Support Performance Targets

The 2019 FTIP reflects investments that help progress toward achieving the transportation performance measures established pursuant to 23 CFR 450.306(D). It is anticipated that the State and local projects included in the 2019 FTIP will assist in meeting these performance measures by providing investments in projects that will contribute to accomplishing the safety performance targets for the residents of Merced County across all modes of transportation. The following projects are expected to initialize or construct in 2019.

The State projects contributing to improved safety conditions are identified in the SHOPP.

- Caltrans has recently awarded the construction contract for the Highway 59 and Olive Ave/Santa Fe Drive Traffic Signal Improvements with funds fully programmed in the SHOPP. This project will reduce the number and severity of rear-end and broadside collisions at the intersection. Construction is expected to be complete in late 2019.
- Caltrans is funding the construction of deceleration lanes for northbound and southbound off-ramps at Applegate Road as a component of a Highway 99 pavement rehabilitation project. Caltrans hopes to Ready to List (RTL) in 2019. In the past two years, there have been two major big rig accidents due to the off-ramp conditions.

Caltrans has also obtained Federal Section 130 / Railway-Highway Crossing funds for safety improvements at two at-grade crossing locations in Merced County:

- In the Community of Winton at Winton Way and BNSF tracks.
- In Northwest Winton Community at Olive Avenue and BNSF tracks.

The local projects, which contribute to improved safety conditions, include a current HSIP project.

- Merced County will enhance pedestrian crosswalks at various unsignalized intersections near school areas in several communities. This project includes installing advanced warning road signs, high-visibility crosswalk marking patterns, advanced yield lines, rectangular rapid flashing beacons, and ADA curb ramps.

There are local, CMAQ-funded projects, which indirectly contribute to improved safety conditions, and they are:

- Right-turn channelization on Southbound Highway 59 towards 16th Street in Merced;
- Signalization of the very congested intersection of Highway 59 and 16th Street in Merced;
- Roundabout at the intersection of Main Street and B Street in Livingston.

There are local, pedestrian improvement projects, which includes new sidewalks and ADA ramps, that will improve the safety for non-motorists. These include:

- Construct pedestrian improvements in older neighborhoods in Western Atwater;
- Construct pedestrian improvements nearby Mitchell Elementary and Middle Schools in Atwater;
- Construct pedestrian improvements on Valeria Street in Dos Palos;
- Construct a multiuse path along Meredith Avenue in Gustine; and
- Construct pedestrian improvements in various locations in Merced.

## Performance Management 2 (PM2): Assessing Pavement and Bridge Condition on the National Highway System (NHS)

The Bridge and Pavement Performance Management (PM2) Final Federal Rule established performance measures related to the performance of the Interstate and non-Interstate NHS for the purpose of carrying out the National Highway Performance Program (NHPP); to assess pavement and bridge condition. The six specific performance measures are:

### Pavement Performance of the NHS

- Percentage of Interstate NHS pavements in Good condition;
- Percentage of Interstate NHS pavements in Poor condition;
- Percentage of non-Interstate NHS pavements in Good condition; and
- Percentage of non-Interstate NHS pavements in Poor condition.

### Bridge Performance of the NHS

- Percentage of NHS bridges in Good condition; and
- Percentage of NHS bridges in Poor condition.

### State and Regional Targets

Federal regulations required Caltrans to establish 2- and 4-year pavement and bridge targets by May 20, 2018. Federal regulations allowed MPO's to either support the Caltrans targets or adopt their own by November 16, 2018.

MCAG had elected to adopt the "statewide" pavement and bridge targets and had submitted the PM2 Target Reporting Form for the Merced Region on September 25, 2018.

The following Caltrans tables indicate the conditions of the Merced Region's pavement and bridges.

Pavement Inventory & Conditions		Lane Miles			Percentage		
Non-Interstate NHS	Lane Miles	Good	Fair	Poor	Good	Fair	Poor
State	22,490	9,787	12,137	566	43.52%	53.97%	2.52%
Other	54	9	44	1	16.67%	81.48%	1.85%
Local	19,373	882	16,061	2,430	4.55%	82.90%	12.54%
<b>Total</b>	<b>41,917</b>	<b>10,678</b>	<b>28,242</b>	<b>2,997</b>	<b>25.47%</b>	<b>67.38%</b>	<b>7.15%</b>
Local: Merced (MCAG)	87	2	72	13	2.30%	82.76%	14.94%

MCAG only makes up 0.2% (87/41,917) of the total Non-Interstate NHS pavement miles.

Bridges Inventory & Conditions			Bridge Count			Deck Area (SF)			Percentage		
Region	Number	Deck Area	Good	Fair	Poor	Good	Fair	Poor	Good	Fair	Poor
State	9,196	210,774,774	6,775	2,137	284	146,271,637	56,760,097	7,743,040	69.40%	26.93%	3.67%
Local	1,629	23,511,109	931	544	54	9,586,733	10,449,077	3,475,299	40.78%	44.44%	14.78%
<b>Total</b>	<b>10,825</b>	<b>234,285,883</b>	<b>7,706</b>	<b>2,681</b>	<b>338</b>	<b>155,858,370</b>	<b>67,209,174</b>	<b>11,218,339</b>	<b>66.52%</b>	<b>28.69%</b>	<b>4.79%</b>
Local: Merced (MCAG)	10	52,958	4	5	1	17,653	34,412	893	33.33%	64.98%	1.69%

MCAG's bridge deck area account for 0.02% (52,958/234,285,883) of the total deck area for NHS bridges.

MCAG had mapped out these local, National Highway System (NHS) pavement and bridges.  
Regional Investments to Support Performance Targets

The rehabilitation of Highway 99, from Merced to Atwater, is being funded with Caltrans SHOPP. As shown on the maps, the condition for Highway 99 is mostly fair or poor. Once these projects are implemented, the condition for the entire stretch will be rated as good.

- Highway 99 Atwater Rehabilitation and Off-Ramp Improvements (extending auxiliary [turn] lanes and flattening turn radii): Caltrans plans to reconstruct Highway 99, from the Atwater-Merced Expressway Interchange to just north of Atwater, with 40-year life continuous reinforced concrete pavement (CRCP). The project also includes safety improvements: adding highway exit lanes for the Applegate Road Exit; and flattening out the turning radii for the actual off ramps. Caltrans is still working on design and acquiring needed properties for the additional highway exit lanes and drainage basins. The project is expected to go to construction in late Spring 2020.
- Highway 99 Merced Rehabilitation: Caltrans plans to reconstruct Highway 99, from Mission Avenue Interchange to the Atwater-Merced Expressway Interchange, with 40-year life CRCP. Caltrans is working on design. The project is expected to go to construction in Spring 2021.

Currently, maintenance and rehabilitation of the Merced Region's local NHS pavement and bridges are not being funded with federal revenue sources so are not programmed in the FTIP. The Merced Region is using SB 1 Local Streets and Roads and regional sales tax (Measure V) monies to fund these projects. In late 2018, the Merced Region has a PAVER pavement management system, which aids jurisdictions with their pavement maintenance and rehabilitation funding decisions.

- Atwater will be reconstructing Winton Parkway from Broadway Avenue to Bellevue Road. On the map, the condition is currently poor. Once reconstructed, Winton Parkway will be rated as good.

### **Performance Management 3 (PM3): System Performance/Freight/CMAQ**

The Final Federal Rule established PM3 performance measures related to the performance of the Interstate and non-Interstate NHS for the purpose of carrying out the National Highway Performance Program (NHPP), the National Highway Freight Program (NHFP), and the Congestion Mitigation and Air Quality (CMAQ) Program. The four specific performance measures are:

#### NHPP System Performance

- Percentage of reliable person-miles traveled on the Interstate; and
- Percentage of reliable person-miles traveled on the non-Interstate NHS.

#### NHFP Freight Performance

- Percentage of Interstate system mileage providing reliable truck travel time (Truck Travel Time Reliability Index).

#### CMAQ Performance

- Total emission reductions by applicable pollutants under the CMAQ program.

#### State and Regional Targets

Federal regulations required Caltrans to establish PM3 annual targets by May 20, 2018. Federal regulations allowed MPO's to either support the Caltrans targets or adopt their own by November 16, 2018.

MCAG had elected to adopt the "statewide" PM3 targets and had submitted the PM3 Target Reporting Form for the Merced Region on November 13, 2018.

#### Regional Investments to Support Performance Targets

In order to improve system and freight performance, Caltrans and MCAG have financially partnered to fund the construction of the Highway 99 Livingston Widening Northbound Project. In the 2018 State Transportation Improvement Program (STIP), there are Caltrans Interregional Improvement Program (IIP) funds programmed in Fiscal Year 2021/22 for construction of the Highway 99 Livingston Widening Southbound Project.

- Highway 99 Livingston Widening Northbound: Caltrans will be widening northbound Highway 99, from south of Livingston to the Merced/Stanislaus County Line, to three lanes. This project is being funded by a combination of revenue sources: SB 1 Trade Corridor Enhancement Program; State Route 99 Bond; and MCAG's Regional Improvement Program (RIP). The California Transportation Commission (CTC) has approved Caltrans' allocation request for construction funding at their March 14, 2019 meeting. This project could begin construction this Fall.
- Highway 99 Livingston Widening Southbound: Caltrans plans to widen southbound Highway 99, from the Merced/Stanislaus County Line to south of Livingston, to three lanes. Hopefully, this construction funding commitment in FY 2021/22 will carry over into the 2020 STIP, so that Caltrans may request construction allocation when the time comes.

There are also local projects on the State Highway System that are progressing towards construction and that will improve system and freight performance.

- Gustine Highway 140/33 Roundabout: The City of Gustine plans to construct a roundabout on Highway 140/33 at the intersection of 4<sup>th</sup> Street and 6<sup>th</sup> Avenue. The City of Gustine is working with Caltrans on finalizing the project design and is acquiring the needed properties. The project is being funded with MCAG's CMAQ, Measure V Regional, and Gustine's local funds. These construction funds are programmed in FY 2019/20.

- Merced Highway 59/16<sup>th</sup> Intersection Signalization and S/B Turn Lane: The City of Merced is working with Caltrans and the Union Pacific Railroad on finalizing the project design. Once the final design is approved, the City could move forward with advertising the project for construction. The project is being funded with MCAG's CMAQ and Merced's local funds. This project may progress to construction in FY 2019/20.

Per the federal CMAQ program guidance, projects must result in emission reductions of criteria pollutants in air quality nonattainment and maintenance areas. The Merced Region is a nonattainment area for ozone and PM2.5, and is a maintenance area for PM10. As annually reported in FHWA's CMAQ Public Access System, all of the region's CMAQ projects demonstrate criteria pollutant reductions. These regional emission reductions support the statewide CMAQ performance targets.

The 2019 FTIP contains \$13,984,844 of CMAQ programming:

- Pedestrian and bicycle facilities: \$7,032,427;
- Traffic flow improvements: \$3,111,476;
- Diesel equipment replacements: \$885,545;
- Rideshare and vanpooling programs: \$640,000;
- Public outreach, marketing and education for transit bus services: \$630,000; and
- PM10 dirt paving projects: \$1,685,396.