

Mid-Performance Period (MPP) Progress Reporting for PM2 Pavement & Bridges on the NHS

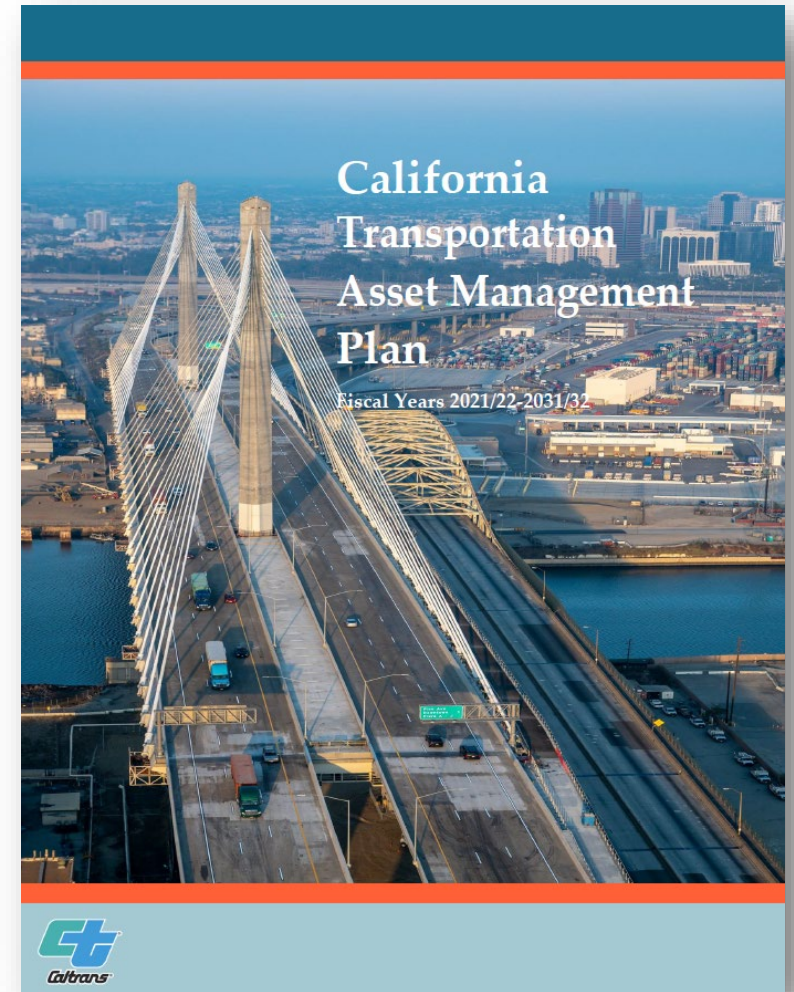
Cross Agency Asset Management Forum
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TAMP Performance Targets

- The 2022 *California Transportation Asset Management Plan (TAMP)* establishes performance targets for pavement and bridge conditions on the NHS.
- Pavement:
 - Percentage of NHS interstate pavements in Good condition
 - Percentage of NHS interstate pavements in Poor condition
 - Percentage of NHS non-Interstate NHS pavements in Good condition
 - Percentage of NHS non-Interstate NHS pavements in Poor condition
- Bridge:
 - Percentage of NHS bridges in Good condition
 - Percentage of NHS bridges in Poor condition
- 10-year Desired State of Repair (DSOR) targets guide strategic planning decisions.
- Shorter term performance targets are set for 2 and 4-year periods to measure progress.



Target Setting Approach

- 2 and 4-year NHS pavement and bridge targets were determined by the MPOs during TAMP development.
- The *Performance Target Analysis Tool (PTAT)* was used to set 4-year targets and determine expected 10-year outcomes based on planned investments.
- Note, MPOs were not required to establish 2-year targets in the 2022 TAMP.

2022 California TAMP Asset Performance Simulation Tool

Revision 01 07-30-2021 Developed by Caltrans HQ TAM Office

A. Legend

Cells for data entry

B. Analysis Parameters

General

Agency	AMBAG	Asset	Pavement	Annual Escalation Rate	3.20%
Years of Analysis	10	Current Inventory	254.5 Lane Miles	Escalation Period (Years)	5

Estimated Investment (Expected Annual Funding)

Annual Funding by Work Type	Initial Const.	Maint.	Preser/Rehab	Reconstruction	Total	% Spending on Fair to Good
Default	\$ 233,714	\$ 742,756	\$ 1,235,298	\$ 2,537,903	\$ 4,749,670	13.0%
Override	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 4,000,000	66.4%
						4.9%
						0.0%
						15.6%

Average Unit Costs

Treatment	Default - Current			Override - Current			Unit Cost Used - Escalated			Improvement Adjustment
	Capital (\$/LM)	Support Ratio	Total (\$/LM)	Capital (\$/LM)	Support Ratio	Total (\$/LM)	Capital (\$/LM)	Support Ratio	Total (\$/LM)	
Fix Fair to Good	\$ 681,257	0.24	\$ 844,759	\$ 681,257	0.24	\$ 844,759	\$ 797,461	0.24	\$ 1,157,523	100%
Fix Poor to Good	\$ 856,990	0.24	\$ 1,062,668	\$ 856,990	0.24	\$ 1,062,668	\$ 1,003,169	0.24	\$ 1,243,930	100%
Add New	\$ 1,000,000	0.24	\$ 1,240,000	\$ 1,000,000	0.24	\$ 1,240,000	\$ 1,170,573	0.24	\$ 1,451,510	-

Annual Deterioration Rate

Condition Change	Default	Override
Good to Fair (%/Year)	9.3%	9.3%
Fair to Poor (%/Year)	1.2%	1.2%

TAMP Targets

Condition	Default		Override
	Good	13.0%	7.0%
Fair	79.4%	84.0%	
Poor	7.6%	9.0%	

C. Analysis Results

Annual Deterioration if do nothing			Annual Improvements from Investment			Projected Inventory
Condition Change	Lane Miles	% Current Total	Improvement	Lane Miles	% Current Total	256.2 Lane Miles
Good to Fair	0.2	0.1%	Fix Fair to Good	0.5	0.2%	
Fair to Poor	2.8	1.1%	Fix Poor to Good	2.5	1.0%	
			Add New Inventory	0.2	0.1%	

Asset Condition

Condition	Current		Do Nothing: 10Y End		Invested: 10Y End		Invested: 4Y End		10Y TAMP Target	
	Lane Miles	%	Lane Miles	%	Lane Miles	%	Lane Miles	%	Lane Miles	%
Good/New	2.0	0.8%	0.1	0.1%	32.5	12.7%	14.1	5.5%	33.3	13.0%
Fair	231.2	90.8%	205.3	80.7%	200.0	78.1%	218.8	85.7%	203.4	79.4%
Poor	21.3	8.4%	49.1	19.3%	23.7	9.3%	22.3	8.7%	19.5	7.6%

10Y Performance Gap Analysis

Condition	Gap (10Y Invested - Target)	
	Lane Miles	%
Good/New	(0.8)	-0.3%
Fair	(3.4)	-1.3%
Poor	4.3	1.7%

Asset Condition Comparison Chart

Scenario	Good/New (%)	Fair (%)	Poor (%)
Current	0.8%	90.8%	8.4%
10Y Do Nothing	0.1%	80.7%	19.3%
10Y Invested	12.7%	78.1%	9.3%
4Y Invested	5.5%	85.7%	8.7%
10Y Target	13.0%	79.4%	7.6%

10Y Needs Assessment

Treatment	Total Cost of Work		
	Invested	Cost Gap	Total
Fix Fair to Good	\$ 6,176,489	\$ -	\$ 6,176,489
Fix Poor to Good	\$ 31,555,515	\$ 5,296,493	\$ 36,852,008
Add New	\$ 2,337,141	\$ -	\$ 2,337,141
Risk Mitigation	\$ -	\$ -	\$ -
Maintenance	\$ 7,427,558	\$ -	\$ 7,427,558
Total	\$ 47,496,703	\$ 5,296,493	\$ 52,793,196

2 and 4-Year Expected Targets

- State-owned NHS performance analysis was combined with 4-year MPO/RTPA expected conditions for NHS pavement and bridges to set 4-year targets.
- These combined targets were calculated using a quantity weighted approach that utilized Caltrans and regional agency condition expectations in statewide aggregate targets.
- The 2-year targets used these statewide aggregated targets to determine conditions for the end of the 2-year period.

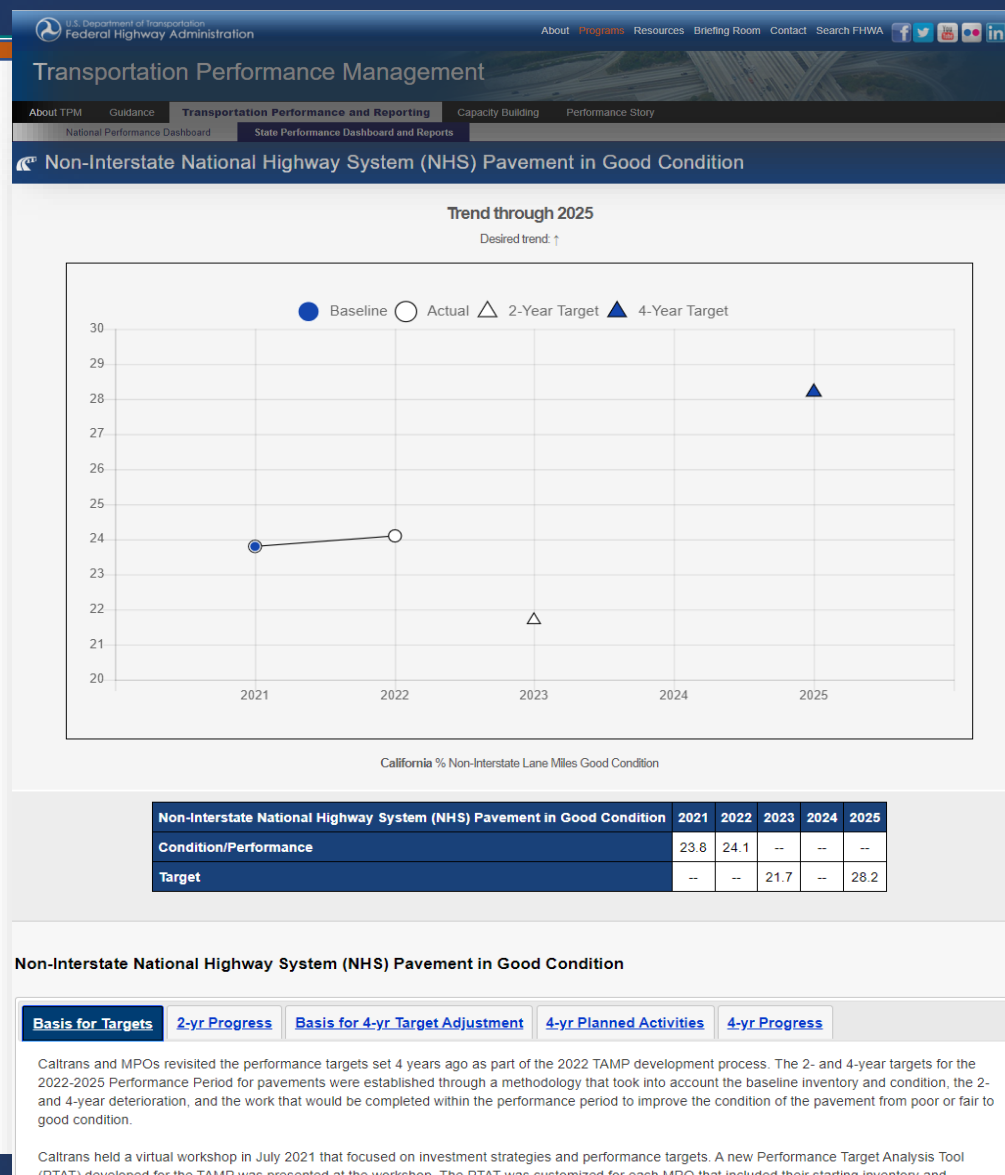
Table 3-2. Statewide Expected Targets

Statewide Expected Targets				
Pavement and Bridge Performance Measures	2-Year NHS Targets (1/1/2022 - 12/31/2023)		4-Year NHS Targets (1/1/2022 - 12/31/2025)	
	Good	Poor	Good	Poor
Pavements on the NHS				
Interstate	47.2%	1.9%	49.2%	1.7%
Non-Interstate	21.7%	10.5%	28.2%	9.0%
Bridges on the NHS				
	49.1%	5.9%	47.3%	4.4%

Transportation Performance Management

- As part of the Transportation Performance Management (TPM) program, Caltrans reports progress towards 2 and 4-year targets for all NHS pavement and bridge assets.
- Performance Management 2 (PM2) covers the condition of NHS pavement and bridges.
- Required reporting:
 - **Baseline Performance Period Report (Oct 2022)**
 - Baseline condition/performance; 2-and 4-year targets
 - **Mid Performance Period Progress Report (Oct 2024)**
 - 2-year condition/performance; 2-year progress
 - Adjusted 4-year targets (optional)
 - **Full Performance Period Progress Report (Oct 2026)**
 - 4-year condition/performance; 4-year progress
- Targets and progress are published on FHWA website.

<https://www.fhwa.dot.gov/tpm/reporting/state/condition.cfm?state=California>



Mid Performance Period (MPP) Progress Reporting

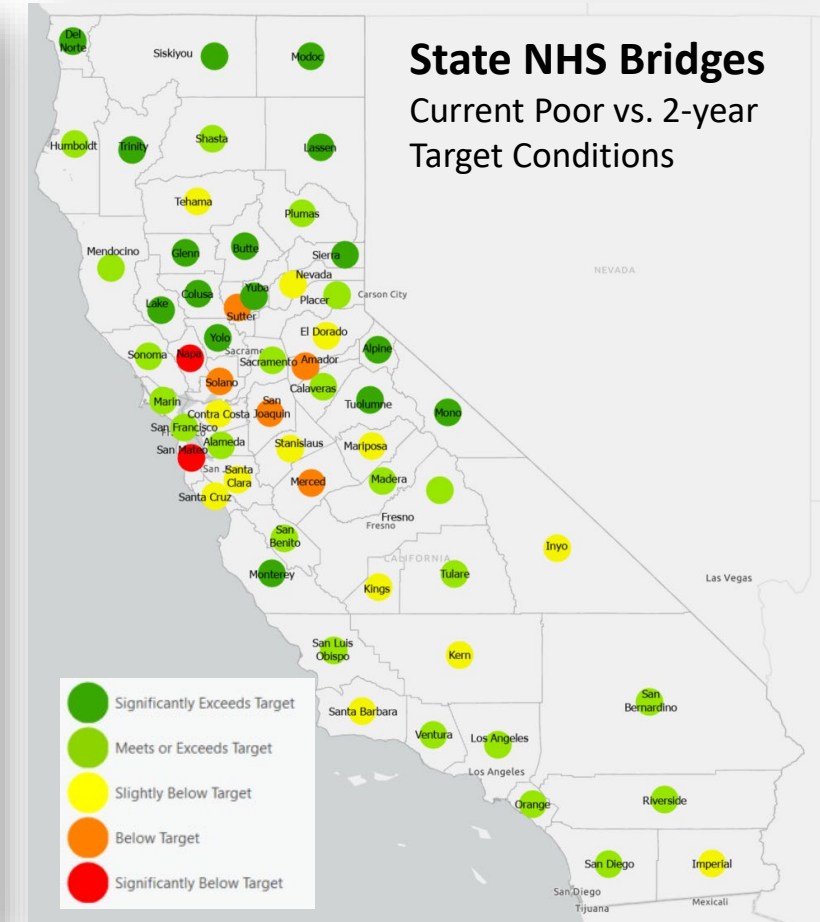
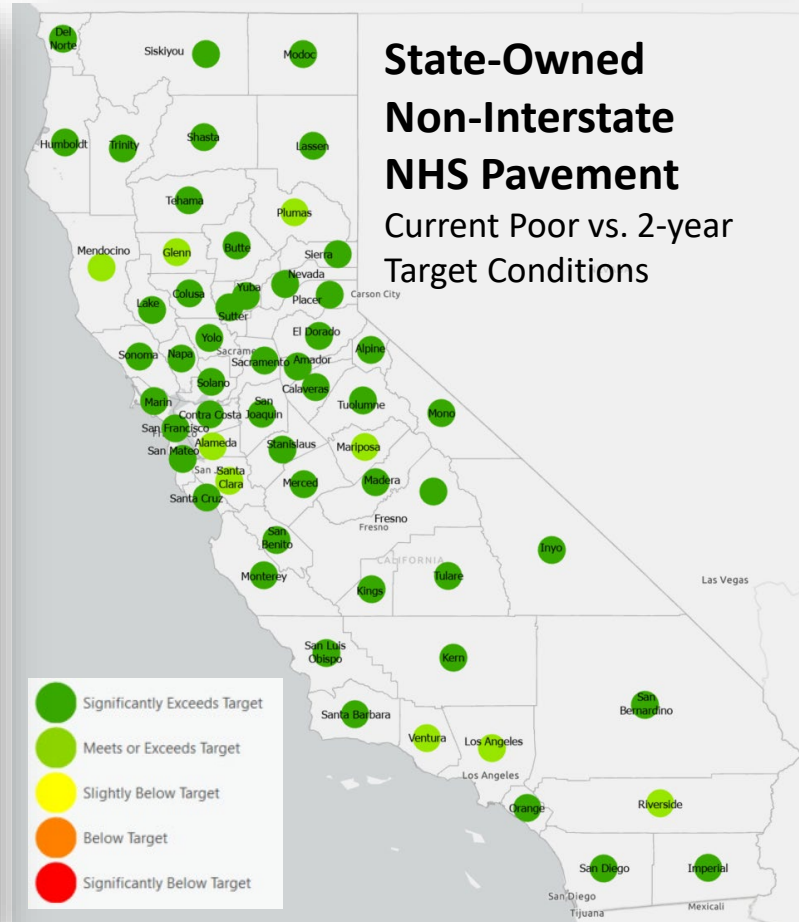
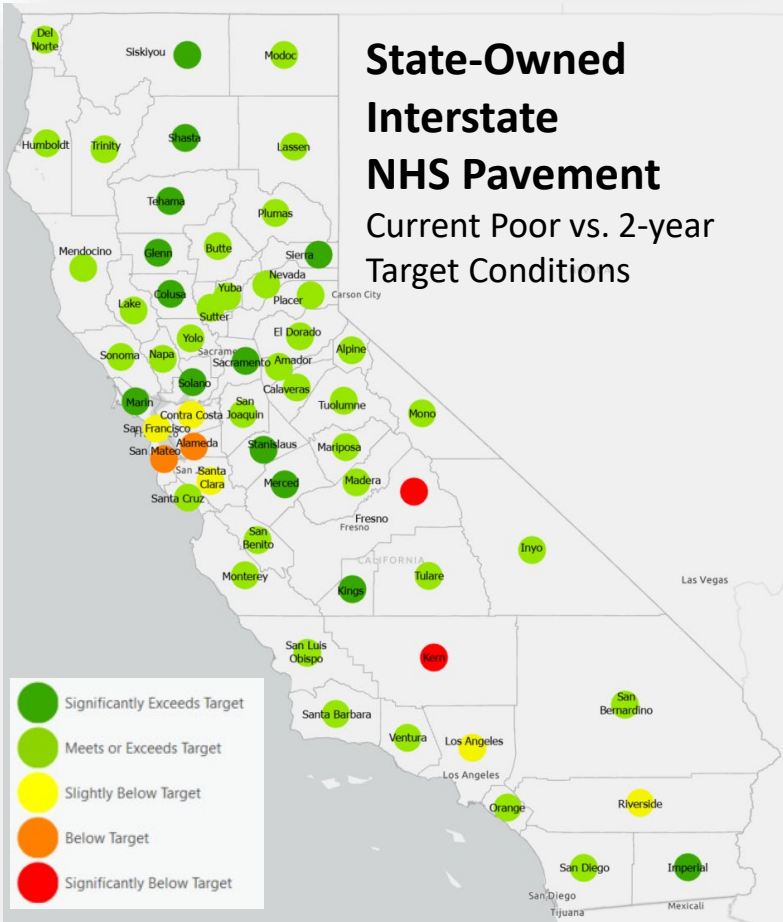


Bridge conditions are based on the 2024 NBI submittal from bridge inspections for state and local bridges.



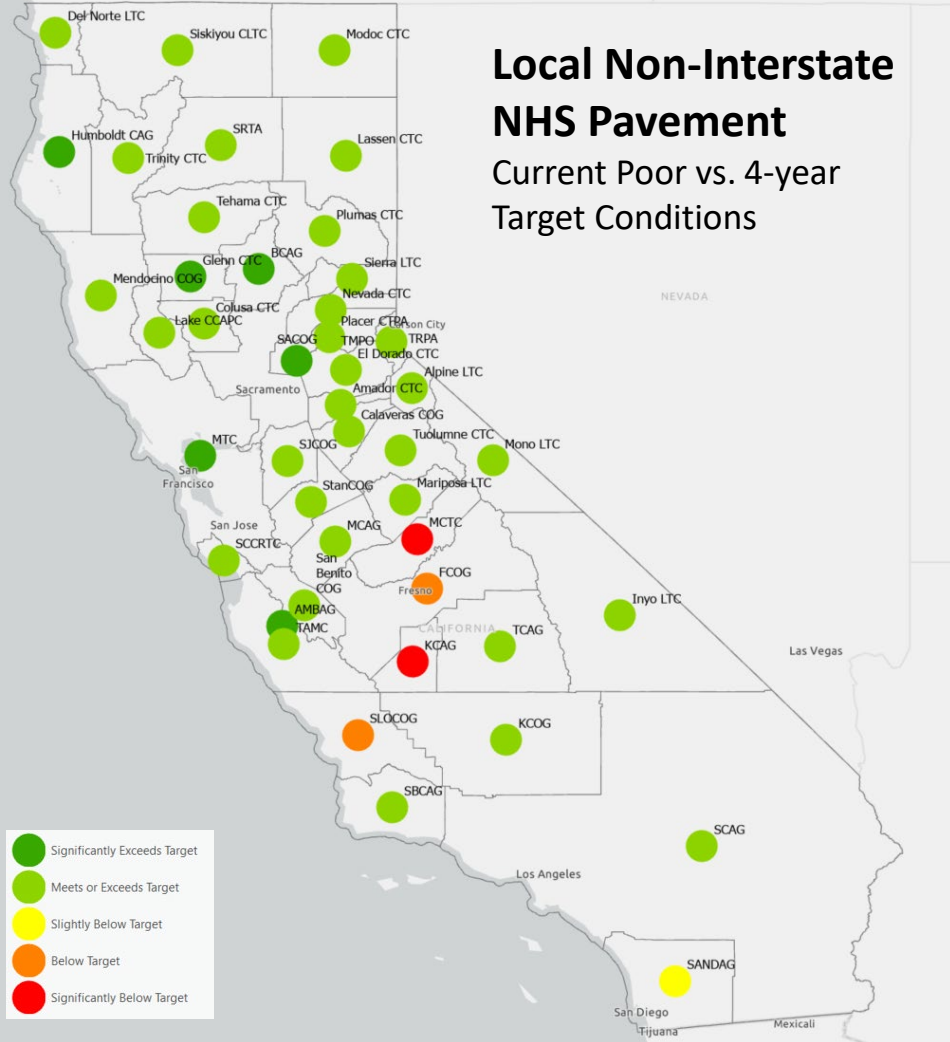
Pavement conditions are based on the 2024 HPMS submittal using data from the Caltrans Automated Pavement Condition Survey (APCS).

MPP Progress – State NHS Pavement & Bridges

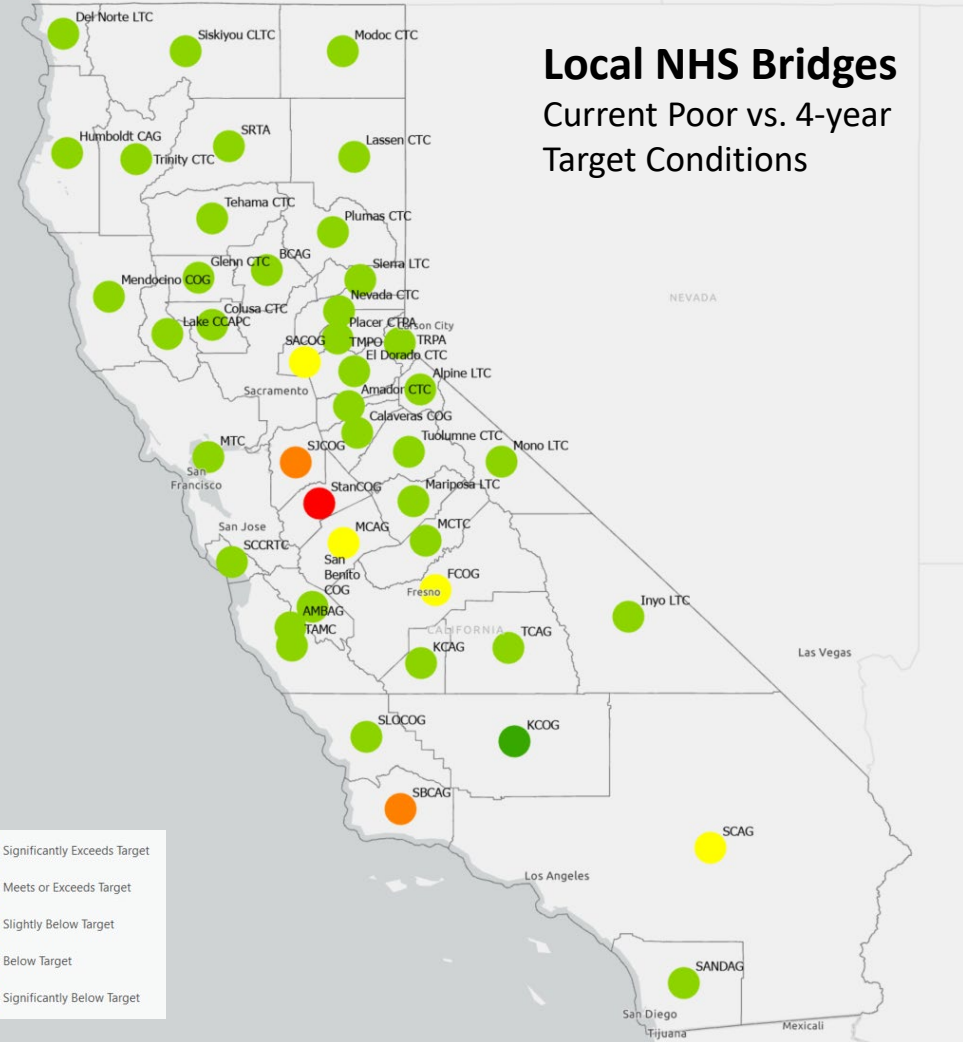


MPP Progress – Local NHS Pavement & Bridges

Local Non-Interstate NHS Pavement
Current Poor vs. 4-year Target Conditions



Local NHS Bridges
Current Poor vs. 4-year Target Conditions



MPP Progress – NHS Pavement

State/MPO/RTPA	Baseline Good (%)	Baseline Poor (%)	Current Good (%)	Current Poor (%)	2-yr Target Good (%)	2-yr Target Poor (%)	4-yr Target Good (%)	4-yr Target Poor (%)	Current vs 2-yr Target Good Difference	Current vs 2-yr Target Poor Difference	Current vs 4-yr Target Good Difference	Current vs 4-yr Target Poor Difference
Interstate	47.9%	1.9%	46.8%	2.4%	47.2%	1.9%	49.2%	1.7%	-0.4%	0.5%	-2.4%	0.7%
State Interstate	47.9%	1.9%	46.8%	2.4%	47.2%	1.9%	49.2%	1.7%	-0.4%	0.5%	-2.4%	0.7%
Non-Interstate	23.8%	6.8%	24.1%	7.4%	21.7%	10.5%	28.2%	9.0%	2.4%	-3.1%	-4.1%	-1.6%
State Non-Interstate	43.1%	2.5%	43.5%	2.3%	21.7%	10.5%	46.0%	2.2%	21.8%	-8.2%	-2.5%	0.1%
Monterey (AMBAG)	7.5%	13.9%	6.2%	7.9%			7.3%	16.4%			-1.1%	-8.5%
Butte (BCAG)	4.2%	18.2%	10.6%	15.1%			3.8%	21.0%			6.9%	-5.9%
Fresno (FCOG)	8.0%	16.6%	6.9%	22.2%			7.9%	18.2%			-1.0%	4.0%
Glenn CTC	6.2%	13.2%	0.0%	11.3%			4.9%	16.4%			-4.9%	-5.1%
Humboldt CAG	3.0%	10.7%	0.0%	7.8%			3.8%	13.3%			-3.8%	-5.5%
Kings (KCAG)	5.0%	0.0%	7.4%	9.5%			6.5%	2.2%			0.9%	7.2%
Kern (KCOG)	8.5%	10.0%	11.2%	8.1%			10.7%	11.2%			0.5%	-3.1%
Lassen CTC	0.0%	0.0%	87.1%	0.0%			1.9%	4.1%			85.2%	-4.1%
Merced (MCAG)	0.0%	28.0%	0.0%	27.7%			3.0%	28.9%			-3.0%	-1.2%
Madera (MCTC)	0.0%	18.9%	0.0%	32.7%			0.3%	22.5%			-0.3%	10.2%
Metropolitan (MTC)	1.7%	12.5%	2.7%	4.8%			10.1%	9.5%			-7.4%	-4.7%
Sacramento (SACOG)	2.3%	21.8%	4.3%	15.9%			4.8%	22.6%			-0.5%	-6.7%
San Diego (SANDAG)	1.0%	14.7%	0.4%	13.2%			8.0%	12.5%			-7.6%	0.7%
Santa Barbara (SBCAG)	3.3%	8.0%	5.2%	5.7%			9.7%	7.9%			-4.5%	-2.3%
Southern California (SCAG)	2.7%	20.6%	2.8%	16.5%			9.3%	18.3%			-6.5%	-1.7%
San Joaquin (SICOG)	4.7%	8.9%	8.0%	5.4%			7.5%	9.7%			0.5%	-4.3%
San Luis Obispo (SLOCOG)	6.8%	7.1%	8.5%	13.4%			8.9%	7.6%			-0.4%	5.8%
Stanislaus (StanCOG)	13.9%	13.1%	11.7%	11.2%			11.5%	14.3%			0.2%	-3.1%
Tulare (TCAG)	5.5%	15.0%	10.0%	14.3%			7.6%	15.5%			2.4%	-1.3%

MPP Progress – NHS Bridges

Local or State	MPO, RTPA	Baseline Good (%)	Baseline Poor (%)	Current Good (%)	Current Poor (%)	2-yr Target Good (%)	2-yr Target Poor (%)	4-yr Target Good (%)	4-yr Target Poor (%)	Current vs 2-yr Target Good Difference	Current vs 2-yr Target Poor Difference	Current vs 4-yr Target Good Difference	Current vs 4-yr Target Poor Difference
State	State	49.9%	4.4%	42.5%	6.1%	49.1%	5.9%	49.1%	3.3%	-6.6%	0.2%	-6.6%	2.8%
Local	Butte (BCAG)	30.4%	0.0%	30.4%	0.0%			24.3%	1.9%			6.1%	-1.9%
Local	Fresno (FCOG)	52.3%	1.6%	64.5%	2.0%			43.3%	1.5%			21.2%	0.6%
Local	Humboldt CAG	0.0%	0.0%	0.0%	0.0%			0.0%	2.8%			0.0%	-2.8%
Local	Kern (KCOG)	47.3%	7.2%	44.1%	0.0%			40.3%	7.5%			3.7%	-7.5%
Local	Merced (MCAG)	77.4%	0.0%	77.4%	1.7%			61.9%	0.6%			15.5%	1.1%
Local	Metropolitan (MTC)	26.6%	19.8%	27.3%	19.5%			21.8%	21.0%			5.5%	-1.5%
Local	Monterey (AMBAG)	13.4%	23.4%	13.4%	23.4%			12.2%	23.5%			1.2%	-0.1%
Local	Sacramento SACOG	39.7%	7.3%	41.3%	9.2%			34.4%	7.0%			6.9%	2.2%
Local	San Diego (SANDAG)	24.6%	17.7%	38.4%	12.4%			29.1%	13.3%			9.3%	-1.0%
Local	San Joaquin (SJCOG)	48.5%	14.2%	47.6%	16.7%			40.8%	13.3%			6.8%	3.4%
Local	San Luis Obispo (SLOCOG)	0.0%	0.0%	0.0%	0.0%			2.0%	0.8%			-2.0%	-0.8%
Local	Santa Barbara (SBCAG)	37.6%	14.7%	47.6%	13.2%			40.6%	8.8%			7.0%	4.4%
Local	Shasta (SRTA)	2.6%	0.0%	94.1%	0.0%			2.6%	2.3%			91.6%	-2.3%
Local	Southern California (SCAG)	38.6%	12.2%	42.4%	12.4%			34.6%	12.0%			7.8%	0.4%
Local	Stanislaus (StanCOG)	36.7%	45.3%	36.7%	45.3%			42.3%	32.8%			-5.6%	12.4%
Local	Tulare (TCAG)	0.0%	0.0%	0.0%	0.0%			4.4%	0.0%			-4.4%	0.0%

Summary of MPP Reporting for PM2

- NHS Interstate Pavements:
 - **Not meeting** 2-year good target
 - **Not meeting** 2-year poor target
- NHS Non-Interstate Pavements:
 - **Meeting** 2-year good target
 - **Meeting** 2-year poor target
- NHS Bridges:
 - **Not meeting** 2-year good target
 - **Not meeting** 2-year poor target

Recommendations

- Examine pavement and bridge condition trends to better understand reasons for meeting/exceeding 2 and 4-year targets.
- Consider if opportunities exist with project changes to help close performance gaps.
- Consider improvements in analysis methods for next TAMP to improve projections and target setting.



Questions?