

Caltrans Asset Management Update

Caltrans D7/ ACEC
Professional Liaison Committee Meeting
Roger C. Yoh
District 7 Asset Manager
March 21, 2022

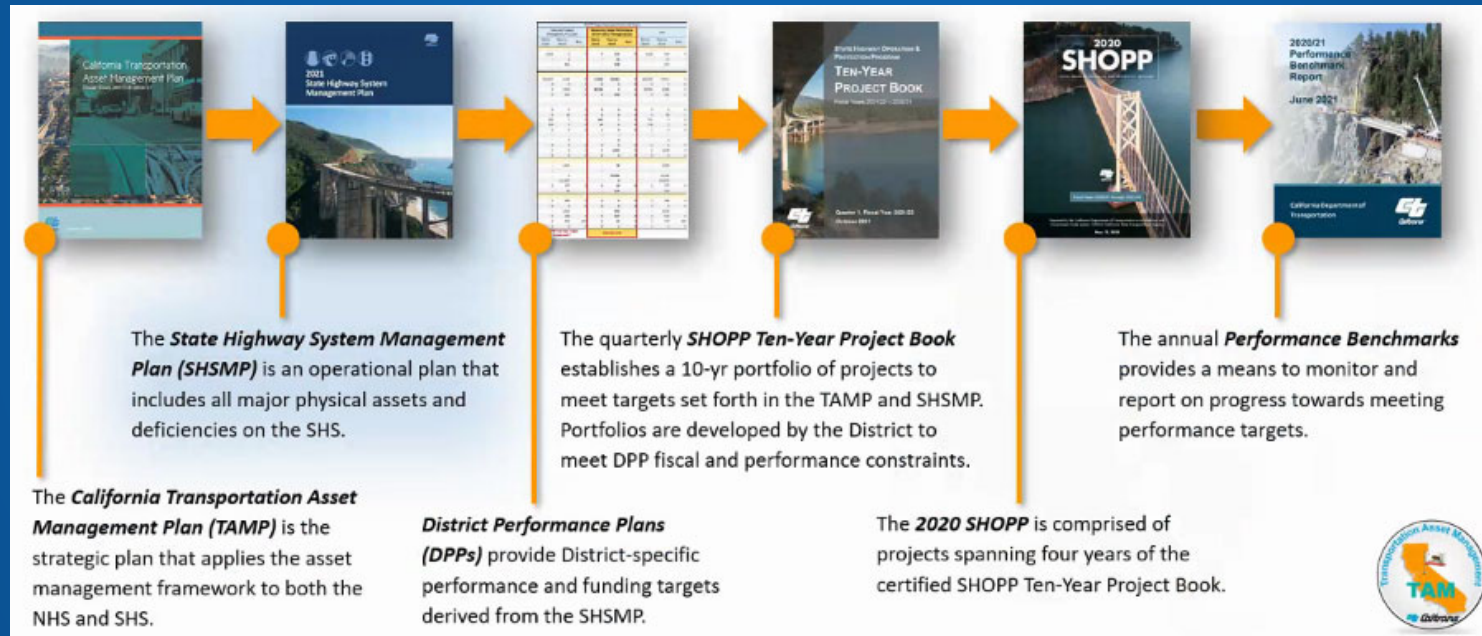
Transportation Asset Management



- Transportation Asset Management (TAM) is a strategic and systematic process of operating, maintaining, upgrading, and expanding physical assets effectively throughout their life cycle. It focuses on business and engineering practices for resource allocation and utilization, with the objective of better decision making based on quality information and well-defined objectives.
- Statutory requirements under federal transportation authorization bills, MAP-21 and FAST Acts, and California's SB 486 (2014)

2023 State Highway System Management Plan

- AB 515, combining 10-Year SHOPP and 5-Year HM
- Departmental Requirements – aligns the SHOPP and HM programs with the Strategic Plan and the CAPTI



Performance-Based Asset Management Approach

Needs Assessment

- Conduct a performance management analysis to determine the total needs, unconstrained by funding.
- Estimate the costs necessary to close all condition and performance gaps.
- *Goal constrained* analysis.

Revenue and Financial Projections

- Determine funding and resources available over the 10-year SHSMP period.

Investment Plan

- Define how available funding is recommended to be allocated.
- Prioritize where available resources should be focused to keep highways functioning with constrained funding.
- Estimate the performance metrics anticipated to be achieved.
- *Fiscally constrained* analysis.

Needs Assessment Approach

STEP 1 – Asset Inventory

- Establish an asset inventory or deficiency level.

STEP 2 – Baseline & Projected Condition

- Establish the baseline and projected future condition of each objective.

STEP 3 – Target Condition

- Establish targets to achieve desired state of repair.

STEP 4 – Performance Gaps

- Perform a gap analysis between the projected condition in 10 years, considering pipelined projects, and the performance targets.

STEP 5 – Cost to Close Performance Gaps

- Estimate the cost to close the performance gaps.



Inventory



Baseline Condition



Projected Do-Nothing Condition



Projected Condition with Pipelined Projects



Target Condition (Desired State of Repair)

Poor Gap

Fair Gap

2023 SHSMP's 10-Year Span

- FY 23/24 → FY 32/33
- For the development of the 2026 SHOPP



District 7's 2024 PID Cycle

- 2024 PID Cycle (Projects RTL in FYs 26/27 & 27/28), **35 projects, \$703M**
- 2022 PID Cycle produced, **52 projects, \$940M**
 - Adopted by the CTC on 3/17/2022
- 2020 PID Cycle produced **56 projects, \$1.482 Bn**
 - First time implementing Asset Management
- 2018 PID Cycle produced **126 projects, \$1.674 Bn**
 - Augmentation of SB 1 funds
- Investments are needs-based approach
- Make responsible investments and be good stewards of public funds

6 Pavement Projects	4 Bridge	4 Drainage	5 Complete Streets	6 Proactive Safety
1 Transportation-Related Facility	1 Mobility Operational Improvements	1 Protective Betterment	1 Signs and Lighting	6 Stormwater BMP

Additional Funds from I/JA/BIL

Formula Funding Programs	FASTAct FFY 2021	BIL/I/JA FFY 2022	Difference	Percent Change
National Highway Performance Program (NHPP)	\$2,065	\$2,460	\$395	19%
Surface Transportation Block Grant Program (STBGP)	\$1,042	\$1,197	\$155	15%
Highway Safety Improvement Program (HSIP)	\$209	\$262	\$53	25%
Railway-Highway Grade Crossings Program (RHCP)	\$17	\$17	\$0	0%
Congestion Mit. and Air Quality Imp. Program (CMAQ)	\$495	\$506	\$11	2%
Metropolitan Planning Program (MPP)	\$54	\$66	\$12	22%
National Highway Freight Program (NHFP)	\$137	\$127	(\$10)	-7%
Carbon Reduction Program ¹	\$0	\$107	\$107	-
PROTECT Formula Program ¹	\$0	\$121	\$121	-
Electric Vehicle Formula Program ^{1,2,3}	\$0	\$77	\$77	-
Bridge Replace & Rehab Program ^{1,2}	\$0	\$849	\$849	-
GRAND TOTAL	\$4,019	\$5,789	\$1,770	44%
1 - New Program				
2 - General Fund Program				
3 - Estimated using 5 year average - Apportionment Notice Not Yet Released				

State Vs Local Percentage Split

- NHPP 90% - 10%
- STBGP 32% - 68%
- HSIP 61% - 39%
- RHCP, CMAQ and MPP are 100% local

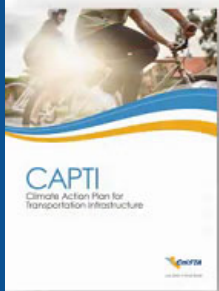
Bridge Formula Program Breakdown

- \$4.2 Billion total for a 5-year program
- 75% by proportion that the total cost must be spent on “poor”, 25% on “fair”
- 15% of the funds must be spent on “off system” (NHS) bridges
- Proposed legislation(s) to distribute the funds
- Caltrans’ share should be between \$2 billion to \$3 billion

Ongoing Activities

- Caltrans/CalSTA teams are developing action plans to define needs and make recommendations
- Cross program collaboration
- CalSTA will evaluate the action plans and decide on state/local split and objectives
- Ongoing discussions about climate resiliency and complete streets in Governor's budget
- Governor's State of the State Address – put money back into pockets of Californians to address rising gas prices; could be problematic if it comes out of the SHOPP
- Proposed legislation for a \$400 gas tax rebate; one-year gas tax holiday “for most vehicles”

What to Expect for 2023 SHSMP



Climate Resiliency Focus

Align the SHSMP with the *Climate Action Plan for Transportation Infrastructure (CAPTI)*. Heightened emphasis on climate resiliency for existing and new objectives (Sea Level Rise Adaptation, Wildfire Adaptation, ZEV Infrastructure)



Infrastructure Investment and Jobs Act

New federal funding for roads and bridges and other transportation objectives will provide a significant increase in the Investment Plan.

Mobility Hubs

Introduction of this new objective will expand the function of Park & Ride facilities.

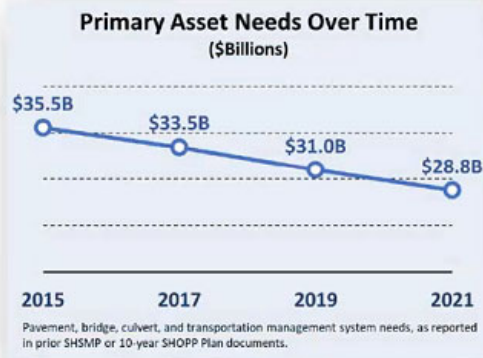


Streamline Objectives

Consolidate existing performance objectives where appropriate.



Overall Reduction in Needs
Needs should continue to decrease as a result of increased SB-1 investments and asset management practices.



SHS Needs by Strategic Goal and Model Type	Physical Asset Model	Deficiency Model	Reservation Model
Performance Objectives			
Safety First			
Proactive Safety		✓	
Reactive Safety			✓
Sustainability & Efficiency			
Bridge and Tunnel Health	✓		
Bridge Goods Movement Upgrades	✓		
Bridge Seismic Mitigation		✓	
Bridge Seismic Rehabilitation		✓	
Commercial Vehicle Enforcement Facilities	✓		
Drainage Pump Plants	✓		
Drainage Restoration		✓	
Fish Passage		✓	
Lighting Rehabilitation	✓		
Major Damage (Emergency Opening)			✓
Major Damage (Permanent Restoration)			✓
Minor Damage	✓		

Multi-Asset Project Scoping Tool

D7 Multi-Asset Project Scoping Tool, V0.9.5 (Draft, For Planning Purposes Only)

Navigation Menu
Assets Legend Projects Layers About

Political Subdivision
 County
 City
 LA City Council
 LA County COG
 LA County Supervisor
 CA Assembly
 CA Senate
 US Congress

Planning
 Post Mile
 Post 1989 Soundwall
 Transit
 Bicycle
 Traffic
 Purple Pipes
 Disadvantaged Communities
 Region 4 Watersheds

Maintenance
 In-Service BMPs
 Maintenance Region

Complete Streets (1/12/22 Data)
 SCAG Proposed Bikeways
 SCAG Existing Bikeways
 Partner Survey
 Survey Map Answers

ADA Grievance
 Locations

Bridge Seismic
 Heatmap
 Locations

53101001311NBA, LA-101-1.311, NB
Sign Panel Information:
- Panel Dimensions: 18 X 7
- Message: 101 NORTH; Hollywood Fwy; Ventura
- Type: Type IV (4)
- Project Installed:
- Year installed: 2010
- Current Project Phase:
- Links: [Street View](#)
- Remarks:

Barrier ID:
Location: N Spring / Aliso, NE
Jurisdiction: Los Angeles
Post Mile: LA-101-1.01
[Google Street View](#)
need verify? U
- In Planning phase

TMS Unit CCTV
- TMS ID: 7155
- PM: LA-101-0.10 (SB)
- Loc: WHITTIER BLVD
- Life Cycle Status: Poor
- Install date: 03/10/97

Actionable Needs List

Actionable Needs on LA-101 between Post Miles 0 and 3

Please use Google Chrome or FireFox for best results

Click on the buttons inside the tabbed menu for detail:

Actionable Items are highlighted in red

Pavement	Bridges	Drainage	TMS	ADA	Overhead Sign Structures & Panels	Lighting	Stormwater BMP	Roadside Safety Improvements	Safety Barriers	Complete Streets	Fish Passage
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Pavement Program : Responsible Party - Md Musa, 213.269.1252

2018																									
Beg PM	End PM	Length	Dir	Lane	Type	Class	Total Lane Miles	APCS Needs Category PreTreatment	MAP21 Condition Category PreTreatment	Alligator AB Percent	Cracking HMA Wheelpath Percent	RUT Avg	Cracking PCCP 3rdStage Percent	Percent Faulted Joints	IRI Avg	Scenario No	APCS Needs Category PriorToTreatment	IRI Avg PriorTo Treatment	3rd Stage PriorTo Treatment	Alligator AB Percent PriorTo Treatment	Faulting PriorTo Treatment	Faulting PCT PriorTo Treatment	HMA Wheelpath Cracking PriorTo Treatment	MAP21 Det Category PreTreatment	RUTAvg Pre Treatment
0.0	1.282	1.282	Left	1	JPC	1	1.246	Green	Good	0.0	0.0	0.144	1.5	5.73	94	3096-AF 2018 APCS Free Fall Fine	Green	94.0	3rdStage_PriorToTreatment	0.0	0.0	5.73	0.0	Good	0.144
0.0	0.032	0.032	Left	1	Flexible	1	0.032	Yellow	Fair	6.0	0.0	0.155	0.0	0.0	121	3096-AF 2018 APCS Free Fall Fine	Yellow	121.0	3rdStage_PriorToTreatment	6.0	0.0	0.0	0.0	Fair (Fair Ride Only)	0.155
0.032	0.075	0.062	Left	1	Flexible	1	0.062	Green	Good	0.0	0.0	0.109	0.0	0.0	54	3096-AF 2018 APCS Free Fall Fine	Green	54.0	3rdStage_PriorToTreatment	0.0	0.0	0.0	0.0	Good	0.109
0.075	0.387	0.312	Left	1	Bridge	1	0.000			0.0	0.0	0.176	0.0	0.0	162	3096-AF 2018 APCS Free Fall Fine	Green	162.0	3rdStage_PriorToTreatment	0.0	0.0	0.0	0.0		0.176
0.387	0.444	0.057	Left	1	Flexible	1	0.057	Blue	Fair	7.7	0.0	0.144	0.0	0.0	220	3096-AF 2018 APCS Free Fall Fine	Blue	220.0	3rdStage_PriorToTreatment	7.7	0.0	0.0	0.0	Fair (Poor Ride)	0.144
0.444	0.649	0.205	Left	1	Flexible	1	0.205	Blue	Fair	13.0	0.0	0.14	0.0	0.0	235	3096-AF 2018 APCS Free Fall Fine	Blue	235.0	3rdStage_PriorToTreatment	13.0	0.0	0.0	0.0	Fair (Poor Ride)	0.14
0.649	0.767	0.118	Left	1	JPC	1	0.118	Green	Fair	0.0	0.0	0.11	0.0	3.45	129	3096-AF 2018 APCS Free Fall Fine	Green	129.0	3rdStage_PriorToTreatment	0.0	0.0	3.45	0.0	Fair (Fair Ride Only)	0.11
0.767	1.569	0.802	Left	1	JPC	1	0.743	Green	Good	0.0	0.0	0.136	0.0	1.81	82	3096-AF 2018 APCS Free Fall Fine	Green	82.0	3rdStage_PriorToTreatment	0.0	0.0	1.81	0.0	Good	0.136
1.282	1.329	0.047	Left	1	Flexible	1	0.020	Blue	Fair	2.4	0.0	0.206	0.0	0.0	231	3096-AF 2018 APCS Free Fall Fine	Blue	231.0	3rdStage_PriorToTreatment	2.4	0.0	0.0	0.0	Fair (Poor Ride)	0.206
1.569	1.8	0.231	Left	1	JPC	1	0.109	Green	Fair	0.0	0.0	0.12	0.0	9.3	106	3096-AF 2018 APCS Free Fall Fine	Green	106.0	3rdStage_PriorToTreatment	0.0	0.01	9.3	0.0	Fair (Fair Ride Only)	0.12
1.8	1.9	0.100	Left	1	JPC	1	0.100	Green	Good	0.0	0.0	0.115	0.0	5.41	51	3096-AF 2018 APCS Free Fall Fine	Green	51.0	3rdStage_PriorToTreatment	0.0	0.0	5.41	0.0	Good	0.115
1.9	1.901	0.001	Left	1	JPC	1	0.001	Green	Good	0.0	0.0	0.104	0.0	0.0	46	3096-AF 2018 APCS Free Fall Fine	Green	46.0	3rdStage_PriorToTreatment	0.0	0.0	0.0	0.0	Good	0.104
1.901	2.023	0.122	Left	1	JPC	1	0.122	Green	Good	0.0	0.0	0.098	0.0	0.0	43	3096-AF 2018 APCS Free Fall Fine	Green	43.0	3rdStage_PriorToTreatment	0.0	0.0	0.0	0.0	Good	0.098
2.023	2.857	0.834	Left	1	JPC	1	0.789	Green	Good	0.0	0.0	0.097	0.0	0.34	70	3096-AF 2018 APCS Free Fall Fine	Green	70.0	3rdStage_PriorToTreatment	0.0	0.0	0.34	0.0	Good	0.097
2.857	3.011	0.154	Left	1	JPC	1	0.132	Green	Fair	0.0	0.0	0.096	0.0	0.0	150	3096-AF 2018 APCS Free Fall Fine	Green	150.0	3rdStage_PriorToTreatment	0.0	0.0	0.0	0.0	Fair (Fair Ride Only)	0.096
0.0	1.282	1.282	Left	2	JPC	1	1.246	Orange	Fair	0.0	0.0	0.149	3.9	33.33	154	3096-AF 2018 APCS Free Fall Fine	Orange	154.0	3rdStage_PriorToTreatment	0.0	0.01	33.33	0.0	Fair (Cracking & IRI Only)	0.149
0.0	0.032	0.032	Left	2	Flexible	1	0.032	Yellow	Fair	8.6	7.6	0.129	0.0	0.0	124	3096-AF 2018 APCS Free Fall Fine	Yellow	124.0	3rdStage_PriorToTreatment	8.6	0.0	0.0	7.6	Fair (Fair Ride Only)	0.129
0.032	0.075	0.062	Left	2	Flexible	1	0.062	Green	Fair	3.9	0.0	0.161	0.0	0.0	142	3096-AF 2018 APCS Free Fall Fine	Green	142.0	3rdStage_PriorToTreatment	3.9	0.0	0.0	0.0	Fair (Fair Ride Only)	0.161
0.075	0.387	0.312	Left	2	Bridge	1	0.000			0.0	0.0	0.177	0.0	0.0	142	3096-AF 2018 APCS Free Fall Fine	Green	142.0	3rdStage_PriorToTreatment	0.0	0.0	0.0	0.0		0.177
0.387	0.444	0.057	Left	2	Flexible	1	0.057	Blue	Fair	40.4	8.7	0.153	0.0	0.0	178	3096-AF 2018 APCS Free Fall Fine	Blue	178.0	3rdStage_PriorToTreatment	40.4	0.0	0.0	8.7	Fair (Poor Ride)	0.153
0.444	0.649	0.205	Left	2	Flexible	1	0.205	Orange	Fair	62.2	20.6	0.157	0.0	0.0	211	3096-AF 2018 APCS Free Fall Fine	Orange	211.0	3rdStage_PriorToTreatment	62.2	0.0	0.0	20.6	Fair (Poor Ride)	0.157
0.649	0.767	0.118	Left	2	JPC	1	0.118	Green	Fair	0.0	0.0	0.123	0.0	10.34	142	3096-AF 2018 APCS Free Fall Fine	Green	142.0	3rdStage_PriorToTreatment	0.0	0.01	10.34	0.0	Fair (Fair Ride Only)	0.123
0.767	1.569	0.802	Left	2	JPC	1	0.743	Green	Good	0.0	0.0	0.119	0.0	0.35	81	3096-AF 2018 APCS Free Fall Fine	Green	81.0	3rdStage_PriorToTreatment	0.0	0.0	0.35	0.0	Good	0.119
1.282	1.329	0.047	Left	2	Flexible	1	0.020	Blue	Fair	5.8	0.0	0.093	0.0	0.0	211	3096-AF 2018 APCS Free Fall Fine	Blue	211.0	3rdStage_PriorToTreatment	5.8	0.0	0.0	0.0	Fair (Poor Ride)	0.093
1.569	1.8	0.231	Left	2	JPC	1	0.109	Blue	Poor	0.0	0.0	0.058	0.0	24.39	172	3096-AF 2018 APCS Free Fall Fine	Blue	172.0	3rdStage_PriorToTreatment	0.0	0.03	24.39	0.0	P1-Poor (Poor crack-related)	0.058
1.8	1.9	0.100	Left	2	JPC	1	0.100	Green	Good	0.0	0.0	0.066	0.0	0.0	49	3096-AF 2018 APCS Free Fall Fine	Green	49.0	3rdStage_PriorToTreatment	0.0	0.0	0.0	0.0	Good	0.066
1.9	1.901	0.001	Left	2	JPC	1	0.001	Green	Good	0.0	0.0	0.072	0.0	0.0	45	3096-AF 2018 APCS Free Fall Fine	Green	45.0	3rdStage_PriorToTreatment	0.0	0.0	0.0	0.0	Good	0.072
1.901	2.023	0.122	Left	2	JPC	1	0.122	Green	Good	0.0	0.0	0.077	0.0	2.13	52	3096-AF 2018 APCS Free Fall Fine	Green	52.0	3rdStage_PriorToTreatment	0.0	0.0	2.13	0.0	Good	0.077
2.023	2.857	0.834	Left	2	JPC	1	0.789	Green	Fair	0.0	0.0	0.084	0.3	4.64	72	3096-AF 2018 APCS Free Fall Fine	Green	72.0	3rdStage_PriorToTreatment	0.0	0.0	4.64	0.0	Fair (Cracking Only)	0.084

Questions?

Caltrans Project Portal

<https://dot.ca.gov/programs/asset-management/caltrans-project-portal>

State Highway System Management Plan

<https://dot.ca.gov/programs/asset-management/state-highway-system-plan>

Complete Streets Toolbox

https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/f0020348_complete-streets-elements-toolbox-a11y.pdf

Caltrans Active Transportation (CAT) Plans

<https://www.catplan.org/>

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