CALTRANS MAINTENANCE

Tony Tavares

Chief, Division of Maintenance

State Maintenance Engineer

California Department of Transportation

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Our Vision: Being the World Leader in Highway Maintenance

- **Safety and preservation are highest priority**
- **Enhance the quality of travel through service**
- **Be Innovative**
- **Do the right thing at the right time**

Stewards of Highway System Assets

- Pavement
- Bridges
- Roadside Rests
- Signals
- Safety Devices
- Landscaping
- Fence
- Drainage Systems
- Signs
- Striping
- Tunnels & Tubes
- ITS Elements

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The Maintenance Program

- ~6,500 Maintenance employees
- ~ 50,000 Lane Miles of Pavement
- 13,225 State-Owned Bridges and other structures
- 43 Tunnels/Tubes (each bore)
- ~205,000 Culverts
- 31,392 acres of landscape
- 86 Roadside Rest Areas
- 391 Maintenance Stations
- 80,122 Highway Lighting
- 4,770 Signalized Intersections

The Maintenance Program

- Structure Maintenance & Investigation
- Roadway Maintenance
- Management Systems & Studies (IMMS)
- Radio Communications
- Major Maintenance (HM)
- Landscape & Litter Abatement
- Budgets, Planning & Administration
- Emergency Management
- Pavement Program
- Stormwater & Environmental Compliance
- Maintenance Safety, Equipment, Training

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Maintenance Program Activities







HM 1	HM 2	HM 3	HM4	HM 5	HM 6	HM 7
ROADBED (2080.010)	**ROADSIDE** (2080.020)	**STRUCTURE** (2080.030)	**TRAFFIC CONTROL & SERVICE FACILITIES** (2080.040)	**MTCE AUXILIARY** (2080.050)	**SNOW & MAJOR DAMAGE** (2080.060)	**RADIO** (2080.070)
FAMILIES	**FAMILIES**	**FAMILIES**	**FAMILIES**	**FAMILIES**	**FAMILIES**	**FAMILIES**
A. Flexible Pavement B. Rigid Pavement	C. Slopes, Drainage, Vegetation D. Litter, Debris E. Landscaping F. Environmental G. Public Facilities	H. Bridges J. Other Structure	K. Electrical M. Traffic Control	T. Support W. Training, Field Auxiliary Services	R. Snow/Ice Control S. Storm Maintenance	U. Radio Support

Pavement Condition

- The Automated Pavement Condition Survey (APCS) is the new Caltrans pavement condition rating system.
- This new methodology is used to rate pavement condition based on laser data and high-definition images of the pavement collected at high speeds.

2016 Automated Pavement Condition Survey (Lane Miles and MAP-21 Percentage)

Survey Year	Good	Fair	Poor	Total**
2016	35-45%	51-58%	4-8%	100%
	20,273	26,539	2,832	49,644

*Condition Ranges vary by Pavement Classification.
**Condition based on draft MAP-21 condition criteria.

- Safer
- Faster
- Entire System Survey

- SB-1/Caltrans Goal

98% good/fair pavement

Culvert Condition

Culvert Inspection Report

Total Estimated Culverts in System=205,000
Culverts Inspected = 107,397
Approx. 10,647,972 million linear feet (as of 8/1/2016)

65% of total inventory	23% of total inventory	12% of total inventory
No deficiencies	Preventive Maintenance	Rehab/Replace

- **SB-1/Caltrans Goal: 90% good/fair culverts**

Bridge Condition

MAP-21 Federal Reporting Criteria		
Condition		**Deck Area (Square Feet)**
Good	**74.9%**	**184,096,588**
Fair	**21.79%**	**53,560,236**
Poor	**3.30%**	**8,099,504**

- **SB-1/Caltrans Goal – 98% bridge decks in good/fair condition (as measured by square feet)**

TMS Health

TMS Elements include	
❖ Traffic Signals	❖ Changeable Message Signs
❖ Ramp Meters	❖ Communications Systems
❖ Loop Detectors	❖ Highway Radios

TMS Health		
	Actual	Goal
TMS LOS	44	90
Detectors in Good Health	68	90
Annual PM Checks	52,000	72,000

- 100% operational TMS = 20,000 fewer daily hours of delay
- 16,000 TMS elements deployed statewide – a 50% increase since 2007

Safety

Preservation

Service

Maintenance Core Focus Areas

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Safety

- First line of response.
  - Responding to emergencies, incidents, and storm events (snow, mud/rock slides, flooding, fires)
  - Hazardous spills
- Safety of the traveling public and employees is the #1 priority

Safety

- Keeping assets operational
  - Electrical systems
    - Signals, Lights, etc…
  - Guardrail
  - Signs
  - Striping
  - Avalanche control
- Challenges: Keeping up with new technology, timely repair to damaged assets

Preservation

- Maintain/preserve state highway assets
  - Pavement
  - Roadside
    - Landscape
    - Drainage systems - culverts
  - Bridges
  - Traffic Control Devices
    - Striping – over 50,000 miles
    - Pavement markers
  - Signs
  - Public facilities

Preservation

Challenges:

- Aging Infrastructure
  - 80% of freeway system built between 1959 and 1974
  - 4-8% of pavement lane miles need rehabilitation
  - Culverts reaching design life
- Funding Shortfalls
  - Dollars used for emergencies, reduce dollars for preservation.
  - Mandates -- Storm Water-Regulations, Air quality and associated testing continue to grow.

Preservation

Challenges:

- Theft and Vandalism
  - Graffiti
  - Litter
  - Copper Wire Theft
  - Illegal Encampments

Service

- Keeping Roadsides in good condition
  - Non landscaped (vegetation control)
  - Litter and graffiti
  - Roadside Rest Areas

- Challenges:
  - Roadside appearance - Less critical yet politically sensitive.
  - Aging rest areas need to be replaced/updated
  - Noxious weeds - new species to deal with, yet mandated reduction in herbicides/chemical usage.
  - Roadside design impacts to maintenance safety & access.

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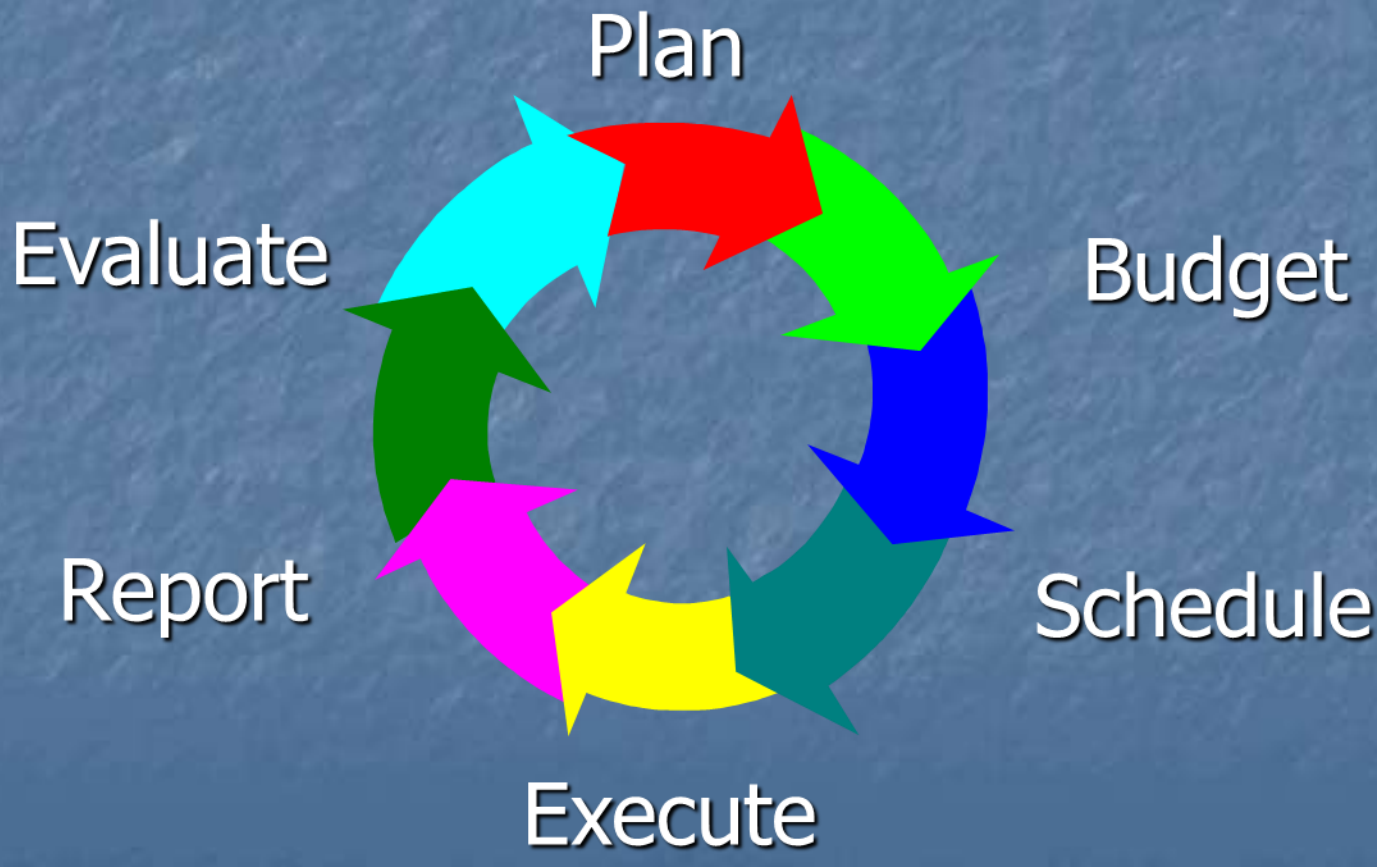
Maintenance Business Process

In order to be effective in maintaining the aging infrastructure, we must plan to preserve it



Level of Service

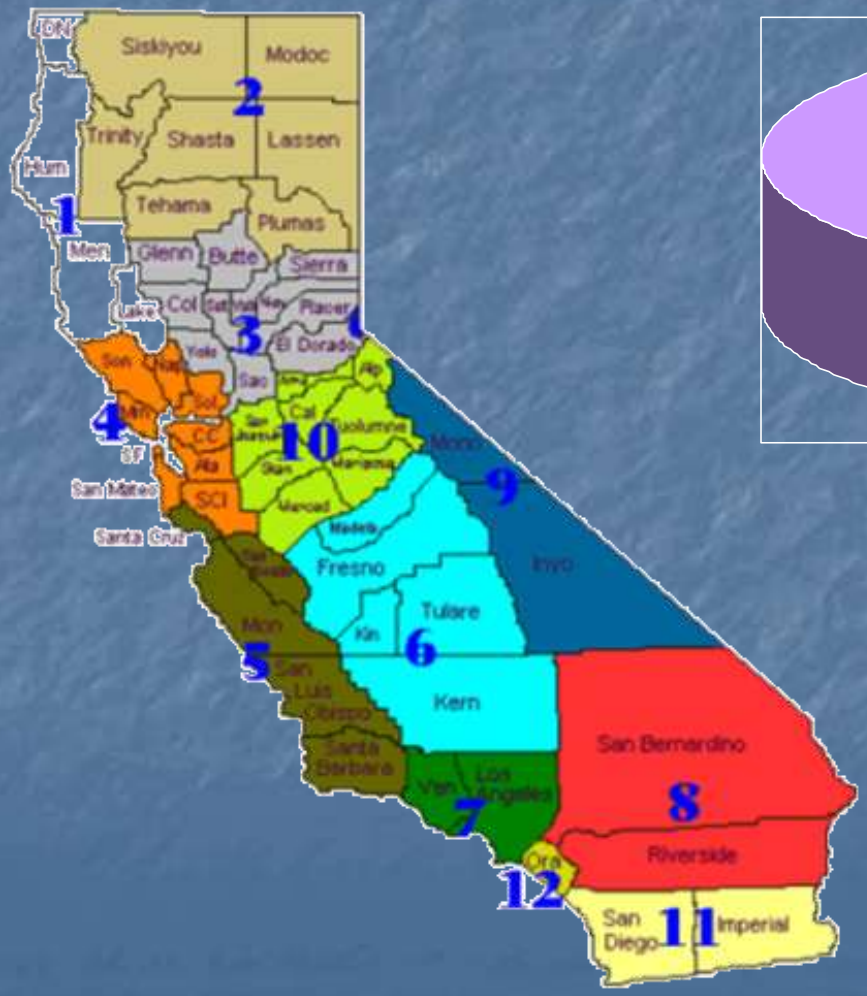
LOS is the review process used to measure the general condition of the inventory for each Family of maintenance in the Maintenance Program.

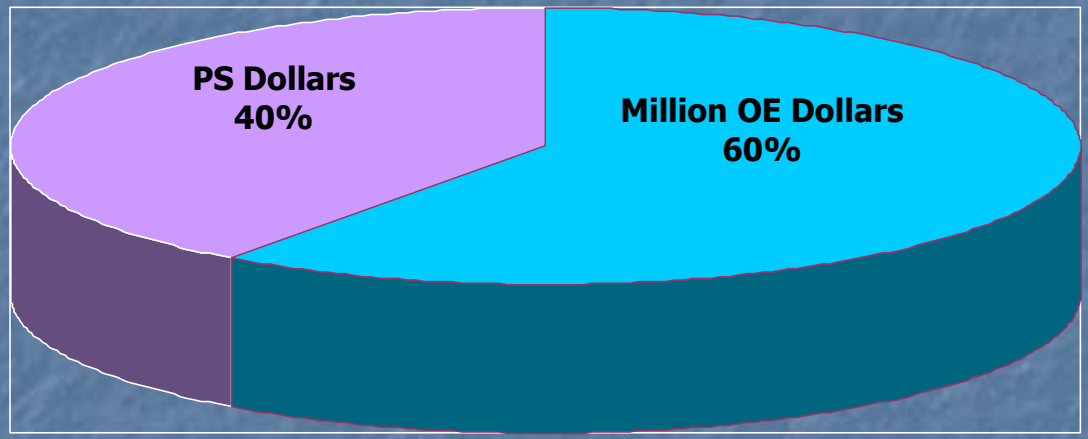
5-Year Maintenance Plan

Senate Bill 1098 (Statute of 2004) requires the Department to prepare a 5-Year Maintenance Plan to address the maintenance needs of the state highway system.

- Purpose: Needs based preservation plan Identify specific maintenance strategies that avoid increases in the SHOPP by delaying the need for rehabilitation, construction, or replacement.
- Goal: Balance resources between SHOPP and maintenance activities
- Challenge: Increasing cost of doing business decreases the Department's buying power
  - Updated every 2 years
  - Transmitted to the Governor, Legislature, and Commission
  - Identifies pavement, bridge, and drainage backlogs
  - Illustrates alternatives:
    - Current funding
    - Steady State plus reduced backlog in 5-years
  - Estimates cost benefit ratio
  - Estimates dollars and lane-miles that would be delayed in the SHOPP

Maintenance Program Budget
FY 17/18 $2.0 Billion





- 6,500 Maintenance employees
- 12 Districts

Questions?