
Performance-Based ITS Maintenance in California

California PATH/UC Berkeley

December 19, 2017



Background

- California's Road Repair and Accountability Act (SB1) establishes five preliminary performance outcomes for Caltrans to meet by 2027
 1. Not less than 98 percent of pavement on the state highway system in good or fair condition.
 2. Not less than 90 percent level of service achieved for maintenance of potholes, spalls, and cracks.
 3. Not less than 90 percent of culverts in good or fair condition.
 4. **Not less than 90 percent of the transportation management system units in good condition.**
 5. Fix not less than an additional 500 bridges.
- The proposed project will define, design, implement and evaluate a performance-based methodology focused on goal 4
- Desired outcome is an optimal performance-based maintenance process that can serve as a model statewide



Two Separate Efforts to Consider

1. UC Berkeley's SB1 Research Project
 - Exploratory study that will define terms, performance measures and methodology for conducting a pilot
 - Already funded and underway
2. Caltrans Pilot Project demonstrating performance-based maintenance of ITS elements
 - Logical follow-on to UCB's SB1 study described above
 - To be discussed in greater detail today, not yet funded



SB1 Research Project (UC Berkeley)

Title: *Meeting the SB1 Transportation System Performance Goals - an Exploratory Study*

Funding: \$25K

Funding Source: UC Berkeley's SB1 Research Allocation

Period of Performance: Dec. 2017 – May 2018

PI: Dr. Alex Skabardonis (PATH)

Study Objectives:

- Define terms and performance measures for SB1's Transportation Management System Performance Goal of 90% of "units" in "good condition"
- Define a methodology for achieving the SB1 goal including a pilot project that utilizes a performance-based maintenance contract



SB1 Research Project (UC Berkeley)

Major Tasks:

1. Assemble project review panel of Caltrans stakeholders
2. Review best practices
3. Define terms and performance measures
4. Define an implementation strategy and pilot project that uses performance-based maintenance
5. Host workshop to present findings to Caltrans

Deliverables:

1. Workshop Agenda and Summary
2. Draft and Final Research Reports
3. Two-page Policy Brief



Pilot: Performance-based ITS Maintenance

Objectives:

1. Conduct and evaluate a pilot demonstration of a performance-based ITS maintenance contract on a selected corridor or study area
2. Establish an optimal performance-based maintenance process that can be replicated statewide and help achieve SB1 goals

Major Tasks:

1. Develop/design the pilot and performance-based contract
2. Select an ITS Maintenance Contractor
3. Conduct the pilot and collect data
4. Evaluate the effectiveness of the pilot in relationship to SB1 goals

Deliverables:

1. Quarterly Project Reports w/ summary of contractor performance
2. Performance-based ITS Maintenance Contract
3. Pilot Evaluation (w/ continuous reporting of results)
4. Recommended process for conducting performance-based ITS maintenance in California



Pilot: Performance-based ITS Maintenance

Cost Estimate: depends on size of corridor or study area, type and number of ITS units being maintained, and if equipment upgrades are included

Project Duration: 2 years

- Phase 1: Design Pilot and select contractor – 6 months
- Phase 2: Conduct Pilot and collect data – 18 months
- Phase 3: Evaluation – ongoing and concurrent