Project Delivery Directive

To: *Project Delivery Employees*

Number:	*PD-08*
References:	*DD -34, DD-93, PMD -04R, PMD-014*
Effective Date:	*July 1, 2012*
Supersedes:	*New*
Review by:	*July 1, 2015*

TITLE: Earned Value Management of Capital Outlay Projects

DIRECTIVE

The Department utilizes Earned Value Management as one of the tools to manage capital outlay projects' cost and schedule.

BACKGROUND

DD-34 states in part, "The California Department of Transportation (Department) manages its programs and project delivery using the project management principles outlined in the Department's Project Management Handbook. Project Managers are assigned to every project to ensure delivery is within the scope of the project, on schedule, and within budget and to ensure the project will satisfy the need for which it was undertaken."

In addition, DD-93 further assigned these responsibilities to Task Managers for the deliverables within each project. DD-93 states in part, "This policy is intended to recognize that Task Managers are assigned on all Capital Projects . Each Task Manager will be responsible for managing its own deliverable and to provide status information including reported progress on each deliverable."

Earned Value Management (EVM) is one of several tools Project Managers (PM) and Task Managers (TM) can use to ensure a project and its deliverables are on schedule and within budget. For EVM to be effective, the planned budget must be reasonable, the actual costs must be accurate (including accurate time charges), and the project's status (percent complete) must be maintained.

DEFINITIONS

Earned Value Management is a methodology for objectively measuring project or task performance and progress. It requires a baseline against which performance can be measured. EVM allows the PM/TM to continuously monitor their project or task by comparing three work performance values:

Planned Value (PV), is the authorized budget assigned to the scheduled work to be accomplished for a schedule activity or WBS component. Also referred to as the budgeted cost of work scheduled (BCWS)[1].

Earned Value (EV), is value of work performed expressed in terms of the approved budget assigned to that work for a schedule activity or WBS component. Also referred to as the budgeted cost of the work performed (BCWP).

Actual Cost (AC), is the total costs actually incurred and recorded in accomplishing work performed during a given time period for a schedule activity or WBS component. Also referred to as the actual cost of work performed (ACWP).

Using these values, schedule and cost variance and indices can be calculated to indicate schedule and cost performance, as well as provide a basis for estimating schedule and cost outcomes. For example:

- Schedule Variance (SV) is a measure of schedule performance on a project or task. It is equal to EV minus PV. It can indicate whether a project is either ahead of schedule (positive value) or behind schedule (negative value) .

- Cost Variance (CV) is a measure of cost performance on a project or task. It is equal to EV minus AC. It can indicate whether a project or task is under budget (positive value) or over budget (negative value).

- The Schedule Performance Index (SPI) is equal to the ratio of the EV to the PV (EV/PV). An SPI less than 1.0 indicates that the project is behind schedule and an SPI greater than 1.0 indicates the project is ahead of schedule. When the SPI measures all project work, the performance on the critical path must also be analyzed to determine if the project will finish ahead of or behind schedule.

- The Cost Performance Index (CPI) is equal to the ratio of the EV to the AC (EV/AC). A CPI less than 1.0 indicates a cost overrun and an CPI greater than 1.0 indicates the project is under budget for the work completed to date.

[1] Project Management Body of Knowledge Version 4 used for PV, EV and AC definitions.

RESPONSIBILITIES

Chief Engineer:

- Establishes Earned Value Management policy.

District Directors:

- Ensure conformance with this policy.

District Division Chiefs and Deputy Division Chiefs, Chief, Division of Engineering Services:

- Ensure Project Managers and Functional Managers perform their responsibilities.

Chief, Division of Project Management

- Leads, champions, sponsors and implements EVM by developing and maintaining policies, guidance, procedures, practices, training and expertise.
- Provides Headquarters EVM coordination.
- Determines standard EVM reporting methods and performance metrics

Functional Managers:

- Work with their Task Managers to develop accurate support budget and schedule for assigned task(s).
- Work with their Task Managers to establish regular evaluation frequencies for monitoring project component performance.
- Review, monitor, and work with their Task Managers on EVM performance metrics.

Task Managers:

- Work with the Project Manager, Project Development Team members and Functional Manager(s) to develop accurate support budget and schedule for assigned task(s).
- Ensure that accurate and timely task progress and task completion information is entered into tracking software and provided to the Project Manager.
- Work with the Project Manager to identify schedule and/or budget anomalies which indicate a need for remedial action or more regular monitoring.
- Work with the Project Manager and Functional Manager to carry out remedial action as needed.
- Ensure their team members report timely and accurate project charges.

Project Managers:

- With the Task Manager(s) and Project Development Team members, develops accurate support budgets and schedules for assigned task(s).
- Ensure that accurate and timely task completion information is entered into tracking software and provided to the District Management.
- With the Task Manager(s), identifies schedule and/or budget anomalies requiring remedial action or frequent monitoring.
- With the Task Manager(s) and Functional Manager(s) initiates remedial action as needed.
- Ensure that local agency sponsors and stakeholders are actively involved and aware of any changes in total support costs.
- Ensure that project baseline data reflects the approved budget.

ROBERT PIEPLOW
Acting Chief Engineer

April 5, 2012
Date Signed