

PROJECT DELIVERY ACCELERATION

TOOLBOX



Improvements to the
Project Delivery Process



November 2008

TABLE OF CONTENTS

	INTRODUCTION.....	1
	IMPLEMENTED IMPROVEMENTS	2
1	Budgets.....	2
	1.01 Flexible Match and Tapered Funding.....	2
2	Construction.....	2
	2.01 Critical Path Method Scheduling	2
	2.02 Constructability Reviews	3
	2.03 Cost-plus-Time (A + B) Bidding.....	3
	2.04 Incentives/Disincentives.....	3
	2.05 A + B with I/Ds	3
	2.06 Internal Milestones.....	4
	2.07 Joint Contractor/State Value Analysis Study Immediately After Contract Approval.....	4
	2.08 Construction Contract Time.....	4
	2.09 Differing Site Conditions Management Review Committee	4
	2.10 Time-Related Overhead.....	5
	2.11 Increased Construction Cost Savings to the Contractor for Reducing Traffic Congestion	5
	2.12 Contract Disincentives to Promote Timely Construction Completion	6
	2.13 Traffic Contingency Plans	6
	2.14 Alternative Dispute Resolution	6
	2.15 Policy to Pay for Acceleration Costs During Construction When Cost Effective	6
	2.16 Lane Closure Software.....	7
	2.17 On-line Debarment List of Debarred Contractors	7
	2.18 Beginning of Work.....	7
	2.19 Expansion of Subcontracting.....	7
	2.20 Elimination of Contract Retention.....	8
	2.21 Owner Controlled Insurance Program.....	8
	2.22 Partnering.....	9
	2.23 Emergency Contracting Innovations	9
3	Design	9
	3.01 Re-engineering the Project Development Process.....	9
	3.02 Increased Response to Statewide Cooperative Agreements	10
	3.03 Pre-Approved Cooperative Agreements with District Director Authority	11
	3.04 On-line Training for Cooperative Agreements.....	11
	3.05 Lump Sum Highway Planting Project	11
	3.06 Landscape Architecture Standards Manual.....	12
	3.07 Design-Sequencing.....	12
	3.08 Look Ahead Report for Contracts to be Advertised	12

3.09	Project Change Control.....	12
3.10	Value Analysis.....	13
3.11	Project Development Process – On Line Course.....	14
3.12	Design Training Curriculum.....	14
4	Engineering Services.....	14
4.01	Reduced Listing Period.....	14
4.02	Reduced Advertising Period.....	14
4.03	Contract Execution Period.....	15
4.04	New Contractor Webpage.....	15
4.05	Streamlined Plans, Specifications and Estimate Submittal Process.....	15
4.06	Training by DES-OE.....	15
4.07	Electronic Bidding Pilot.....	16
4.08	Risk Advertising.....	16
4.09	Provide Electronic Access to Project Documentation.....	16
4.10	Soundwall Specification.....	16
4.11	Accelerated Bridge Construction Documents for Engineers.....	16
5	Environmental.....	17
5.01	Organizational Change.....	17
5.02	“Mare Island Accord”.....	17
5.03	Coast Highway Management Plan, Big Sur Coast.....	18
5.04	Renegotiation of NEPA/404 Integration Process MOU.....	19
5.05	Resource Agency Partnering Agreements.....	19
5.06	Programmatic Agreements with Resource Agencies.....	19
5.07	Mitigation Banking and Process Improvements.....	20
5.08	Environmental Impact Statement (EIS) Review Process Improvement.....	21
5.09	Consistent Approach to Well-Defined Project Need and Purpose.....	21
5.10	Preliminary Environmental Assessment Report.....	21
5.11	Multi-Agency Working Group to Address Assessment of Cumulative Impacts.....	22
5.12	Annotated Outlines for Environmental Documents and Standard Formats for Biological Assessments.....	23
5.13	Disposal Site Quality Team.....	23
5.14	Standard Environmental Reference (SER).....	24
5.15	NEPA Delegation Pilot Program.....	24
5.16	Categorical Exclusions.....	25
6	Local Assistance.....	25
6.01	Use It or Lose It.....	25
6.02	Manuals and Guidelines on DVD (Publications for Local Assistance DVD).....	25
6.03	Improved Program Management Direction and Communications.....	26
6.04	Electronic Forms- FormsPLUS.....	26
6.05	Expedite Reimbursements.....	27
6.06	Standard Environmental Reference.....	27
6.07	Improved Training.....	27
7	Maintenance.....	27
7.01	Emergency Contractor Registry.....	27
7.02	Director’s Order Guidelines and Matrix.....	28

8	Project Management	28
8.01	Project Charter Policy	28
8.02	Capital Project Skill Development Plan	28
8.03	Use of Flexible Resources to Deliver Projects	29
8.04	Revised Milestone Standard	29
8.05	Project Management Professional Certification.....	29
8.06	Lessons Learned Database	30
8.07	Project Close Out	30
8.08	Project Communication Handbook.....	30
8.09	Project Management Certificate Program	31
8.10	Project Delivery Contracts.....	31
8.11	Development and Use of Risk Management Plans for Capital Projects.....	31
9	Right of Way and Land Surveys	32
9.01	One-Call Acquisition.....	32
9.02	Single Agent Appraise/Acquire Process.....	32
9.03	Resolution of Necessities by Locals.....	32
9.04	Right of Way Acquisition prior to Environmental Approval	33
9.05	Streamlined Positive Location (Potholing) Process.....	33
9.06	Right of Way Project Delivery Team	34
9.07	Quality Enhancement Joint Review Process.....	34
9.08	Biennial Surveys and Right of Way Engineering Coordination Meetings	34
9.09	Right of Way Intranet Site	35
9.10	Utility Design Activities Prior to Environmental Approval.....	35
9.11	Underground Service Alerts (USA) – Design Inquiry Service Contract Utility Design	35
9.12	Increased Awareness of Right of Way Activities	35
9.13	Continuous Advertising for Appraisal Consultants	36
9.14	Improved Certificate of Sufficiency Process	36
9.15	Vanguard Remote Surveying System	36
9.16	Specifications for Surveying on Superstructures.....	36
9.17	Right of Way Engineering Mapping Standards.....	36
9.18	Utility Relocation Master Contracts	37
9.19	Letter/Notice to Property Owners for Environmental Study Entry.....	37
9.20	Joint Training for R/W Utility Coordinators and District Local Assistance Engineers.....	37
9.21	Assuming Greater Role in Delivery of Training to Local Public Agencies and Consultants.....	37
9.22	Improve Accuracy in Right of Way Estimates.....	38
9.23	RTK GPS Equipment and Specifications	38
9.24	Terrestrial Laser Scanning	38
9.25	Early Involvement for Railroad Appraisals.....	38
10	Transportation Planning.....	39
10.01	Establishment of the Project Study Report – Project Development Support Document	39
10.02	Early Environmental Efforts/Geographic Information Systems.....	39
10.03	Route Optimization Analysis Tools.....	40
10.04	State Highway Operations and Protection Program (SHOPP) Investment Analysis Tool	40

10.05	Purpose and Need Sub-Team.....	40
11	Transportation Programming.....	40
11.01	Delegated Authority.....	40
11.02	Improved Scoping and Scheduling.....	41
11.03	New Developments in Information Technology.....	41
	PROPOSED IMPROVEMENTS.....	42
1	Budgets.....	42
1.02	Upgrade the Federal-aid Data System (FADS).....	42
1.03	Combine FADS with CTIPS and LP2000.....	42
2	Construction.....	42
2.24	Information Technology Systems.....	42
2.25	Cost Reduction Incentive Proposals (CRIP).....	43
2.26	Civil Work Claims Acceleration.....	43
2.27	Standing Dispute Resolution Boards (DRBs).....	43
2.28	Critical Path Method (CPM) Specification Improvements.....	43
2.29	Utility Agreement Incentives.....	43
2.30	Notice of Claim.....	43
2.31	Resident Engineer (RE) Office Space.....	44
2.32	Improved Bidder Inquiry.....	44
2.33	Smart Start.....	44
2.34	Expanded Use of Agreed Price Contract Change Orders.....	44
3	Design.....	45
3.13	Design Build.....	45
3.14	Framework for Independent Quality Assurance (IQA) for Design Product.....	45
3.15	Additional Courses for the Design Training Curriculum.....	45
4	Engineering Services.....	45
4.12	Internet Bidding.....	45
4.13	Accelerated Bridge Construction.....	46
5	Environmental.....	46
5.17	Improved Scoping and Scheduling.....	46
5.18	Environmental Management System—PEAR and STEVE Tool.....	47
5.19	Environmental Engineering—Hazardous Waste and Noise.....	47
5.20	Traffic Studies.....	47
5.21	Environmental Commitment Tracking.....	48
5.22	Purpose and Need.....	48
5.23	Additional Programmatic Agreements with Resource Agencies.....	48
5.24	NEPA/404 MOU Training.....	48
6	Local Assistance.....	49
6.08	Additional Staff for Implementation of the National Environmental Policy Act (NEPA) Delegation Pilot.....	49
7	Maintenance.....	49
8	Project Management.....	49
8.12	Project Resource and Schedule Management.....	49

8.13	Documentation of Knowledge, Experience, Abilities and Skills for Project Delivery Roles	50
9	Right of Way and Land Surveys	50
9.26	Perfection of Title on U.S. Forest Service Lands.....	50
9.27	Single Agent Appraise/Acquire Limit Increase	51
9.28	Machine Guidance Technology in Construction	51
9.29	Integrating Geo-spatial Technologies into the Right of Way Data Management Process	51
9.30	Real Time GPS Network RTN.....	52
9.31	Mobile Laser Scanning.....	52
9.32	Survey File	52
9.33	Contaminated Property Acquisition Process	52
10	Transportation Planning.....	53
10.06	Project Initiation Document (PID) Assessment Endeavor	53
10.07	New PID for SHOPP Reservation Projects	53
11	Transportation Programming.....	53
11.04	Enhanced Information Technology.....	53
	Status of Improvements.....	54

INTRODUCTION

The Project Delivery Acceleration Toolbox (Toolbox) is a comprehensive report listing the California Department of Transportation's (Department) efforts (past and present) to accelerate the delivery of transportation projects. This document also identifies proposed tools for the Department to implement over the next few years. This document will be modified often to reflect the most current and continuing improvement efforts of the Department. The purpose of this document is to provide the Department's employees, as well as our external partners, valuable tools to accelerate project delivery. The Toolbox is on the Department's Project Delivery website: <http://www.dot.ca.gov/hq/oppd/projaccel/index.htm>.

The Toolbox contents are separated into three sections: Implemented Improvements, Proposed Improvements, and Status of Improvements. All three sections are organized by Department functional division (i.e., Budgets, Planning, Programming, etc.). The last section lists all improvements in a spreadsheet format for quick reference and indicates the status of each improvement.

For additional information about this Toolbox, contact the corresponding Division listed below:

Division Contacts:

Budgets	Norma Ortega	(916) 654-4556
Construction	Mark Leja	(916) 654-2157
Design	Raymond Tritt	(916) 653-3348
Engineering Services	Bob Pieplow	(916) 227-8800
Environmental	Jay Norvell	(916) 653-7136
Local Assistance	Frank Cao	(916) 653-0341
Maintenance	Steve Takigawa	(916) 654-5849
Project Management	Karla Sutliff	(916) 654-2494
Right of Way and Land Surveys	Bimla Rhinehart	(916) 654-5075
Transportation Planning	Curt Davis	(916) 654-3768
Transportation Programming	Rachel Falsetti	(916) 654-4013

IMPLEMENTED IMPROVEMENTS

1 BUDGETS

1.01 Flexible Match and Tapered Funding

The Department has been using flexible match credits and tapered funding on a project-by-project basis. A proposal for using these innovative financing methods is submitted to the FHWA before starting any federally eligible work on the project. The approval is documented in the request for authorization and project agreement for each project.

A flexible match credit allows a wide variety of public and private contributions to be counted toward the non-federal match for Federal-aid projects. Flexible match credit allows for early acquisition of right-of-way (R/W) prior to the completion of Federal environmental clearance and federal authorization, this allows for earlier R/W purchases without jeopardizing federal funding. For example, the Department can use flexible match credit for non-federal funding for R/W acquisition and support costs. Also, flexible match allows various forms of non-federal funds, donations, etc. to be credited toward the federal match requirement without regard to achieving the required proportionate match for each bill to FHWA. Usually, non-federal funds are applied at the beginning of the project schedule for a flexible match scenario.

Tapered funding allows reimbursement of the full federal share of a project before the non-federal matching funds are spent. Tapered funding allows projects to begin with federal funds and prior to other funding being fully available at the start of the project. For example, federal and matching funds ratios for a local project can be met by using federal funding first then using local funding to pay the final project cost as long as the overall minimum matching requirements for the project is met.

2 CONSTRUCTION

2.01 Critical Path Method Scheduling

Critical Path Method (CPM) scheduling shows the work as planned and documents the actual work as it occurs. Using CPM encourages contractors to plan their work and stay on schedule. A CPM schedule alerts the Department to potential delays. State-owned float is the quantity of days that reviews of submittals are completed earlier than as required in the contract. Because State-owned float is banked to offset State-caused delays, the Engineer has an incentive to review contractor submittals quickly.

2.02 Constructability Reviews

In 1997, a policy guideline was issued requiring project constructability reviews. Prior to this policy there was no requirement for construction staff input prior to draft project plans and specifications review. Constructability reviews are Construction's opportunity to recommend plan and specification changes to save money, accelerate construction, confirm biddability, and ensure constructability.

2.03 Cost-plus-Time (A + B) Bidding

In A+B bidding the successful bidder has the lowest combination of the "A" contract amount, which is the total bid price of all contract items, plus the "B" amount, which is the total number of working days bid by the contractor to complete the project multiplied by the "Cost per Day" which is calculated by the Department. Cost per day includes the lesser of road user costs (as calculated by the District Traffic Engineer) plus liquidated damages or 0.1% of the engineer's estimated cost of construction. Contractors who bid on A+B contracts generally bid fewer working days than calculated by the Department (average is 27% fewer working days). A + B bidding was piloted in 1993. In 1995, FHWA determined that A + B bidding was no longer experimental and agencies were allowed to use A+B bidding on projects without FHWA prior approval. New specifications and guidelines for using A + B bidding on projects were issued in September 2002. A+B bidding is routinely used on projects with an engineer's construction cost estimate greater than a \$5 million and with a daily road user cost greater than \$5,000. There is a Construction exception process that allows A+B bidding on lower cost projects. The Department continues to increase the number of projects advertised with A + B bidding.

2.04 Incentives/Disincentives

Incentives/Disincentives (I/Ds) encourages a contractor to meet the contract's specified schedule. The value of the incentive and disincentive are usually based on liquidated damages and/or road user costs. Historically, use of I/Ds began on emergency contracts. Guidelines for employing A+B bidding and/or I/Ds on all projects (including non-emergency projects) were issued in June of 2000. I/Ds are used only on projects with a greater daily road user cost than \$5,000.

2.05 A + B with I/Ds

In special circumstances, A+B bidding and I/D can be used together when there are critical internal milestones to encourage timely delivery of the milestone to minimize overall contract time. When I/Ds are used in conjunction with A+B bidding, caution is taken to ensure costs do not overlap, since both I/Ds and the "Cost per Day" used in the "B" calculation of A+B bidding are based on liquidated damages (LDs) and road user costs (additional LDs).

2.06 Internal Milestones

Internal Milestones can be incorporated into the specifications of a contract during the design phase. These needs are usually identified during Constructability Reviews. Internal Milestones can ensure speedy construction up to that milestone(s) and/or ensure a given segment of construction is completed at a given time for various reasons, such as private business needs, right-of-way requirements, or cooperation with overlapping projects.

2.07 Joint Contractor/State Value Analysis Study Immediately After Contract Approval

A special provision called “Value Analysis (VA) Study Workshop,” is included in all contracts estimated to cost more than \$5 million. This specification provides an opportunity for the Department and contractor staff to meet to generate and develop ideas for reducing the contract’s cost and time. The Department and contractor split the cost savings if any are determined.

2.08 Construction Contract Time

A new policy was implemented in February 2001 to determine the original construction contract time. This policy requires project engineers to use standard industry production rates and critical path method (CPM) schedules on all major projects (costing \$1,000,000 or more). Previously, project engineers would review projects of similar cost and scope, or use in-house production rates to determine construction contract time.

In addition, the Department is also utilizing new technologies to decrease construction contract time. One of these technologies is Fast Setting Hydraulic Cement Concrete, however, it has high cost and limited use. Also there are numerous bidding methods that can be used to decrease contract time.

2.09 Differing Site Conditions Management Review Committee

Differing Site Conditions (DSC) disputes can be particularly complex, difficult to analyze, and require the consideration of various sources of information. DSC disputes often occur during the subsurface work performed early in a project, and can be prolonged disputes that are costly to the Department when not resolved early. DSC disputes are relatively common during a contract and can proceed through both the claim administration and arbitration phases of dispute resolution.

In February 2002 a new process was implemented to clarify the Department’s position on DSC disputes. After the Contractor files a notice of potential claim regarding a DSC a management review committee is then involved early in the potential claim process. The management review committee consists of the Deputy

District Director of Construction (chairperson), the structure construction area manager, and the construction coordinator. This process allows the Department to maintain statewide consistency in dealing with DSC disputes.

2.10 Time-Related Overhead

The Department has developed and implemented use of a Time Related Overhead (TRO) specification to provide timely compensation to its construction contractors for owner-related delays. The Department initiated a pilot program in August 2000 to include the TRO bid item and specifications in construction contracts greater than \$5 million. Results from a formal evaluation of the pilot program were favorable. Benefits of using TRO specifications include:

- Allowing compensation for a bid item based upon competitive bidding driven by market forces and contractor efficiencies
- Permitting administration of overhead compensation at the resident engineer's level
- Providing "real time" project management, allowing the project manager and resident engineer to quickly quantify delay cost impacts as the proposed changes or disputes occur
- Reducing contentious, non-partnering atmosphere and eliminating polarized positions on overhead disputes during contract administration
- Resolving delay issues before the completion of the work
- In most cases, eliminating time-consuming, complex, and expensive audits

The Department's management plans to continue the use of TRO specifications in State Highway projects over \$5 million.

2.11 Increased Construction Cost Savings to the Contractor for Reducing Traffic Congestion

The Department initiated a legislative proposal to encourage contractors to submit more cost reduction proposals to reduce or avoid traffic congestion during construction of a project. As a result, AB 1530 became effective on January 1, 2002. This bill increased the contractor's compensation to 60% of the cost reduction if the changes significantly reduced or avoided traffic congestion during construction. Prior to this bill, the contractor received 50% of the cost reduction as an incentive. A revised special provision called "Cost Reduction Incentive" is being included in all contracts to implement AB 1530.

2.12 Contract Disincentives to Promote Timely Construction Completion

To ensure timely completion of transportation projects, the contract specifications should specify the start date, and the completion date (contract sections: “Beginning of Work” and “Time of Completion”) with damages paid to the State for not meeting these milestones. The damages are assessed under the contract provision “Liquidated Damages”. Liquidated damages usually consist of direct costs with field/corporate overhead mark-up, and sometimes costs associated with delaying adjacent or follow-on contracts. Road user costs are typically not included unless the project engineer can determine the daily lost opportunity cost for the motorist. Construction may recommend these contract incentives or others as appropriate during Constructability Reviews.

2.13 Traffic Contingency Plans

Construction has improved guidelines and policy regarding effective use and requirements of contingency plans. This helps to keep construction on schedule and allow safe passage through the jobsite when there are delays or factors beyond the contractor’s control.

2.14 Alternative Dispute Resolution

On contracts of \$10 million or greater, a mandatory dispute review board (DRB) must be established. The DRB is a three-person board that hears presentation of information from the contractor and the State, reviews the information, discerns facts, and makes a recommendation to the parties as to who is correct and why. This provides the District/Region Resident Engineer and contractor an objective, third-party opinion valuable in helping to settle disputes and keeping the contract on schedule.

Construction implemented specifications, guidance and agreements for a dispute resolution advisor (DRA) on all contracts between \$3 million and \$10 million in 2008. The DRA is a one-person board performing a function very similar to that of a Dispute Review Board.

2.15 Policy to Pay for Acceleration Costs During Construction When Cost Effective

Legislation was approved and policy was established to pay for the cost of acceleration during construction when it is cost effective. Cost effectiveness is defined as avoiding motorists' delays.

2.16 Lane Closure Software

Construction, Traffic Operations and Maintenance have developed an interim lane closure request/processing/tracking system to reduce the amount of time to request/accept closures.

2.17 On-line Debarment List of Debarred Contractors

In 2000, the California Legislature passed AB 2275, which authorizes the Department to regulate actions against parties who willfully conceal, misrepresent, or alter quality control results. The debarment process is intended for conspicuous patterns of fraudulent test and inspection reports. Names of debarred contractors are listed on the Internet. This will ensure true test results and will minimize delays and re-work due to fraudulent test results.

This list is on the Construction website at:
<http://www.dot.ca.gov/hq/construc/debarred.doc>

2.18 Beginning of Work

Construction implemented a specification that will require certain documents to be submitted by the Contractor and approved or accepted by the Engineer prior to the start of construction operations in 2008. Standard submittals required prior to construction operations will be the baseline CPM schedule, water pollution control program or storm water pollution prevention plan, dispute review board nominee, notice of materials to be used, and (traffic) contingency plan. This specification is intended to avoid contractor's delays by getting the contractor "in and out" of the jobsite as expeditiously as possible.

2.19 Expansion of Subcontracting

The level of subcontracting allowed on construction contracts was expanded from 50% to 70% in 2008. This allows experienced contractors to leverage resources and perform more work using subcontractors. Use of the specialty designation for the calculation of prime contractor work was eliminated under this initiative.

Payment and performance bonding was waived on contracts valued less than \$150,000 (Minor B) contracts in 2008. Bonding was identified as a major barrier to entry for small and micro businesses.

Expanded contracting opportunities grows the construction industry through mentoring, experience, and better capitalization; ultimately expanding the bidding pool. This is expected to drive delivery cost down and accelerate project delivery during workload peaks.

2.20 Elimination of Contract Retention

Contract retention is a withholding of money without cause during the performance of the work. Retention was eliminated on federally funded contracts in 2006 to comply with the Code of Federal Regulations. Prime contractors are contractually prohibited from retaining from their subcontractors. State law prohibiting retention goes into effect 1 January 2009. The elimination of retention reduces cash flow constraints and financing costs for contractors. This allows the contractor to better utilize their physical resources to build projects faster. The Department has not seen an increase in the number of contractor defaults or termination of contracts because of this change in Federal law and does not anticipate any negative impacts due to this change in State law.

To protect the interests of the State and Sureties, the Department implemented a withhold for cause provision in its contracts when the contractor does not maintain satisfactory progress. The Department is further indemnified by payment and performance bonding that are included on federally funded contracts.

2.21 Owner Controlled Insurance Program

The Department is currently implementing an Owner Controlled Insurance Program (OCIP) on selected large transportation improvement construction contracts. This program was driven by Agency and was supported by the Administration. An OCIP is a centrally procured and managed insurance and risk control program implemented for a single construction project or a series of construction projects. Rather than each contractor providing its own insurance and passing this cost to the Department through the construction contract, the Department purchases certain lines of insurance (such as general liability, excess liability, and workers compensation) to cover most of the contractors on a job site.

Aggressive risk control and claims management measures are then implemented for the project. Potential cost savings arise from the prevention of losses, reduction of the cost of those losses through consolidated claims management, reduction in cost of claims through a single insurer's legal defense, and reduction in premiums from the negotiating clout achieved by combining multiple insurance programs into one. In addition to achieving cost savings, OCIPs may be used to obtain insurance coverage and limits otherwise unavailable for a construction project thus allowing increased participation by small business contractors who may not be able to afford such limits. The OCIP sponsor procures and manages the insurance policies covering the interests of all or most of the contractors on the project. The key element of an OCIP is the owner maintains control of the insurance program, risk management program, and claims management program for the entire construction project. This approach differs from the traditional approach from which each contractor on a job site procures and maintains its own insurance policy with vastly different, terms, conditions, limits, and insurance coverage.

2.22 Partnering

Partnering is a way of conducting business in which two or more organizations make long-term commitments to achieve mutual goals. It promotes open communication, trust, understanding and teamwork. Key project delivery team members are encouraged to attend partnering sessions, use partnering tools for effective dispute resolution, and be actively engaged throughout the life of the construction contract. The benefits of partnering include increased project safety, quality, and job satisfaction as well as reduced delays, claims, and contract cost.

For more information, download the *Field Guide to Partnering on Caltrans Construction Projects* from the Caltrans Partnering Program website at:

<http://www.dot.ca.gov/hq/construc/partnering.html>

2.23 Emergency Contracting Innovations

The confirmation of verbal agreement, director's order, and the emergency limited bid contract boilerplate were simplified and streamlined in 2008. The time to negotiate and sign emergency force account contracts with construction contractors was cut 68% on average. This positions the Department to respond more quickly and accurately to emergencies that threaten public safety and infrastructure.

Emergency relief guidelines were issued in 2008 to improve the precision of emergency contract cost and schedule estimating. Construction policy was also issued to clearly define roles and responsibilities for handing projects off from the Division of Maintenance to the Division of Construction. Communication between the divisions was improved through posting of key information on the internet that is linked through both internet portals. Accelerated project delivery resulted from improved efficiency.

3 DESIGN

3.01 Re-engineering the Project Development Process

Three pilot teams implemented a "reengineered" process, producing State Highway Operation and Protection Program (SHOPP) projects that focused on three key elements:

- Utilizing multifunctional work teams responsible for the project from inception through construction,
- Allocating funding on a program level, rather than project by project, based on a performance-based long term preservation plan, and
- Advertising and awarding construction contracts on a corridor or geographical basis, with individual projects being let on a task order basis (Master Contracts).

The key benefits realized from the pilots included:

- The use of multifunctional teams significantly enhanced the project team dynamics, developed ownership of the projects by all team members, and increased project team communications. This resulted in instant feedback between functions, less rework within projects, less delays between functional units, and overall accelerated delivery of projects.
- Providing funding on a program level rather than a project level provided the project owners (maintenance and operations) greater flexibility in using funds to address the immediate needs. The project owners also maintained a greater level of control of the project scope, helping to ensure that the project delivered was the project that was originally envisioned. The 10-year SHOPP and the Department's delegated authority for voting of rehabilitation funds were somewhat based on this concept.

Traffic Operations is currently utilizing a multifunctional team as an option to deliver safety projects. The team has developed and is implementing a two page Project Report/Project Study Report (PR/PSR). The team has also developed a procedure to complete surveys early and to start the environmental process prior to the Project Initiation Document (PID) being signed. The team has found that on a large portion of the projects they are able to make Ready to List (RTL) within 18 months of the project being amended into the SHOPP.

While the full “re-engineered” process was never fully implemented, several ideas have been utilized on a limited basis. District 2 is using the multi-functional team approach for safety projects and the North Region is using this approach for projects in the Tahoe area. District 11 has implemented Corridor Management where a Corridor Manager oversees a multi-functional team delivering projects within a specified highway corridor. Design-Sequencing was developed from the idea of bringing contractors on board earlier than 100% project plans, specifications and estimate (PS&E).

3.02 Increased Response to Statewide Cooperative Agreements

A Cooperative Agreement is a formal, legally binding contract between the State of California and a city, county, or other public entity (e.g., Authority, RTPA, MPO, Federal Agency, State Agency, Tribal Governments) when there is an exchange of effort, funds, materials, or property. The Cooperative Agreement process should be managed as a part of the Project's Work Breakdown Structure (WBS) with the appropriate attention to timing, resources and relationships to other project development activities. The Department is involved in approximately 440 new agreements per year and the Office of Cooperative Agreements reviews more than 1300 drafts each year.

In recognition of the increasing importance of cooperative agreements, the Division of Design (Design) has split the cooperative agreement workload from the Office of Project Development Procedures and created the Office of Cooperative Agreements. Additional staff and consultants have been hired to maintain existing

responsibilities, develop new tools, and enhance the liaison role between the Capital Program and the Division of Legal.

3.03 Pre-Approved Cooperative Agreements with District Director Authority

In an effort to meet the Director's goal of having cooperative agreements developed in 60 days or less, two significant changes to the cooperative agreement process have been implemented. First, the Project Agreement Construction Tool (PACT) will now develop pre-approved cooperative agreements for basic project development agreements. This provides a well-prepared Project Development Team the opportunity to get a cooperative agreement written in a single meeting. Second, in support of the pre-approved PACT agreement the signature authority for pre-approved PACT agreements is now delegated to the District Director.

3.04 On-line Training for Cooperative Agreements

An on-line course on Cooperative Agreements is available through Design's Internet web site. It covers the fundamentals of the what, why, who, when, and how of Cooperative Agreements. It is available to everybody including the Department, Local Agency, and consultant staffs.

3.05 Lump Sum Highway Planting Project

Districts 8 and 11 produced three "lump sum" highway planting projects. These projects consist of one lump sum bid for planting and one lump sum bid for irrigation work thus creating time-savings in producing the estimate.

The first "lump sum" highway planting project was developed and implemented in District 8 on Route 60 and has been completed. District Construction reports that a reduction in claims resulted from fewer discrepancies in unit counts, but that contract administration effort is the same as for a traditional unit bid project.

Conflicting expectations between Office Engineer and District Design for appropriate specification language resulted in the second proposed "lump sum" project being processed as a traditional unit bid project.

The third "lump sum" highway-planting project was in District 11 on Route 94 in Lemon Grove and has been completed. District 11 estimates that two to three times more inspection time was required and twice as much effort was put into potential claims resolution than for traditionally prepared contracts.

Lump sum bidding is an available option for the PDT team to explore on a project-by-project basis to accelerate delivery of highway planting projects.

3.06 Landscape Architecture Standards Manual

The Landscape Architecture PS&E Guide (Guide) assists the Department's Landscape Architects in the preparation of design work. It includes guidance on all elements of project development from planning to final PS&E and through construction. The Guide includes memos of instruction, procedures, standards, and policies related to landscape architecture.

The Guide was updated in 2007 and is now available on-line at:
http://www.dot.ca.gov/hq/LandArch/lap_guide/index.htm

3.07 Design-Sequencing

Legislation authorized a Design Sequencing Pilot Program that allows the Department to award a limited number of design-sequenced projects to a contractor based on plans that are a minimum of "30 percent" complete. This method, although dramatically different from the 100 percent complete project PS&E that are normally required before soliciting bids from potential contractors, may result in faster delivery. For the seven projects completed to date, the time savings has ranged from 2 months delay to 18 months saved with an average time savings of 4 months when compared to the original Design-Bid-Build timeline.

Developing a PS&E package is a process that can take many years to complete for large or complex projects, where various functional units must complete a monumental amount of supporting work, in the proper order, to orchestrate a 100 percent PS&E package. With design sequencing, flexibility is worked into a normally rigid process. It allows each construction sequence to commence when design for that sequence is complete, instead of requiring the design for the entire project to be completed before beginning construction.

3.08 Look Ahead Report for Contracts to be Advertised

A website has been developed to provide a single reliable source of information to the contracting industry regarding the Department's planned construction contracts to assist industry to better plan for its resource, equipment and material needs. The projects are listed about 12 months in advance and are updated at least monthly.

The Look Ahead Report can be viewed at:
<http://www.dot.ca.gov/hq/esc/projects/lookahead/>

3.09 Project Change Control

The Department is implementing "change control" techniques. The focus of change control is to keep projects on schedule by reducing design changes after completing

PA&ED. These changes can result in significant delays especially if they affect right of way requirements or environmental approval. Change control is accomplished by:

- (1) Establishing change control teams to coordinate project lock-in process to manage scope changes after PA&ED,
- (2) Determining what controlling “work packages” could cause significant scope changes and developing project schedules that complete these controlling work packages at the earliest opportunity, and
- (3) Using a Project Study Report – Project Development Support (PSR-PDS) document. A PSR-PDS is a programming document for PA&ED support used on all projects requiring an environmental document (non-CE). Upon completion of the PA&ED support programmed with the PSR-PDS document, the remaining support components, and right-of-way and construction capital can be programmed with a greater level of confidence and lower risk. (See Section 10 – Transportation Planning.)

3.10 Value Analysis

The Department’s Value Analysis (VA) program can assist in determining the best solution to meet a project’s purpose and need, advancing project performance objectives, and/or identifying opportunities for cost savings. VA can serve as an effective tool to help manage the project scope, cost and schedule. The VA methodology requires a multi-disciplinary team to provide a comprehensive review and analysis of the project. Including key project stakeholders on a VA Team can expedite the project development process by facilitating consensus. VA is also used to develop and analyze project staging and scheduling alternatives to identify opportunities for accelerating a project’s completion. The Department encourages the application of VA studies on a wide range of projects, products, and processes.

Timing is a critical factor in any successful VA study. The potential for improving the quality or cost effectiveness of the project is best at the early stages of a project’s development as the degree of improvement potential decreases as the project develops. Typically, a study should be conducted no later than PS&E being 30% complete.

Congress has passed two pieces of legislation mandating the Department to perform a VA study on all projects (as defined in the environmental document) over \$25 million (capital plus support) on the Interstate and National Highway System. Also mandated are studies for bridge projects over \$20 million. As stated within the current law, source of project funding is no longer a criteria. All projects, designed and/or funded by the Department, Local Agencies, consultants or others meeting these requirements must have a VA study performed.

3.11 Project Development Process – On Line Course

An introductory project development on-line course was implemented in 2005. The course includes a general overview of the project development process from planning through construction. The course audience includes Department staff, local agencies, and consultants. On-line sessions are available twice a month.

The on line course may be accessed at:

<http://www.dot.ca.gov/hq/oppd/pdp/index.htm>

3.12 Design Training Curriculum

The Design Training Curriculum is a cluster of courses that provides knowledge and training in a specific field enabling the student to learn practical, up to date skills and information applicable to various job assignments. An individual who has completed the relevant curriculum program should have the skills and knowledge to successfully complete assigned work. The Department can focus Design training on 'need to know training' required for employees to be effective in their job assignments. An increase in productivity and quality should result as well as increased job satisfaction and a personal sense of accomplishment.

The Curriculum consists of programs focused on an entry-level engineer or technician new to the Design function, on the Project Engineer level, and the Design Senior Level. Additional specialties in core disciplines are being added.

4 ENGINEERING SERVICES

4.01 Reduced Listing Period

The "Listing Period" is the time used for final development of contract documents, proofing, and reproduction of bid packages. In 2001, the Division of Engineering Services – Office Engineer (DES-OE) reduced the six-week listing period to four weeks based on efficiencies in office automation and reproduction of contract documents. For safety projects, the listing period was reduced to three weeks.

In 2007, DES-OE was able to reduce the listing period for all contracts to three weeks. Because contract plan reproduction is the controlling activity for listing a project, DES-OE now requires the draft contract be ready for reproduction at Ready to List (RTL). This requirement eliminates a week after RTL for finalizing the contract plans.

4.02 Reduced Advertising Period

The "Advertising Period" is the duration from when contract documents are available to contractors for bidding to the time bids are opened. In 2001, DES-OE reduced the advertising period for Safety Projects under \$2.5 million with 50 or less contract

items, from four to three weeks. Maintenance projects with less than 20 contract items or 20 plan sheets had their advertising periods reduced to 3 weeks. As part of GoCalifornia (GoCA) Industry Capacity Expansion (ICE), in 2007 DES-OE modified the advertising period for all contracts based on the number of plan sheets, contract items, and nonstandard features.

4.03 Contract Execution Period

Construction contracts allowed 8 days, excluding Saturdays and holidays, for a contractor to execute a contract after award. DES-OE would allow 5 days for mail delivery. In July 2002, the following changes were made:

- Contractors are now provided a pre-addressed UPS overnight mail envelopes to return the signed contracts.
- The special provisions now allow 10 days (instead of 8) for regular contracts and 5 for informal contracts (instead of 4).
- There is no grace period.

The award to execution duration has been reduced to an average of 1.4 days per contract.

4.04 New Contractor Webpage

In August 2005, DES-OE implemented a hotlink on the Department's Website for contractors wanting contract advertisement information. The Contractor Information page has a table that covers general information, advertising, bid opening, awards, construction standards, Civil Rights and cost information.

4.05 Streamlined Plans, Specifications and Estimate Submittal Process

The Plans, Specifications and Estimate (PS&E) submittal process is the process where PS&E is submitted from the districts to DES-OE for contract preparation. In 2003 DES-OE reduced the submittal time from 3 days to 0 days by developing a fully electronic PS&E submittal package.

4.06 Training by DES-OE

DES-OE provides classes to enable the Districts to deliver full, complete, and accurate PS&E packages that can be awarded as legal, cost-effective construction contracts. DES-OE provides a list and schedule of their classes on its website.

4.07 Electronic Bidding Pilot

DES-OE successfully piloted electronic advertising, receiving, opening, and awarding bids on five contracts. In June of 2008, DES-OE completed the Information Technology process to purchase an application to fully implement electronic bidding. At the request of Headquarters Information Technology, DES-OE is waiting for the release of a new web based version (currently scheduled to ship Dec 2008) and plans to start implementation in April 2009.

4.08 Risk Advertising

In 2002, the Department implemented Risk Advertising, which allows a District to advertise a funded contract before all constraints are cleared. The District has to justify and receive concurrence of the constraint owner and approval by the Chief Engineer before risk advertisement can be used. The constraint has to be cleared two weeks before bid opening or the bid opening is postponed.

4.09 Provide Electronic Access to Project Documentation

To facilitate information sharing and project delivery, electronic access to project documentation by other functions in the Department and FHWA is available. Also available is an automatic e-mail notification to other Department programs when DES-OE receives a PS&E submittal from the district.

4.10 Soundwall Specification

The Division of Design and DES-OE worked together to develop an alternative soundwall Standard Special Provision (SSP) to facilitate the inclusion of alternative soundwalls in PS&E packages.

The new SSP allows Designers to consider a variety of pre-approved alternative soundwall types during the design process. This is in response to the requests from communities and local and regional partners who are seeking innovative alternatives to masonry block wall and pre-cast concrete noise barrier structures that have dominated the soundwall market to date.

The SSP and descriptive information on its utilization is in the Bridge Reference Specification, 51Swall, which can be located on the DES-SDS&EE – SOE web page.

4.11 Accelerated Bridge Construction Documents for Engineers

Accelerated Bridge Construction (ABC) has received tremendous attention nationally, with much progress towards standardizing details and tools to facilitate its

use over the past decade. In California, ABC has not been as widely employed to address specific project goals due to concerns with seismic safety. In fact, the successes realized across the nation on projects using ABC tools to reduce construction impacts to the traveling public are largely centered in regions of low seismic vulnerability. Caltrans engineers are leading a national initiative considering issues related to ABC in seismic regions. An internal work team comprised of Structure Design, Structure Construction, Earthquake Engineering, Structure Office Engineers and Materials Engineering and Testing Services representatives developed two documents in 2008; the *ABC Lessons Learned report*, and a *Strategic Action Plan for ABC Implementation in California*. These documents will assist engineers and planners as they look to ABC tools to reduce impacts to the traveling public from construction activity.

5 ENVIRONMENTAL

5.01 Organizational Change

In January 2001 the Division of Environmental Analysis (DEA), which was formerly under the Deputy Director for Planning, was moved under the Deputy Director for Project Delivery. This organizational change has facilitated project delivery and environmental streamlining, because the key functions during the life cycle of a project are now aligned under one Deputy Director.

5.02 “Mare Island Accord”

Because of Department/Federal Highway Administration (FHWA) partnering initiatives, the Department, the FHWA and the U.S. Environmental Protection Agency (EPA) entered into a formal partnering agreement (Partnership) in July 2000. The Partnership committed to quarterly meetings of senior management, shared training and outreach, and other activities to foster better interagency relationships and communication. In addition, the Partnership committed to supporting a number of initiatives that would benefit transportation planning, project delivery, and environmental protection, including:

- The Merced Partnership for Integrated Planning (PIP) pilot was formed to study integrative planning and project development. The Merced PIP is an innovative approach to developing a regional transportation plan that included use of GIS resource layers, early collaborative work with resource agencies, extensive public outreach, and a focus on scenario planning. This project was at the forefront of the national effort to link transportation planning and National Environmental Policy Act (NEPA). Lessons learned and best practices identified during the Merced PIP will benefit other regions of California.
- Formation of the Cumulative and Indirect Impact Analysis Work Group, which completed guidance to help transportation and resource agency staff address two of the most complex issues in environmental impact analysis. Cumulative impact analysis is required by NEPA, CEQA, and the Endangered Species

Act, and consists of the assessment of the incremental environmental effects of the project when considered with past, present, and reasonably foreseeable projects. (See Section 5.11 below for further discussion.) Indirect impact analysis and disclosure are required by both NEPA and CEQA. Indirect impacts are generally defined as effects that are caused by a project, but unlike direct effects, occur later in time, or are further removed in distance from the project. For more detail, see:

[http://www.dot.ca.gov/ser/Growth-related IndirectImpactAnalysis/gri_guidance.htm#intro](http://www.dot.ca.gov/ser/Growth-related%20IndirectImpactAnalysis/gri_guidance.htm#intro)

- Revision of the 1994 *Memorandum of Understanding – National Environmental Policy Act and Clean Water Act Section 404 Integration Process for Surface Transportation Projects in Arizona, California and Nevada* (NEPA/404 MOU). The new NEPA/404 MOU was executed in Spring 2006 (see Section 5.04 below).

The Partnership principals and middle managers meet regularly to track and report on the status of the initiatives and to discuss emerging problems, issues, opportunities and agency priorities. This has resulted in improved interagency relationships and a better understanding of each agency's mandates and challenges.

5.03 Coast Highway Management Plan, Big Sur Coast

Under an interagency agreement, initiated in April 1999, the Department and the California Coastal Commission have agreed to jointly develop a management plan for the Big Sur Coast that includes the following goals:

1. Provide a coordinated approach to maintaining the State Highway 1 corridor along the Big Sur Coast.
2. Streamline interagency coordination and regulatory approvals for transportation projects associated with State Highway 1.
3. Coordinate with public agencies adjoining State Highway 1 that manage natural and recreational resources, such as State Parks, Los Padres National Forest, and Monterey Bay National Marine Sanctuary.

The Department has funded a position with the Coastal Commission to assist in preparing portions of the management plan addressing coastal shoreline access, visual resources, land uses, and other pertinent issues. A Programmatic Biological Opinion under Section 7 of the Federal Endangered Species Act for Smith's Blue Butterfly has been completed. (The host plant for this species grows right to edge of pavement.) Resource agency coordination with the Monterey Bay National Marine Sanctuary, County of Monterey, U.S. Forest Service, and the California Coastal Commission on the plan continues to strengthen Department's relationships with these public entities.

5.04 Renegotiation of NEPA/404 Integration Process MOU

In 1994, the Department, the FHWA, the Federal Transit Administration (FTA), the U.S. Army Corps of Engineers (ACOE), the U.S. Environmental Protection Agency (EPA), the U.S. Fish and Wildlife Service (USFWS), and the National Marine Fisheries Service (NMFS) executed a Memorandum of Understanding (MOU) regarding integration of NEPA and procedures for implementation of Section 404 of the Clean Water Act. Due to changes in the ACOE's Nationwide Permit Program (NWP), as well as organizational changes within FHWA, the signatory agencies agreed in August 2000 to revise the MOU. The primary purpose of the integration process is to enable the ACOE to fulfill its NEPA responsibilities for its Section 404 permit action concurrently with the FHWA/Department NEPA process. A working group comprising of representatives of all agencies met regularly to revise the MOU and a final agreement was signed in April 2006.

The new agreement is significantly different from the 1994 MOU. The new MOU is more flexible, and is primarily intended for use on those projects that require an Environmental Impact Statement and have more than 5 acres of permanent impacts to waters of the U.S. The new MOU also raises the threshold for use of the NEPA/404 integration process, softens requirements for agency concurrence, and includes an improved process for issue resolution. The new MOU will improve the coordination of the NEPA and Clean Water Act. On-line NEPA/MOU training is under development by the Environmental Management Office and is expected to be available by the end of 2008.

5.05 Resource Agency Partnering Agreements

Through a FY 2000 Finance Letter, the Department received an allocation of \$2.25M to fund positions in federal and state resource agencies to handle priority work within the transportation program. The additional resources support enhanced project review and coordination services, and provide for environmental streamlining to help with project delivery. The Department has executed agreements with these agencies that outline the coordination and review processes and performance measures for this partnering program. To help agencies manage their workload and establish priorities for staff time, the Department is providing each agency with information on current and future projects. Regular coordination meetings with the agencies and Department provide improved consultation and review procedures. The Department regularly monitors agency performance and assesses the need for additional positions based on workload and the ability of the agencies to fill additional positions. Currently, the program funds 29 positions in seven state and federal resource agencies.

5.06 Programmatic Agreements with Resource Agencies

Many environmental regulatory processes allow consultation or permitting on a programmatic basis. Depending on the process and resource type, programmatic

approaches can be used for similar types of projects (e.g., the Programmatic CE described below); for similar projects/impacts on particular species (e.g., Programmatic Section 7 consultation under the Federal Endangered Species Act); or to substitute alternative procedures for those specified in regulation (e.g., Programmatic Agreement {PA} for Section 106 of the National Historic Preservation Act). In all cases, negotiation of Programmatic Agreements requires substantial initial effort by the Department, the FHWA, and the regulatory agency. Because Programmatic Agreements typically specify study protocols and/or mitigation methodologies they have potential to substantially streamline future project-level consultations and improve the accuracy of project schedules and estimates.

The Department has received a Programmatic Biological Opinion (Section 7) for the Valley Elderberry Longhorn Beetle and final agreements for the coastal red-legged frog. Additional Programmatic Biological Opinions have been received for the San Joaquin Kit Fox, Upland Species, Giant Garter Snake, and Desert Tortoise. Early efforts are underway to seek a PA for Coho Salmon. Additional programmatic agreements are under consideration for the Sierra red-legged frog; various species on the north coast (e.g., marbled murrelet); and southern California species in the coastal sage scrub community. The Department has worked with FHWA and has received delegation to conduct informal Section 7 consultation and inferred presence of endangered species.

For historic and archaeological resources, Department staff has developed and is implementing a PA for Section 106, in consultation with FHWA and the State Office of Historic Preservation (SHPO). The Section 106 PA went into effect on January 1, 2004, and has a 10-year duration. Execution of this PA has streamlined the Section 106 process by reducing the number of individual consultations with the SHPO and is showing immediate successes.

The Department will continue to seek opportunities to use programmatic approaches, where the long-term benefits would outweigh the initial cost of developing the agreement. Opportunities for additional programmatic biological opinions are being explored and may be implemented.

5.07 Mitigation Banking and Process Improvements

Mitigation banking involves the purchase of bank "credits" from the bank creator. Mitigation banking can help streamline project delivery by producing more accurate mitigation estimates, reducing the time needed for resource agency consultation regarding appropriate mitigation sites, and by moving the mitigation parcel acquisition process off the critical path for a proposed project. A Mitigation Process Improvement Team has identified changes in Department policies and procedures that would simplify the Department participation in mitigation banks. The DEA is working with Transportation Planning, Districts, Infrastructure departments, resource agencies and others to develop new methods to plan for mitigation needs and collaborate with resource agencies consistent with the new Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)

provisions. Mitigation banking policies and procedures are implemented; however, actual mitigation banking takes place on a project-by-project basis, thus is on going.

5.08 Environmental Impact Statement (EIS) Review Process Improvement

In an effort to improve the quality of NEPA documents and to facilitate the delegation of EIS approval from FHWA Region 9 to the FHWA California Division, in 1998 the Department and FHWA developed a process of concurrent review of EISs. Under the concurrent review process FHWA and the Department review EISs simultaneously. The process also served as a means for the Department to review and comment on the quality of district environmental documents. The process was reexamined to identify additional improvements and modified in November 2001 and again in March 2003. While major components of the revised process remain the same, the process was updated again in July 2007 to reflect the requirements of NEPA Delegation. The net effect of the NEPA Delegation process, and the prior concurrent EIS review process, has been an increase in quality and shorter review times.

5.09 Consistent Approach to Well-Defined Project Need and Purpose

A good purpose and need can be an important means of avoiding ill-conceived projects. It is highly desirable to have a consistent purpose and need concept throughout, keeping in mind that the level of detail increases as the project concept is developed. A good purpose and need helps to prioritize projects for programming at the Project Initiation Document (PID) stage. The purpose and need is critical for defining a project's scope, formulating which alternatives to study, evaluating alternatives, and achieving environmental streamlining. The purpose and need can also help in identifying potential context-sensitive solutions.

In early 2002, the Department established an intra-department, inter-division team (Team) to examine the process by which a project's purpose and need are established and to recommend measures to ensure that projects' purpose and need statements are well reasoned and consistent from the earliest planning stages through the environmental analysis and project approval stage. The Team's recommendations have been finalized and a Deputy Directive (DD-83) addressing Purpose and Need has been implemented. In addition, resources on developing purpose and need statements have been posted online for use by the Districts. Training on purpose and need has been jointly developed with Design and has been provided to Design Seniors.

5.10 Preliminary Environmental Assessment Report

In December 2001, the Department began to require the preparation of a Preliminary Environmental Assessment Report (PEAR) to support the Project Study Report – Project Development Support (PSR-PDS) for all projects on the State Highway

System requiring an environmental document (EIS/EIR and ND/FONSI). The PEAR defines the scope of the subsequent environmental document by identifying the known environmental issues and constraints (using site visits and the improved scoping tools described in Section 5.17) and informs the development of the work plan (cost and schedule) for the environmental component of the project. Because the PEAR includes the cost estimates for the preparation of the environmental studies and NEPA/CEQA document and the proposed schedule, the project development support element can be programmed more accurately. The Department expects that well scoped projects with a realistic environmental support component, schedule, and appropriate funding are better projects and will be approved faster. Use of the PEAR is mandated for all districts and regions. A statewide PEAR tool is currently under development to facilitate uniform statewide preliminary environmental information development and use during the PID process (see Section 5.18). Developing better information on location of environmental resources of concern during the PID process will make completion of Project Approval/Environmental Document (PA&ED) more efficient. DEA, Planning and other functional units have been working to better resource PID efforts to produce better PIDs (e.g. PEARS).

5.11 Multi-Agency Working Group to Address Assessment of Cumulative Impacts

Cumulative impact is defined as the impact on the environment, which results from the incremental impact of the project when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes them. Cumulative analysis is a requirement of NEPA, CEQA, and the Endangered Species Act; definitions do not match from one set of regulations to the next. In California, with steadily increasing population leading to fragmented and shrinking habitat, this analysis has become both increasingly important and increasingly contentious over the last few years.

In 2004, as part of the Merced Partnership in Planning, the Department completed an interagency pilot project to increase mutual understanding of agency mission, jurisdiction, definitions and requirements as they relate to cumulative impact analysis. Key players included the Department, EPA, U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), and the local land use and transportation agencies. In June 2005, the Department, FHWA, and EPA developed guidance for cumulative and indirect impact analysis. Guidance on indirect impacts was posted online in July 2006. Together, these measures are designed to increase predictability of resource agency response to the analysis, improve delivery planning, and streamline project delivery.

5.12 Annotated Outlines for Environmental Documents and Standard Formats for Biological Assessments

Department staff from headquarters and districts/regions statewide formed a team that has developed annotated outlines for environmental documents. This effort has served a number of purposes:

- Improving the quality of the content of environmental documents
- Facilitating reviews by state and federal resources, and regulatory agencies by providing a consistent format
- Promoting statewide consistency within the Department in both preparing the documents and in direction given to consultants preparing environmental documents.

The Department also formed a team of staff biologists to develop standardized formats for the biological technical reports that support the environmental document and Section 7 consultation.

The Department believes that standardized documents will expedite project review and approval since the review agencies will become familiar with the format and know where to find certain types of information. In addition, a standardized format will improve the organization of environmental documents by allowing context, impacts, and mitigation of each issue to be addressed together in one section, and by decreasing the potential for contradictions that can result from issues being discussed in different sections.

Annotated outlines are available on the Standard Environmental Reference (SER) for CEQA/NEPA documents (Initial Study/Environmental Assessment, Environmental Impact Report/Environmental Assessment, and Environmental Impact Report/Environmental Impact Statement) and for NEPA-only documents (Environmental Impact Statement and Environmental Assessment).

SER Forms and Templates are available at the following link:

<http://www.dot.ca.gov/ser/forms.htm>

5.13 Disposal Site Quality Team

The Disposal Site Quality Team was formed in July 2000 to address the Department and FHWA policies on disposal sites. There has been controversy regarding responsibility for compliance with CEQA, NEPA, and other state and federal regulations that may apply to disposal sites during the project development process and throughout construction. Some resource agencies require identification and environmental “clearance” of disposal sites prior to issuance of permits or other agreements, such as biological opinions for sensitive species impacts. This causes interagency conflicts, project delays, and unnecessary expenditures of time and money. The team developed guidance to clarify responsibility for compliance with environmental requirements pertaining to disposal sites. This guidance also implemented policy on designation of optional disposal sites.

For further details, see Karla Sutliff's December 13, 2001 memo:

<http://www.dot.ca.gov/ser/downloads/memos/disposal/DisposalSiteMemo.pdf>

5.14 Standard Environmental Reference (SER)

The Department developed the SER to meet federal and state environmental requirements. The SER is designed for use by the Department as the guidance for preparing and processing its own environmental documentation, and by local agencies for federal-aid projects. The SER is the result of a process improvement team recommendation examining means to improve local agency transportation project delivery. Updates, refinements and additional information are continuously added to the SER. The SER provides guidance on the preparation of environmental documents to comply with NEPA, CEQA and other environmental laws, regulations, and Executive Orders, and provides related Internet sites. The SER also links users to detailed guidance on the preparation of the technical reports, which support the environmental documents. The purpose of SER is to ensure that State and local agency projects comply with federal and State environmental requirements in a consistent manner, educate users, and assist local agencies in consultant scopes of work.

5.15 NEPA Delegation Pilot Program

In Section 6005 of the SAFETEA-LU, California was named as one of five pilot states eligible to apply for delegation of FHWA's NEPA responsibilities for one or more highway projects in the state, and for FHWA's coordination and consultation responsibilities under other federal environmental laws. The goal of the Pilot Program is to allow states to demonstrate approaches to streamlining the environmental processes while maintaining environmental protections. Having the Department approving NEPA documents in-house and coordinating directly with federal resource agencies rather than transmitting documents through FHWA for approval will accomplish this. The Division of Environmental Analysis actively worked with FHWA, local partners, and federal resource agencies to apply for and successfully implement delegation.

Effective July 1, 2007, the Department assumed all of FHWA's responsibilities under NEPA for projects on the State Highway System (SHS), and for federal-aid local streets and roads projects under FHWA's Surface Transportation Project Delivery Pilot Program, pursuant to 23 CFR 773. The Department also assumed all of FHWA's responsibilities for environmental coordination and consultation under other federal environmental laws pertaining to the review or approval of projects under the Pilot Program. Under the Pilot Program, the Department is required to comply with all applicable federal environmental laws and with FHWA environmental regulations, policies, and guidance.

5.16 Categorical Exclusions

In 2007, the responsibility for making Categorical Exclusion (CE) determinations was assigned to the Department by FHWA through the Section 6004 CE MOU, and the Pilot Program MOU, Section 6005 (NEPA Delegation). Section 6004 of SAFETEA-LU, "State Assumptions of Responsibilities for Categorical Exclusions" allows any state to enter into an MOU with FHWA to assume responsibility for determining whether a proposed project qualifies as a CE specifically designated by the U.S. Department of Transportation Secretary. States may also assume Federal environmental consultation and coordination responsibilities for those projects. The assigned responsibility for CE determinations under Section 6004 is limited to those actions specifically listed or referenced in the Section 6004 CE MOU between FHWA and the Department, executed on June 7, 2007.

The Pilot Program MOU, in addition to assigning the Department the authority to approve environmental documents, also assigns the Department the authority to approve those categorically excluded activities not covered under Section 6004 CE MOU, pursuant to Section 6005 of SAFETEA-LU. Because the Department has been assigned the authority to make CE determinations, the 2003 Programmatic Categorical Exclusion (PCE) is now suspended.

6 LOCAL ASSISTANCE

6.01 Use It or Lose It

Implementation of the "use it or lose it" provisions provided a significant incentive for on-time delivery of locally designated, federally funded RSTP/CMAQ projects. This legislation was enacted to provide a disciplined, structured and accountable environment for the delivery of local RSTP and CMAQ projects. The legislation states that RSTP and CMAQ funds not obligated within the first three years of federal eligibility are subject to redirection by the CTC in the fourth year. The Department submits progress reports on impacted fund balances to the CTC.

Local agencies may check their impacted fund balances each month online at: <http://www.dot.ca.gov/hq/LocalPrograms/AB1012/ab1012.htm>

6.02 Manuals and Guidelines on DVD (Publications for Local Assistance DVD)

Local Assistance publications, previously available on CD, are now available on DVD from the Department Publications Unit. The DVD acts as a one-stop shop for information and promotes better access to helpful information for local project delivery. The DVD provides local agencies and their consultants with fast and powerful access to essential information, which makes it useful as a starter kit for new staff. The DVD includes a FormsPLUS application to assist in the preparation of necessary project related documents. The DVD also includes a mini library of

manuals, handbooks, and other publications that address procedures, practices, policies, and standards. The Local Assistance Procedures Manual, Local Assistance Guidelines, Local Assistance Guidebooks, the Department's Standard Plans and Specifications, and all previously released Local Program Procedures (LPPs) are some of the publications included on the DVD. Most of these publications are posted on the Department's Website, but the DVD provides information without requiring Internet access or performing an on-line search. The DVD is part of an ongoing effort to provide more "user-friendly" manuals for local assistance project delivery.

6.03 Improved Program Management Direction and Communications

The Division of Local Assistance Council (Consisting of the Division Chief, Office Chiefs and District Local Assistance Engineers) was established in 1999 to 1) identify issues, 2) recommend corrective actions to help local agencies achieve efficient, effective, and timely delivery of transportation projects, and 3) strengthen the state/local partnerships.

The Planning and Local Assistance Network (PLAN) is comprised of Planning and Modal Program Deputy Director and Division Chiefs, District Planning Deputies, and several Supervising Transportation Planners. The PLAN members meet three times a year to discuss planning and project delivery matters.

A Hot Topics Team, comprised of the Deputy Director for Planning, District Planning Directors and HQ Technical staff (as necessary), convene in off months to discuss issues affecting project delivery. Sub-teams provide issue resolution and communicate resolution techniques to HQ and District staff. The Deputy for Planning and Modal Programs also meets one-on-one with each District Planning Deputy to further engage each district and to enhance communication. This collaborative/communicative management style provides for accelerated project delivery by maintaining an open and direct line of communication and actively pursuing issue resolution.

6.04 Electronic Forms- FormsPLUS

Currently, there are a large number of forms that local agencies must complete when submitting a request to receive funding. Electronic versions of these forms have been developed using a File Maker Pro application since 2002. In 2006, the forms were upgraded to FileMaker 7. More than 200 forms needed to expedite Local Assistance Project Delivery have been provided via DVD to over 300 local agencies. Users can also download the electronic forms from the DLA website. The intended results are to reduce the time and effort needed by users to complete necessary forms, and to eliminate redundant data entries.

6.05 Expedite Reimbursements

The Department offers an Electronic Fund Transfer (EFT) option to local agencies. EFT expedites reimbursements to local agencies through direct deposit to their designated banking account.

6.06 Standard Environmental Reference

The DLA and the Division of Environmental Analysis (DEA) maintain the Standard Environmental Reference (SER) to provide guidance on compliance with NEPA and related federal laws, regulations, and policies. The SER, which contains links to applicable legislation and other relevant supporting data, is available on-line for statewide use by local agencies, the Department, and FHWA. (See Section 5 – Environmental).

6.07 Improved Training

The DLA continues to provide the training program and improve training to local agencies by more strategically leveraging training resources, providing just-in-time and distance learning training mechanisms where applicable, and working with Headquarters Divisions to increase the number of local agencies attending the Department's Capital Program Skills Development training.

7 MAINTENANCE**7.01 Emergency Contractor Registry**

During the year 2000, the Department invited contractors to voluntarily register at the Emergency Contractor Registry (Registry) web page:

Contractors visit here: <http://www.dot.ca.gov/contractor>

Internal website, users can download the Registry here:
<http://onramp.dot.ca.gov/hq/maint/orway/ha23/misc/registry.htm>

The purpose of the Registry is to build a database of contractors who are interested in helping the Department expedite emergency work. The Registry contains over 4,500 entries of contractors and includes addresses, phone and fax numbers, types of work they can do, types of equipment they possess, and other information as applicable.

7.02 Director's Order Guidelines and Matrix

During disasters and other emergencies, the Department accelerates construction work and projects using Director's Orders. The Director's Order Guidelines topics include types of emergency contracts (such as Force Account, Emergency Limited Bid and Informal Bid). The Guidelines also provide information regarding types of allowable work and prohibited work; funding considerations; legal authority and the impact of disaster declarations. There are several different types of emergency contracts available to accelerate construction and/or design.

The Guideline and Matrix of the Director's Order are available at:
http://onramp.dot.ca.gov/hq/maint/orway/ha23/do_guide/dog00.html

8 PROJECT MANAGEMENT

8.01 Project Charter Policy

A charter documents the agreement between the project sponsor and the project manager over the key elements of a project. It helps the project manager guide the project team efficiently through the project development process. It is the first project management document in the suite of project management plans used to identify and control a project's scope, schedule and budget. It is also used to identify and meet customer expectations. The charter process is intended to help manage project scope and to reduce rework by eliminating unnecessary scope changes. Included with the charter policy is a tool called the Innovative Checklist, which is a resource for project managers and teams to identify innovative practices that they can apply to their project.

The charter policy is available at:
http://pd.dot.ca.gov/pm/ProjectOffice/ProcessGuidance_Directives/PM_MemosDirectives/PMD007_Rev.pdf

8.02 Capital Project Skill Development Plan

The Capital Project Skill Development (CPSD) plan provides the Department's capital project staff with the knowledge and skills needed to produce their deliverables. The CPSD plan was developed and is managed by a team that includes representatives from the Divisions of:

- Construction
- Design
- Engineering Services
- Environmental
- Project Management
- Right of Way
- Traffic Operations

These divisions are responsible to develop and provide technical training to the nearly 10,000 capital project staff statewide. In addition, CPSD provides discretionary training funds to the districts for securing courses in software, soft skills, and management. Districts throughout the state have been provided the resources and are responsible to ensure student participation in this training. The current annual goal is to provide approximately 200,000 hours of student time. An on-line course catalog is available in the Learning Management System (LMS) portion of Staff Central.

Additional information and on-line course catalog for CPSD is available at:

<http://pd.dot.ca.gov/pm/cpsd/index.asp>

8.03 Use of Flexible Resources to Deliver Projects

With the passage of Proposition 35 in November 2000, the Department has increased its effort to hire consultant resources in the delivery of Capital Projects. Consultant Services units are present in every district and region. The Department is using on-call contracts to alleviate delivery bottlenecks and project-specific contracts to augment project delivery efforts.

Additional information about consultant services unit is available at:

http://pd.dot.ca.gov/pm/ProjectOffice/ProcessGuidance_Directives/PM_MemosDirectives/PMD008.pdf

8.04 Revised Milestone Standard

In order to better plan and monitor the progress of all State Transportation Improvement Program (STIP) and State Highway Operation and Protection Program (SHOPP) projects during the environmental phase, two new milestones were introduced to the Department's Work Breakdown Structure (WBS). These milestones are Notice of Preparation (NOP) for the Environmental Information Report (EIR) documents under the California Environmental Quality Act (CEQA) and Notice of Intent (NOI) for Environmental Information Statement (EIS) documents under the National Environmental Policy Act (NEPA). In addition to the reporting requirement to the CTC, the Division of Project Management will also be monitoring other internal milestones during PA&ED on a quarterly basis.

Additional guidance available at:

http://pd.dot.ca.gov/pm/ProjectOffice/ProcessGuidance_Directives/PM_MemosDirectives/RevisedCapitalProjectMilestoneStandards.pdf

8.05 Project Management Professional Certification

The Project Management Professional (PMP) certification is an industry standard credential for project managers. Certification ensures that project managers

understand the foundations, terminology and processes in project management. The Division of Project Management supports project managers in pursuit of certification by providing training and streamlining the application process. Currently there are over 250 PMPs in the Department.

8.06 Lessons Learned Database

The Lessons Learned Database is a tool to capture the lessons learned during the course of a project. Its purpose is to benefit Department users from previous lessons, and to continuously improve and correct Department documents (manuals, handbooks, etc) by channeling the lessons learned information to the appropriate person(s). All project team members are encouraged to record the problems they have encountered during project delivery, and to provide their suggestions and solutions for resolving those problems. The tool will allow users to search for information based on various parameters.

The Lessons Learned Database can be accessed at:

<http://pd.dot.ca.gov/pm/PMPI/LessonsLearned/index.asp>

8.07 Project Close Out

The Project Close Out tool documents the various steps needed to close out each component (phase) of the project. Project Managers need to close out each component (phase) of the project in a formal and consistent manner. Proper Project Close-Out process should provide:

- Systematic documentation and archive of project records.
- The capture of Lessons Learned during project execution, so that these lessons can be used to improve future projects. A formal process would be used to amend guidance and manuals.
- Formal acceptance and delivery of the close-out products.

A documented Close Out task provides a brief description of the task, the procedure that needs to be followed, the roles of various individuals involved, a flowchart of the process, and links to further documents.

The Close Out tool can be accessed at:

http://pd.dot.ca.gov/pm/ProjectOffice/ProcessGuidance_Directives/Closeout.asp

8.08 Project Communication Handbook

Published in February 2003 and updated in September 2007, the Project Communication Handbook provides an overview of the basic concepts and processes that guide project communication in the Department. The purpose of the Project Communication Handbook is to assist the project team in identifying internal

and external stakeholders, and to enhance communication among all parties involved in Project Delivery. The Project Communication Handbook includes the processes for completing project communication plans and conflict management strategies.

The Project Communication Handbook can be downloaded at:

http://www.dot.ca.gov/hq/projmgmt/documents/pchb/project_communication_handbook_2nd_ed.pdf

8.09 Project Management Certificate Program

The Department's Project Management Certificate program provides the fundamentals of Project Management as they are applied to the delivery of the Capital Projects and lays a foundation for Project Management Professional (PMP) industry certification. The program is part of the Department's Capital Project Skill Development effort. The certificate program consists of eight courses (six on-line and two live class room delivery), and is offered in partnership with California State University, Sacramento. Currently there are over 285 graduates of this program statewide, with more than 250 others in progress.

8.10 Project Delivery Contracts

Effective with the 2005/06 fiscal year, Project Delivery instituted delivery agreements. These agreements are signed documents between the Director of the Department and each District Director. Agreements are based on the Ready-to-List (RTL) milestone and programmed capital value for each project to be delivered in the fiscal year. The status of these projects is updated weekly for reporting and monitoring purposes. The contracts have effectively reinforced the importance of achieving major milestones according to the commitments made to the project sponsor(s).

The Delivery Contracts can be accessed at:

<http://pd.dot.ca.gov/pm/ProjectOffice/ContractsForDelivery/ContractsHome.asp>

8.11 Development and Use of Risk Management Plans for Capital Projects

Project risk management is the systematic process of identifying, analyzing, and responding to project risk. Risk management training is currently being delivered to project and functional managers across the state. The Department's Risk Management Handbook (2nd edition) was updated and published in May, 2007. On May 2, 2007, a memo titled "Project Risk Management in Project Delivery" was sent to all District Directors and Deputy Directors for Program/Project Management from Rick Land, Chief Engineer. Project Management Coordinators work in cooperation with the Single Focal Points and project managers to increase the use of risk management planning in all of the Districts. The risk management performance

measures are: Percent of major projects with risk management plans at Project Initiation Document (PID) and percent of Project Change Requests (PCRs) due to unidentified risks.

The Risk Management Handbook (2nd edition) is available at:

http://www.dot.ca.gov/hq/projmgmt/documents/prmhb/caltrans_project_risk_management_handbook_20070502.pdf

9 RIGHT OF WAY AND LAND SURVEYS

9.01 One-Call Acquisition

The Division of Right of Way and Land Surveys (Right of Way) was recently successful in getting the Department of Finance to increase the dollar limit for the One-Call Acquisition Process from \$2,500 to \$10,000. Increasing the dollar limit to \$10,000 was very important because increased property values in the State had limited the \$2,500 use, since fewer parcels were being valued under \$2,500. The One-Call Acquisition process has proven to be more customer friendly because it reduces the number of calls to property owners to just one, which translates into a direct dollar savings to the Department. This process allows the Right of Way Agent to issue a Draft Purchase Order (DPO) (check) on the first call for low value parcels (\$10,000 or less) and conclude the acquisition transaction on the spot with immediate payment. This process was developed in conjunction with Accounting, Audits, Right of Way, Department of Finance, and Board of Control. This has allowed immediate payment to the property owner where the normal payment process could take at least one month. This not only improved customer service, but also reduced the number of field trips by the Right of Way Agent.

9.02 Single Agent Appraise/Acquire Process

Right of Way has implemented a Single Agent Appraise/Acquire Process that permits a single Right of Way Agent to appraise, acquire and relocate personal property on parcels that are valued at \$10,000 or less. Prior to receiving a policy exception from the Federal Highway Administration (FHWA), the property owner had to work with three different agents who were each responsible for a single function. This process eliminates multiple trips to the property, saves both the agent and the owner's time in providing information about the property and establishing rapport at each meeting.

9.03 Resolution of Necessities by Locals

The Department is the responsible agency for obtaining Resolutions of Necessity for all projects on the state highway system, irrespective of whom is the lead agency or who does the right of way work. The California Transportation Commission (CTC) is the State's governing body for adopting Resolutions of Necessity. However, statute

provides for specific authorization on a project-by-project basis to allow a County Board of Supervisors or City Councils, in lieu of the CTC, to hear Resolutions of Necessities, upon written approval by the Department. The guidelines for this exception and approval process were initially outlined in a Department Memorandum dated December 10, 2001 with a subsequent clarifying memorandum released on November 26, 2002.

9.04 Right of Way Acquisition prior to Environmental Approval

Right of Way appraisals may be completed during the Preliminary Right of Way Phase of the project (see Planning & Management Functional File Memo #94-1 and Right of Way Appraisal Manual Section 7.01.06.00) on projects where Caltrans has not been delegated NEPA responsibilities. Another overriding criteria is that the preferred alternative must have been made public and federal funds must be pre-authorized (see Right of Way Manual 3.05.00.00).

Acquisitions can be completed using State only funding under specific guidelines (see Acquisition Reference File 00-1). Federal regulations permit early acquisitions without federal participation; however, they do allow the value of a parcel acquired or donated lands to be used as a soft match for the non-federal portion of a federal aid project.

When the Department is not the NEPA decision maker Right of Way may acquire the property prior to environmental approval if the project is non-controversial and the project has been programmed. All laws, regulations, and policies including Uniform Relocation Assistance and Real Properties Acquisition Policies Act, must be followed throughout the acquisition process. The Right of Way Division Chief shall approve a Letter of Qualification (LOQ) documenting how the project meets the criteria set forth in the guidelines. Documentation is maintained in the project file. The LOQ shall contain signatures of the Region/District Division Chiefs for Project Development, Environmental Planning, and Right of Way, indicating their concurrence.

9.05 Streamlined Positive Location (Potholing) Process

The streamlined utility positive location process allows the Department to take full control in identifying the exact location of underground utilities. The Department has developed a process to contract out the positive location work to keep projects on schedule. Timely project delivery is further enhanced by positively locating subsurface utility facilities early in the project development phase which results in early plan development and possibly minimize or avoiding utility relocations. The positive location process is also used to meet the requirements of the High/Low Risk Policy.

9.06 Right of Way Project Delivery Team

Use of a Right of Way Project Delivery Team (Team) to deliver Right of Way products/services on non-complex small projects has proven to be one effective option to accelerate and enhance project delivery. The Project Delivery Team concept utilizes full-service Right of Way project delivery teams rather than a functional service. The Team is responsible for delivering all Right of Way products and services necessary to advertise and award projects. The Team is comprised of Right of Way Agents who have experience in estimating, appraisals, acquisitions, relocation assistance, and in some instances utilities. Currently the concept has greater applications in the smaller districts. The Team concept saves time because there are fewer "handoffs" from one functional organization to another. The Team owns a project from the earliest estimate to final closeout. Team members gain a broader perspective of project delivery and tend to "own" projects rather than having a single functional perspective. Team members become exposed to many Right of Way skill areas without having to formally rotate. However, one important factor when considering use of this option is that the Team approach precludes development of specialized expertise required for projects that are more complex.

9.07 Quality Enhancement Joint Review Process

Quality Enhancement Joint Review (QEJR) process identifies functional readiness gaps and Best Business Practices. The QEJR improves the processes established to provide quality products or services. Every fiscal year a plan is established outlining what functions to review for the following fiscal year. Critical monitoring areas are developed prior to the review and shared with the Region/District Managers. Ideally this review is conducted using a team approach comprised of a headquarters functional senior as the team leader, a visiting Region/District agent, and the hosting Region/District functional senior. In addition, a FHWA representative and a Quality Enhancement Joint Review Project Manager may participate. The teams are charged with looking at the functional strengths, areas for development, projected workloads and staffing needs, training needs to deliver the work products, and Best Business Practices. This process has worked extremely well, has opened up communication channels and has been a good forum to share knowledge/expertise statewide.

9.08 Biennial Surveys and Right of Way Engineering Coordination Meetings

The purpose of the Surveys and Right of Way Engineering Coordination Meetings is to perform Independent Quality Assurance and Program Review activities in each District/Region every two years. This team effort helps to assure that quality management practices are in place, functioning and effective. Activities performed are intended to: 1) cause continuous improvement in policies and procedures related to the Department's Strategic Goals and Objectives, 2) foster state-wide standardization and exchange of best practices, methods and procedures, and 3) identify and discuss Surveys and Right of Way Engineering issues and concerns.

9.09 Right of Way Intranet Site

The Right of Way Intranet site publicizes Best Business Practices and other useful information. Right of Way utilizes its Region/District Quality Enhancement Joint Review (QEJR) process to examine processes and procedures to ensure compliance with applicable statutes, regulations and policies. A major by-product of these reviews is the compilation of "Best Business Practices." These Best Business Practices are available on the Internet and information is organized by function, subject, and Region/District. This site also allows users to submit Best Business Practices and to query others regarding unique Right of Way situations. This site provides a useful method for communicating throughout the Right of Way Division.

9.10 Utility Design Activities Prior to Environmental Approval

With headquarters approval, a utility company may start utility design activities prior to the approval of the Environmental document. A district/region's request for approval to order utility design activities, prior to approval of the environmental document, may be submitted only upon completion of the environmental studies and the selection of the preferred alternative for the project. The guidelines for this exception and approval process are outlined in Utility Reference File No. 02-01.

9.11 Underground Service Alerts (USA) – Design Inquiry Service Contract Utility Design

Since March 2007, every district RW Utilities Branch has the Design Inquiry Service contract with USA North and/or USA South. Under this contract the RW Utility Coordinator has unlimited access to USA's database. The coordinator can obtain, via the Internet, a list of utility owners who may have facilities located within the project limits. This list will be used in the RW Utility estimate and Utility Verification process to ensure all potential utility conflicts are collected and forwarded to the Design Engineer.

9.12 Increased Awareness of Right of Way Activities

Right of Way developed and successfully delivered "Right of Way and You" training statewide to non-right of way personnel. Several joint Management Board meetings have been held with other Divisions including Design and Environmental. A "Partial Acquisition Appraisals for Attorneys" course has been developed and successfully delivered. Right of Way also participates in academies sponsored by other Divisions, including the Local Assistance Academy.

9.13 Continuous Advertising for Appraisal Consultants

In coordination with Division of Procurement and Contracts (DPAC) and implemented by memorandum dated April 19, 2002, the continuous advertising for appraisal consultants has been established. This accelerated the process for entering into personal service contracts for “in lieu of staff” appraisals for specialized services, including but not limited to, machinery/equipment, and loss of goodwill and/or railroad valuations. The services may be contracted under the specific and limited conditions of Government Code Section 19130.

9.14 Improved Certificate of Sufficiency Process

In coordination with Divisions of Environmental Analysis and Design, Right of Way has implemented an improved process for coordination and approval of the Certificate of Sufficiency, including use of the “Hazardous Substance Disclosure Document” by Environmental.

9.15 Vangarde Remote Surveying System

Accurate and timely pavement elevation surveys are critical data for transportation engineers to design pavement solutions, compute quantities, correct roadway deformations, widen roadways and ensure proper drainage. The Vangarde System (VG) was deployed to improve the safety and reliability of pavement elevation surveying operations. VG has enhanced safety for transportation workers and the traveling public and improved mobility by allowing the surveyor to collect data remotely from a vehicle located away from traffic.

9.16 Specifications for Surveying on Superstructures

A multi-disciplinary team developed recommendations and revisions to the Department’s Surveys Manual to provide construction stakes on the superstructure. Management approved the changes in September 2004. The manual change addresses the placement of construction stakes on the superstructure of a bridge to control the building of the bridge. The changes describe the responsibilities and communications between Surveys, the Structure Representative, and the Resident Engineer, including safety. The changes also include a reference to traffic control requirements.

9.17 Right of Way Engineering Mapping Standards

Right of Way has updated Right of Way Appraisal Map standards. The new guidelines and procedures were developed from customer input and have been incorporated into the Plans Preparation Manual. The standards promote statewide uniformity and consistency of mapping products produced by in-house staff,

consultants and local agencies on all state transportation improvement projects. Previously, Right of Way mapping products varied from district to district.

9.18 Utility Relocation Master Contracts

Jointly with the major utility companies, Right of Way developed a single Master Contract that shares the cost of utility relocations for freeway projects. The new Contract provides an equitable and uniform single standard of cost apportionment, eliminates interpretation problems, and reduces staff time in the preparation of the Report of Investigation, resulting in accelerated project delivery.

9.19 Letter/Notice to Property Owners for Environmental Study Entry

In selected situations where entry onto private property for environmental study purposes does not interfere with the property owner's use, and is clearly non-invasive in nature, such as walk-on visual inspections, taking photographs, etc., in lieu of obtaining written consent, Right of Way Managers may elect to send an informational letter to the property owner. The letter informs the owner of the purpose and impact of such entry and allows to property owner to provide specific instructions they wish to have observed during such entry by the Department (personal contact before entering, closing livestock gates, instructions concerning dogs, etc.). Where appropriate this tool can streamline the process and save project delivery cost and time.

9.20 Joint Training for R/W Utility Coordinators and District Local Assistance Engineers

In coordination with the Division of Local Assistance, a training/work session for all R/W Utility Coordinators and District Local Assistance Engineers (DLAEs) was presented to evaluate, discuss and clarify issues/questions regarding utility relocation procedures on locally funded federal-aid projects. Coordination and communication will continue to be a priority between the two Divisions, including joint training/work sessions.

9.21 Assuming Greater Role in Delivery of Training to Local Public Agencies and Consultants

In coordination with the Division of Local Assistance and University of California at Berkeley, the Division of Right of Way has assumed responsibility for updating and delivering the course, "Right of Way and Utility Requirements for Federal-Aid Projects." This course will foster communication between Right of Way and the target audience, including Local Agency partners and their consultants. It will also facilitate compliance with federal/state requirements by ensuring the accuracy of the material presented.

9.22 Improve Accuracy in Right of Way Estimates

Ensure the accuracy of R/W estimates by implementing the recommendations of the R/W Process Improvement Team for R/W Work Plans, resourcing, and Data Sheets.

Cost Estimate Map Toolbox posted on Division website at:

http://pd.dot.ca.gov/row/offices/landsurveys/documents/rw_engineering/Cost_estimate_mapping.htm

9.23 RTK GPS Equipment and Specifications

Global Positioning Systems (GPS) and advanced surveying technology have boosted the efficiency of the Department's surveying operations. The deployment of real time kinematic (RTK) GPS equipment allows surveying crews to produce project delivery surveying products more quickly and safely. The Department's surveyors developed "first of their kind" specifications to standardize RTK GPS methods and ensure repeatability of results. These specifications have now been adopted nationally.

9.24 Terrestrial Laser Scanning

Caltrans has completed research with the Advanced Highway Maintenance and Construction Technology (AHMCT) at the University of California at Davis and is implementing land-based laser scanning technology to measure and model bridges, structures, roadways, slide areas, accidents, and archeological sites. This technology was successfully used to accelerate the reconstruction of the MacArthur Maze collapse in May 2007.

http://www.pobonline.com/Articles/Article_Rotation/BNP_GUID_9-5-2006_A_1000000000000222130

9.25 Early Involvement for Railroad Appraisals

Right of Way agents delivering Railroad (RR) property appraisals are contacting the Railroad companies earlier in the process to gain an understanding of what the future holds for the particular subject property. The plans for the RR corridor are discussed and included as part of the appraisal investigation. The investigation also includes discussions with other Rail representatives both internal and external to the Department who may be able to provide more perspective.

10 TRANSPORTATION PLANNING***10.01 Establishment of the Project Study Report – Project Development Support Document***

The Department and the California Transportation Commission (CTC) have established and adopted new guidelines for an expedited Project Study Report (PSR) entitled the Project Study Report – Project Development Support (PSR-PDS). The PSR-PDS meets the needs of SB 45 by allowing projects to be programmed by component and by expediting the PSR process. The traditional PSR required that the scope, cost and schedule of the entire project be determined and set within the document. This lent itself to cost and schedule delays and scope changes. The new PSR-PDS recognizes that until the environmental studies have been completed, the preferred project alignment and specific project features cannot accurately be determined. The PSR-PDS can program support cost through Project Approval and Environmental Document phase (PA&ED) and through Plans, Specifications and Estimates (PS&E) phase. The PSR-PDS gives an approximation of the total project cost. The PSR-PDS in conjunction with Project Change Control (see Section 3 - Design) encourages that all information and studies that are required to make a good project selection are known up front, prior to programming the project through construction.

10.02 Early Environmental Efforts/Geographic Information Systems

Early environmental scan efforts also assist in speeding project delivery by early identification at the system planning and Regional Transportation Plan (RTP) level of "fatal flaw" alternatives or locations for environmental purposes or community resistance. (See also Section 5 - Environmental.)

The Department has several new Geographic Information System (GIS) environmental scan efforts for early identification of protected species and other environmental factors. In both system and regional planning, alternatives with major environmental implications are identified early on and evaluated for proceeding/not proceeding with an alternative or alignment.

The Department has also developed a GIS tool to display planned and programmed projects. The California Transportation Investment System GIS tool provides a comprehensive inventory of projects (highway, local, rail, airport, bicycle, pedestrian, and transit) planned by State and regional agencies over the next 20 years. This sketch level GIS tool is intended to inform and to improve decision making by assisting the Department and regional planning agencies in identifying planned improvements on the transportation system and providing opportunities for improved timing and coordination of projects.

It is also recognized that these efforts will need to be done in concert with the much-needed GIS efforts of the resource agencies and transit operators.

10.03 Route Optimization Analysis Tools

The Division of Transportation Planning (Planning) has completed a pilot project with the primary objective of finding a cost effective solution to provide a full range of potential route alignments, with alignment costs, through an alternative route optimization tool. This will accelerate project delivery by reducing the potential for delays in the approval of a project due to additional requests for investigating additional alignments. This tool may also reduce project delays caused by late discoveries of unforeseen environmental or socioeconomic or political issues.

10.04 State Highway Operations and Protection Program (SHOPP) Investment Analysis Tool

The prototype SHOPP Investment Analysis Tool was developed to assist Transportation Planning, Transportation Programming, SHOPP Program Managers, and Districts to assess the impact to the various SHOPP Programs as needs change. The tool also allows the Department to test adjustments as funding conditions and policies change.

10.05 Purpose and Need Sub-Team

The mission of the Purpose and Need Sub-Team (Team) was to develop the process outlined in Section 5.09 of preparing and utilizing a well-defined and quality purpose and need (P&N) statement to make sustainable transportation investment decisions. The objective was to institutionalize a process for implementing consistent, well-defined P&N statements from planning through maintenance and operations (cradle to grave). The Team developed a work plan to identify further improvement to the P&N process and institutionalize a consistent approach for P&N statement preparation and utilization.

11 TRANSPORTATION PROGRAMMING**11.01 Delegated Authority**

The Division of Transportation Programming (Programming) has delegated authority by the California Transportation Commission (CTC) to take actions that will accelerate project delivery. The Department has delegated authority for project allocations over the Safety and Minor categories of the State Highway Operation and Protection Program (SHOPP). The delegation only applies to safety projects in the approved SHOPP and not to safety projects that are amended into the SHOPP. The Department has a delegated authority from Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) to approve Administrative Modifications to the FSTIP. This will save approximately one month in the amendment review and approval process.

11.02 Improved Scoping and Scheduling

Programming in coordination with the FHWA and FTA has developed guidelines and criteria for the use of Administrative Modifications. Certain types of changes to a project (such as increasing the total cost within the allowable limits, minor scope change and swap of funds) can be accommodated relatively quickly as an Administrative Modification, which does not require federal approval for the changes to be effective in the FSTIP. In addition, the Expedited Project Selection Procedure allows moving projects within the FSTIP quadrennial period without the need for an amendment.

Programming participates in the California Federal Programming Group (CFPG) forum (that includes State Metropolitan Planning Organizations (MPOs), FHWA, FTA, and Districts) every six weeks to discuss various issues related to federal programming.

11.03 New Developments in Information Technology

Programming has improved their existing programming database to serve as a multi-agency joint use project database system. This revised system is the California Transportation Improvement Program System (CTIPS), and contains project listings for the State Transportation Improvement Program (STIP), Corridor Mobility Improvement Account (CMIA), Route 99 Corridor Account (Rte 99), STIP Augmentation, SHOPP and the FSTIP. The Transportation Congestion Relief Program (TCRP) is currently being added to the database. The use of this tool and the advancements in Information Technology greatly improves the ability for the Department, FHWA, FTA, and local agencies to plan, program and monitor their projects. This system and its proposed future improvements will increase efficiency and assist in streamlining the entire programming process resulting in enhanced program/project delivery.

PROPOSED IMPROVEMENTS

1 BUDGETS

1.02 Upgrade the Federal-aid Data System (FADS)

The current Federal Aid Data System (FADS) is written in RAMIS and resides on a TS1 mainframe account. The system is very limited in scope, is not user friendly, and has minimal reporting capability. This is a critical system due to the fact that the Department transmits data to the Federal Highway Administration (FHWA) in Washington D.C. every morning requesting obligation of federal funds and for executing State-Federal agreements for federal fund reimbursement for State and Local transportation projects. This process is critical for the Department to receive an estimated \$3.0 Billion a year in reimbursements.

The proposed FADS system will include an application server and a database server that will use UNIX as its operating system. The front end will be a WEB browser utilizing Oracle Forms (version 5.0) for creating screens, Oracle Reports (version 3.0) for creating standard reports, and Discoverer 2000 for creating ad-hoc reports. The proposed FADS system will improve reporting capabilities, will be more efficient, and user friendly. This will result in time savings for staff and accelerate project delivery.

1.03 Combine FADS with CTIPS and LP2000

It is also proposed to combine the Federal Resources (FADS) business needs with the business needs of Transportation Programming (CTIPS) and the Division of Local Programs (LP2000). The combined system is called the California Transportation Infrastructure Funding System (CTIFS) and will maximize the benefits of each Division's data systems so that project programming, fund obligation, and federal agreement processes are streamlined for State and Local Agency transportation projects and programs.

With the proposed upgraded system, users will have view access to the ledger balances. Ad hoc reporting capabilities will allow users to track fund use by funding program. This could be accomplished at the State, local agency or regional agency level. The upgraded system would also be accessible to project managers and engineers to see the federal authorization and obligation status of their projects.

2 CONSTRUCTION

2.24 Information Technology Systems

Construction is working towards improving and adding functionality to existing information systems and developing new systems that reduce manual and increase

automatic process, thereby allowing improved contract time and reduction in delays. A potentially larger portion of district construction staff's time may be utilized for ensuring timely prosecution of the work and earlier resolution and settlement of delay disputes.

2.25 Cost Reduction Incentive Proposals (CRIP)

Construction is working with industry and internal stakeholders to improve the quality of Contractor prepared cost incentive proposals and their speedy evaluation.

2.26 Civil Work Claims Acceleration

On projects with plant establishment, Construction is implementing an option for the contractor to pursue claims for the civil construction work prior to contract acceptance.

2.27 Standing Dispute Resolution Boards (DRBs)

The use of alternative dispute resolution will be expanded through the use of standing DRBs on all projects valued less than \$3 million. Upon implementation, the Department will have nonbinding alternative dispute resolution mechanisms on all of its construction contracts.

2.28 Critical Path Method (CPM) Specification Improvements

An effort is underway to evaluate and simplify the CPM specifications. Schedule and float ownership will be better defined. Construction is evaluating the use of appropriate software and the loss of P3 software. The CPM concurrence process will be improved through allowance of interim baseline acceptance, acceptance with exceptions, and better policy on using withholds. Allowance of resource based CPMs are being evaluated and developed for optional use on complex and long duration projects.

2.29 Utility Agreement Incentives

Construction and Right of Way are evaluating the possible use of financial incentives for Utility Companies to relocate their facilities prior to the beginning of work.

2.30 Notice of Claim

Construction is working on a revision to construction contracts to better define the trigger for a dispute. This will clearly identify when the notice of potential claim

process is triggered. Better notice of potential claims positions Construction to better plan and deliver projects through expanded opportunities to modify, eliminate, or work around disputed items of work.

2.31 Resident Engineer (RE) Office Space

Construction has developed an optional special provision for the contractor to provide for the resident engineer's office as a part of the construction project. This is expected to reduce costs and red tape since this work would be competitively bid.

2.32 Improved Bidder Inquiry

Construction and the Engineering Services Office Engineer are working to improve the bidder inquiry process. The vision is to have all contractor bidder inquiries submitted and posted electronically. Support and response time standards will be set to ensure timely and complete responses to bidder inquiries. More reliable bidder inquiry responses should expand the pool of bidders and reduce bidder risk. This should translate into accelerated project delivery at lower cost.

2.33 Smart Start

Smart Start is a beginning of work specification that specifies the number of working days and the last allowable working day. This allows the contractor to coordinate limited crews and equipment deliveries to multiple projects more efficiently. These efficiencies should result in lower bidder proposals and accelerated project delivery.

2.34 Expanded Use of Agreed Price Contract Change Orders

A contract administration process evaluation of the CCO process concluded that too many extra work at force account (EWFA) contract change orders are executed. The EWFA method instills inefficiency and places too much risk on the Department.

Construction has audited several contractor methods of CCO estimating and concluded they were remarkably similar. This resulted in policy that allows district flexibility in the estimating of the cost of extra work outside the required EWFA analysis method. This should result in the completion of more agreed price CCOs. More agreed price CCOs instills efficient use of contractor resources, responsible risk taking, and innovation to accelerate project delivery.

3 DESIGN**3.13 Design Build**

Design-Build is a project delivery method under which a single contract is executed for both the design and construction of a project. Some of the advantages of Design-Build are faster delivery, cost containment, and allocation of risk to the party best able to manage it. Design-Build can also promote innovative design and construction techniques. Current law prohibits the Department from utilizing this delivery method, however, numerous bills have been proposed to give the Department this authority and the Department will continue seeking this authority.

3.14 Framework for Independent Quality Assurance (IQA) for Design Product

The purpose of framework for IQA for Design Products is to provide a systematic approach to assure IQA is applied by Districts/Regions to fulfill the obligation stated in Deputy Directive 90. The framework is to be applied to all projects that are on the State Highway System regardless of the implementing agency. It also sets the foundation for the Department, locals, and private partners to develop a better understanding of the roles and responsibilities in delivering quality transportation projects. The goal is to convert the framework into guidance on how to implement Independent Quality Assurance for Design products.

At this time Districts 8 and 12 have agreed to refine and study the concept. Further refinement is still needed to implement guidelines for IQA and will be forthcoming as progress is made.

3.15 Additional Courses for the Design Training Curriculum

Additional specialties in core disciplines such as hydraulics, pavements and storm water will be added to the Design Training course as the training curriculum develops. Most of the classes within a program have been created with additional courses to supplement the various programs under development as resources allow.

4 ENGINEERING SERVICES**4.12 Internet Bidding**

DES-OE sees the potential for getting lower project costs through increased competition and also for shortening processing times via Internet bidding. Work has already begun on the next phase, which is to get Department of Finance approval and funding for procuring and implementing a full production system. DES-OE has purchased AASHTOWare software that will enable submittal of bids electronically.

The Division of Information Technology required DES-OE to postpone implementation of the AASHTOWare application needed for electronic bidding until the application has been converted by the vendor from a client-server based system to a web based system. This requirement has delayed electronic bidding implementation by two years. (The Department's Information Security Standards prevents use of the associated Internet bid submittal site, which is privately owned and operated but used by 28 other state DOTs.) When electronic bidding is implemented the bids will be created by construction contractors using a Department provided computer program instead of the current paper booklets. This will eliminate bid rejections caused by contractor's illegibility or math errors, and eliminate for DES-OE the time and cost of key data entry of the information on the paper booklets into Caltrans systems.

4.13 Accelerated Bridge Construction

Division of Engineering Services is now actively working with Department management to conjoin efforts related to accelerating project delivery, including Accelerated Bridge Construction, into a single streamlined effort. This approach ensures that necessary concepts are considered earlier in the project development phase such that adequate resources are programmed.

5 ENVIRONMENTAL

5.17 Improved Scoping and Scheduling

The Department has and is continuing to develop tools to inform the planning process of environmental concerns. Project delivery can be hampered when the environmental phase of the project is not properly scoped prior to programming. This often leads to an unrealistic schedule and unanticipated costs and delays. DEA is developing the "PEAR tool," which is an automated scoping tool that uses electronic forms and available Geographic Information System (GIS) information. This tool should be in place in 2009. The tool allows the user to define the limits of a transportation project and overlay views of previously mapped environmental resources to be addressed during the environmental process. While by no means a substitute for detailed investigations, the tool provides an early warning of environmental constraints and issues, allowing the planners to avoid the resources, if possible. It also allows the planner to better anticipate the scope, costs, and schedule for the eventual environmental studies, coordination with resource and permitting agencies, and mitigation of impacts.

To augment the geographic and resource data in the GIS tool, which primarily comes from other agencies' inventories, the Department is conducting its own inventories to document cultural and biological resources within the Department's rights-of-way. Using Transportation Enhancement Activities (TEA) funds, the Department has completed the roadside archaeological inventories in Districts 2, 3, 4, 5, 6, 9, 10 and 11. The more detailed data from these surveys will augment the

broad-based GIS planning tool, and facilitate the scoping and scheduling of projects on existing routes.

In addition, the PEAR Handbook is undergoing revisions to address changes and improvements in the Department's environmental scoping process, and will soon be available on-line.

5.18 Environmental Management System—PEAR and STEVE Tool

Two projects are under way in response to the Business Process Review (BPR) completed and published January 2003: the PEAR Tool, which is discussed in Section 5.17 above, and the Standard Tracking Exchange Vehicle of Environment (STEVE) Tool: http://pd.dot.ca.gov/env/ems/index_steve_pear.htm

The STEVE Tool will achieve multiple business objectives including:

- Facilitating the sharing and tracking of environmental information
- Providing a single source for environmental information retrieval
- Expediting environmental process by reducing delays in reviewing environmental documents
- Managing resources by monitoring the environmental process from project initiation through project completion

5.19 Environmental Engineering—Hazardous Waste and Noise

Development is underway on the Hazardous Waste Handbook, a guide for district staff to use on hazardous waste projects. Goals for the handbook are that it is: 1) simple to use, 2) interactive and web-based, and 3) contains information on the specific types of hazardous waste projects most frequently encountered by the districts including aerially deposited lead (ADL), underground storage tanks (USTs), asbestos, and superfund sites.

Development is also underway on databases for ADL and soundwalls to simplify the reporting process to the Department of Toxic Substances Control and the Federal Highway Administration.

5.20 Traffic Studies

Traffic studies provide the foundation for the project's purpose and need and also help support key environmental and engineering studies needed for project delivery. To help accelerate projects, a Statewide Traffic Guidance Team (Team) has been formed to develop guidance on how to review and prepare traffic studies. The Team Sponsors/Steering Committee includes representatives from Design, Local Assistance, Transportation Planning, Traffic Operations, and Environmental Analysis. The target date for completion of this effort is late 2009.

5.21 Environmental Commitment Tracking

Pursuant to the FHWA Stewardship Agreement and the Department's Strategic Plan, Environmental is emphasizing the need to track the Department's implementation of environmental commitments made during the project delivery process. Each district is required to establish and maintain an Environmental Commitment Record (ECR) for each project. The Environmental Branch Chief or designee, in coordination with appropriate representatives from other functional areas, denotes completion of individual commitments on an on-going basis. When all commitments are completed, the Environmental Branch Chief or designee, in conjunction with the Resident Engineer, prepares the Certificate of Compliance with Environmental Mitigation Requirements.

See Rick Land's June 25, 2005 memo regarding ECRs:

http://www.dot.ca.gov/ser/downloads/memos/DDD_const_design_env_proj_mgmt.pdf.

To the extent that the Department is able to document compliance with environmental commitments, the Department builds credibility that will help foster better relationships with the resource agencies and the public and may accelerate project delivery.

5.22 Purpose and Need

As a follow-up to the earlier efforts on purpose and need, such as DD-83, Design and Environmental are working jointly to complete an on-line purpose and need training class that will be available by early 2009.

5.23 Additional Programmatic Agreements with Resource Agencies

Early efforts are underway to seek a Programmatic Agreement (PA) for Coho Salmon. Additional programmatic agreements are under consideration for the Sierra red-legged frog, various species on the north coast (e.g. marbled murrelet), and southern California species in the coastal sage scrub community.

5.24 NEPA/404 MOU Training

The new NEPA/404 MOU was signed in April 2006, and is substantially different from the prior 1994 NEPA/404 MOU. The Environmental Management Office is developing an on-line NEPA/404 MOU Training course, and anticipates the course will be available by the end of 2008.

6 LOCAL ASSISTANCE

6.08 Additional Staff for Implementation of the National Environmental Policy Act (NEPA) Delegation Pilot

The Division of Local Assistance and the NEPA Delegation and Environmental Compliance Office submitted a Budget Change Proposal (BCP) to make permanent the six limited term environmental positions responsible for assisting with implementing the NEPA Delegation Pilot Program, and requested six new environmental positions to provide technical environmental report review assistance for local assistance federal-aid transportation projects.

7 MAINTENANCE

Currently no Proposed Items

8 PROJECT MANAGEMENT

8.12 Project Resource and Schedule Management

Project Resourcing and Schedule Management System (PRSM) will be an enterprise project management system that will provide integrated scheduling and timekeeping capabilities for the Department's Capital Outlay Support (COS) statewide. PRSM will be a Commercial-off-the-Shelf ("COTS") system. Its exact functionality will depend on what is available on the market. PRSM is intended to be an easy-to-use project scheduling system that:

- Allows portions of the Work Breakdown Structure (WBS) on each project to be assigned to individual employees ("Task Managers").
- Allows Task Managers to update current schedules, labor hour estimates and assignments on their work using a web browser, while preventing them from making any other changes.
- Allows all employees to see current cost and schedule information using a web browser.
- Integrates with Staff Central to ensure that employees know what labor charges they are authorized to make on projects.
- Assists supervisors and managers to prioritize the work of their units.
- Assists supervisors and managers to estimate their future workload and plan for that workload.
- Compares project costs with the project budgets.
- Forecasts the final cost of each project phase.

Additional information is available at the PRSM intranet site:

<http://pd.dot.ca.gov/pm/pmweb/prsm/148home.asp>

8.13 Documentation of Knowledge, Experience, Abilities and Skills for Project Delivery Roles

- Project Delivery suffers when knowledgeable and experienced employees leave and candidates with inadequate experience, knowledge, or abilities are hired or promoted to fill vacancies.
- Employees want to know what knowledge, experience, abilities, and skills they should acquire to meet their career goals in Project Delivery.
- Managers and supervisors want to be confident that there will be candidates ready, able and trained to fill vacancies as they occur.

A team representing all Project Delivery divisions is documenting the knowledge, experience, abilities and skills needed for Project Delivery roles. The effort includes

- A list of the roles that employees undertake in each of the project delivery functions: Environmental, Design, Right of Way, Construction, Engineering Services, Traffic Operations and Project Management
- A description for each Project Development role
- A list of needed qualifications (knowledge, skills, abilities, experience) for each of the PD roles
- Duty statements for each of the project delivery roles
- A list of mandatory and job-required courses for each project delivery role
- Documentation development of a tool (or a system) that encompasses and gives easy access to, the above listed information

This effort is part of the Succession Planning effort, which is a response, in part, to the 2002 Employee Survey. It will also be used to update the Learning Management System (LMS). This project's target completion date is December 2008.

9 RIGHT OF WAY AND LAND SURVEYS

9.26 Perfection of Title on U.S. Forest Service Lands

Right of Way will continue to coordinate the upgrading of United States Forest Service (USFS) special use permits to Department of Transportation (DOT) Easements. In December of 2001, the Department, FHWA and USFS entered into an MOU that required the Department upgrade all of its Special Use permits across USFS lands to a DOT easement by late 2011. Right of Way is coordinating the effort to provide annual status updates between Right of Way Engineering, Division of Planning, USFS, and FHWA.

9.27 Single Agent Appraise/Acquire Limit Increase

Approval is pending with FHWA to increase the successful “Single Agent Appraise/Acquire Process” from \$10,000 to \$25,000. This tool will provide additional staff assignment flexibility to Right of Way managers in meeting project delivery needs through the most efficient use of staff. It will minimize multiple agent contacts with property owners and trips to property

9.28 Machine Guidance Technology in Construction

Machine guidance technology uses positioning devices, alone or in combination, such as Global Positioning Systems (GPS), Total Stations, or rotating laser levels to determine the real time X, Y, and Z position of construction equipment and compare the position against a Digital Design Model stored in an onboard computer. A computer display shows the operator several perspectives and delta values of his/her position compared to the design surface. This technology has the potential to increase the contractor’s productivity, reduce the number of survey stakes and reduce construction working days. The construction industry is currently implementing machine guidance and the Department is developing interim guidelines to foster its use.

Interim Guidelines completed and posted at:

http://pd.dot.ca.gov/row/offices/landsurveys/documents/machine_guidance/Interim-Guidelines-for-Machine-Guidance-Technology.pdf

A Machine Guidance activity was included in the GoCalifornia Industry Capacity Expansion effort. A pilot project was awarded in District 11 with a nonstandard special provision to allow the Contractor to bid the project using machine guidance technology.

9.29 Integrating Geo-spatial Technologies into the Right of Way Data Management Process

An effort is underway to integrate Geographic Information Systems (GIS) and database management systems into the Right of Way process. Current right of way data systems are not linked spatially to parcels or centerlines. With a geospatial link, physical location can be used to integrate multiple data sets and management systems across activities and to improve visual, as well as textual search capabilities. The ability to access and retrieve data electronically will provide convenience and improved decision-making, coordination, data consistency and accessibility to all users.

9.30 Real Time GPS Network RTN

Real-time global positioning system (GPS) infrastructure systems, such as Caltrans Central Valley Spatial Reference Network (CVSRN) pilot project, enable users' instantaneous centimeter accuracy positioning in the field. Implementation of RTNs has the potential to dramatically decrease the need for in-ground monumentation for survey control and traditional line-of-sight surveying measurements. Personnel resources currently required to setup and guard GPS base stations can be freed up to perform other tasks. Applications of this technology could provide advanced safety features for transportation, increased use of machine guidance technology, and support intelligent transportation systems. Efforts are on-going to develop data sharing and partnerships between public and private RTNs for statewide applications.

9.31 Mobile Laser Scanning

Mobile laser scanning is another technology that shows great promise for collecting engineering and asset management data on and adjacent to highways, roads and bridges. A laser scanner is mounted on a vehicle and data is collected at highway speeds without lane closures. Caltrans is currently conducting research with the Advanced Highway Maintenance and Construction Technology (AHMCT) at the University of California at Davis to investigate mobile scanning applications on Caltrans projects.

9.32 Survey File

The Project Development Procedures Manual (PDPM) Appendix QQ and CADD User Manual are being updated to improve Survey File (SF) delivery and the quality of the plans, specifications, and estimates (PS&E). The SF is a compilation of electronic design data generated during the development of the PS&E. The SF data must be accurate, complete and timely to minimize costly delays, claims, contract change orders, and re-staking charges during construction. The SF should be included in all constructability reviews and throughout the development of projects without constructability reviews (minor projects) to drive consultation and communication on project issues. Electronic SFs have the potential to facilitate the use of automated machine guidance technology in construction.

9.33 Contaminated Property Acquisition Process

As of summer 2008, a proposed Project Delivery Directive and new Hazardous Materials Disclosure Document is circulating for approval that will better define the process of acquiring properties with some level of hazardous materials.

10 TRANSPORTATION PLANNING***10.06 Project Initiation Document (PID) Assessment Endeavor***

Transportation Planning is evaluating the original intent of the PID, and comparing that to where we are today. It is anticipated that there will be improvements in cost and delivery.

10.07 New PID for SHOPP Reservation Projects

A new PID format for SHOPP Reservation (formerly known as Small SHOPP) projects is being developed. This PID will have fewer requirements than a standard PID, reflecting the needs of these projects with capital costs less than one million dollars.

11 TRANSPORTATION PROGRAMMING***11.04 Enhanced Information Technology***

Programming continuously improves their web site to insure the availability of real-time programming information. The site includes the adopted STIP, status of Funds Requests, TCRP Fact Sheets; approved SHOPP; CTC Agendas, Meeting Book Items, and Action Taken Reports; the FSTIP and status of FSTIP amendments and links to websites containing project delivery resources; web access to the programming database CTIPS. The web is the main tool that is utilized to post the FSTIP and its amendments for the required public review in accordance with the FSTIP Public Participation Plan. Improving the website will enhance its operation, and ensure that it is user friendly and an efficient programming information tool, which accelerates program/project delivery.

Status of Improvements

ID	Description	Owner	Status	Year Implemented	Target Implementation	Comments	Page #
1.01	Flexible Match and Tapered Funding	Budgets	Implemented	2002		This has allowed the Department to pursue early acquisition of right of way prior to environmental document approval.	2
1.02	Upgrade the Federal-aid Data System (FADS)	Budgets	In Progress		2009	FADS will be upgraded to a web-based application by 2009.	42
1.03	Combine FADS with CTIPS and LP2000	Budgets	On Hold		2011	The consolidation of FADS with CTIPS and LP2000 will take place following FADS upgrade.	42
2.01	Critical Path Method Scheduling	Construction	Implemented	1995		Provides incentive for contractors to stay on schedule.	2
2.02	Constructability Reviews	Construction	Implemented	1997		Expanded to all major projects in 1998.	3
2.03	Cost-plus-Time (A + B) Bidding	Construction	Implemented	2000		A+B Bidding was piloted in 1993. FHWA declared A+B Bidding as non-experimental in 1995. Guidance was updated in 2002.	3
2.04	Incentives/Disincentives (I/D)	Construction	Implemented	2000		Guidelines for employing I/Ds were issued in June 2000.	3
2.05	A + B with I/Ds	Construction	Implemented	2000		These items can be used together when there is a critical internal milestone.	3
2.06	Internal Milestones	Construction	Implemented	2001			4
2.07	Joint Contractor/State Value Analysis Study Immediately After Contract Approval	Construction	Implemented	2001		Opportunity for State and contractor to develop ideas to reduce construction contract time and cost.	4
2.08	Construction Contract Time	Construction	Implemented	2001		Policy requires project engineers to use standard industry production rates and critical path method schedules on all major projects.	4
2.09	Differing Site Conditions (DSC) Management Review Committee	Construction	Implemented	2002		Process results in statewide consistency in dealing with DSC disputes.	4
2.10	Time-Related Overhead	Construction	Implemented	2000		Inclusion of TRO bid item was implemented on a pilot basis in 2000. TRO Specifications are used in projects over \$5M.	5
2.11	Increased Construction Cost Savings to the Contractor for Reducing Traffic Congestion	Construction	Implemented	2002		AB 1530 became effective on January 1, 2002. The bill increased the contractor's compensation to 60% if the cost reduction changes significantly reduced or avoided traffic congestion during construction.	5
2.12	Contract Disincentives to Promote Timely Construction Completion	Construction	Implemented				6
2.13	Traffic Contingency Plans	Construction	Implemented	2001		Developed SSP 12-220	6
2.14	Alternative Dispute Resolution	Construction	Implemented	2002		A dispute review board is mandatory on contracts \$10M or more.	6
2.15	Policy to Pay for Acceleration Costs During Construction When Cost Effective	Construction	Implemented	2001			6
2.16	Lane Closure Software	Construction	Implemented	2005			7
2.17	On-line Debarment List of Debarred Contractors	Construction	Implemented	2004			7
2.18	Beginning of Work	Construction	Implemented	2008		Postpone the beginning of work by 55 days to allow the contractor to prepare submittals such as working drawings, falsework plans, SWPPP, etc.	7
2.19	Expansion of Subcontracting	Construction	Implemented	2008		Increase the level of subcontracting opportunities from 50% to 70%.	7
2.20	Elimination of Contract Retention	Construction	Implemented	2008		Eliminate retention on federal fund contracts.	8
2.21	Owner Controlled Insurance Program (OCIP)	Construction	Implemented	2008		OCIP can help to increase small business contractor participation.	8
2.22	Partnering	Construction	Implemented	2008			9
2.23	Emergency Contracting Innovations	Construction	Implemented	2008		Improve the directors order, confirmation of verbal agreement, and emergency contract boilerplate.	9

ID	Description	Owner	Status	Year Implemented	Target Implementation	Comments	Page #
2.24	Information Technology Systems	Construction	In Progress		2011	Construction Management System (CMS) project started July 2006.	42
2.25	Cost Reduction Incentives Proposals (CRIP)	Construction	In Progress		2008	Improve the number and quality of CRIPs considered and approved.	43
2.26	Civil Work Claims Acceleration	Construction	In Progress		2008	Allow claims for civil work to be resolved during the plant establishment period.	43
2.27	Standing Dispute Resolution Boards	Construction	In Progress		2009	Two person alternative dispute resolution for projects valued up to \$3 million.	43
2.28	Critical Path Method (CPM) Specification Improvements	Construction	In Progress		2009		43
2.29	Utility Agreement Incentives	Construction	In Progress		2009	Use economic incentives to encourage timely relocation of utilities.	43
2.30	Notice of Claim	Construction	In Progress		2008	Better define the triggers for a construction dispute that would trigger the three part notice of potential claim process.	43
2.31	Resident Engineer (RE) Office Space	Construction	In Progress		2008	Contractor provides RE office space as a part of the construction contract bid.	44
2.32	Proposed Bidder Inquiry	Construction	In Progress		2008	Improve the timeliness and quality of responses to bidder inquiries.	44
2.33	Smart Start	Construction	In Progress		2009	Specify the last working day and total working days, the Contractor picks the first working day.	44
2.34	Expanded Use of Agreed Price Contract Change Orders	Construction	In Progress		2009	Align construction cost estimating procedures with industry practices to develop realistic cost estimates for contract change order work.	44
3.01	Re-engineering the Project Development Process	Design	Implemented	1999		Re-engineering team completed report in 1999. While the entire concept was not approved nor implemented, ideas generated during this study have been.	9
3.02	Increased Response to Statewide Cooperative Agreements	Design	Implemented	2004		Office of Cooperative Agreements created. Updated Chapters 9, 12, and 16 of the PDPM in 2005.	10
3.03	Pre-Approved Cooperative Agreements with District Director Authority	Design	Implemented	2008		PACT (Project Agreement Construction Tool) now develops approvable cooperative agreements ready for execution by a District Director.	11
3.04	On-line Training for Cooperative Agreements	Design	Implemented	2005		A on-line course is available via the internet to Department, Local Agency, and consultant staff	11
3.05	Lump Sum Highway Planting Project	Design	Implemented	2006		Lump sum bidding is an available option for the PDT team to explore on a project by project basis to accelerate delivery of highway planting projects.	11
3.06	Landscape Architecture Standards Manual	Design	Implemented	2008		A hard copy will be available Winter 2009.	12
3.07	Design-Sequencing	Design	Implemented	2000		Phase I Pilot Program consisted of 10 projects of which 8 have been completed and 2 are still in construction. Average time savings is 4 months. Phase II Pilot has just begun with 6 projects selected and 5 projects in construction.	12
3.08	Look Ahead Report for Contracts to be Advertised	Design	Implemented	2008		A website has been developed to provide a single reliable source of information to the contracting industry regarding the Department's planned construction contracts to assist industry to better plan for its resource, equipment and material needs.	12
3.09	Project Change Control	Design	Implemented	2000			12

ID	Description	Owner	Status	Year Implemented	Target Implementation	Comments	Page #
3.10	Value Analysis	Design	Ongoing			The Department has been performing VA since 1969. Federal legislation mandated studies on all projects on the Federal-aided system that have total a cost over \$25 million, regardless of funding source.	13
3.11	Project Development Process – On-Line Course	Design	Implemented	2005		On-line sessions are held twice a month for 20 to 100 students each.	14
3.12	Design Training Curriculum	Design	Implemented	2007		Specialized studies program designed to focus training and training development towards core classes intended to improve quality of design products. Curriculum development is on-going.	14
3.13	Design-Build	Design	In Progress		2010	Department is still trying to obtain authority to use Design-Build.	45
3.14	Framework for Independent Quality Assurance for Design Product	Design	In Progress		Continuous	Independent Quality Assurance (IQA) is a systematic approach to measure quality for Design products. Part of a quality management system, IQA assesses quality control and quality assurance (QC/QA) throughout the development for preventive planning, meeting expectations, and post evaluation.	45
3.15	Additional Courses for Design Training Curriculum	Design	In Progress		2009	Additional specialties in core disciplines such as hydraulics, pavements and storm water will be added to support the Design Training course.	45
4.01	Reduced Listing Period	Engineering Services	Implemented	2001		In 2007 listing period for all contracts was reduced to three weeks.	14
4.02	Reduced Advertising Period	Engineering Services	Implemented	2001		In 2007 DES-OE modified the advertising period for all contracts based on the number of plan sheets, contract items, and nonstandard features.	14
4.03	Contract Execution Period	Engineering Services	Implemented	2002		Average cycle time duration reduction = 1.4 days	15
4.04	New Contractor Webpage	Engineering Services	Implemented	2005		Webpage created to provide contractors with contract advertisement information.	15
4.05	Streamlined Plans, Specifications and Estimate Submittal Process	Engineering Services	Implemented	2002		Electronic submittals has reduced mail submittal time from 3 to 0 days.	15
4.06	Training by DES-OE	Engineering Services	Implemented	2000		Classes updated each year to meet District training needs.	15
4.07	Electronic Bidding Pilot	Engineering Services	Implemented	2002		Proof of concept completed.	16
4.08	Risk Advertising	Engineering Services	Implemented	2001		Risk Advertisement process was updated in 2006 to include risk votes and clarify responsibilities and process.	16
4.09	Provide Electronic Access to Project Documentation	Engineering Services	Implemented	2005		Districts to determine if handouts are provided on CD media. E-files provided on CD media should be in "read only" format.	16
4.10	Soundwall Specification	Engineering Services	Implemented	2003		The SSP and descriptive information on its utilization is in the Bridge Reference Specification, 51Swall, which can be located on the DES-SDS&EE – SOE web page.	16
4.11	Accelerated Bridge Construction (ABC) Documents for Engineers	Engineering Services	Implemented	2008		The "ABC Lessons Learned Report" and "Strategic Action Plan for ABC Implementation in California" documents are available to assist engineers and planners.	16
4.12	Internet Bidding	Engineering Services	In Progress		2009	The application needed for electronic bidding needs to be converted by the vendor from a client-server based system to web based system	45

ID	Description	Owner	Status	Year Implemented	Target Implementation	Comments	Page #
4.13	Accelerated Bridge Construction	Engineering Services	In Progress		2012	Division of Engineering Services is now actively working with Department management to conjoin efforts related to accelerating project delivery, including Accelerated Bridge Construction, into a single streamlined effort.	46
5.01	Organizational Change	Environmental	Implemented	2001		Has facilitated project delivery and environmental streamlining, because the key functions during the development of a project are now aligned under one Deputy Director.	17
5.02	"Mare Island Accord"	Environmental	Implemented	2000		Has resulted in improved interagency relationships and a better understanding each other's mandates and challenges.	17
5.03	Coast Highway Management Plan, Big Sur Coast	Environmental	Implemented	2004		Effort on Management Plan was completed in 2004, and environmental approval for the plan is not required.	18
5.04	Renegotiation of NEPA/404 Integration Process MOU	Environmental	Implemented	2006		New MOU is more flexible and reflects lessons learned from the previous agreement.	19
5.05	Resource Agency Partnering Agreements	Environmental	Implemented	2000		Program recently expanded to include the California/Nevada Operations Office of the U.S. Fish and Wildlife Service.	19
5.06	Programmatic Agreements with Resource Agencies	Environmental	Implemented	1994		Opportunities for more programmatic biological opinions are being explored and may be implemented.	19
5.07	Mitigation Banking and Process Improvements	Environmental	Implemented	1991		Working to develop new methods to collaborate with resource agencies consistent with new SAFETEA-LU provisions.	20
5.08	Environmental Impact Statement (EIS) Review Process Improvement	Environmental	Implemented	1998		Now, under NEPA Delegation, the Department has assumed FHWA's Federal Lead Agency role, and has the authority to review and approve NEPA documents.	21
5.09	Consistent Approach to Well-Defined Project Need and Purpose	Environmental	Implemented	2004		Deputy Directive Number DD-83 has been implemented. Resources on developing Purpose and Need statements have been posted online.	21
5.10	Preliminary Environmental Assessment Report (PEAR)	Environmental	Implemented	2001		The PEAR process has been implemented. The PEAR handbook is being revised to address changes and improvements in the environmental scoping process. Revisions are under final review by Environmental, and will be posted on the SER.	21
5.11	Multi-Agency Working Group to Address Assessment of Cumulative Impacts	Environmental	Implemented	2006		Guidance for cumulative impacts was developed 2005. Indirect impact analysis was developed in 2006.	22
5.12	Annotated Outlines for Environmental Documents and Standard Formats for Biological Assessments	Environmental	Implemented	2004		Has improved the quality of environmental documents and facilitated reviews by state and federal agencies by providing a consistent format. Guidance was updated in 2007.	23
5.13	Disposal Site Quality Team	Environmental	Implemented	2001			23
5.14	Standard Environmental Reference (SER)	Environmental	Implemented	2002		Refinements and additional information are continuously added.	24
5.15	NEPA Delegation Pilot Program	Environmental	Implemented	2007		On July 1, 2007, FHWA assigned its responsibilities for NEPA, as well as for consultation and coordination under other Federal laws, to the Department.	24
5.16	Categorical Exclusions	Environmental	Implemented	2007		In 2007 the responsibility for making Categorical Exclusion (CE) determinations was assigned to the Department by FHWA through the Section 6004 CE MOU, and the Pilot Program MOU, Section 6005 (NEPA Delegation).	25

ID	Description	Owner	Status	Year Implemented	Target Implementation	Comments	Page #
5.17	Improved Scoping and Scheduling	Environmental	In Progress		2009	"PEAR tool" under development will allow for early warning of environmental constraints. Department has completed roadside archaeological inventories in Districts 2, 3, 4, 5, 6, 9, 10, and 11.	46
5.18	Environmental Management System -- PEAR and STEVE tools	Environmental	In Progress		2009	Both tools are under development.	47
5.19	Environmental Engineering -- Hazardous Waste and Noise	Environmental	In Progress		2009	A Hazardous Waste Handbook is in development to guide district staff on hazardous waste projects.	47
5.20	Traffic Studies	Environmental	In Progress		2009	To help accelerate projects, a Caltrans Statewide Traffic Guidance Team has been formed to develop guidance on how to review and prepare traffic studies. The Team Sponsors/Steering Committee includes representatives from Design, Local Assistance, Transportation Planning, Traffic Operations, and Environmental Analysis.	47
5.21	Environmental Commitment Tracking	Environmental	In Progress		2011	Pursuant to the FHWA Stewardship Agreement and the Department's Strategic Plan, DEA is emphasizing the need to track the Department's implementation of environmental commitments made during the project delivery process. Each district is required to establish and maintain an Environmental Commitment Record (ECR) for each project.	48
5.22	Purpose and Need	Environmental	In Progress		2009	As a follow-up to the prior efforts on purpose and need such as DD-83, Design and DEA are working jointly to complete an on-line purpose and need training class that will be available by early 2009.	48
5.23	Additional Programmatic Agreements with Resource Agencies	Environmental	In Progress		2011	DEA is seeking Programmatic Agreement (PA) for Coho salmon and is considering PAs for the Sierra red-legged frog, various species on the north coast (e.g. marbled murrelet), and southern California species in the coastal sage scrub community.	48
5.24	NEPA/404 MOU Training	Environmental	In Progress		2008	The Environmental Management Office is developing an on-line NEPA/404 MOU Training course to address changes in the new MOU.	48
6.01	Use It or Lose It	Local Assistance	Implemented	1999			25
6.02	Manuals and Guidelines on DVD (Publications for Local Assistance DVD)	Local Assistance	Implemented	2006		Manual and guidance now available on DVD.	25
6.03	Improved Program Management Direction and Communications	Local Assistance	Implemented	2006		Instituted Planning and Local Assistance Network (PLAN), Hot Topics and Sub-team meetings.	26
6.04	Electronic Forms -FormsPLUS	Local Assistance	Implemented	2006		Users can now obtain new forms as soon as new LPPs are issued.	26
6.05	Expedite Reimbursements	Local Assistance	Implemented	2001			27
6.06	Standard Environmental Reference	Local Assistance	Implemented	2002		In conjunction with the Division of Environmental Analysis.	27
6.07	Improved Training	Local Assistance	Implemented	2006			27
6.08	Additional Staff for Implementation of the National Environmental Policy Act (NEPA) Delegation Pilot	Local Assistance	In Progress		2009	Budget Change Proposal submitted to make permanent the 6 limited term environmental positions responsible for assisting with implementing the NEPA Delegation Pilot Program, and requested 6 new environmental positions to provide technical environmental report review assistance for local assistance federal-aid transportation projects	49
7.01	Emergency Contractor Registry	Maintenance	Implemented	2000		Over 4,500 contractors have voluntarily registered.	27

ID	Description	Owner	Status	Year Implemented	Target Implementation	Comments	Page #
7.02	Director's Order Guidelines and Matrix	Maintenance	Implemented	2002		Provides information on emergency contracts	28
8.01	Project Charter Policy	Project Management	Implemented	2001		Charter process is intended to help manage project scope and reduce rework.	28
8.02	Capital Project Skill Development Plan	Project Management	Implemented	2000		Current annual goal is to provide approximately 200,000 hours of training.	28
8.03	Use of Flexible Resources to Deliver Projects	Project Management	Implemented	2001		New consultant contracts are continuously being developed and awarded.	29
8.04	Revised Milestone Standard	Project Management	Implemented	2001		Two additional environmental milestones were added to the work breakdown structure.	29
8.05	Project Management Professional (PMP) Certification	Project Management	Implemented	1999		There are over 250 PMPs in the Department.	29
8.06	Lessons Learned Database	Project Management	Implemented	2003		Increased utilization of the Lessons Learned database and associated improvements will be addressed as part of the Caltrans Strategic Plan, Strategy 3.1.1 which begins in FY 08/09 and ends in FY 11/12.	30
8.07	Project Close Out	Project Management	Implemented	2003			30
8.08	Project Communication Handbook	Project Management	Implemented	2003		The Handbook was updated in September 2007 and is available on-line.	30
8.09	Project Management Certificate Program	Project Management	Implemented	2002		Over 285 graduates with 250 others in progress.	31
8.10	Project Delivery Contracts	Project Management	Implemented	2005		Contracts can be accessed via the intranet	31
8.11	Development and Use of Risk Management Plans for Capital Projects	Project Management	Implemented	2004		The Handbook was updated in May 2007 and is available on-line.	31
8.12	Project Resource and Schedule Management	Project Management	In Progress		2010	Contract award is expected in October 2008. The 18-month implementation contract will run through 2010.	49
8.13	Documentation of Knowledge, Experience, Abilities and Skills for Project Delivery Roles	Project Management	In Progress		Dec- 2008	Skill documentation will be rolled out statewide as part of the PRSM implementation beginning in May 2009.	50
9.01	One-Call Acquisition	Right of Way and Land Surveys	Implemented	2000		The Department received final approval from the Department of Finance in Oct 2007 increasing the Draft Purchase Order (DPO) limit from \$2,500 to \$10,000, increase implemented in May 2008.	32
9.02	Single Agent Appraise/Acquire Process	Right of Way and Land Surveys	Implemented	2001		One Agent appraises and acquires parcels less than \$10,000. Pilot study to be proposed to increase limit to \$25,000. See Section 9.27	32
9.03	Resolution of Necessities by Locals	Right of Way and Land Surveys	Implemented	2001		Implemented with Department Memorandum dated December 10, 2001. Clarifying memoranda have been subsequently released.	32
9.04	Right of Way Acquisition prior to Environmental Approval	Right of Way and Land Surveys	Implemented	2000			33
9.05	Streamlined Positive Location (Potholing) Process	Right of Way and Land Surveys	Implemented	2001		To date, 277 contracts have been executed.	33
9.06	Right of Way Project Delivery Team	Right of Way and Land Surveys	Implemented	1998		Continuing to be implemented in selected Districts	34
9.07	Quality Enhancement Joint Review Process	Right of Way and Land Surveys	Implemented	1999		A plan is established every year outlining what functions are to be reviewed. See R/W Website calendar for current schedule	34
9.08	Biennial Surveys and Right of Way Engineering Coordination Meetings	Right of Way and Land Surveys	Implemented	2007		Meetings are repeated every other year in each district.	34

ID	Description	Owner	Status	Year Implemented	Target Implementation	Comments	Page #
9.09	Right of Way Intranet Site	Right of Way and Land Surveys	Implemented	2002		Relocation Assistance Program (RAP) Best Business Practices have been posted on the intranet site.	35
9.10	Utility Design Activities Prior to Environmental Approval	Right of Way and Land Surveys	Implemented	2002		Guidelines for this process are outlined in Utility Reference No. 0201	35
9.11	Underground Service Alerts (USA) - Design Inquiry Service Contract Utility Design	Right of Way and Land Surveys	Implemented	2007			35
9.12	Increased Awareness of Right of Way Activities	Right of Way and Land Surveys	Implemented	2000		On-going training statewide	35
9.13	Continuous Advertising for Appraisal Consultants	Right of Way and Land Surveys	Implemented	2002		This accelerated the process for entering into personal service contracts.	36
9.14	Improved Certificate of Sufficiency Process	Right of Way and Land Surveys	Implemented	2004		Decision Document approved April 2004.	36
9.15	Vanguard Remote Surveying System	Right of Way and Land Surveys	Implemented	1994		Ten systems are in use throughout the Department.	36
9.16	Specifications for Surveying on Superstructures	Right of Way and Land Surveys	Implemented	2004		Provides uniform and consistent support statewide in the form of construction stakes on superstructures.	36
9.17	Right of Way Engineering Mapping Standards	Right of Way and Land Surveys	Implemented	2003		Improved communication and coordination reported.	36
9.18	Utility Relocation Master Contracts	Right of Way and Land Surveys	Implemented	2004			37
9.19	Letter/Notice to Property Owners for Environmental Study Entry	Right of Way and Land Surveys	Implemented	2003		Letter/Notice to Property Owners for Environmental Study entry developed in coordination with Legal.	37
9.20	Joint Training for R/W Utility Coordinators and District Local Assistance Engineers	Right of Way and Land Surveys	Implemented	2005		Joint training for Right of Way Utility Coordinators and District Local Assistance Engineers was delivered in June 2005. The Department has taken over instructing the R/W course in the Federal Aid Series.	37
9.21	Assuming Greater Role in Delivery of Training to Local Public Agencies and Consultants	Right of Way and Land Surveys	Implemented	2005		Developed partnership and continuously working and training Local Public Agencies and Consultants.	37
9.22	Improve Accuracy in Right of Way Estimates	Right of Way and Land Surveys	Implemented	2005		Cost Estimate Map Toolbox has been posted on the Right of Way Division website.	38
9.23	RTK GPS Equipment and Specifications	Right of Way and Land Surveys	Implemented	2008		100% of Department survey crews have been outfitted with RTK GPS equipment in the 2007/08 fiscal year.	38
9.24	Terrestrial Laser Scanning	Right of Way and Land Surveys	Implemented	2007		This technology was used to accelerate the reconstruction of the MacArthur Maze collapse.	38
9.25	Early Involvement for Railroad Appraisals	Right of Way and Land Surveys	Implemented	2007			38
9.26	Perfection of Title on U.S. Forest Service Lands	Right of Way and Land Surveys	In Progress		2011	In December of 2001, the Department, FHWA and USFS entered into an MOU that required the Department upgrade all of it's Special Use permits across USFS lands to a DOT easement by late 2011.	50
9.27	Single Agent Appraise/Acquire Limit Increase	Right of Way and Land Surveys	In Progress		2010	Pilot study to be proposed to request FHWA to increase the Appraise/Acquire Process from \$10,000 to \$25,000.	51

ID	Description	Owner	Status	Year Implemented	Target Implementation	Comments	Page #
9.28	Machine Guidance Technology in Construction	Right of Way and Land Surveys	In Progress		2009	Interim Guidelines completed in 2004 and posted. A Machine Guidance activity was included in the GoCalifornia Industry Capacity Expansion effort. A pilot project was awarded in 2008 in District 11, with a nonstandard special provision that allows the Contractor to bid and construct the project using machine guidance technology. Using the lessons learned, standards will be developed for more widespread use.	51
9.29	Integrating Geo-spatial Technologies into the Right of Way Data Management Process	Right of Way and Land Surveys	In Progress		2009	The Department is participating in a NCHRP research project to support deployment of a Right of Way MIS integrating Geo-spatial technologies.	51
9.30	Real Time GPS Network RTN	Right of Way and Land Surveys	In Progress		2010	District 6 has constructed a 14 station RTN to serve as a pilot project for future expansion. A market survey was conducted to demonstrate software solutions and the FSR was approved. The pilot project was completed and expansion of the network in the Central Valley and elsewhere is underway. All Districts are actively seeking RTN in their areas.	52
9.31	Mobile Laser Scanning	Right of Way and Land Surveys	In Progress		2010		52
9.32	Survey File	Right of Way and Land Surveys	In Progress		2008		52
9.33	Contaminated Property Acquisition Process	Right of Way and Land Surveys	In Progress		2008	Project Delivery Directive pending approval in 2008	52
10.01	Establishment of the Project Study Report – Project Development Support Document (PSR-PDS)	Transportation Planning	Implemented	1999		CTC approved policy on December 18, 1999.	39
10.02	Early Environmental Efforts/Geographic Information Systems	Transportation Planning	Implemented	2005			39
10.03	Route Optimization Analysis Tools	Transportation Planning	Implemented	2005		This tool provides a range of potential alignments with alignment costs.	40
10.04	SHOPP Investment Analysis Tool	Transportation Planning	Implemented	2008		Analyzes the SHOPP program as needs and funding conditions change.	40
10.05	Purpose and Need Sub-Team	Transportation Planning	Implemented	2008		The Team developed a work plan to identify improvement to the Purpose and Need process	40
10.06	Project Initiation Document Assessment Endeavor	Transportation Planning	In Progress		2008		53
10.07	New PID for SHOPP Reservation Projects	Transportation Planning	In Progress		2008	The SHOPP Reservation PID will have fewer requirements than the standard PID.	53
11.01	Delegated Authority	Transportation Programming	Implemented				40
11.02	Improved Scoping and Scheduling	Transportation Programming	Implemented				41
11.03	New Developments in Information Technology	Transportation Programming	Implemented				41
11.04	Enhanced Information Technology	Transportation Programming	In Progress		Continuous	Programming continuously improves their web site to insure the availability of real-time programming information	53