

CONSTRUCTION EVALUATED PROGRAM FOR EXPERIMENTAL FEATURES

GUIDELINES

The intent of the Construction Evaluated Program for Experimental Features is to field test and evaluate the constructability and performance of experimental features on transportation facilities. An experimental feature is defined as a material, process, method, equipment item, traffic operational device, or other feature that:

- Has not been sufficiently tested under actual service conditions to merit acceptance without reservation in normal highway construction, or
- Has been submitted to the New Products Committee for review, but further field evaluations are needed to complete their review.

To show the general processing steps, a Construction Evaluated Program Flowchart is provided in Appendix 1.

If the experimental feature performs well and field tests prove satisfactory, the feature may be removed from experimental status. With removal from experimental status, Federal Highway Administration (FHWA) may participate in the cost of future installations as they would any other standard construction feature. This program incorporates FHWA guidelines for the use of experimental features (see FHWA Guidelines <http://www.fhwa.dot.gov/programadmin/contracts/expermnt.htm>).

For all construction projects that include an experimental feature, a Construction Evaluated Work Plan (CEWP) is to be submitted to the Division of Design, Office of Resource Conservation, mail station #28, for processing. See Appendix 2 for sample template and instructions. The CEWP provides the necessary documentation to secure project funding approval and describes the monitoring and reporting schedule that will evaluate the experimental feature's performance. The CEWP shall include a description, intended objective, measurement and characteristics of the experimental feature to be evaluated. The CEWP shall provide schedules for construction and post construction evaluations, reporting requirements, cost estimates attributed to the experimental feature, and identify a control section for comparison purposes. To assure evaluations will be completed in a timely manner, each of the responsible parties designated to complete the described activities shall be identified. The CEWP also acts as a guide for department staff in the event there is a change in personnel during the construction or evaluation phase of the experiment.

For federal-aid projects incorporating experimental features, a copy of the FHWA approved CEWP must be included with the PS&E submittal to Office Engineer. Failure to submit a timely CEWP may jeopardize the experimental feature's inclusion in the project and federal-aid participation in its cost. Separate funding for the evaluation

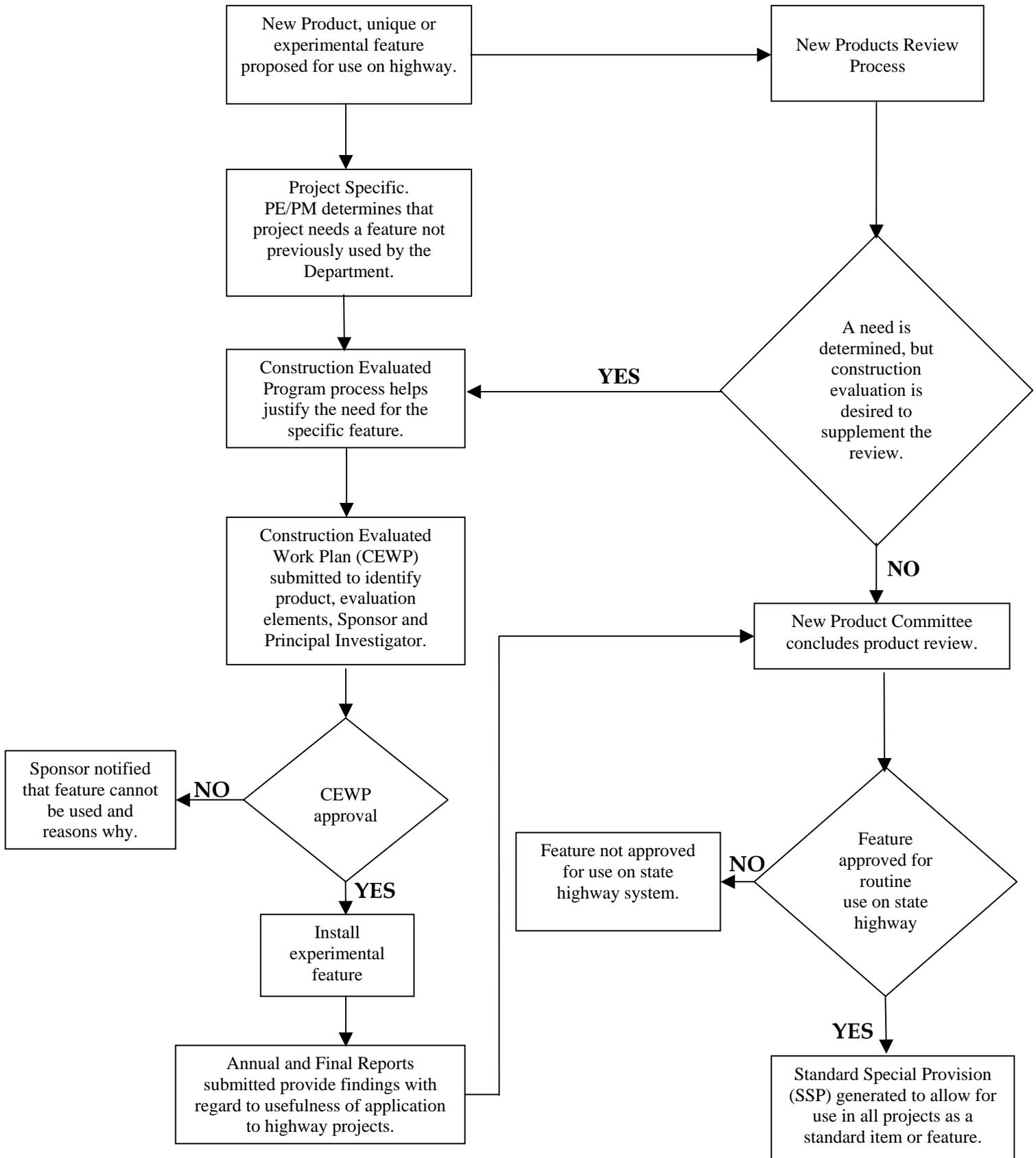
phase of the experimental feature is not provided by FHWA. The late addition of a CEWP through a contract change order (CCO) is strongly discouraged by FHWA. Should FHWA funding be unavailable for the CEWP, State only funds must be used. Results and conclusions from state only funded projects can also be used to support requests made to FHWA to remove experimental features from experimental status.

If the experimental feature is a proprietary item, written approval for use must first be obtained from the District Director, see [RTL Guide Sec. 6.13](#). For proprietary structure items, the Chief, Division of Engineering Services (DES) must provide written approval. If the proprietary item is to be used on a federally funded project, FHWA approval is required through a Public Interest Finding (PIF). See [RTL Guide Sec. 1.3.5](#) or on the Caltrans' intranet at <http://onramp.dot.ca.gov/hq/budgets/fedlibrary.htm> for more information concerning the PIF process. Copies of the District Director or DES Chief's approval letters and the PIF shall be included with the CEWP.

Once FHWA has approved the CEWP, Caltrans can install the experimental feature and begin its evaluations. Typically, Caltrans will evaluate the experimental feature's performance over a three to five year period. At minimum, field evaluations are to be documented at the time the experimental feature is placed and recorded in a construction report. Performance evaluations are to be completed annually thereafter and a final report to be completed at the conclusion of the evaluation period. The CEWP must identify both a Sponsor and a Principal Investigator (PI). The Sponsor, either a Division Chief or a Deputy District Director, is responsible for ensuring that all evaluations are completed in accordance with the approved CEWP. The PI is responsible for completing all evaluations and submitting reports to the Division of Design, Office of Resource Conservation, mail station #28. The Office of Resource Conservation will be responsible for administering the program and will be the liaison for gaining approval or sharing information with FHWA.

Upon completion of the evaluation period, Caltrans may provide positive findings to FHWA that the evaluation of the product/process demonstrates a public benefit. Caltrans can then request FHWA to remove the product/process from experimental status. Once the experimental status is removed and the feature has been approved for use through the New Products Committee, it can be used as a standard feature on future Caltrans projects without a CEWP. The Headquarters Division(s) with functional responsibility for the feature is responsible for any necessary policy changes and specification development needed to incorporate the feature as a standard and is responsible for statewide implementation.

APPENDIX 1 CONSTRUCTION EVALUATED PROGRAM FLOWCHART



APPENDIX 2 CONSTRUCTION EVALUATED WORK PLAN TEMPLATE

Project ID Number
Dist.-County-Route
Post Mile
E.A. charge code
Federal-Aid No.

TITLE

Name of experimental feature

INTRODUCTION

1. Description of Experimental Feature:
 - a. Is it a proprietary product?
 - b. Is it a new technique or process?
2. Function/Purpose:
 - a. Describe what it does, how and why this works compared to conventional features.
 - b. Describe why experimental feature is most suitable for this project.
 - c. Attach plan sheet and typical section or working drawings if helpful in describing feature.
3. Background:
 - a. Has the experimental feature been used previously in California?
 - List previous or current projects already testing this experimental feature (contact Office of Resource Conservation for listing).
 - List any known state-funded only projects (not listed above).
 - List any known independent laboratory testing (if applicable).
 - List any known installations by other agencies.
 - b. Describe performance of projects listed above. Include successes and failures.
 - c. How is this particular experimental feature's use different from use on other similar projects?
 - d. Description of any related approved or planned experimental feature projects and how their application fits the overall research effort for this feature.
 - e. What is the anticipated time frame for completion of the performance evaluation of all similar experimental features?
4. Potential Benefits to the Department.

PROPOSAL

1. Location of Experimental Feature.
 - a. Project (Co-Route-Post Mile & E.A.).
 - b. Feature (Post Mile limits of each test section, direction of travel, lane number, right or left of, bridge number, etc.). Attach plan sheet (schematic layout of test sections if helpful to describing the location).
 - c. Number of units/physical size (what is proposed work?).
 - d. How will each test section be identified in the field (paddle on R/W fence; paint on shoulder)?
 - e. Control sections or other alternatives should be provided for performance comparisons unless the nature of the experiment is such that they would serve no purpose.
2. Estimated Construction Cost:
 - a. Experimental feature cost to project (per unit).
 - b. Total experimental feature cost (multiple feature project)
 - c. Total cost of project.
 - d. Comparative retail cost to that of a standard feature (per unit).
3. Construction season (including planned advertisement date).
4. Discuss other alternatives considered (including costs/benefits).

REPORTING

All reports must be submitted to the Division of Design, Office of Resource Conservation for monitoring. The Office of Resource Conservation will forward copies to FHWA. Reports should describe how the experimental feature will be evaluated. Procedures should be specific enough that alternate staff could complete the evaluation and reporting.

The Sponsor identified in the CEWP will have a performance measure associated with the completion of each evaluation/report.

1. Construction Report – Due within 90 days of installation of experimental feature. Include any key points during the installation process, such as:
 - Ease of installation.
 - Unforeseen difficulties, including the need of any Contract Change Orders (CCO) associated with the experimental feature.
2. Performance Evaluation – Due annually on or before July 1st and should at minimum include:

- Comparison
 Test Section versus Control Section.
 Before/ After Study.
 - Laboratory Testing.
 - Horizontal/Vertical Surveys.
 - Visual Observations/Engineering Judgment.
 - Early termination may be requested if further evaluations would not provide additional beneficial information or if a statewide implementation policy can be recommended.
3. Final Report - At the conclusion of the reporting period, a Final Report is due and should include a summary of findings and recommendations on future use.

RESPONSIBILITIES

The Principal Investigator is responsible for technical liaison efforts, performance evaluations and submittal of all evaluations/reports to the Division of Design, Office of Resource Conservation. Should the Principal Investigator leave this area of functional responsibility, a replacement Principal Investigator must be identified and the Office of Resource Conservation notified of the change.

It is imperative that the Principal Investigator apprise the regional maintenance superintendent of the location and status of the experiment, to preclude maintenance activities from invalidating the evaluation effort.

The Sponsor (either a Division Chief or Deputy District Director) is to be listed and will be accountable for ensuring that the evaluations and reports are completed in a timely manner and submitted to the Division of Design, Office of Resource Conservation. Provide a statement that lists the Sponsor's commitment to review reports during this experiment as well as those of related projects to determine the potential statewide application/impact prior to Caltrans making a request to FHWA for removal of the feature from experimental status.

A performance measure associated with the delivery of the evaluations and reports is under development. The Division of Design will compile an annual report to the Chief Engineer documenting the completion rate of the evaluations and reports.

PROPOSED IMPLEMENTATION PLAN

Include the anticipated manual, policy, specification changes, etc., that would need to be updated should this experimental feature research conclude a positive impact or benefit to the Caltrans.

CONCURRENCE AND RECOMMENDATION

I concur and recommend approval of this CEWP

PRINCIPAL INVESTIGATOR (PI):

Name:

Title:

Division:

Phone Number:

PI Signature

Date

I concur and recommend approval of this CEWP

SPONSOR:

Name:

Title:

Division:

Phone Number:

Sponsor Signature

Date

ATTACHMENTS

Attachments that should be included with the CEWP submittal include:

1. Contract Plans (PS&E)
2. Special Provisions
3. Manufacture Brochure
4. Specifications
5. Federal Form 1461 (Sample Form Attached)
6. Public Information Finding (PIF)

Federal Form 1461 Sample

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

EXPERIMENTAL PROJECT REPORT

EA.

EXPERIMENTAL PROJECT	EXPERIMENTAL PROJECT NO. STATE YEAR NUMBER SUF. (1) CA-xx-xx <input type="checkbox"/>	CONSTRUCTION PROJ. NO. (8)	LOCATION (28)		
	EVALUATION FUNDING (48) 1 <input type="checkbox"/> HP&R 3 <input type="checkbox"/> DEMONSTRATION 2 <input type="checkbox"/> CONSTRUCTION 4 <input type="checkbox"/> IMPLEMENTATION		NEEP NO. <input type="checkbox"/> <input type="checkbox"/> (49)	PROPRIETARY FEATURE? (51) <input type="checkbox"/> YES <input type="checkbox"/> NO	
SHORT TITLE	TITLE (52) .				
THIS FORM	DATE (140) MO. YR. -	REPORTING (144) 1 <input type="checkbox"/> INITIAL 2 <input type="checkbox"/> ANNUAL 3 <input type="checkbox"/> FINAL			
KEY WORDS	KEY WORD 1 (145)		KEY WORD 2 (167)		
	KEY WORD 3 (189)		KEY WORD 4 (211)		
	UNIQUE WORD (233)		PROPRIETARY FEATURE NAME		
CHRONOLOGY	Date Work Plan Approved: MO. YR. <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> (277)	Date Feature Constructed MO. YR. <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> (281)	Evaluation Scheduled Until: MO. YR. <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> (285)	Evaluation Extended Until: MO. YR. <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> (289)	Date Evaluation Terminated: MO. YR. <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> (293)
	QUANTITY AND COST	QUANTITY OF UNITS (Rounded to whole numbers) (297) .	UNITS (305) 1. <input type="checkbox"/> LIN. FT. 5. <input type="checkbox"/> TON 2. <input type="checkbox"/> S.Y. 6. <input type="checkbox"/> LBS 3. <input type="checkbox"/> S.Y.-IN. 7. <input type="checkbox"/> EACH 4. <input type="checkbox"/> C.Y. 8. <input type="checkbox"/> LUMP SUM		UNIT COST (Dollars, Cents) \$. (306)
		AVAILABLE EVALUATION REPORTS (315) <input type="checkbox"/> CONSTRUCTION <input type="checkbox"/> PERFORMANCE <input type="checkbox"/> FINAL			
	EVALUATION	CONSTRUCTION PROBLEMS (318) 1 <input type="checkbox"/> NONE 2 <input type="checkbox"/> SLIGHT 3 <input type="checkbox"/> MODERATE 4 <input type="checkbox"/> SIGNIFICANT 5 <input type="checkbox"/> SEVERE		PERFORMANCE (319) 1 <input type="checkbox"/> EXCELLENT 2 <input type="checkbox"/> GOOD 3 <input type="checkbox"/> SATISFACTORY 4 <input type="checkbox"/> MARGINAL 5 <input type="checkbox"/> UNSATISFACTORY	
		APPLICATION (320) 1 <input type="checkbox"/> ADOPTED AS PRIMARY STD. 4 <input type="checkbox"/> PENDING 2 <input type="checkbox"/> PERMITTED ALTERNATIVE 5 <input type="checkbox"/> REJECTED 3 <input type="checkbox"/> ADOPTED CONDITIONALLY 6 <input type="checkbox"/> NOT CONSTRUCTED			(Explain in Remarks if 3, 4, 5, or 6 is checked)
REMARKS	(321)				

(700)