

Chapter 12 Plans, Specifications & Estimate

Contents

12.1	Introduction.....	1
12.2	PS&E Procedures for Significant NHS Projects	1
12.3	Environmental Procedures	2
	Compliance with Environmental Laws.....	2
	Preliminary Design	2
	Final Design	2
	Permits	3
	Documentation	3
12.4	Method of Construction	3
	Contracting Method.....	3
	Force Account (Day Labor).....	4
	Emergency Work.....	7
12.5	Value Engineering Analysis.....	7
	Federal Requirements.....	7
	Procedures.....	8
12.6	Plans	8
	Design Guidance.....	8
	Design Decisions	9
	Plan Sheet and Specification Signatures	9
	Standard Plans.....	9
	Erosion Control Plans	9
	Work Zone Safety and Mobility	10
	Work Zone Implementation and Improvement Procedures	12
	Americans with Disabilities Act (ADA) Compliance Plans	12
12.7	Standard Specifications	13
	Acceptable Standard Specifications and Special Provision	13
	Caltrans Specifications.....	14
12.8	Federal Contract Requirements	14
	Required Federal Contract Language	14
	Disadvantaged Business Enterprise (DBE).....	14
	Contract Time.....	15
	Changed Condition Clauses.....	15

Differing Site Conditions.....	16
Suspensions of Work Ordered by the Engineer	16
Material Changes in the Scope of the Work.....	16
Liquidated Damages	17
Buy America.....	18
Form FHWA-1273	20
Federal Trainee Program	22
Federal Wage Rate Determinations (29 CFR 1.6)	24
Relations with Railroad	24
Sample Bid.....	24
12.9 Restricted Contract Provisions.....	25
Indian Preference.....	25
Bonding and Prequalification.....	25
Price Adjustment Clauses	26
Project Labor Agreements.....	27
12.10 Optional Contract Provisions.....	29
Additive or Deductive Bid Items	29
Alternate Bids.....	29
Incentive/Disincentive (I/D) Provisions	30
Quality – Price Adjustment Clauses	30
Alternative Contracting Practices	30
12.11 Materials and Equipment.....	31
Publicly-Owned Equipment.....	31
Contractor Purchases for Local Ownership.....	31
Convict-Produced Materials	31
Local Preferences	32
Warranty Clauses.....	32
Proprietary Items.....	32
Equipment Rental Rates	32
12.12 Estimates.....	33
Nonparticipating Work.....	33
Contract Items.....	34
Local Public Agency Furnished Materials.....	34
Supplemental Work.....	34
Contingencies	35
Construction Engineering.....	35
Federal Trainee Program	35

Optional Bridge Review.....35

12.13 Review and Submittal of the PS&E Package..... 36

 Responsible Charge Certification.....36

 PS&E Checklist.....36

 Checklist Review by Caltrans.....36

12.14 Projects Without Traditional PS&E 37

12.15 References 38

Tables

Table 12-1: Liquidated Damages..... 17

Table 12-2: Federal Trainee Schedule 23

Exhibits

- [Exhibit 12-B: Bidder’s List of Subcontractors \(DBE and Non-DBE\)](#)
- [Exhibit 12-D: PS&E Checklist](#)
- [Exhibit 12-E: PS&E Checklist Instructions](#)
- [Exhibit 12-F: Cost-Effectiveness/Public Interest Finding/A&E Noncompetitive](#)
- [Exhibit 12-G: Required Federal-Aid Contract Language](#)
- [Exhibit 12-H: Sample Bid](#)

All LAPM Exhibits are located at:
<https://dot.ca.gov/programs/local-assistance/forms/local-assistance-procedures-manual-forms>

Chapter 12 Plans, Specifications & Estimate

12.1 Introduction

The policies and procedures contained in this chapter reflect current federal requirements for the Plans, Specifications and Estimate (PS&E) phase of local projects off the State Highway System (SHS). These instructions are not intended to address the relevant state laws and local regulations with which a Local Public Agency (LPA) must also comply.

The preparation of the PS&E for local federal-aid projects off the SHS is the responsibility of the LPA. LPAs will certify on [LAPM 3-A: Project Authorization/Adjustment Request](#) that their project PS&E complies with all applicable federal and state regulations and procedures. [Exhibit 12-D: PS&E Checklist](#) summarizes the items required for LPA compliance. The LPA's project PS&E Certification and PS&E Checklist must be submitted to the Caltrans District Local Assistance Engineer (DLAE) along with their Request for Authorization to Proceed with Construction.

Federal-aid projects in which the total project costs are expected to be \$100 million or more, require that the Financial Plan Annual Update (FPAU) be prepared when all elements of the plan are fully known, but not later than the request for authorization of federal financial assistance for construction. Financial Plans for projects of \$100 million or more must be submitted to the Caltrans DLAE. Submittal of the Financial Plan and a Project Management Plan (PMP) are required for projects of \$500 million or more. Major federal-aid projects of \$500 million or more require that a PMP be prepared and submitted to Caltrans/Federal Highway Administration (FHWA). FHWA also requires that a Cost and Schedule Risk Assessment (CSRA) be performed prior to National Environmental Policy Act (NEPA) completion and prior to construction authorization. For more information see [LAPM Chapter 2: Roles and Responsibilities](#).

For locally-administered projects on the SHS, the LPA must enter into a cooperative agreement with Caltrans to establish the responsibility for project PS&Es (see [Caltrans Project Development Procedures Manual \(PDPM\) Chapter 1: Introduction](#)).

12.2 PS&E Procedures for Significant NHS Projects

For significant projects (as defined in [LAPM Chapter 7: Field Review](#), Section 7.2) on the NHS, the LPA's written PS&E procedures must be approved by Caltrans before final design is started. The DLAE will determine which projects require this approval at the field review (see [LAPM Chapter 7](#)). The written PS&E procedures should identify changes from the procedures described in this chapter and as a minimum cover the following items:

- Project management personnel and procedures
- Highway design standards (and any other technical standards as appropriate)
- Consultant selection procedures
- Project DBE participation procedures
- Review and approval procedures
- Oversight procedures if a state highway is involved
- Maintenance of records and access

The DLAE should consult with headquarters Division of Local Assistance (DLA) for assistance with the review of the LPA procedures.

12.3 Environmental Procedures

23 CFR 771.113 prohibits starting work on the final design phase of a federally-funded project until after approval of the final environmental document (see [LAPM Chapter 6: Environmental Procedures](#)). Failure to comply with this requirement will make a project ineligible for federal reimbursement.

Compliance with Environmental Laws

The LPA is responsible for ensuring that mitigation measures presented as commitments in environmental documents, and that conditions and restrictions associated with regulatory permits, are incorporated into appropriate contract documents, plans, specifications and estimates prior to proceeding with major construction activities such as land acquisition or construction. Environmental documents referred to here may be a Categorical Exclusion (CE), Environmental Assessment (EA), or Environmental Impact Statement (EIS).

Failure to meet mitigation commitments may render the project ineligible for federal reimbursement.

Omission or modification of a mitigation commitment, thereby creating new significant environmental effects, will result in the need to prepare a re-evaluation to assess any changes that have occurred and their effect on the validity of the environmental document. Changes in project design, applicable laws or regulations, or environmental impacts may also require environmental re-evaluation, including additional studies, consultation, and public involvement. If the document is an EIS, a Supplemental EIS may be required.

Preliminary Design

23 CFR 636.103 defines preliminary design as the general project location and design concepts. It includes, but is not limited to, preliminary engineering and other activities and analyses, such as environmental assessments, topographic surveys, metes and bounds surveys, geotechnical investigations, hydrologic analysis, hydraulic analysis, utility engineering, traffic studies, financial plans, revenue estimates, hazardous materials assessments, general estimates of the types and quantities of materials, and other work needed to establish parameters for the final design. In addition to the activities specified in the definition, [Appendix A of FHWA Order 6640.1A](#) provides examples considered to be preliminary design. Prior to completion of the NEPA review process, any such preliminary engineering and other activities and analyses must not materially affect the objective consideration of alternatives in the NEPA review process.

Final Design

LPAs may not proceed with final design activities until Caltrans District Senior Environmental Planner and the DLAE have signed the CE Form, Caltrans Deputy District Director has signed the Finding of No Significant Impact (FONSI), or Caltrans District Director has signed the Record of Decision (ROD). Granting approval to proceed with final design prior to final environmental approval would be a premature commitment to one alternative at a time when other alternatives, including the alternative of taking no action, are still being actively considered in the environmental process. Upon final environmental approval, it is incumbent upon the DLAE

to immediately provide notification to the LPA and a copy of the approved environmental determination or documents.

LPAs are required to provide a list of mitigation commitments to the DLAE (for projects processed with a CE), provide a list of mitigation commitments in the FONSI (for projects processed with an EA), and provide a list of mitigation commitments in the ROD (for projects processed with an EIS).

Unique mitigation commitments including but not limited to preservation of historic sites, protection of public-owned parklands, removal and disposal of hazardous materials, and the establishment of sensitive plant communities or wetland mitigation sites are often complex and require technical expertise in the translation and transfer into final design. Any plant establishment and monitoring periods must also be addressed during final design.

For complex projects, Caltrans staff is available to assist in the translation and proper transfer of mitigation commitments into the final design. Caltrans assures that mitigation commitments and any required ongoing maintenance of mitigation are implemented by conducting periodic process reviews.

Permits

The LPA is also responsible for translating permit conditions and restrictions into the final design. Permits include, but are not limited to: Army Corps of Engineers Section 404 Nationwide Permit; Section 404 Individual Permit; NEPA/404 Integration MOU, Section 10 Permit; United States Coast Guard Bridge Permit; Regional Water Quality Control Board Section 401 Water Quality Certification and National Pollution Discharge Permit; California Department of Fish and Wildlife Streambed Alteration Agreement; California Coastal Commission Coastal Development Permit, and Bay Conservation and Development Commission Permit. Typical mitigation includes hay bales, silt fencing, dust control, riprap, soil stabilization matting, slope drain, turbidity barrier, etc.

LPAs should work closely with the permitting agency to ensure accurate translation and proper transfer of permit conditions and restrictions (as appropriate) into final design. Conversations with regulatory agencies regarding translation of permit conditions and restrictions should be well documented.

Documentation

Well documented records, referencing the page numbers and/or plan sheets on which commitments are illustrated, should be maintained and the Environmental Commitment Record (ECR) equivalent addressing all environmental mitigations should be submitted along with other PS&E documents by the LPA, as this information will be necessary when certifying the PS&E. For more details refer to LAPM Chapter 6, Section 6.3. This information will also be useful during the PS&E and process reviews.

12.4 Method of Construction

Contracting Method

Except as noted below, all federal-aid construction projects must be completed by contracts awarded to the lowest responsible bidder of a competitive bid process (23 CFR 635.104). In addition, LPAs may not, under any circumstances, negotiate with a bidder prior to award to reduce the price of a construction contract.

Occasionally, situations arise which may support the use of a contracting method other than competitive bidding. Non-competitive construction contracting may be approved under the following conditions:

- When an emergency exists of such magnitude that work cannot be delayed
- There is only one organization qualified to do the work
- Competition is deemed inadequate after soliciting bids
- When it is more cost-effective to do the project by force account (defined below)
- When using some design/build or Construction Manager/General Contractor (CMGC) methods of procurement

The use of a non-competitive contracting method must be thoroughly justified in writing (generally using a Public Interest Finding (PIF)), submitted to the Caltrans DLAE for approval, documented in the project files, and retained for future reference. [When utilizing Design-Build, CMGC, or ID/IQ contracting methods, a PIF justification is not required \(23 CFR 635.104\(c\)\(d\)\).](#) When utilizing CMGC, the LPA must follow Caltrans Local Assistance Procedures for CMGC Projects.

Force Account (Day Labor)

23 CFR 635.203 defines force account as the direct performance of construction work by the LPA, railroad, or public utility using labor, equipment, materials, and supplies furnished by them and under their direct control. Payment under force account is based on the actual cost of labor, equipment, and materials furnished, with consideration for overhead and profit.

Since work by force account is an exception to the normal contract method, which is based on competitive bidding, each LPA must also look to its own charter and applicable state code(s) when considering work by force account.

The performance of work by force account on a federal-aid project may be appropriate when:

- It is determined that the rights or responsibilities of the community are so affected as to require a special course of action, including a lack of competition or unreasonable bids (must be documented).
- By the inherent nature of the operation, it is deemed cost-effective to perform minor adjustments of railroad and utility facilities while the major work is still accomplished by competitive bidding (the use of force account work under this circumstance has been predetermined to always be cost-effective without further documentation or authorization).
- It is deemed cost-effective to perform some work (incidental to the main purpose of the project and other than minor adjustments of railroad and utility facilities), while the major work is still accomplished by competitive bidding.
- It is necessary for emergency relief.

A public interest finding (PIF) fully justifying the use of force account work on a local federal-aid project must be prepared by the LPA (see Exhibit 12-F: Cost-Effectiveness/Public Interest Finding/A&E Noncompetitive). The documentation should include:

- An identification and description of the project and the kinds of work to be performed.

- A comparison of the detailed cost estimates for work by force account versus a competitive bid contract.
- An estimate of federal funds to be provided based on the reimbursement ratio of the qualifying costs.
- The reason(s) the use of work by force account is considered to be cost-effective or an emergency.
- An authorization by the City or County Public Works Director authorizing LPA forces to perform the work and certifying that the documentation reflects the true and current estimates of costs to perform the work.

With the submittal of the PIF to justify the use of force account work, the LPA must demonstrate the following abilities to perform the work (FHWA Order 5060.1, March 12, 2012):

1. Availability of equipment

- a. The LPA must own (or currently lease) most of the equipment that is needed to perform the work. If the LPA must acquire or lease substantially more equipment than required for its normal operation, it would be difficult to justify an affirmative finding of cost-effectiveness. While no contractor, subcontractor or LPA owns all of the equipment that it may need, the costs associated with leasing equipment on a force account project should be a relatively minor portion of the overall cost. FHWA and Caltrans may elect to limit the percentage of equipment leasing costs for differing types of work.
- b. In LPA force account work, the rates on publicly owned equipment eligible for federal participation may be the agreed unit price or actual cost. For agreed unit prices, the equipment need not be itemized on the estimate. If the project is to be performed on the basis of actual cost, the estimate should include a schedule of rates, exclusive of profit, to be charged for the use of publicly owned equipment.

2. Use of minor agreements

It is anticipated that the LPA will perform all work with its own forces. However, in some instances, it may be appropriate for the LPA to enter into agreements for specific minor services associated with the scope of work (e.g., guardrail installation). Such instances should be documented and pre-approved. Any work done by contract forces would be subject to prevailing wage rate requirements as appropriate.

3. Ability to comply with design, construction and material, quality standards

The LPA must have the ability to comply with the appropriate design, construction, and material quality standards.

4. Ability to document compliance with quality assurance requirements

The LPA must be able to obtain and document the same level of quality that is required for competitively let contracts under 23 CFR 637.

5. Schedule

The project/contract completion time is to be equal for both LPA and contract work estimates in order to provide a fair comparison of prices.

6. Cost comparison

The LPA must provide sufficient cost information so that a cost-effectiveness determination can be made by comparing the total cost for the LPA to perform the work versus the total cost using competitively bid prices.

a. LPA's cost estimate

The LPA's cost estimate should be prepared on a force account basis including estimated quantities and prices for material, labor, and equipment. The estimate should be based on one of two methods:

- i. **Actual Cost:** Payment will be based on the actual cost of labor, materials, and equipment rates. Estimated hours and rates should be included and final reimbursement will be based on an audit of actual costs.
- ii. **Unit Price:** Payment will be based on agreed unit prices and the actual number of units constructed. Agreed unit prices must be developed using quantities, man-hours, pay rates, material costs, and equipment rental rates.

b. Materials

When the LPA proposes to use previously purchased and stockpiled material, the value of the material should be the same as the price listed on the LPA's cost inventory. All material must comply with FHWA's general material requirements in 23 CFR Subpart D.

c. Work items

The LPA must include all work items in the LPA cost estimate (regardless of federal participation) so that a fair comparison can be made with the estimate of contract work.

d. LPA's total cost estimate

The LPA's total cost estimate must include an adjustment for the agency's overhead or indirect cost rates for labor, equipment, and materials. The agency's overhead or indirect costs rates must be developed in compliance with the Cost Principles for State, Local, and Indian Tribal Governments (2 CFR Part 225).

e. Reductions not allowed to LPA's total cost estimate

The total LPA cost estimate must not be reduced by: potential savings resulting from use of less than complete plans, potential savings from reduced quality assurance during construction, and anticipated savings from reduced construction management and documentation.

f. Assurances that the project will comply with all federal-aid requirements

The LPA must assure that it will comply with all applicable Title 23 requirements during construction such as the applicable sections of Form FHWA-1273, job site poster requirements, environmental commitments, etc.

The DLAE must sign to approve the submitted public interest finding (Exhibit 12-F).

Emergency Work

In an emergency situation competitive bidding may be waived on any of the federal-aid programs, and the work may be performed by either force account or negotiated contract. For projects that are exempt from FHWA oversight, the waiver must be approved by the DLAE. An emergency is a situation that requires emergency repair work, as provided under the [Emergency Relief Program](#) or when a major element or segment of a highway system has failed and the situation is such that competitive bidding is not possible or is impractical. Competitive bidding under such circumstance may not be possible or practical because immediate action is necessary to:

- Minimize the extent of the damage,
- Protect remaining facilities, or
- Restore essential travel.

As an example: The LPA has a bridge programmed for replacement using Highway Bridge Program (HBP) funds and has begun preliminary engineering on the bridge replacement project. A major storm causes damage to the bridge before the LPA completes the design of the bridge, such that repairing the bridge is not practical. At this point, the LPA can contact their DLAE to be granted a waiver (Authorization to Proceed), to begin negotiations with contractor(s) to replace the bridge using HBP funds and using the plans that have been completed to date.

It should be noted that this waiver to competitive bidding only applies to emergency repairs as defined above. Reconstruction work and permanent repairs that can be separated from emergency repairs are to be performed using the competitive bidding process.

12.5 Value Engineering Analysis

Federal Requirements

Federal requirements mandate that a Value Engineering Analysis (VA) be performed on (1) all federal-aid highway projects on the NHS with a total estimated project cost of \$50 million or more; (2) all federal-aid bridge projects on the NHS with an estimated total cost of \$40 million or more; (3) any major project (as defined in [23 U.S.C. 106\(h\)](#)), located on or off of the NHS, that utilizes federal-aid highway funding in any contract or phase comprising the major project; (4) any project where a VA has not been conducted and a change is made to the project's scope or design between the final design and the construction letting which results in an increase in the project's total cost exceeding the thresholds identified in (1), (2), or (3) of this section; and (5) any other project FHWA determines to be appropriate that utilizes federal-aid highway program funding. In addition to the federal requirements, local HBP projects require a VA for both NHS and non-NHS bridge projects with an estimated total cost of \$40 million or more. Design/Build projects are excluded. VA requirements are applicable to CMGC projects and are required to be completed. The approved recommendations must be incorporated into the project plans prior to requesting a construction price proposal from the CMGC contractor. The VA consists of a systematic process of review and analysis of the project during the concept and design phases, by a multi-disciplined team of persons not involved in the project. The LPA administering the project has been delegated the responsibility to ensure that VA is performed under Caltrans

delegation authority. For each project, the LPA must indicate in the appropriate checkbox on [Exhibit 12-D: PS&E Checklist](#) whether VA was performed.

Procedures

The multi-disciplined team can be qualified LPA staff, qualified personnel from the current design consultant contract, or qualified personnel from a certified VA consultant contractor. The most important factor is that the multi-disciplined team be qualified and not involved in the project in which they are performing the VA.

The multi-disciplined team performing VA must provide recommendations:

- To improve the value and quality of the project
- To provide the needed functions safely, reliably, and at the lowest overall cost
- To reduce the time to complete the project
- To combine or eliminate otherwise inefficient use of costly parts of the original proposed design for the project
- To completely redesign the project using different techniques, materials, or methods to accomplish the original purpose of the project

For bridge projects, the multi-disciplined team must also include bridge substructure requirements based on construction material and be evaluated as follows:

- On engineering and economic bases, taking into consideration acceptable designs for bridges.
- Using an analysis of life-cycle and duration of project construction. For VA studies of projects on the State Highway System, it is advisable to have Caltrans' participation on the VA team.

This process concludes with a value analysis report that contains the approved recommendations. A copy of this report must be submitted by the LPA to the DLAE who forwards it to the District Value Analysis Coordinator (DVAC) in Caltrans' Division of Design who is responsible for the project. The DVAC will submit this report to the Value Analysis Branch in headquarters, who will then include it in their annual report to FHWA. As a guide, [PDPM Chapter 19: Value Analysis](#) can be used. The DVAC may be consulted for applicable sections.

12.6 Plans

Plans must describe the location, design features, and construction requirements in sufficient detail to facilitate the construction, contract control, and estimation of construction costs for the project. The LPA may use the [Caltrans Plans Preparation Manual](#) as a guide for preparing contract plans.

Design Guidance

Guidance for the design of federal-aid highway projects is contained in [LAPM Chapter 11: Design Guidance](#).

Design Decisions

The Public Works Director, or the person to whom approval authority has been delegated, must sign approval for design decisions. The person with approval authority must be a registered Civil Engineer in the State of California. Additional information is provided in LAPM Chapter 11.

Plan Sheet and Specification Signatures

On LPA federal-aid projects, the title sheets of the plans and specifications must bear the signature and seal or stamp, the date of signing and sealing or stamping, and the expiration date of the licensed professional engineer in the State of California. If signed by the LPA consultant, the title sheets must also be signed by a full-time employee of the LPA who is responsible for the project. Additional LPA signatures on the title sheet are optional. Plans and specifications for projects advertised, awarded, and administered by the LPA do not include the State Engineer's signature, except as required for a state encroachment permit and/or cooperative agreement. The title sheets of the plans and specifications must also show the federal-aid project number.

Other plan sheets (including typical section sheets) must bear the signature of the professional engineer under whose direction the sheets were prepared. Signature of the sheets may be delegated to a California registered engineer retained by the LPA to prepare the plans.

Standard Plans

Current Caltrans Standard Plans must be used for locally-sponsored projects on the SHS.

The following Standard Plans are acceptable for use with local federal-aid projects off the SHS:

- The current edition of the [Caltrans Standard Plans](#)
- The current edition of the Standard Plans for Public Works Construction, developed and promulgated by the American Public Works Association - Southern California Chapter and the Associated General Contractors of California - Southern California Districts

In addition to the above, standard plans that are developed locally for non-federally funded projects may be used on local federal-aid projects. The local standard plans must be signed (with registration number) by the person who is registered in California in the professional field for the type of standard plan being signed. Details included in local standard plans used for projects on the NHS must meet statewide geometric standards.

Bridge construction details included in local standard plans must meet Caltrans' bridge design standards. When the LPA requests structure-review assistance from Caltrans, the Caltrans Standard Plans must be used, as appropriate, for the structure portion of the project.

Erosion Control Plans

Erosion control measures and practices must be taken to inhibit the dislodging and transporting of soil particles by water or wind, including actions that limit the area of exposed soil and minimize the time the soil is exposed. Emphasis must be placed on erosion control in the preparation of PS&E. All reasonable steps must be taken to ensure that highway project designs for the control of erosion and sedimentation and the protection of water quality comply with applicable standards and regulations of other agencies.

The [AASHTO Highway Drainage Guidelines](#) are to be followed on all construction projects. These guidelines are not intended to pre-empt any local requirements or State law if such requirements are more stringent. Federal-aid funds must not be used in erosion and sediment control actions made necessary because of contractor oversight, carelessness, or failure to implement sufficient control measures.

Work Zone Safety and Mobility

Local Public Agency Policy

23 CFR 630 Subpart J: Work Zone and Safety and Mobility requires the implementation of a policy by the LPA for systematic consideration and management of work zone impacts on all federal-aid transportation projects. This policy may take the form of processes, procedures, and guidance, and may vary based on the characteristics and expected work zone impacts of individual projects or classes of projects.

Each LPA may develop its own policy or may choose to pattern their policy after Caltrans' to provide a smooth and efficient flow of traffic, while retaining safety through the roadway work zone. For Caltrans' policy refer to [Deputy Directive-60: Transportation Management Plans](#). The LPA's policy can be as simple as providing a smooth and efficient flow of traffic, while retaining safety through the roadway work zone.

LPAs are encouraged to implement this policy for their nonfederal-aid projects as well. More information on Work Zone Safety and Mobility is provided at https://ops.fhwa.dot.gov/wz/resources/final_rule.htm. FHWA's Local and Rural Safety Program can be found at: https://safety.fhwa.dot.gov/local_rural/.

Significant Projects

As defined in 23 CFR 630.1010, a Significant Project is one that, alone or in combination with other concurrent projects nearby, is anticipated to cause sustained work zone impacts greater than what is considered tolerable by the traveling public, based on the agency's policy and/or engineering judgment. Work zone impacts as defined in 23 CFR 630.1004, refer to work zone-induced deviations from the normal range of transportation system safety and mobility. The extent of the work zone impacts may vary based on factors such as, road classifications, area type (urban, suburban, and rural), traffic and travel characteristics, type of work being performed, time of day/night, and complexity of the project. These impacts may extend beyond the physical location of the work zone. They may occur on the roadway on which the work is being performed, as well as other highway corridors, other modes of transportation and/or the regional transportation network.

If a project is expected to be significant, the Transportation Management Plan (TMP) for that project must also contain both Transportation Operations (TO) and Public Information (PI) components. Agencies are encouraged to consider TO and PI strategies for all projects. Identification of upcoming projects expected to be significant should be done as early as possible in the project delivery and development process.

Transportation Management Plan (TMP)

A TMP is required for all federal-aid construction projects. The TMP needs to include a Temporary Traffic Control (TTC) Plan that addresses traffic safety and control in the work zone. It consists of strategies to manage the work zone impacts of a project. The TMP scope, content, and degree of detail may vary based upon the LPA's work zone policy, and an understanding of

the expected work zone impacts of the project. For significant projects, the LPA must develop a TMP that consists of a TTC plan and addresses both TO and PI components.

The TMP may consist only of a TTC Plan for individual projects or classes of projects determined by the LPA to have less significant work zone impacts. If additional information is needed by the LPA, the DLAE may refer the LPA to the [Transportation Management Plan Guidelines](#) and may obtain additional information from the Caltrans headquarters TMP Coordinator in the Division of Traffic Operations.

Temporary Traffic Control (TTC) Plan

A TTC Plan describes the measures to be used to facilitate road users through a work zone, an incident area, or other event that temporarily disrupts normal road user flow. The TTC Plan has a vital role in providing continuity of reasonable, safe, and efficient road user flow and for highway workers' safety.

The TTC Plan must be consistent with the provisions under Part 6 of the [California Manual on Uniform Traffic Control Device \(CA MUTCD\)](#), and with the work zone hardware recommendations in Chapter 9 Traffic Barriers, Traffic Control Devices and Other Safety Features for Work Zone (2002 Edition) of the AASHTO Roadside Design Guide.

In developing and implementing the TTC Plan, the pre-existing roadside safety hardware must be maintained at an equivalent or better level than what existed, prior to project implementation. The scope of TTC Plan is determined by the project characteristics and the traffic safety and control requirements identified by the LPA for that project. The TTC Plan must be either referenced to specific TTC elements in the MUTCD or be designed specifically for the project.

Transportation Operations (TO)

The Transportation Operations (TO) must include the identification of strategies that will be used to mitigate impacts of the work zone in the operation and management of the transportation system. Typical TO strategies may include, but are not limited to, demand management, corridor/network management, safety management and enforcement, and work zone management. The scope of the TO component should be determined by the project characteristics and the transportation operations and safety strategies identified by the LPA.

Public Information (PI)

The Public Information (PI) must include communication/traveler strategies that seek to inform affected road users, general public, area residences and businesses, and appropriate public entities about the project, the expected work zone impacts, and the changing conditions on the project. The scope of the PI component must be determined by the project characteristic, public information, and outreach strategies identified by the LPA. Public information will be provided through methods suited for the project and may include, but not be limited to, information on the project characteristics, expected impacts, closure details, and commuter alternatives.

LPAs should develop and implement the TMP in sustained consultation with stakeholders (e.g., other transportation agencies, railroad agencies/operators, transit providers, freight movers, utility suppliers, police, fire, emergency medical services, schools, business communities, and regional transportation management centers).

The PS&E must include either a TMP or provisions for contractors to develop a TMP at the most appropriate project phase that will be applicable to the LPA's chosen contracting methodology for the project. A contractor-developed TMP must be subject to the approval of the LPA and must not be implemented before it is approved.

The PS&E must include appropriate pay item provisions for implementation of the TMP, either through method or performance-based specifications:

1. For method-based specifications individual pay items, lump sum payment, or a combination thereof may be used.
2. For performance-based specifications, applicable performance criteria and standards may be used (e.g., safety performance criteria such as number of crashes within the work zone; mobility performance criteria such as travel time through the work zone delay, queue length, and traffic volume; incident response and clearance criteria; work duration criteria).

The LPA and the contractor must each designate a trained person at the project level who has the primary responsibility and sufficient authority for implementing the TMP and other safety and mobility aspects of the project.

Work Zone Implementation and Improvement Procedures

Work Zone Assessment and Management Procedures

The LPA must develop and implement systematic procedures to assess work zone impacts in project development and manage safety mobility during project implementation. The scope of these procedures must be based on the project characteristics.

Work Zone Data

The LPA must use field observations, available work zone crash data, and operational information to manage work zone impacts for specific projects during the implementation. The LPA must continually pursue improvement of work zone safety and mobility by analyzing work zone crash and operational data from multiple projects to improve the processes and procedures. The LPA must maintain elements of the data and information resources that are necessary to support these activities.

Training

The LPA must require that personnel (either staff or contract personnel) involved in the development, design, implementation, operation, inspection, or enforcement of work zone-related transportation management and traffic control be trained appropriate to the job descriptions each individual is required to perform. The LPA must require periodic training updates that reflect changing industry practices and state processes and procedures.

Process Review

Process reviews may be performed to evaluate work zone data at the LPA level and/or review of randomly selected projects throughout the LPA's jurisdictions. Appropriate personnel who represent the project development stages and the different offices within Caltrans and FHWA may participate in this review. Other non-state stakeholders may also be included in this review, as appropriate. The results of the review are intended for the improvements in the work zone processes and procedures, data and information resources, and training programs to enhance efforts in addressing safety and mobility of both current and future projects.

Americans with Disabilities Act (ADA) Compliance Plans

Within the project limits, the plans (and specifications if applicable) must comply with the federal ADA and the California and Local Building Codes. 28 CFR 35: Nondiscrimination on the Basis

of Disability in State and Local Government Services or 28 CFR 36: Nondiscrimination on the Basis of Disability by Public Accommodations and in Commercial Facilities including Appendix A require each new or altered facility (includes roads and streets) or part of a facility constructed or altered by, on behalf of, or for the use of a public entity must be designed and constructed or altered in such manner that the facility or part of the facility is readily accessible to and usable by individuals with disabilities. Each altered facility must, to the maximum extent feasible, be altered in such manner that the altered portion of the facility is readily accessible to, and usable by individuals with disabilities. As mentioned in [LAPM Chapter 11: Design Guidance](#), Title II-6.6000 of the Department of Justice's Technical Assistance Manual, when streets, roads, or highways are newly built or altered, they must have ramps or sloped areas, wherever there are curbs, or other barriers to entry from a sidewalk, or path. Likewise, when new sidewalks or paths are built or are altered, they must contain curb ramps or sloped areas, wherever they intersect with streets, roads, or highways. The Curb Ramp Details included in the Caltrans Standard Plans fully comply with both the federal and state requirements for curb ramps. Alterations include items such as reconstruction, major rehabilitation, widening, resurfacing (e.g., structural overlays, mills, and fills), signal installation and upgrades, and projects of similar scale and effect.

Normal maintenance activities are not considered to be alterations. Resurfacing beyond normal maintenance is considered to be an alteration. Normal maintenance activities include actions that are intended to preserve the system, retard future deterioration, and maintain the functional condition of the roadway without increasing the structural capacity. These activities include, but are not limited to, thin surface treatments (non-structural), joint repair, pavement patching (filling potholes), shoulder repair, signing, striping, minor signal upgrades, and repairs to drainage systems.

12.7 Standard Specifications

The specifications for a construction contract include the requirements contained in the standard specifications and special provisions written specifically for a contract. The special provisions provide the technical contract requirements applicable to the specific project construction features as well as legal and administrative requirements peculiar to the project.

A list of federally required contract provisions, contractor certifications, as well as contract provisions requiring prior justification/approval for local federal-aid construction projects is included in [Exhibit 12-D: PS&E Checklist](#). A description of these contract provisions, requirements and their application is provided in [Exhibit 12-E: PS&E Checklist Instructions](#), [Exhibit 12-G: Required Federal-Aid Contract Language](#) and [Exhibit 12-H: Sample Bid](#).

Acceptable Standard Specifications and Special Provision

The LPA must use current Caltrans [Standard Specifications and Standard Special Provisions](#) (including revisions and updates) for locally-sponsored projects on the SHS.

Note: In this manual current Caltrans Standard Specifications is understood to mean the most currently available Caltrans Standard Specifications inclusive of all revisions, amendments, and updates.

The following standard specifications are acceptable for use on all local federal-aid projects off the SHS:

- Current Caltrans [Standard Specifications and applicable Standard Special Provisions](#)

- The current edition of the Standard Specifications for Public Works Construction (commonly referred to as the Green Book), developed and promulgated by the American Public Works Association, Southern California Chapter and the Associated General Contractors of California, Southern California Districts.

In addition to the above, standard specifications which are developed locally for non-federally funded projects may be used for local federal-aid projects that are off the NHS. However, the use of local standard specifications and standard special provisions are subject to the following conditions:

- In the event that any conflict arises between the local standard specifications and the local assistance procedures contained in this manual or elsewhere, the local assistance procedures must apply.
- Bridge construction methods and materials specifications included in local standard specifications must meet the bridge requirements of Caltrans Standard Specifications.

Caltrans Specifications

For projects off the SHS, [Exhibit 12-G: Required Federal-Aid Contract Language](#) has combined required federal contract provisions into a single document to assist LPAs. [Exhibit 12-H: Sample Bid](#) has assembled federal certifications, disclosures, and other requirements into a single document. For SHS projects, current Caltrans [Standard Specifications and Standard Special Provisions](#) and federal contract boilerplate (Form FHWA-1273 and other required federal contract provisions) are available from the Caltrans Office Engineer at: <http://ppmoe.dot.ca.gov/des/oe/>. For LPA projects to be advertised, awarded, and administered by Caltrans, Caltrans boilerplate specifications are inserted by Caltrans.

12.8 Federal Contract Requirements

Required Federal Contract Language

[Exhibit 12-G](#) is available to assist LPAs in complying with federal regulations on transportation construction projects. It specifies to the contractor the terms of the contract including, but not limited to, when the contractor is to start, number of working days, liquidated damages, payment, work operations, and items of work.

Disadvantaged Business Enterprise (DBE)

Individual DBE contract goals will be established. Complete evaluation documentation is required and must be retained for each contract (see DBE references in [LAPM Chapter 9: Civil Rights and Disadvantaged Business Enterprises](#)). For contracts that contain a specific DBE goal, Caltrans' Standard Specifications are required to describe the DBE policy, the DBE contract goal, eligibility criteria, good faith effort requirements, sanctions on failure to comply, procedures for counting DBE participation, award documentation procedures, post-award compliance procedures, and required records and reporting. [Exhibit 12-G](#) includes requirements for DBE subcontractor listing, Federal Lobbying Restrictions, DBE, and other requirements. All federal-aid projects are subject to the legislative and regulatory DBE requirements. The main objective is to ensure that DBE firms have an opportunity to participate in federally-funded projects. If a there is a DBE goal placed on the contract, the contractor must meet the goal or document a good faith effort to meet the contract goal by using DBEs (see [LAPM Chapter 9: Civil Rights and Disadvantaged Business Enterprises](#)). Good faith efforts must be documented

and verified (see [Exhibit 15-H: Proposer/Contractor Good Faith Effort](#)). If a DBE subcontractor is unable to perform, the contractor must make a good faith effort to replace him or her with another DBE subcontractor if the goal is not otherwise met. Contracts must contain special provisions stating that it is the LPA's policy to comply with 49 CFR 26 and specify the contractor's obligation under these regulations. In accordance with [LAPM Chapter 9](#), Section 9.6: Local Public Agency Responsibilities under Caltrans DBE Program Plan, each LPA is required to create and maintain a bidders list containing information about all DBE and non-DBE firms that bid or quote on the LPA's federal-aid construction contracts. The required bidders list is to include the name, address, DBE/non-DBE status, date established, and annual gross receipts of the firms. [Exhibit 12-B: Bidder's List of Subcontractors \(DBE and Non-DBE\)](#) provides a sample form that LPAs may choose to use in their solicitations to compile a bidders list. If an agency makes their own form, required information must be included to satisfy 49 CFR 26.11 and Section 4104 of the Public Contract Code of the State of California.

Contract Time

Contract time is defined as the maximum time allowed in the contract for completion of all work contained in the contract documents. This time can be established in the specifications by either a specific completion date or a fixed number of working days. Contract time often becomes an issue when the traveling public is inconvenienced without any apparent reason.

While there may be several reasons for a project to appear dormant, frequently the cause can be traced to excessive contract time or poor contractor scheduling.

The contract time must be specified in the bidding documents and must be monitored by the administering agency. Insufficient contract time can result in higher bid prices, increased time overruns and claims, inefficiencies, and safety problems. On the other hand, excess contract time can result in increased inefficiencies, equating to costs to both the LPA and contractor. In addition, delays and inconvenience to the public may be unnecessarily extended.

Caltrans will periodically perform a process review of LPA procedures for determining contract time to assess whether the resulting contract times are appropriate. There are several different techniques used to determine contract time. FHWA Technical Advisory 5080.15, Construction Contract Time Determination Procedures, describes time determination techniques for NHS projects in detail, and is available in the appendix of the FHWA Contract Administration Core Curriculum.

The LPA should strive for the shortest practical duration of traffic interruptions during highway construction. Alternative contracting methods including Incentive/Disincentive (I/D), lane rental, A+B contracts, or other contract provisions for early completion are available to minimize traffic inconvenience and delay. These provisions are available from Caltrans. Alternative contracting should be discussed with the DLAE prior to use. [FHWA Technical Advisory 5080.10: Incentive/Disincentive for Early Completion](#) describes this technique in detail.

Changed Condition Clauses

The regulation requires the use of three different clauses: Standardized changed condition clauses are required to be included in all contracts. Caltrans' Standard Specifications and the Standard Special Provisions for Public Works Construction (Green Book) contain standard changed condition clauses. If the LPA chooses to use a different standard specifications book, the federal regulations must still apply.

Differing Site Conditions

This clause provides for the adjustment of the contract terms if the contractor encounters:

- Subsurface or latent physical conditions that differ materially from those indicated in the contract, or
- Unknown physical conditions of an unusual nature that differ materially from those ordinarily encountered and generally recognized as inherent to the work

Suspensions of Work Ordered by the Engineer

This clause provides for the adjustment of the contract terms if the performance of all or a portion of the work is suspended or delayed by the resident engineer, in writing, for an unreasonable period of time (not originally anticipated, customary, or inherent to the construction industry). The contractor is required to submit a request for adjustment, in writing, to the resident engineer within seven (7) calendar days of receipt of the notice to resume work. Recovery of profit on costs resulting from suspensions of work is not allowed.

This clause does not preclude the recognition of constructive suspensions or delays resulting from the contracting agency's actions, without written notification. The LPAs may address constructive delays and suspensions, as they choose, in their standard specifications and contract administration procedures.

Suspensions must be for unreasonable delays and do not include brief, customary suspensions for reasons inherent to highway construction (i.e., material sampling and testing, approval of shop drawings, material sources, etc. and other reasonable and customary suspensions necessary for the supervision of construction by the contracting agency). In addition, an adjustment under this clause is not allowed if the work is suspended for other reasons or if an adjustment is provided for, or excluded, under other terms or conditions of the contract.

Material Changes in the Scope of the Work

This clause provides for the adjustment of the contract terms if the resident engineer orders, in writing, an alteration in the work or in the quantities that significantly change the character of work. The term significant change must be constructed to apply only to the following circumstances:

- The altered character of the work differs materially from that of the original contract, or
- A major item of work, as defined in the contract, is increased or decreased by more than 25 percent of the original contract quantity (adjustments must apply only to that portion in excess of 125 percent of original contract quantity, or in case of a decrease, to the actual quantity performed)

This clause provides for adjustments resulting from formal change orders by the resident engineer, in writing, to the extent that the impacted work is part of the contract. Both parties may initiate an adjustment, and both must be in agreement before the work is performed. As with the suspension of work provision, this clause does not preclude the recognition of constructive suspensions or delays.

Liquidated Damages

The term liquidated damages means the daily amount set forth in the contract to be deducted from the contract price to cover additional costs incurred by the LPA because of the contractor's failure to complete the contract work within the number of calendar days or workdays specified.

Federal law requires the provision for liquidated damages on all federal-aid projects on the NHS. For projects off the NHS, this provision is optional. Liquidated damages are based on the estimated cost of field construction engineering. In special cases, liquidated damages greater than the estimated field construction engineering cost may be specified provided that detailed reasons, such as project-related costs for delays and public inconvenience, are given to support the greater amount. The LPA may withhold liquidated damages before the accrual date if the anticipated liquidated damages exceed the value of the remaining work.

Liquidated damages are not to be used as disincentives or incentives to encourage timely completion. If project completion time is critical, then Incentive/Disincentive (I/D) provisions should be considered to motivate the contractor to complete the work sooner, and the I/D amount and time should be documented in the project file.

Liquidated damages for all work except plan establishment or permanent erosion control establishment are shown in the following table:

Table 12-1: Liquidated Damages

Total Bid		Liquidated damages per day
From over	To	
\$0	\$200,000	\$2,800
\$200,000	\$500,000	\$3,600
\$500,000	\$1,000,000	\$3,600
\$1,000,000	\$2,000,000	\$4,200
\$2,000,000	\$5,000,000	\$5,200
\$5,000,000	\$10,000,000	\$6,700
\$10,000,000	\$20,000,000	\$9,500
\$20,000,000	\$50,000,000	\$13,200
\$50,000,000	\$100,000,000	\$16,000
\$100,000,000	\$250,000,000	\$19,300

If all work except plant establishment or permanent erosion establishment is complete and the total number of working days have expired, liquidated damages are \$950 per day.

If the LPA uses an alternate method to determine liquidated damages for locally-funded projects, it may be used on federal-aid projects as long as it avoids excessive charges. If an alternate method is used, the LPA should have a calculation or justification for liquidated damage in the project files.

Buy America

FHWA's policy for Buy America requires a domestic manufacturing process for all steel and iron products, manufactured products, and construction materials that are permanently incorporated in a federal-aid funded project.

Manufactured products are those that contain steel or iron components that equate to 90 percent or more by weight of the product. Steel or iron products used within precast concrete products, such as reinforcing steel, wire mesh, and pre-stressing or post-tensioning strands, rods, or cables, must meet Buy America regardless of the percentage of use.

FHWA defines a construction material as an article, material, or supply that consists of only one of the following items: non-ferrous metals, plastic and polymer-based products (including polyvinylchloride and composite building materials), glass, fiber optic cable (including drop cable), optical fiber, lumber, engineered wood, or drywall. The manufacturing processes for all materials governed by Buy America requirements are outlined in accordance with 2 CFR 184.6. If one or more of these construction materials have been combined by a manufacturer with other materials through a manufacturing process, Buy America requirements do not apply unless otherwise specified.

Buy America provisions are also applicable to non-federal-aid funded projects, if:

- the non-federal-aid contract is included within the scope of the NEPA document, and
- at least one other contract within the scope of the same NEPA document is funded or will be funded with federal-aid funds. This includes any contract eligible for federal-aid assistance including but not limited to environmental, design, right-of-way, construction, etc.

When Buy America is applicable, the LPA must include Buy America provisions in their PS&E packages prior to advertising for bids and in its contracts. Awarding any such non-federal-aid highway contract, without applicable Buy America provisions would render all contracts within the scope of the NEPA document ineligible for federal-aid funds.

The Buy America provision also applies to all steel and iron components of a manufactured product with at least 90 percent or more by weight of the product(s). Iron and steel used in precast concrete manufactured products must meet the Buy America requirements regardless of the amount used. All manufacturing processes involved in steel or iron products must occur within the United States. These processes include rolling, extruding, machining, bending, grinding, drilling, coating, welding, and smelting. Domestically-produced steel billets or iron ingots shipped overseas for any process and returned to the United States do not conform to this requirement.

Buy America provisions do not apply to:

- Recycled steel
- Raw materials, scrap temporary steel items such as sheet piling, bridges, steel scaffolding, and false work
- Materials that remain in place at the contractor's convenience such as sheet piling and forms
- Pig iron and processed, pelletized, and reduced iron ore manufactured outside the United States

Buy America requirements apply to all steel and iron products, manufactured products, and construction materials supplied and permanently incorporated into a federal-aid project regardless of the funding source used to purchase the product and regardless of how the products were procured (i.e., agency furnished materials, materials added by change order, etc.). The LPA must not list non-domestic steel and iron products, or construction materials as nonparticipating in order to circumvent the Buy America requirements.

Typically, the need for Buy America waivers is identified during the early phases of the project. If the need for a waiver is identified during the design phase, the LPA must wait until the FHWA's Buy America waiver is approved before requesting PS&E approval. In the case of non-federally funded projects covered under the NEPA document, the LPA must wait for the FHWA's Buy America waiver approval to advertise the project for bids. If during construction, the LPA identifies the need for a Buy America waiver, the LPA must wait for FHWA's approval of the Buy America waiver to incorporate the material in the project. A request for a Buy America waiver does not guarantee FHWA's approval of the waiver request. The LPA must expeditiously contact their DLAE to discuss potential Buy America waivers.

The LPA may request a waiver of the Buy America requirement for specific projects, certain materials or products in specific geographical areas, or combinations of both if:

- Buy America is inconsistent with the public interest, or
- There is not a sufficient supply of domestic materials of satisfactory quality.

The LPA must submit their Buy America waiver request to the DLAE which will review the request and recommend to FHWA for further processing. The following supporting information must be provided by the LPA, but additional information may be requested during the waiver review period:

- Federal project number
- Project description
- Total construction project cost, including Federal, State, and Local share amounts
- Description of the waiver item(s)
- Cost of waiver item(s)
- Country of origin of the product(s) (if known at the time)
- Reasons for the waiver request
- A description of the efforts made by the LPA to locate domestically-manufactured product(s)
- An analysis of re-design of the project using alternate or approved equal domestic product
- LPA's documentation of good faith efforts to maximize the use of domestic iron and steel products in accordance with U.S. President Executive Order 14005 Section 1: Ensuring the Future is Made in All of America by All of America's Workers

In addition to the Buy America waiver, FHWA's Buy America policies allow the LPA to incorporate non-domestic steel or iron materials if any of the following methods is used:

- Minimal use of foreign steel and iron materials. If the cost of foreign steel and iron materials used does not exceed one-tenth of one percent (0.1 percent) of the total contract cost or \$2,500, whichever is greater. The total cost of iron and steel includes the cost of the material plus the cost of transportation to the project site, but does not include labor costs involved in final assembly.
- Alternate bid provisions. The LPA elects to include alternate bid provisions for both, foreign and domestic steel and iron materials. The contract provisions must require all bidders to submit a bid based on furnishing domestic steel and iron materials, and clearly state that the contract will be awarded to the bidder who submits the lowest total bid based on furnishing domestic steel and iron materials unless such total bid is more than 25 percent higher than the total bid based on foreign steel or iron products. The comparison must be between the total lowest bid using domestic steel and iron product and the total lowest bid using foreign steel and iron product.

The LPA must coordinate with their DLAE prior to using the alternate bid provisions; the DLAE will coordinate with FHWA.

Approval authority for waiver of Buy America requirements has not been delegated from the FHWA to Caltrans, and therefore, is not delegated to the LPAs. The LPA should plan for a Buy America waiver request to take at least one year; however, longer timeframes for review and approval should be considered. Additionally, LPAs should be particularly careful not to specify, in the design process, items that are not Buy America compliant. Information on the Buy America waiver process can be found at:

<http://www.fhwa.dot.gov/construction/contracts/waivers.cfm>.

After-the-fact discoveries of non-domestic materials incorporated in the project are not considered Buy America waivers. The LPA's failure to comply with Buy America provisions will result in the loss of federal funding for not only the applicable contract items, but likely all federal funding authorized for the construction phase of the project. In the event an after-the-fact discovery occurs, the LPA must expeditiously inform their DLAE, which will coordinate with FHWA to determine the appropriate resolution.

Form FHWA-1273

[Form FHWA-1273](#) is a package of federally-required contract provisions that must be physically included, unmodified, in the executed contract for all federal-aid projects. The provisions apply to all work performed on the contract including work performed by subcontract. The unmodified Form FHWA-1273 is required to be physically incorporated into each executed contract, subcontract, and subsequent lower-tier subcontracts. To be directly incorporated into the contract [means one of the following](#):

- [Form FHWA-1273 is inserted in the project's final contract agreement package signed by the LPA and the contractor and continuously numbered on all pages including Form FHWA-1273.](#)
- [Form FHWA-1273 is referenced and numbered in the table of contents of the contract, and attached as an appendix. The appendix and the project's final contract agreement package signed by the LPA and the contractor must be within the same document.](#)

[In the same manner, Form FHWA-1273 must be physically inserted into any subsequent subcontracts.](#)

FHWA does not consider simply placing, or stapling Form FHWA-1273 in the special provisions or standards specifications to be directly incorporated into the contract. Even if contract documents such as the contract special provisions or standard specifications are considered by the LPA as part of the contract, the LPA still must insert the Form FHWA-1273 into the contract by one of the two methods mentioned above.

Failure of the LPA to incorporate the Form FHWA-1273 in the executed contract makes the construction phase of the project ineligible for federal reimbursement. The prime contractor is responsible for compliance with the requirements by all subcontractors and lower tier subcontractors. Failure of the prime contractor to comply with this requirement is grounds for LPA termination of the contract with the contractor and debarment of the contractor by the FHWA.

Modifications of Form FHWA-1273 by Special Provision

Sections IV (Davis-Bacon and Related Act Provisions) and Section VI (Subletting or Assigning the Contract) of Form FHWA-1273 may not be applicable to some projects. If the project is exempted from either of these two provisions, it must be specified elsewhere in the contract by special provision that it does not apply.

Form FHWA-1273 includes significant changes to the applicability of Davis-Bacon and Related Acts which states that where applicable law requires that projects be treated as a project on a federal-aid highway, the provisions of this subpart will apply regardless of the location of the project.

Use of Local Hiring Preference

The Infrastructure Investment and Jobs Act (IIJA), commonly referred to as the Bipartisan Infrastructure Law (BIL) allows LPAs to implement geographic or economic hiring preference (including local hiring preferences) relating to the use of labor on federal-aid construction projects.

LPAs may now include local hiring preference specifications in federal-aid contracts. The LPA must ensure the establishment and implementation of a hiring preference complies with all federal, State, and local laws, policies, and procedures. FHWA review and approval is not required.

Local hiring preferences should not be confused with project labor agreements (PLAs). Local hiring preferences may be implemented through contract specifications, without the use of a PLA. While local hiring preferences may be added to a PLA, doing so will trigger FHWA review and approval. This will add up to four to six months to the process.

More information regarding use of local hiring preference can be found at:

<https://www.federalregister.gov/documents/2022/02/11/2022-02974/enhancing-highway-workforce-development-opportunities-contracting-initiative>.

Nondiscrimination

The provisions of this section related to 23 CFR 230 are applicable to federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR 230 are not applicable to material supply, engineering, or architectural service contracts. Please read the Form FHWA-1273 for complete details on Section II. Include Item 12, Female and Minority Goals of [Exhibit 12-G: Required Federal-aid Contract Language](#) in contract provisions. The contractor and each non-material subcontractor are required to report annually, on the composition of their workforce by race, gender, and job category who perform work

during the last payroll period of July, using Form PR-1391 Federal-aid Highway Construction Contractors Annual EEO Report to the LPA. The LPA must forward completed Form PR-1391's (see Exhibit 16-O) to the Caltrans District Local Assistance Engineer.

Federal Trainee Program

On selected federal-aid highway construction projects, Federal Trainee Program or On-the-Job Training (OJT) special provisions (Item 14 of Exhibit 12-G) must be included in the contract provisions to establish the number of trainees for the construction contract.

The main objectives of the Federal Trainee/OJT Program are to:

- Provide training for women and minorities which will upgrade their job skills, thereby increasing their access to higher paying trade jobs and journeyman-level positions and
- Ensure that a diverse work force will meet future labor needs in the construction industry.

Filling training positions on each project must focus on hiring women and minorities, but not exclude anyone. If a contractor cannot meet the OJT objectives, direct recruitment efforts must be documented to show an effort at OJT compliance.

The major components of an OJT program include:

- The LPA must include the required federal training special provisions in the PS&E package if the project size and duration warrant an OJT program.
- The LPA should select contracts that contribute to the Contract Training Goals. These contracts must show the number of trainees, the number of trainees upgraded to journeyman, and the level of skills.
- The LPA must review the training programs proposed by contractors. Approval or rejection is based on the legitimacy of the job-skill classifications proposed and the number of training hours specified.
- Caltrans must determine if statewide OJT is effective.
- The contractor is responsible for recruitment and selection of trainees.
- The contractor must evaluate training based on an approved training program.
- OJT provision costs are reimbursed by the FHWA in accordance with the Federal Requirement Training Special Provisions included in selected contracts. Required trainees/apprentices are to be funded on the bidding schedule or by change order at \$0.80/hour; or the training program can be a bid item with the same reimbursement ratio as the construction project. OJT support services include recruiting, counseling, remedial training, and an OJT program administration by others.
- If the contractor does not show a good faith effort to provide acceptable training to the trainees specified, a sanction may be applied. Sanctions may include withholding progress payments if effective on-the-job training is not provided.

In California, federal trainees are considered registered apprentices. There are relatively few crafts in highway work which utilize apprentices - bricklayers, carpenters, cement masons, electricians, equipment operators, ironworkers, pile bucks, and a few others. The ratio of journeymen to apprentices is generally 5 to 1.

With these thoughts in mind, the number of trainees established for a project should be determined by examining the extent of only that work which will be done by the apprentice-able crafts. The following procedure may be used as a guide for establishing the number of trainees for a federal-aid project:

1. If the proposed construction contract has less than 100 working days, no trainees and no Federal Trainee Program special provisions are needed.
2. If the proposed construction contract has 100 working days or more, add individual totals for each of the following work categories in the Engineer's Estimate:
 - Earthwork (except for imported borrow)
 - Pile driving
 - Portland Cement Concrete (except for precast concrete)
 - Masonry
 - Bar reinforcing and pre-stressing steel
 - Structural steel erection
 - Electrical
 - Buildings
3. Using the totals obtained above, determine the number of trainees for each work category from the following table:

Table 12-2: Federal Trainee Schedule

Cost for Work Category	Number of Trainees	Cost for Work Category	Number of Trainees
< 400,000	0	16,000,000	15
≥ 400,000	1	18,000,000	16
700,000	2	20,000,000	17
1,000,000	3	23,000,000	18
1,500,000	4	26,000,000	19
2,000,000	5	29,000,000	20
2,500,000	6	33,000,000	21
3,000,000	7	37,000,000	22
4,000,000	8	41,000,000	23
5,000,000	9	45,000,000	24
6,500,000	10	50,000,000	25
8,000,000	11	> 50,000,000	*
10,000,000	12		
12,000,000	13		
14,000,000	14		

* 25, plus 1 additional trainee for every \$5,000,000 over \$50,000,000

4. If the totals for each of the work categories listed under Step 2 above are all less than \$400,000 then no trainees and no Federal Trainee Program special provisions are needed.
5. For any work category equal to or greater than \$400,000, total the trainees obtained for the applicable work categories and include the Federal Trainee Program special provisions. Calculate the contract cost using \$800 per trainee and include Federal Trainee Program under Trainees of the Engineer's Estimate.

Federal Wage Rate Determinations (29 CFR 1.6)

The payment of federal prevailing wage rates on federal-aid contracts is derived from the Davis-Bacon Act of 1931 and is prescribed by 23 U.S.C.113. The federal prevailing wage rates must be physically inserted [into the contract](#) or referenced by [the applicable Wage Determination \(WD\) # website address](#) in the project special provisions [during advertisement](#).

The federal prevailing wage rates are available directly from the U.S. Government website at <https://sam.gov/content/wage-determinations>.

See [Chapter 15.3: Project Advertisement for conformance with 29 CFR 1.6](#).

Relations with Railroad

Where construction of a federal-aid project requires use of railroad properties or adjustments to railroad facilities, there must be an agreement in writing between the LPA and the railroad company.

FHWA approval of railroad agreements is required for nonexempt projects. A copy of the conformed agreement must be transmitted through the DLAE for FHWA review.

The pertinent portions of this agreement applicable to any protective services required during performance of the work must be included in the project specifications and special provisions for any construction contract. Caltrans uses standard special provisions for this section on Caltrans projects.

Sample Bid

[Exhibit 12-H: Sample Bid](#) is available to assist the LPA and the bidder. In addition to the name, address, etc., it contains the Engineer's Estimate, list of subcontractors (including license numbers), EEO certification, Public Contract Code requirements, Non-collusion Affidavit, Debarment and Suspension Certification, Non-lobbying Certification, Bidders Bond, Payment Bond, Performance Bond, Local Public Agency DBE information, Federal Wage Rates, and Disclosure of Lobbying Activities.

Certifications/Disclosures

Non-collusion – On all federal-aid construction projects, a non-collusion certification protects the integrity of the federal-aid highway program and serves as a tool in prosecuting construction contract bid rigging cases. A non-collusion certification is required from all bidders as part of the bid proposal package (see [Exhibit 12-H](#)). Failure to submit the certification will render the bid ineligible for award. Equal Employment Opportunity – Federal-aid Highway Act of 1968 (23 U.S.C.140(a)) and implementing regulations at 23 CFR 230, require that the LPA receiving federal financial assistance assure that employment in connection with federal highway construction projects is provided without regard to race, color, creed, national origin, or sex. Refer to [LAPM Chapter 9: Civil Rights & Disadvantage Business Enterprise](#), Section 9.4: Equal

Employment Opportunity (EEO) Contractor Compliance, Form FHWA-1273, and [Exhibit 12-H](#) for further guidance.

Debarment, Suspension and Ineligibility Certification – On all federal-aid construction contracts and all related subcontracts of \$25,000 or more, the contractor and lower tier participants must certify they are in compliance with this provision. This includes subcontractors, material suppliers, and vendors.

Each participant in the contract must certify that it is not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any federal agency and they have not been convicted or had civil judgment rendered within the past 3 (three) years for certain types of offenses (see Part X of Form FHWA-1273 in Exhibit 12-G and Exhibit 12-H). It is the administering agency's responsibility to assure that the contractor is not suspended or debarred from federal contracts. A listing of parties excluded from federal procurement and non-procurement programs is at www.sam.gov.

Lobbying – The language of Standard Form-LLL, Disclosure Form to Rep Lobbying, in accordance with the form instructions certification must be included in all lower tier sub-agreements which exceed \$100,000 (see [Exhibit 12-H: Sample Bid](#) and Part XI of Form FHWA-1273 in [Exhibit 12-G: Required Federal-aid Contract Language](#)).

12.9 Restricted Contract Provisions

Indian Preference

Federal law permits an Indian employment preference provision for federal-aid projects on or near Indian reservations or Indian lands. Roads near an Indian reservation are those within a reasonable commute to and from the reservation. Indian preference must be applied without regard to tribal affiliation or place of enrollment.

In setting employment goals, consideration should be given to the potential employment requirements of the contractor and core-crew. A contractor must not layoff or terminate a core-crew employee to meet a preference goal. Any sanctions for failure to meet employment goals should be included as part of the contract.

Many tribes have a Tribal Employment Rights Office (TERO) tax, which applies to contracts performed within the reservation boundaries. FHWA will reimburse any local tax as long as it does not single out federal-aid highway construction contracts. TEROs can bill contractors for services rendered during recruitment and related support services. These fees are not eligible for federal participation. If part of a project is not within the reservation boundaries, the TERO tax must not apply to that portion. On and Off reservation portions of the project should be clearly indicated in order to avoid over-payment.

Bonding and Prequalification

Bonding is grouped into three classifications which are:

- Bid bonds – Consisting of a bond, certified check, or negotiable instrument submitted with the bid as assurance that the bidder will execute the contract within the specified time.
- Performance bonds – Executed with the contract to assure the contractor's obligations under the contract.

- Payment bonds – Executed in connection with a contract to assure payment, as required by law, to all persons supplying labor and material in the contract.

Prequalification is defined as a means of predetermining job experience and work capacity and is used to identify individuals and organizations from which the LPA may accept a bid.

The procedures and requirements a State Transportation Department proposes to use for qualifying and licensing contractors, who may bid for, be awarded, or perform federal-aid highway contracts, must be submitted to the Division Administrator for advance approval. Only those approved procedures and requirements may be used for federal-aid highway projects. Any changes in approved procedures and requirements must likewise be subject to approval by the Division Administrator.

FHWA does not require implementation of procedures or requirements for prequalification, bonding, or licensing on federal-aid projects.

However, if the LPA has such procedures or requirements, they must conform to FHWA's competitive bidding policy as follows:

- No procedures or requirements for bonding, insurance, prequalification, qualification, or licensing of contractors must be used which may operate to restrict competition, prevent submission of a bid by or prohibit consideration of a bid submitted by any responsible contractor, whether a resident or nonresident of the State wherein the work is to be performed.
- No contractor must be required to obtain a license before the submission of a bid or before the bid may be considered for award of a contract.

Price Adjustment Clauses

On all federal-aid construction projects, price adjustment clauses may be implemented under the following conditions:

- Material costs are extremely volatile
- Suppliers are unable to provide a price quote for the full term of the contract
- Price quotes are subject to delivery or market conditions
- Shortages are expected

These provisions should be limited to materials whose price volatility may produce a large effect on contract prices. The standard adjustment(s) should be quantifiable and set out in the contract specifications. The standard adjustment(s) should be based on a price or base index, which is not susceptible to manipulation by contractors or suppliers, such as the consumer price index. Published price data may be found in the Bureau of Labor Statistics: Producer Price Indexes, Engineering News Record (weekly) or various oil-related publications with price data for oil-related products.

Some concepts for developing price adjustment clauses include:

- Price adjustment does not need to be a standard specification unless shown in the bid-proposal.
- There should be upper and lower limits on adjusted compensation.

- Both upward and downward adjustments should be calculated.
- Only a significant change in the index should trigger a price adjustment.
- Basis of payment should clearly indicate coverage of the price adjustment clause.
- Contractor should not have an option to accept or reject price adjustment compensation and the compensation should be automatically incorporated in the progress and partial payment computations.
- Compensation should not be based on actual invoiced receipts.
- Upward price adjustments should not be allowed after the contract time has expired.

When local conditions warrant the use of price adjustment clauses, the following should be considered:

- Use for projects which will exceed nine months duration from bid opening to completion.
- On single season contracts, provide price adjustment clauses for all price volatile materials which affect the unit costs of the major items of work.
- On multiple season contracts, provide price adjustment clauses for all price volatile materials and supplies.

When fuel prices are volatile, a price adjustment clause may be needed. This may occur on projects that are fuel intensive such as excavation, embankment, aggregate hauling, and paving.

Project Labor Agreements

On February 6, 2009, President Obama issued Executive Order 13502 (the Order) on the use of a Project Labor Agreement (PLA) for federal-aid construction contracts. The Order revoked two Executive Orders issued under President Bush, which required any executive agency issuing grants, providing financial assistance, or entering into cooperative agreements for construction projects to ensure that no project specifications were used that either required or prohibited bidders from utilizing PLAs. The Federal government now believes that PLAs could be beneficial for large-scale construction projects, generally those with a total cost of \$25 million or more, due to the benefits that PLAs can offer by promoting the efficient and expeditious completion of such projects. LPAs may request the use of PLAs on projects totaling less than \$25 million if the project would otherwise comply with this guidance. FHWA has issued this interim guidance for use until final implementing guidance is released by the Office of Management and Budget. Pursuant to the Executive Order, PLAs may be used on federal-aid construction project contracts by local public agencies provided that the agency presents evidence that the use of such an agreement on the relevant project will:

1. Advance the government's interest in reducing construction costs and achieving economy and efficiency, producing labor-management stability, and ensuring compliance with laws and regulations governing safety and health, equal employment opportunity, labor and employment standards, and other matters as appropriate; and
2. Be consistent with law.

If an agency would like to use a PLA on a federal-aid construction contract, the agency should submit a request for approval to their DLAE that includes the draft PLA and written justification

describing why the project advances the interest of the government. The draft PLA must be submitted, and approval received at least five months before construction begins. The use of a PLA may be approved if the LPA has made a reasonable showing that the use of a PLA on the project will advance the interests of the government. In determining whether the use of a PLA is in the interest of the government, the LPA may consider many factors.

Those factors include, but are not limited to:

- The size and complexity of the project;
- The importance of the project and need to adhere to a certain timeline;
- The risk of labor unrest on the project and the circumstances that are present that may lead to a heightened risk of labor disruption, such as the history of labor unrest in the area, the anticipated working conditions of the project relating to the environment or work schedules, and the expiration of one or more collective bargaining agreements that could lead to jurisdictional disputes;
- The impacts of a labor disruption to the users, the operation of the facility, and the region;
- The costs of a delay should a labor disruption occur; and
- The available labor pool relative to the particular skills required to complete the project.

A showing of any one or more of these factors may be adequate to justify the use of a PLA in a particular project. This list is not exclusive - other factors may reasonably permit the LPA to conclude that the use of PLA is appropriate for a given project.

In order to be valid, the draft PLA must:

- Bind all contractors and subcontractors on the construction project through the inclusion of appropriate specifications in all relevant solicitation provisions and contract documents;
- Allow all contractors and subcontractors to compete for contracts and subcontracts without regard to whether they are otherwise parties to collective bargaining agreements;
- Contain guarantees against strikes, lockouts, and similar job disruptions;
- Set forth effective, prompt, and mutually-binding procedures for resolving labor disputes arising during the PLA;
- Provide other mechanisms for labor-management cooperation on matters of mutual concern, including productivity, quality of work, safety, and health; and
- Fully conform to all statutes, regulations, and executive orders.

Upon receipt of the request for approval, the draft PLA and the written justification, the request will be reviewed, using the established criteria, by Caltrans and then forwarded to FHWA for their review and approval. Executive Order 13502 is available at:

<https://obamawhitehouse.archives.gov/realitycheck/the-press-office/executive-order-use-project-labor-agreements-federal-construction-projects>.

12.10 Optional Contract Provisions

Additive or Deductive Bid Items

LPAs may use additive or deductive bid items on federal-aid projects provided they use one of the following methods, with one exception, specified in California Public Contract Code, Section 20103.8. That one exception is the method described in subparagraph 20103.8(d) which cannot be used on federal-aid projects because it does not provide for a public opening of bids with full disclosure nor a predetermined method of identifying the lowest bidder.

20103.8. A local agency may require a bid for a public works contract to include prices for items that may be added to, or deducted from, the scope of work in the contract for which the bid is being submitted. Whenever additive or deductive items are included in a bid, the bid solicitation shall specify which one of the following methods will be used to determine the lowest bid. In the absence of a specification, only the method provided by subdivision (a) will be used:

- a. The lowest bid shall be the lowest bid price on the base contract without consideration of the prices on the additive or deductive items.
- b. The lowest bid shall be the lowest total of the bid prices on the base contract and those additive or deductive items that were specifically identified in the bid solicitation as being used for the purpose of determining the lowest bid price.
- c. The lowest bid shall be the lowest total of the bid prices on the base contract and those additive or deductive items that when taken in order from a specifically identified list of those items in the solicitation, and added to, or subtracted from, the base contract, are less than, or equal to, a funding amount publicly disclosed by the local agency before the first bid is opened.
- d. Deleted as it is not to be used. A responsible bidder who submitted the lowest bid before the first bid is opened as determined by this section shall be awarded the contract, if it is awarded. This section does not preclude the local agency from adding to or deducting from the contract any of the additive or deductive items after the lowest responsible bidder has been determined.
- e. Nothing in this section shall preclude the prequalification of subcontractors.

Alternate Bids

Alternate bidding is a method used to minimize the overall cost of any federal-aid projects through increased competition. By considering alternate design schemes and construction methods, it is possible to attract the greatest number of bidders and realize the lowest possible bid prices. Alternate bidding procedures should be used when more than one alternate is judged equal over the design period and there is a reasonable possibility that the least costly design approach will depend on the competitive circumstances. The potential for using alternates will normally be developed through design studies and value engineering analysis during project development. Moreover, there may be standard plan alternates developed for repetitive design items (i.e., drainage items, bridge structures, sound walls, and pavement details, etc.). The bidding documents and contract plans should clearly indicate the design criteria and the type of alternate designs or contractor options that will be acceptable. The contractor should be permitted to bid any designated alternate that is consistent with its expertise and equipment.

Incentive/Disincentive (I/D) Provisions

FHWA's long-standing policy prohibiting bonus payments on federal-aid projects, as formerly stated in 23 CFR 635.118, was rescinded on June 13, 1984. The decision was based on the findings of National Experimental and Evaluation Program (NEEP) 24. The NEEP-24 demonstrated that the use of early completion incentive payments could be used beneficially and without abuses.

A discussion of factors to consider when selecting and developing I/D projects is available in FHWA's Contract Administration Core Curriculum at:

<https://www.fhwa.dot.gov/programadmin/contracts/coretoc.cfm>.

Conceptual guidelines have also been developed to be used for project selection criteria and can be found in the Caltrans memorandum Delegation of Authority for Use of A+B Bidding and Incentive/Disincentive (I/D) Provisions at: <https://dot.ca.gov/programs/design/design-memoranda>.

A clear distinction should be made between the intent of I/D provisions and the purpose of liquidated damages. Although they have similar mechanisms, the function of each is different. The primary function of liquidated damages is to recover costs associated with the contractor's failure to complete the project on time. On the other hand, I/D provision is intended to motivate the contractor to complete the work on or ahead of schedule without jeopardizing quality of work. An I/D provision for early completion is defined as a contract provision, which compensates the contractor for each day that identified critical work is completed ahead of schedule and assesses a deduction for each day that completion of the critical work is delayed. The use of I/D provisions is primarily intended for critical projects where it is essential that traffic inconvenience and delays be held to a minimum. It must be emphasized that I/D provisions should not be used routinely.

Quality – Price Adjustment Clauses

Price adjustment clauses and schedules are an important and effective component of quality assurance specifications. Quality Assurance specifications generally include statistically based acceptance plans, require contractor process control testing, and have provisions for pay adjustments based on the degree of compliance with specified requirements. Incentives and disincentives should rationally relate to the gain or loss in service life or performance of the product. Quality assurance specifications and programs may lead to better contractor control of the quality of the product; however, they do not diminish the need for effective construction inspection. FHWA has traditionally endorsed the use of incentive provisions up to five percent of the unit bid price for improved quality provided they are based on readily measured physical properties that reflect improved performance. Incentives greater than five percent on NHS projects are considered on a case-by-case basis following an analysis of performance data.

For non-NHS projects, consideration for incentives greater than 5 (five) percent is delegated to the LPA. A detailed discussion of the criteria (such as: typical critical physical properties, acceptance plans, and pay schedules) to consider when developing price adjustment provisions are provided in FHWA's Contract Administration Core Curriculum.

Alternative Contracting Practices

Neither FHWA nor Caltrans have any intention of mandating the use of any of the alternative contracting practices cited below on LPAs. However, FHWA is trying to develop a process nationwide through which states that LPAs and the industry can bring forth alternative

contracting practices that they believe could result in worthwhile improvements to our traditional ways of doing business. It is FHWA's intent to try all promising concepts proposed that fall within the flexibility of the federal-aid program requirements

A discussion on the Cost-Plus-Time Bidding (A+B method), Lane Rental, Design/Build Alternative, and Warranty contracting techniques is provided in FHWA's [Contract Administration Core Curriculum](#). Conceptual guidelines have also been developed to be used for project selection criteria and can be found in the Caltrans memorandum Delegation of Authority for Use of A+B Bidding and Incentive/Disincentive (I/D) Provisions at: <https://dot.ca.gov/programs/design/design-memoranda>.

12.11 Materials and Equipment

Publicly-Owned Equipment

On all federal-aid construction projects, publicly-owned equipment should not normally compete with privately-owned equipment on a project going out for bid. The LPA may approve the use of publicly-owned equipment when justified by a Cost-Effectiveness Determination (see [Exhibit 12-F: Cost-Effectiveness/Public Interest Finding/A&E Noncompetitive](#)).

Federal participation is permitted provided:

- The PS&E submittal provides for the proposed use;
- The specifications indicate equipment availability, rates, and delivery point;
- The specifications include the provision that the contractor must have the option of providing or renting all or part of the equipment.

Public agencies must not benefit from the rental of its own equipment and rental rates must be competitive. The rates for work performed by force account work should be based on an agreed unit price or actual cost. The equipment need not be included in the estimate; however, the estimate should include a schedule of rates charged for use of publicly-owned equipment.

Contractor Purchases for Local Ownership

On all federal-aid construction projects, equipment purchased by the LPA or by a contractor with ownership transferred to the LPA for construction engineering (CE) is not totally eligible for federal participation. Only that portion of the amortized equipment cost (over its useful life) attributable to the time the equipment is used on a federal-aid project is accounted for as CE and eligible. Equipment is defined as tangible, nonexpendable, personal property having a useful life of more than one year and an acquisition cost of \$5,000 or more per unit.

Convict-Produced Materials

Materials produced by convict labor after July 1, 1991 may be used on any federal-aid projects if:

- Such materials have been produced by convicts on parole, supervised release, or probation from prison;
- Such material has been produced in a qualified prison facility and the amount produced during any 12-month period does not exceed the amount produced during the 12-month period ending July 1, 1987.

These materials are not given preferential treatment and are subject to the same requirements as materials from other sources. The contractor furnishes all materials through normal contracting procedures and selects either public or private sources of materials. Prison Industries may not bid directly on projects but may serve as a material supplier to contractors.

Local Preferences

On all federal-aid construction projects, materials produced within the state or local area must not be favored over comparable materials produced outside of the state or local area. Also, in-state material sources cannot be given preference over foreign materials or actions taken against materials of foreign origin unless permitted by federal law (for example Buy America materials). State or local preference provisions are not allowed on federal-aid project contracts.

Warranty Clauses

For projects off the NHS, LPAs may include warranty provisions in construction contracts in accordance with procedures they have developed for their nonfederal projects.

For projects on the NHS, LPAs may include warranty provisions in construction contracts in accordance with the following conditions:

- Warranty provisions must be for a specific construction product or feature. Items of maintenance not eligible for federal participation must not be covered.
- No warranty requirements must be approved which may place an undue obligation on the contractor for items over which the contractor has no control.

The LPA must provide documentation of these conditions in the project files. LPAs are advised that items of maintenance are not eligible for federal participation. Including maintenance items will result in the items being considered non-participating and requiring pay back of the federal funds involved.

Proprietary Items

For the purpose of providing greater flexibility and encouraging innovation in the development of highway transportation technology and methods, the use of federal funds for patented or proprietary materials, specifications, or processes is allowed. Therefore, federal fund participation is not restricted when LPAs specify a trade name in federal-aid contracts. In addition, federal-aid participation is not restricted when the LPA specifies patented or proprietary materials in design-build (DB) Request-for-Proposal (RFP) documents.

This Federal regulation does not, however, affect State requirements for the use of patented or proprietary products. For State requirements on the use of patented or proprietary products, California Public Contract Code 3400 still applies.

Equipment Rental Rates

Federal policy requires that actual costs be used to determine extra work payments; however, actual equipment costs are not readily available. Therefore, FHWA permits the LPAs to specify in their construction contract specifications the use of predetermined rate guides as well as equipment rate schedules developed by the LPA which are in conformance with the federal cost principles and FHWA's policy contained in the Contract Administration Core Curriculum, published by FHWA. Caltrans' Equipment Rental Rates are in conformance with these requirements.

12.12 Estimates

The estimate used to authorize the construction phase of a federal-aid project must reflect the anticipated cost of the project in sufficient detail to provide an initial prediction of the financial obligations to be incurred by the LPA and FHWA and to permit an effective review and comparison of the bids received. Initially, a preliminary estimate is prepared by the LPA, which includes the basic items that a contractor will be asked to bid. This is a confidential document, which represents the LPA's best estimate of a fair and reasonable price for the items or work to be performed. As such, the Engineer's Estimate should not be made available to contractors and the general public prior to opening bids. This estimate must be prepared in a format, which describes the item of work, unit amount, quantity, unit price, amount, a subtotal, contingencies, and a total ([LAPM 3-A: Project Authorization/Adjustment Request](#)). Other estimates must also be prepared, if appropriate, for LPA furnished materials, supplemental work, construction engineering, the Federal Trainee Program, and force account (day labor) work performed by the LPA. Also, for Highway Bridge Program projects, the quantities and costs for each structure or bridge must be tracked individually, even if there are multiple structures or bridges in the same project or contract. Furthermore, any items of work, which are ineligible for federal participation in a category, must be segregated from the eligible items of work. These estimates are used to prepare the Finance Letter and the Request for Authorization for Construction. After bids are opened and the project has been awarded, a Detail Estimate is prepared by the LPA, which upgrades the preliminary estimate by using actual bid amounts rather than estimates. For more information on detail estimates, refer to [LAPM Chapter 15: Advertise and Award Project](#).

Nonparticipating Work

On all federal-aid construction projects, work which is not within the limits of the project must be segregated under a category called Not Part of Federal Project for purposes of the preliminary and detail estimates (work funded by others is most generally nonparticipating).

Work within the federal-aid project limits, but ineligible for federal funding, is referred to as nonparticipating work. Items considered nonparticipating work include but are not limited to the following:

- Betterment work such as capital outlay, safety improvements, or operational improvements that goes beyond restoring a site to its original condition or to the current standard (for emergency relief work)
- Right-of-way obligations when right of way is nonparticipating
- Maintenance-related activities
- Spare parts not incorporated in the work
- Bid items ineligible for the federal program funding the project

Except as permitted by 23 CFR 630.106(f)(2), when a cost or item of work is identified as nonparticipating at the time the authorization (E-76) is executed it must remain that way for the life of the project.

A full list of nonparticipating work can be found at: <https://dot.ca.gov/-/media/dot-media/programs/construction/documents/contract-administration/change-order-information/fhwa-nonpart-cost-items-a11y.pdf>.

These nonparticipating cost items must also be identified and segregated for the purposes of the preliminary and detail estimates. Quantities for each structure must be shown separately with an appropriate structure code. Miscellaneous work, such as utility adjustments by a utility company, must also be separate.

Contract Items

In order to determine which contract items should be included in the preliminary estimate, the work is broken down into the basic types of construction, such as excavation, concrete, and steel.

Each type and each classification of a type of construction comprises one bid item. Each contract item must be measured accurately. When practical, work performed by a different subcontractor should also be segregated into separate contract items. The list of contract items should be analyzed to be sure that all phases of the work are included in the estimate. Care should also be taken to ensure that there is no overlap of contract items, which could result in a duplication of payments. The [Coded Contract Item List](#) published by Caltrans may be used by the LPA with or without the item code number. The contract item list should be used if the LPA is using Caltrans Standard Specifications as the item descriptions are matched with the specifications.

Local Public Agency Furnished Materials

Federal regulations require that the contractor must furnish all materials to be incorporated in the work. Exceptions to this requirement may be made when a public interest finding (PIF) is approved for the LPA to furnish materials (23 CFR 635.407). LPA Furnished Materials are a part of the total cost of the project and should be subtotaled and included in the total project cost. All LPA Furnished Materials are subject to Buy America requirements.

To be eligible for federal participation, any material (other than local natural material) purchased by the LPA and furnished to the contractor for mandatory use in the project must be acquired on the basis of competitive bidding, except when there is a finding of public interest that justifies the use of another method of acquisition (23 CFR 635.407). PIFs are to be approved by the LPA and submitted to the DLAE for review. The unit cost eligible for federal participation is limited to the unit cost of such material to the LPA.

Supplemental Work

Supplemental work is work that is anticipated and required but cannot be described and quantified for delivery on a unit-price or lump sum basis.

Such work must be included in the project estimates and should follow the Subtotal Contract Items. Supplemental work should include extra work, additional work, traffic control (if required) or other work to be performed by the contractor and charged to the contract work order. Supplemental work can be listed and included in the total project cost, as a separate line item, or included in the contingencies section of the preliminary estimate. Supplemental work must be included in the contingencies of the Detail Estimate (see [Exhibit 15-M: Detail Estimate](#)).

For additional information on the use of supplemental work as an item of work, refer to the [Construction Contract Development Guide](#) (Section 7: Preparing the Project Cost Estimate).

Contingencies

Estimates may include contingencies, including supplemental work, of five to ten percent of the total estimate. Contingency amounts should be adjusted to give the total contract a round number. If there is a large amount of supplemental work, ten percent may be exceeded, but contingencies should always be at least five percent.

Construction Engineering

FHWA defines construction engineering as the supervision and inspection of construction activities; additional staking functions considered necessary for effective control of the construction operations; testing materials incorporated into construction; checking shop drawings; and measurements needed for the preparation of pay estimates. Construction engineering costs should be shown on the Estimate if federal reimbursement is desired.

Historically, federal participation in construction engineering (CE) was limited to fifteen percent of the federal participating construction costs. Current federal statutes no longer contain such a limitation. As a general guide, it is highly recommended that LPAs continue to use 15% as a guide for estimating CE costs and maintain justification for higher CE costs. CE costs in excess of 15% will continue to need justification by LPAs and approval by the DLAEs. Projects funded from federal programs under direct Caltrans management (i.e., those programs for which Caltrans selects and programs the project) will need approval by the appropriate program manager.

Federal Trainee Program

Estimates for federal-aid projects may include an estimated amount for the Federal Trainee Program. It is up to the LPA to establish the number of trainees for each project. For additional information on the Federal Trainee Program refer to [Section 12.8: Federal Contract Requirements](#) of this chapter.

Estimates for Force Account (Day Labor)

If force account work (day labor) is to be included in the project, it must be listed in the estimate as a separate item. Such work must be justified and documented by a Cost-Effectiveness Determination as described in [Section 12.4: Method of Construction](#) of this chapter (also see [Exhibit 12-F: Cost-Effectiveness/Public Interest Finding/A&E Noncompetitive](#)).

Optional Bridge Review

When a bridge or major structure is involved, the LPA may request a cursory review of the structural designs by Caltrans Division of Engineering Services (DES), Structures Local Assistance. Caltrans review and comments will be advisory only. If requested, Caltrans' decision to review structural plans will be based on:

- Experience of LPA staff
- Complexity of project, type of structure

If the LPA requests a cursory review, they must submit independently checked plans to the DLAE. The DLAE will forward the plans to Caltrans DES, Structures Local Assistance. The checker's signature or initials must appear on each sheet of the structure plans. Unsigned plans will be returned to the LPA. The project special provisions, estimates, and engineering reports (Hydraulics Report and Geotechnical Report) must have the engineer's stamp, signature, and

registration number on the title sheet. Plans submitted without the required documents will be returned to the LPA. Submittals must be electronically-printed PDFs and cannot be scanned copies.

For major federal-aid construction projects on the NHS, involving a bridge or major structure, the bridge review must be in accordance with PS&E procedures described in [Section 12.2: PS&E Procedures for Significant NHS Projects](#) of this chapter.

When transmitting the project documents to the DLAE for review, the LPA must identify the following:

- Agency advertising the project
- Estimated advertising date
- Type of funding
- Expenditure authorization number on state-advertised projects

12.13 Review and Submittal of the PS&E Package

Responsible Charge Certification

[LAPM 3-A: Project Authorization/Adjustment Request](#) must be signed by the engineer responsible for the project (who must be either an LPA employee or a consultant retained by the LPA and a professional civil engineer registered to practice in California).

In the certification, the LPA certifies that the PS&E has been prepared in accordance with the LAPM and that any necessary design decisions have been approved by the Public Works Director or his/her designee. The certification must also acknowledge that review of PS&E will not be performed by Caltrans. By this certification, the LPA accepts responsibility for compliance with applicable design standards, Title 23 of the United States Code, and other applicable federal requirements (DBE, EEO, Buy America, federal and state wage rates, license requirements, etc.). Failure to comply with any of these requirements may cause withdrawal of funds.

PS&E Checklist

LPAs will complete [Exhibit 12-D: PS&E Checklist](#) which has been developed to address the flexibility allowed under federal regulations and still ensure that the minimum required provisions are included in each set of contract documents. However, if any of the required provisions are left out of a construction contract, the project will not be eligible for federal reimbursement. [Exhibit 12-E: PS&E Checklist Instructions](#) is provided to assist the LPA through the checklist and determine which of the various federal contract provisions are required. Samples of required federal contract provisions and certifications are provided in [Exhibit 12-G: Required Federal Contract Language](#) and [Exhibit 12-H: Sample Bid](#). These samples are based on Caltrans Standard Specifications; however, the LPA may use equivalent provisions based on other standard specifications as long as the intent of the federal requirement is met.

Checklist Review by Caltrans

The DLAEs will review each checklist to ensure that the LPA has completed the form in accordance with the instructions in this manual. Except as discussed below, this review will be limited to the actual checklist and will not involve a review of the PS&E package.

Special Provisions Review by Caltrans

The DLAE has the responsibility to confirm that the correct Special and Federal Contract Provisions are included in the contract provisions as indicated on the checklist. The DLAE should ensure that at least one set of Special and Federal Contract Provisions is reviewed per year for each LPA that submits a PS&E. Also, the DLAE will decide if additional documents will be reviewed based on past experience with the agency, the number of federal-aid projects the agency has done, and the amount of resources the district can direct to this effort. LPAs requesting reviews will be accommodated to the extent that resources are available.

The checklist has been designed to facilitate this review by providing space for the LPA to indicate the page number of the appropriate federal provisions. This review will help the LPAs become familiar with the use of the checklist and the corresponding federal contract provisions. It will not, however, relieve the LPA of responsibility for compliance with all federal requirements.

DLAE Acceptance of the Checklist

The DLAE will indicate acceptance of the checklist by checking the type of review (i.e., whether the checklist review included a review of the special provisions) and signing the form. The LPA's request for authorization for the construction phase of a project will not be forwarded to the Division of Local Assistance for approval prior to acceptance by the DLAE.

Submittal of Plans, Specifications and Estimate (PS&E)

As a minimum, LPAs will submit the contract special provisions and the preliminary estimate with the PS&E Certification Letter. A set of plans will also be required. As soon as the project is advertised, the LPA must furnish the DLAE with one copy of the as-advertised plans and special provisions, or two copies if structures (bridges) are involved.

Process Review

Process reviews of a random sample of the LPA PS&E packages will be conducted as needed. The process reviews will be conducted on a post audit basis. LPAs should be aware that if deficiencies are found during a process review, it may be too late to make corrections and the loss of all or a portion of the project federal funding will result.

12.14 Projects Without Traditional PS&E

Some projects on or off the NHS, such as Congestion Mitigation and Air Quality and Active Transportation Projects, may consist of studies and other non-infrastructure type projects. Examples include Traffic Demand Management studies relating to regional air quality, ride-sharing programs, commuter incentive programs, and commuter computer centers. These projects will not have a set of plans or PS&E, but may only consist of a consultant contract agreement. The LPA must submit a request for authorization to proceed in the same manner as Non-Infrastructure Projects discussed in [LAPM Chapter 3: Project Authorization](#). If the project is part of a regional study conducted by a Metropolitan Planning Organization, then the local federal-aid portion of the work plan must be segregated to show the project costs associated with each LPA.

12.15 References

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<https://www.gpo.gov/fdsys/pkg/USCODE-2011-title25/html/USCODE-2011-title25-chap14-subchapV.htm>

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40 U.S.C.276 (c) Copeland Act

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40 U.S.C.333

<https://www.gpo.gov/fdsys/granule/USCODE-2001-title40/USCODE-2001-title40-chap5-subchapII-sec333/content-detail.html>

23 CFR 200

<http://www.fhwa.dot.gov/legsregs/directives/fapg/cfr0200.htm>

- 23 CFR 230
<https://www.ecfr.gov/current/title-23/part-230>
- 23 CFR 230 A&D
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- 23 CFR 230.111
<https://www.law.cornell.edu/cfr/text/23/230.111>
- 23 CFR 635.410
<https://www.fhwa.dot.gov/construction/contracts/831125.cfm>
- 23 CFR 627.5
<https://www.gpo.gov/fdsys/granule/CFR-2004-title23-vol1/CFR-2004-title23-vol1-sec627-5>
- 23 CFR 630.1010(a)(2)
<https://www.law.cornell.edu/cfr/text/23/630.1010>
- 23 CFR 633
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<https://www.law.cornell.edu/cfr/text/23/635.410>
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