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Contract Administration Core Curriculum Manual

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I. Introduction and course objectives

This manual was prepared by the Federal Highway Administration (FHWA) Contract Administration Group. This Group is located within the Office of Program Administration (HIPA), which is part of the Office of Infrastructure.

The Contract Administration Group has responsibility, on a national level, for construction contract administration matters as contained in the following sections of the United States Code of Federal Regulations (CFR):

- 23 CFR 633 A
- 23 CFR 635 A, B, C, and D
- 23 CFR 636

As part of its nationwide oversight role, the Group maintains the following Orders, Technical Advisories, and guides:

- Order 5060.1 – FHWA Policy on Agency Force Account Use
- Technical Advisory T 5080.3 – Development and Use of Price Adjustment Contract Provisions
- Technical Advisory T 5080.10 – Incentive/Disincentive (I/D) for Early Completion
- Technical Advisory T 5080.15 – FHWA Guide for Construction Contract Time Determination Procedures
- Guide on Internet Bidding for Highway Construction Projects
- Guide on Preparing Engineer’s Estimates, Bid Reviews and Evaluation

The Contract Administration Core Curriculum (CACC) Manual was initially developed as a resource for FHWA Division staff involved in construction oversight by providing a compilation of the various requirements which apply to Federal-aid (FA) highway construction projects. Over time the manual has become a critical resource for both internal and external personnel responsible for carrying out stewardship and oversight of the FA highway construction program. The current edition of the manual has been expanded and reorganized to follow the project development cycle.

Manual Objectives

The primary focus of this manual is to discuss contract provisions, administrative procedures, and applicable policies related to FA highway construction contracts. Discussions include those contract procedures, policies and requirements prescribed in 23 CFR Parts 230, 630, 633, 635, and 636 among others; and their applicability to highway construction contracts. Other FA requirements that may impact the FA eligibility of a project will be noted but not discussed in depth; references are provided so that additional guidance may be

sought from the appropriate office(s) within FHWA. The process for reporting potential fraud, collusion, or other concerns to the U.S. Department of Transportation (USDOT), Office of the Inspector General (OIG) will also be discussed.

Information related to a specific contract administration requirement will be organized in four subsections:

- References – the legislative, regulatory and policy documents governing the requirement;
- Applicability – how and when to apply the requirement;
- Background – a short discussion of how the requirement came into being; and last,
- Guidance – a synopsis of current policy.

The secondary objective of the manual is to assist FHWA, State transportation agency (STA) and local public agency (LPA) employees in better understanding the many Federal-aid requirements which may impact a project's eligibility. The manual does not discuss in detail any requirement outside the purview of the Contract Administration Group but it does indicate where additional information may be found. The information in these sections may not be broken down into the four sections. Instead, there will be a short synopsis of the requirement and a reference to the responsible office within FHWA.

To further assist FHWA, State and local agency personnel, HIPA-30, working with the National Highway Institute, has developed a training course based on this manual. The course, NHI-134077, has recently been revised to conform to NHI standards. Upon completion of the course, the participants should be able to:

- Review construction contract provisions and contracting procedures for conformance with FA requirements;
- Show an improved ability to discuss construction contract administration issues;
- Research FHWA policy through statutes, regulations and directives in a systematic manner; and
- Use fraud indicators to detect the possibility of fraud and refer any matters involving fraud, bribery, kickbacks, gratuities, etc. to the USDOT's OIG.

II. Overview of FHWA

A. Background

On October 3, 1893, General Roy Stone took charge of the new Office of Road Inquiry (ORI) -with a budget of \$10,000 and a staff consisting of one stenographer. Although his budget never exceeded \$10,000, and was reduced to \$8,000 in some years, General Stone energized his small Agency, making it a leader in the Good Roads Movement before he left office in 1899. Largely a response to lobbying by bicycle enthusiasts for better roads, ORI was given a mission of making inquiries on systems of road management; investigating the best methods of road making; preparing instructional publications; and assisting the agricultural colleges and experiment stations in disseminating information on this subject. In the 100-plus years since that first day, ORI has evolved into the Federal Highway Administration. With a staff of some 3,000 employees and division offices in every State of the Union, FHWA has followed General Stone's example by working with its State, territorial, local, and private sector partners to formulate the vision, to harness the best technology, and to foster a commitment to excellence that has given the United States the most extensive road network in history.

In 1996, the FHWA celebrated the anniversary of two of our greatest achievements-the start of the Federal-aid highway program on July 11, 1916 and the beginning of the Interstate Highway Program on June 29, 1956. As part of the celebration, the agency published *FHWA By Day* to tell the story of these events and many more-including the unheralded, routine, day-to-day activities of the thousands of men and women who have made the FHWA world renowned as a leader in surface transportation. This history-1893 through 1995-is told through brief narratives of some of the events-major, minor, and in between-the FHWA and its predecessor Agencies have been involved in since General Stone walked into his attic offices in the original Department of Agriculture Building (long since torn down) for the first time. *FHWA By Day* is available on the FHWA website.

In addition to cooperating with State partners on Federal-aid highway projects, FHWA has built roads in Federal reserves, often in some of the most difficult locations imaginable; has conducted vital research for nearly its entire history; worked hand-in-hand with State and local officials in the aftermath of hundreds of natural disasters; assisted in providing essential highway infrastructure in countries around the world and trained foreign personnel to carry on this work; helped the United States through two world wars and several major military actions as well as through panics, recessions, and the Nation's worst Depression; provided leadership and national purpose in highway development; transformed itself several times to meet changing transportation

needs and environmental demands; and fostered long lasting partnerships that have been at the center of the agency's success.

B. Current Organization

The Federal Highway Administration is an agency within the United States Department of Transportation (USDOT). Its fellow modal administrations include the Bureau of Transportation Statistics (BTS), Federal Aviation Administration (FAA), Federal Motor Carrier Safety Administration (FMCSA), Federal Railroad Administration (FRA), Federal Transit Administration (FTA), Maritime Administration (MARAD), National Highway Traffic Safety Administration (NHTSA), Saint Lawrence Seaway Development Corporation (SLSDC), and the Surface Transportation Board (STB). The Norman Y. Mineta Research and Special Programs Improvement Act (Public Law 108-426) disestablished the Research and Special Programs Administration (RSPA), splitting its functions into two new Federal agencies: the Research and Innovative Technology Administration (RITA) and the Pipeline and Hazardous Materials Safety Administration (PHMSA).

From its small beginning as the Office of Road Inquiry in 1893, FHWA grew substantially through the decades of 1950-1980, primarily due to the emphasis on Interstate construction. As the program grew, the Office of Road Inquiry became the Bureau of Public Roads, an agency within the US Department of Commerce. The agency changed identity to the Federal Highway Administration when the USDOT was formed in 1967.

Outside of its headquarters in Washington, D.C., FHWA maintains a field office, commonly referred to as a Division, in every State (typically in the State capitol), the District of Columbia, and in the Commonwealth of Puerto Rico; and a national technical resource center which is staffed by offices in Atlanta, Baltimore, Chicago, Lakewood, and San Francisco. The Resource Center was established to provide FHWA and its state partners with technical expertise in a wide variety of areas including contract administration, quality assurance, innovative financing, and safety. The Divisions are the primary point of contact for State and local agencies since their focus is to assist the State transportation agency (STA) in carrying out the Federal-aid highway program within the State while ensuring the Federal requirements are met for the program and individual projects.

Beyond the Federal-aid highway program, FHWA provides project development and construction services to Federal land management agencies, such as the National Park Service (NPS), the U.S. Forest Service (USFS), the Bureau of Land Management (BLM) and the Bureau of Indian Affairs (BIA). These services are provided by the Federal Lands Highway Office and its three Divisions. This program, formerly called the Direct Federal program, is now referred to as the Federal Lands Highway Program. . As the direct purchasers of

design and construction services, the Federal Lands Highway Divisions must comply with the Federal Acquisition Regulations System (FAR – 48 CFR). The FAR requirements differ somewhat from the requirements which apply to the Federal-aid highway program, the primary focus of this manual.

C. Federal-aid Highway Program Overview

In order to understand the reasons behind some of the regulations, it is helpful to know something about the operating environment of the Federal-aid highway program. First, the “Federal-aid highway program,” or FAHP, is a term which encompasses all the activities funded through the FHWA and administered by the STAs. However, the word “program” may also refer to one of the many component activities such as the Surface Transportation Program (STP) or Congestion Mitigation and Air Quality Improvement Program (CMAQ). Note that the Moving Ahead for Progress in the 21st Century Act (MAP-21) substantially reduced the number of subcomponent programs within the FAHP. An excellent guide to the component programs of the FAHP, “*A Guide to Federal-aid Programs and Projects*,” is available on the FHWA website at <http://www.fhwa.dot.gov/federalaid/projects.cfm>.

The Federal role in the FAHP has primarily been to set minimum national standards, ensure nationwide system compatibility and connectivity, and to provide capital assistance and oversight for highway construction. Prior to 1991, four Federal-aid (FA) highway systems existed: the Interstate, Primary, Secondary and Urban. These systems included about 22% (1 363 000 km (847,000 miles)) of the total road network in the United States but carried over 80% of the nation’s travel.

Following the passage of the Intermodal Surface Transportation Efficiency Act of 1991 (Pub. L. 102-240, commonly referred to as ISTEA), only the National Highway System (NHS) exists as a Federal-aid system. This system of roads was formally approved through the National Highway System Designation Act of 1995 (Pub. L. 104-59, or NHS Act). The NHS includes the Interstate System and additional high volume routes for a total length of approximately 265 500 kilometers (168,500 miles) of public roads. The NHS carries 45% of the Nation’s travel on about 4% of the road network. The NHS was designed to include the routes that carry and will continue to carry a large percentage of the Nation’s highway traffic, and serve strategic, economic and trade priorities through connections to military installations, border crossings, airports, seaports, and rail-highway transfer facilities.

All other roads that are functionally classified above a local road or rural minor collector are considered to be Federal-aid highways as defined in 23 U.S.C. 101(a)(5). This means that a highway construction project on one of these roads is eligible for FA participation provided the project’s scope of work meets the eligibility requirements of the proposed funding type. There are some FA funds

that may be expended on non-Federal-aid highways, more typically referred to as off-system roads; however, the eligible activities list is considerably reduced.

1. Legislation

Unlike other Federal assistance programs, the FAHP does not require the passage of an annual appropriations bill before projects are authorized. FHWA, through periodic enabling legislation, receives contract authority which allows obligation of funds in advance of appropriations. Signed on July 6, 2012, the Moving Ahead for Progress in the 21st Century Act (Pub. L. 112-141 or MAP-21) is the most recent authorization act for the FAHP. Additional information about the impacts of MAP-21 may be found at www.fhwa.dot.gov/map21/.

The authorization act, which typically covers from two to six years, establishes maximum program authorization levels, funding distribution formulas, and may establish, modify or abolish the various components of the FAHP. The act may also “ earmark ” or set aside funding for specific activities, including construction projects, feasibility studies or research. For example, some funds may only be expended for construction or safety-related activities on NHS or Interstate routes while other funds may only be used for STP-eligible projects within small municipalities. Since the NHS carries a large portion of U.S. travel and goods, projects to improve it may be funded through many of the various components of the FAHP. All other roads, which have been functionally classified higher than a local road or rural minor collectors, are eligible for Federal-aid funding under the Surface Transportation Program (STP).

An appropriation act covers one Federal fiscal year (October 1 through September 30). This act provides funds to liquidate prior obligations and may set a limit on the amount of new obligations during the fiscal year. The appropriation act may also include modifications to the highway laws, program activities, etc.

Once both acts are in place, FHWA distributes the funding within the various program categories to the STAs. Funding for a program category will generally be distributed either by an apportionment formula defined in statute, or allocated administratively. Note: with few exceptions, almost all authorized funds are apportioned or allocated; it is the obligation authority that is limited by the appropriation act. An excellent reference for additional information on highway funding is *Financing Federal-aid Highways* which is available on the FHWA website at www.fhwa.dot.gov/reports/financingfederalaid/index.htm.

A good reference on the Highway Account of the Highway Trust Fund is the Trust Fund Primer. This report is available in hard copy or on the FHWA website at www.fhwa.dot.gov/aap/primer98.pdf.

2. Directives, Regulations and Policy Development

a. Directives

Directives convey information essential to the administration or operation of FHWA. The directives system is used to prescribe or establish internal policy, organization structure, methods, procedures, requirements, guidelines, and delegations of authority. The Directives System Handbook, which was originally issued in 1980 and has subsequently been revised, is the primary source document for information contained in this section. The handbook was furnished to FHWA field offices under FHWA Order H1321.1A, dated December 5, 1980. The latest revision was issued through Order H1321.1C, dated January 6, 2010. All Divisions should have this document including the revisions. The objectives of the directives system are to:

- provide instruction that is necessary, current, complete, readily accessible, easily understood and consistent with FHWA policy;
- ensure adequate public participation in the development of both policies and procedures; and
- clarify and improve organizational relationships by coordinating instructions, thereby eliminating conflicts and duplications.

Directives are produced in several formats which serve different purposes and are addressed to different audiences. The basic types are:

1. Orders – official agency issuance containing internal policy, instructions, or procedures expected to remain in effect for more than 1 year.
2. Notices – official agency issuance containing internal policy, instructions, or procedures that generally has a short-term duration; typically not extending beyond a 1 year period.
3. Joint Interagency Order and Notice - Official issuance of policy, instructions, or procedures that are administered jointly by FHWA and other U.S. Department of Transportation (DOT) Operating Administrations (OAs).

Technical Advisories (TAs) contain permanent or long-term technical information that is purely advisory. They are not to be used to impose requirements or issue policy since FHWA Order 1321.1C terminated TAs as a category of directive. TAs are directed to the STAs, GSHRs, and local public agencies, as well as FHWA, as a means of describing “state of the art” or “state of practice” for common items that support the FAHP.

b. The Rulemaking Process

Simply put, the rulemaking process is the process any Federal agency must use to adopt, revise or clarify regulations; or adopt emergency procedures. The process may take a year for a low priority, low controversy issue. Issues that are highly controversial or complex may require several years to complete the process.

The primary objective of rulemaking is to ensure that the public and affected entities have an opportunity to participate in the development of new or modified regulations which may impact them. As the primary means for interacting with the public, a Federal agency publishes notices about its actions in the Federal Register at defined points in the process. The Federal Register is integral to the process since it provides a daily digest of Federal activity. Published by the National Archives and Records Administration, the Federal Register is available by subscription; through Federal depository libraries around the country; and on the Internet through the Government Printing Office's Federal Digital System (gpo.gov/fdsys/).

Regulations have the force and effect of law, and may apply to Federal, State, local agencies, educational institutions, non-profit and non-governmental organizations as well as the public. Detailed technical or housekeeping procedures for carrying out specific actions, unless they affect the substantive rights of grant recipients or the public, are not normally included in the CFR.

The primary regulations which affect the FAHP are contained in 23 CFR and 49 CFR issued by the FHWA and the USDOT respectively. Other CFR sections which may affect the FAHP are 2 CFR (Grants and Agreements), 28 CFR (Judicial Administration), 29 CFR (Labor), 40 CFR (Protection of Environment), 41 CFR (Public Contracts and Property Management), and 48 CFR (Federal Acquisition Regulations System).

The CFR includes:

- requirements and conditions that must be followed to qualify the project or work in question for Federal participation;
- material which confers a right or benefit, imposes an obligation, or otherwise affects the substantive rights of grant recipients or the public relative to a Federal program; and
- material which contains an agency statement of general applicability and future effect, which the agency intends to have the force and effect of law, that is designed to implement, interpret, or prescribe law or policy or to describe the procedure or practice requirements of an agency.

Classifications of Rulemaking Actions

According to the FHWA Rulemaking Manual, rulemaking actions are classified based on their anticipated economic or operational impact into one of three types as defined by USDOT Order 2100.5 - :

A significant rulemaking is one that may result in a significant impact and consequently requires a regulatory analysis. A significant rulemaking is one that:

- concerns a matter for which there is substantial public interest or controversy;

- has a major impact on the modal administrations within the USDOT or other Federal agencies;
- has a substantial effect on State or local governments;
- has a substantial impact on a major transportation safety problem;
- initiates a substantial regulatory program or changes in policy;
- is substantially different from international requirements and standards, or
- otherwise involves important USDOT policy.

Example: The September 2004 final rule on work zone safety substantially changed the requirements for ensuring the safety within highway construction work zones for both workers and the travelling public.

An emergency rulemaking is one that would ordinarily be published for comment, but circumstances warrant its issue without prior notice or opportunity to comment. This is typically done in response to a change in law which is relatively straightforward.

Example: The 1984 Highway Act eliminated “cement” from the Buy America provisions of the 1982 Surface Transportation Assistance Act (STAA). The revision was incorporated into the regulations through a final rulemaking. However, when SAFETEA-LU required specific changes to the design-build regulations, the usual process was followed since the legislatively mandated changes allowed FHWA some flexibility.

Lastly, a nonsignificant rulemaking is simply one that does not fit into the significant or emergency classifications.

Example: The February 2004 final rule removed several obsolete parts from the regulations but there was no impact on the STAs, local agencies or contractors since the requirements had been made obsolete by legislation.

The Regulatory Development and Adoption Process

The process has six basic phases:

1. Internal coordination – during this phase, an office within FHWA determines whether a regulatory action is needed. The initiating office may decide to modify existing regulations; or develop new regulations in response to legislation or other causes. This phase includes in-house coordination to avoid conflicts between the needs of different offices and programs in FHWA.

2. External coordination – during this phase, FHWA discusses the proposal with other Federal agencies that may be interested or affected by the changes. However, the proposal is not released to the general public. Before this

phase is completed, FHWA must receive clearance from OST and the Office of Management and Budget (OMB).

3. Initial public notification phase – this begins with FHWA’s publication of its proposal for general review and comment by the public and affected entities, and runs through the comment period. Typically the comment period is set at 60 days but may be longer for controversial or complex rulemaking. During this phase, the agency may hold informational meetings about the proposal.

4. Docket analysis – as comments are received in the docket, the initiating office may begin to analyze the responses. Formal analysis begins once the docket has closed, and provides the basis for agency decisions about the proposed rulemaking. The initiating office may decide to redraft or supplement the proposal which restarts the process, or proceed to a final rulemaking.

5. Development of the final rulemaking – the initiating office drafts the final rulemaking in the required format which consists of a preamble and then the final regulation. The preamble summarizes the contents of the proposed and final rules, identifies the major issues involved in each, and, most importantly, summarized the principal differences between the proposed and final regulations. The preamble also summarizes the significant dockets comments and how the agency has addressed those comments in the final rule. Once the drafted final rulemaking receives clearance from OST and OMB, FHWA submits it to the Federal Register for the final phase.

6. Transition to the new requirements – this phase begins with the publication of the final rulemaking in the Federal Register, and ends with the effective date of the rulemaking, typically 30 days after the publication date, however, for rulemakings that require affected entities to make substantive changes to their processes, the period may be extended. For example, the complexity of the changes to 23 CFR 630J – Traffic Safety in Highway and Street Work Zones – published on September 9, 2004, resulted in an effective date for the rulemaking on October 12, 2007.

c. Good Guidance

As discussed in the directives section, FHWA issues guidance to its Divisions and the STAs in a variety of formats. In January 2007, the OMB issued new guidelines governing the process Federal agencies must follow in developing “significant” non-regulatory guidance, particularly guidance which is to be posted on the agency’s Internet website. Any non-regulatory guidance receives an internal review to determine its potential impact on recipients prior to being issued.

3. Program Administration

The FAHP is a Federally-funded, State-administered program. Therefore, the Federal-State partnership is an essential element for the continued success of the program. For a State to be eligible to receive FA funding, it must have a transportation department suitably equipped and capable of carrying out the duties required by law (23 U.S.C. 302), this will be discussed in greater detail in Section III.A.1. The FHWA provides funding, guidance and technical assistance to the STAs. Local public agencies receive FA highway funds through the STA. While a local public agency (LPA) may administer its own FA projects through an agreement with its STA, the STA remains responsible for ensuring that all Federal requirements are met for the projects

Historically Federal-aid highway funding has been focused on capital construction activities, most prominently for completion of the Interstate System. While some funding could be used for resurfacing, rehabilitation, or restoration (3R), the emphasis was on new or major reconstruction efforts. Now that construction of the Interstate System is essentially complete, focus is shifting to system preservation through preventive maintenance, 3R/4R, and improvements in management and operations. The acronym '3R' is the collective term of reference for activities aimed at extending a facility's life - resurfacing, restoration, and rehabilitation. The fourth 'R' stands for reconstruction.

Most of the costs for non-construction activities (generally referred to as non-capital costs) are the responsibility of the State and local governments. Non-capital costs include routine maintenance, administration, and law enforcement, and debt service on highway bonds and notes. Routine maintenance includes those activities required to keep the highway open for public travel such as snow removal, mowing, and pothole patching. Information about the distribution of all costs for all levels of government in the latest year for which final numbers are available in the Highway Statistics data collected by FHWA's Office of Policy on the summary chart, HF-10 - Funding for Highways and Disposition of Highway-User Revenues, All Units of Government (available at <http://www.fhwa.dot.gov/policyinformation/statistics.cfm>).

Although highway capital improvements attract most of the public and political attention, they represent only about half of the total outlay for highways. In many States, non-capital expenses have first claim on available revenue. Federal-aid contributions as a percentage of a State's highway budget varies considerably around the nation due to a number of variables such as State highway gasoline taxes, vehicle miles travelled (VMT) and lane-miles within the State, and Congressionally designated projects for the State.

State highway programs in many States must share some percentage of their road-user tax revenues with local governments. Although the local highway agencies carry out many of the same basic functions, spending patterns vary among localities. At the national level, capital spending by local

governments represents a third of their total highway spending. Of all functional classifications, local roads require the highest level of spending per unit of travel.

The national highway expenditure database does not include private sector contributions. Most new roadways added to the highway network are property access roads and streets built by private land developers. In addition, several States require private developers to pay for any capital improvements that may be needed due to development activities adjacent to an existing public roadway. The construction costs for these roads or improvements are then absorbed by the purchasers of homes or offices within the developments. Following construction, these routes are typically turned over to the State or local government for operation and maintenance.

4. Stewardship and Oversight

When the Federal-aid highway program (FAHP) began, FHWA personnel were involved in almost every project decision. In part this was due to a lack of experience on the part of State personnel but primarily it was a due to a demand for accountability by Congress and the general public. As States gained experience with the Federal-aid requirements, Congress gradually allowed States to take greater responsibility for some categories of projects through programs such as the Secondary Road Plan in the 1950s and Certification Acceptance in the 1970s. Section 1016 of the Intermodal Surface Transportation Efficiency Act of 1991 (Pub. L.102-240, or ISTEA, enacted 12-18-1991) continued that trend by allowing States to approve plans, specifications and estimates (PS&Es) for certain NHS and non-NHS projects (in-lieu-of FHWA approval) if certain standards are met.

While ISTEA allowed only PS&E approvals by STAs, the Transportation Efficiency Act for the 21st Century (Pub. L. 105-178, or TEA-21, enacted 6-9-1998) allowed the STAs to take on greater responsibilities through the oversight changes of section 1305 which modified 23 USC 106 to:

- allow States to assume FHWA's responsibilities for non-Interstate NHS projects for design, plans, specifications, estimates, contract award and inspection unless the State or the Secretary determines such assumption is not appropriate; and
- require States to assume FHWA's responsibilities for non-NHS projects unless the State determines that such assumption is not appropriate.

TEA-21 required that FHWA and the STA enter into an agreement documenting the types and classifications of projects for which the STA will assume responsibility under Title 23. This State-specific agreement, generally referred to as the "stewardship" or "oversight" agreement, forms the basis for FHWA's project level and program level oversight activities.

While ISTEA and TEA-21 provided for changes in the applicability of certain standards and approval responsibilities, 23 USC 114(a) continues to

require that Federal-aid highway construction projects are “... subject to the inspection and approval of the FHWA.”

On July 6, 2012, the Moving Ahead for Progress in the 21st Century Act (Pub.L. 112-141, or MAP-21) was signed into law. Section 1503 of MAP-21 allows STAs to assume FHWA’s responsibilities for projects on Interstate routes, including new construction or reconstruction projects with a value greater than \$1 million. However, MAP-21 also prohibits the STA for assuming responsibility for any project determined by the Division to be a high risk project. Additional guidance can be found in the [March 2014 Risk-Based Stewardship and Oversight Guidance](#).

Since FHWA continues to have stewardship and oversight responsibilities for all FHWA programs, the changes to 23 U.S.C. 106 do not preclude FHWA from reviewing any Federal-aid highway project that is being administered by a State or local agency. FHWA employs a number of techniques to provide stewardship and oversight to the FAHP, including risk management, process/program reviews, program assessments, and performance management. FHWA will conduct program level oversight of all FHWA programs regardless of which agency may have project approval authority. Randomly selected projects administered by either the STA or a local agency may be included in program reviews. The results of a Division’s risk assessment, program and project reviews; OIG investigations; or reviews by GAO may result in modifications to the oversight agreement to ensure that issues and/or concerns are appropriately resolved.

Full project level review requires FHWA participation in all major decisions from project initiation through design and construction up to FHWA final acceptance and voucher payment. Unless the STA/FHWA agreement differs, full FHWA oversight projects tend to be new construction or reconstruction projects on Interstate routes with an estimated value greater than \$1 million.

Another category of projects requiring additional FHWA oversight are referred to as “major” projects. These projects tend to have a total estimated value greater than \$500 million but the value may be smaller in States with a smaller overall highway program. Major projects require submission and approval of a project finance and management plan. Additional discussion of the major project requirements is in Section III.B.8.d. The most up-to-date information about major project requirements will be found on the FHWA website at

http://www.fhwa.dot.gov/ipd/project_delivery/defined/major_project.htm.

5. Deviations from Requirements

In general, deviations from Federal requirements are allowed in only limited circumstances. Some Federal requirements must be fully met to maintain federal eligibility of the project in question while other Federal

requirements may be waived provided certain conditions are met. This manual provides guidance on when deviations from construction contract requirements may be acceptable. Guidance on non-construction related deviations may be obtained from the Division or relevant FHWA headquarters unit.

a. Public Interest Findings and Certifications

References:

23 U.S.C. 112 – *Letting of contracts*

23 CFR various parts

Applicability: Applies to all FA highway projects

Guidance: Various FHWA policies provide for exceptions when justified with documentation of public interest findings, certifications or findings of cost effectiveness. The three documents have slightly different purposes. A certification requires that the STA certify the need to waive a requirement. A cost effectiveness finding requires the STA clearly demonstrate that the proposed deviation is more cost-effective than meeting the requirement. A public interest finding requires the STA clearly demonstrate that the proposed deviation is more beneficial to the public than meeting the requirement. Please note, however, that some requirements cannot be waived by a public interest finding (PIF) such as the prohibition on convict labor, the requirement to pay Davis-Bacon wage rates, and Buy America. Additionally, the requirement for competitive bidding cannot be waived by a public interest finding. While Federal law, at one time, permitted the Secretary to waive the requirement for competitive bidding when in the public interest, Congress eliminated the public interest exception to competitive bidding in the Surface Transportation Assistance Act of 1982. Deviations from competitive bidding are now only permitted whenever the Secretary finds that it is cost effective to do so, an emergency exists, or the Secretary approves an alternate bidding process under SEP-14. See Section III.B.8.c.i for further information.

The form and format of a certification/PIF/cost effectiveness finding varies according to the magnitude of the request and its potential impact. The document must contain the basis for the request and any supporting documentation about the impacts, costs, logistics, and precedence. Cost effectiveness findings and PIFs will generally need to be reviewed and approved by the Division Administrator; however, the Stewardship Agreement may allow the STA to act for FHWA on some PIFs. While certifications do not require Division approval, appropriate documentation needs to be in the project file to support the STA's decision.

Additional discussion about the difference between a certification and a PIF is contained in the section on the use of patented or proprietary items (see section III.B.8.l.v).

b. *Special Experimental Project-15 (SEP-15)*

References:

Federal Register Notice, "*New Special Experimental Project (SEP-15) To Explore Alternative and Innovative Approaches to the Overall Project Development Process; Information*," October 6, 2004

HQ memo, "*SEP-15 Application Process*," October 14, 2004

SEP-15 Procedures webpage

SEP-15 FAQ webpage

Applicability: Any Federal-aid project

Background: This is a component of FHWA's effort to streamline and expedite project development.

Guidance: An STA may propose an experiment that would result in a measurable reduction in project delivery through the waiver of FA requirements that are not related to competitive bidding. (Experiments with competitive bidding requirements are carried out under SEP-14 – see Section III.B.8.c.) SEP-15 cannot be used to modify environmental and other requirements external to title 23 of the United States Code. The notice about SEP-15 explains in detail the SEP-15 process and requirements.

Questions about SEP-15 should be directed to FHWA's Office of Innovative Program Delivery.

c. *Costs Incurred Prior to FHWA Authorization*

References:

23 CFR 1.9

Applicability: Any Federal-aid project

Guidance: FHWA is precluded by Federal law from participating in any cost which was incurred prior to FHWA's authorization or in violation of a Federal and/or State requirement. In some limited instances, a STA may request that the Division Administrator to participate in prior incurred costs. The FHWA may participate in such costs only if the Division Administrator finds that the approval will not adversely affect the public, that the State has acted in good faith and that there has been no willful violation of Federal requirements, there has been substantial compliance with all other requirements prescribed by the Administrator and full compliance with Federal statutory requirements, that the cost to the United States will not be in excess of the cost which it would have incurred had there been full compliance, and that the quality of work undertaken has not been impaired. This action cannot be assumed by the STA.

6. System Management

Nearly 6 440 000 km (4 million miles) of roads and streets are open to public travel in the United States. The Federal government, through its land-managing agencies, owns 4.6%, or 225 000 km (139,425 miles) of those roads, mostly through national parks, forests, Indian reservations, military bases, or other Federal properties. All other roads are under State or local control. Therefore, the responsibility for daily management of the road network through the planning, construction, operation and maintenance falls primarily on State and local governments.

State governments manage roughly 1 300 000 km (800,000 miles) of highways. Although 88% (1 114 000 km or 692,000 miles) are through rural areas, State routes are generally heavily traveled and, therefore, are typically functionally classified as major arterial or collector roads. Minor arterial roads and collector streets fall typically under the control of local agencies, except in States that manage most of their entire road network such as North Carolina and Virginia.

Local public agencies (LPAs) administer the largest percentage of roads (69% or 4.3 million km (2.7 million miles)). Since the majority of these roads serve as property access routes and carry very low traffic volumes, most locally administered roads are functionally classified as local roads which are generally ineligible for Federal-aid funding.

III. Project Development Requirements

A. General Requirements for STAs

Section 112(a) of 23 U.S.C. states that *“The Secretary shall require such plans and specifications and such methods of bidding as shall be effective in securing competition.”* This statutory requirement forms the basis for many of FHWA’s regulatory requirements in 23 CFR 635. In order to promote competition in FA construction projects, FHWA has enacted various regulatory requirements for procurement, material selection, and product specifications procedures that will lead to enhanced competition and the elimination of restrictive local preferences in the procurement process.

1. Suitably Equipped

An important element of the FAHP is the Federal-State partnership. In order for the partnership to be effective, the State must have a transportation department capable of carrying out its part of the program. This need is reinforced by the requirement within 23 U.S.C. 302(a) that *“[a]ny State desiring to avail itself of the provisions of this title shall have a State transportation department which shall have adequate powers, and be suitably equipped and organized to discharge to the satisfaction of the Secretary the duties required by this title.”* 23 CFR 1.3 provides additional details about the authorities that an STA must have to carry out the program. The law does allow an STA to use engineering services from other agencies and/or the private sector as needed; the basic guidelines are outlined in 23 CFR 1.11.

2. Public Agencies in Competition with the Private Sector

References:

23 U.S.C. 112 - *Letting of contracts*

23 CFR 635.112(e)

Applicability: All FA highway construction projects.

Background: Open competitive bidding by private enterprises is a basic tenet of the Federal-aid program since it provides equal economic opportunity for private enterprises and permits projects to be completed at the lowest possible cost.

A public agency does not need to make a profit (in many states, public agencies are prohibited from making a profit). In addition, the taxpayer subsidizes their employee wages, benefits and equipment costs. Therefore, a public agency would have a competitive advantage over private companies if allowed to compete for contracts.

Guidance: As indicated in 23 CFR 635.112(e): "No public agency shall be permitted to bid in competition or to enter into subcontracts with private contractors." A public agency is defined as any organization with administrative or functional responsibilities that are either directly or indirectly affiliated with a governmental body of any nation, State, or local jurisdiction.

There are no exceptions to this competitive bidding policy. However, under limited circumstances a public agency may be permitted to undertake efforts normally reserved for the private sector. These circumstances are discussed in detail in other sections in this manual:

- Work which is inherently governmental – discussed below,
- Publicly Owned Equipment (Section III.B.8.k),
- Convict Produced Materials (Section III.B.8.l), and
- State Owned/Furnished/Designated Materials (Section III.B.8.l).

Work which is inherently governmental, such as law enforcement, must be carried out by a public agency. When necessary for the project's completion, this work may be carried out through either an interagency agreement between the public agency and the STA; or through an agreement between the contractor and the public agency. An example of this would be the requirement for a law enforcement presence as part of the work zone safety requirements of 23 CFR 630 Subpart K.

In addition, under limited circumstances a STA or local public agency may perform highway construction work on a force account basis by providing the labor, equipment, materials, and supplies needed to complete the work. Refer to Section III.B.8.c – Basis of Contract Award and 23 CFR 635 Subpart B for more information.

3. Non-discrimination

References:

23 U.S.C. 140 -- *Nondiscrimination*

23 U.S.C. 324 – *Prohibition of discrimination on the basis of sex*

The Civil Rights Act of 1964, Title VI (42 U.S.C. 2000d *et seq.*)

The Age Discrimination in Employment Act of 1967 (29 U.S.C. 621 *et seq.*)

The Rehabilitation Act of 1973 (29 U.S.C. 794 *et seq.*)

The Age Discrimination Act of 1975 (42 U.S.C. 6101 *et seq.*)

The Americans with Disabilities Act of 1990 (42 U.S.C. 12101 *et seq.*)

23 CFR 200

23 CFR 230, Subparts A and D

28 CFR 35

29 CFR 5

41 CFR 60

49 CFR 21

49 CFR 27

49 CFR 28

49 CFR 37

Executive Order 11246, as amended - *"Equal Employment Opportunity,"* September 24, 1965.

Executive Order 12898 - *"Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,"* February 11, 1994 [59 FR 7629]

Executive Order 13166 - *"Improving Access to Services for Persons with Limited English Proficiency,"* August 11, 2000 [65 FR 50121]

Executive Order 13515 - *"Increasing Participation of Asian Americans and Pacific Islanders in Federal Programs,"* October 14, 2009.

USDOT, *"Guidance to Recipients on Special Language Services to Limited English Proficient (LEP) Beneficiaries,"* December 14, 2005 [70 FR 74087]

FHWA Order 4710.8 - *"Clarification of Federal Highway Administration (FHWA) and State Responsibilities Under Executive Order 11246 and Department of Labor (DOL) Regulations in 41 CFR Chapter 60,"* February 1, 1999.

HQ memo - *"Implementation of Executive Order 13166 - Improving Access to Services for People with Limited English Proficiency,"* April 7, 2006.

Applicability: All Federal-aid contracts.

Background: Nondiscrimination provisions apply to all programs and activities of Federal-aid recipients, sub-recipients, and contractors, regardless of tier. The obligation to not discriminate is based on the objective of Congress to prohibit the use of Federal funds in ways that subsidize, promote or perpetuate discrimination based on race, color, national origin, sex, age, or physical or mental disability. Primary recipients are responsible for determining and obtaining compliance by the sub-recipients and contractors.

The basic statutory authority for the nondiscrimination requirement is Title VI of the Civil Rights Act of 1964, which FHWA implements through 23 CFR 200. Title VI mandates that Federal assistance not be used to discriminate on the basis of race, color, or national origin. Through enactment of other legislative acts, the mandate has expanded to prohibit discrimination on the additional grounds of religion, sex, age, and disability. In addition, through Executive Orders, recipients must also consider "environmental justice" principles and the needs of "limited English proficiency" populations as they carry out federally-supported programs and projects.

Guidance: Title VI and the related legal authorities cited above require that the STA guarantee that no person be subjected to discrimination for any program or activity, including any contract, for which the State receives Federal assistance. In the event of noncompliance by the State, contractor, or

subcontractor, payment may be withheld or the contract may be cancelled in whole or in part.

In addition, the STA must ensure compliance with Equal Employment Opportunity (EEO) requirements, which are focused on increasing participation of minorities and women in the general work force. Section II of the FHWA-1273 form extends the EEO requirements to Federal-aid highway construction contractors' employment practices regarding recruitment, hiring, pay, training, promotion, and retention. Nondiscrimination in employment also covers the contractor's selection of subcontractors and suppliers, and procurement of materials. The FHWA-1273 requirements are detailed in Section III.B.9.a of this Manual - PS&E Contents.

4. Foreign Contractor and Supplier Restriction

References:

49 CFR 30

Applicability: All FA construction projects

Background: Starting in December 1987, the Congress passed a series of laws which prohibited the use of Federal funds in any contract for the construction of any public work with any contractor, subcontractor or suppliers of products of a foreign country which was identified by the United States Trade Representative (USTR) as discriminating against US firms in its public works projects. In response, the USDOT promulgated 49 CFR 30.

Guidance: Although 49 CFR 30 remains in effect, the USTR has not recently listed any foreign country as discriminating against US firms.

Should the USTR list a country, STAs would need to comply with the requirements of 49 CFR 30.

5. Prohibition on Use of State Preferences

References:

23 U.S.C. 112 - *Letting of contracts*

23 CFR 635.112

23 CFR 635.409

Applicability: All FA highway construction projects.

Background: In order to maximize competition for projects, FHWA prohibits the use of in-State preferences in the selection of contractors, materials, or labor.

Guidance: The STA shall not impose any requirement or enforce any procedure which requires the use of, or provides a price differential in favor of contractors, labor, articles or materials produced within the State. This includes requirements that prohibit, restrict, or discriminate against the use of articles or materials shipped from or prepared, made, or produced in any State, territory, or possession of the U.S.

Basically, labor and materials produced within a State shall not be favored to the exclusion of comparable labor and materials produced outside of the State. State preference clauses give particular advantage to the designated source and thus restrict competition. Therefore, State preference provisions shall not be used on any Federal-aid construction projects.

This policy also applies to State preference actions against materials of foreign origin, except as otherwise permitted by Federal law. Thus, States cannot give preference to in-State material sources over foreign material sources. Under the Buy America provisions, the States are permitted to expand the Buy America restrictions with respect to non-US produced materials provided that the STA is legally authorized under State law to impose more stringent requirements.

However, STAs cannot prohibit materials from specific countries. Title 23 CFR 635.409(b) prohibits the use of foreign restrictions to a greater extent than the USDOT policy (49 CFR 30). In essence, a State may have a Buy America requirement for a material if the requirement is provided by State statute; however, the State cannot prohibit the use of products from a specific country (unless this country is on the US DOT's prohibition list - see also section III.A.4 - Foreign Contractor and Supplier Restrictions).

6. Drug-Free Workplace Requirements

References:

49 CFR 32

23 CFR 630.307(c)(3)

Applicability: Applies only to grantees and recipients who receive assistance directly from a Federal agency (i.e., STAs and Federal Lands Highway contractors). These requirements do not apply to subgrantees or subrecipients (i.e., local public agencies) nor do they apply to Federal-aid contractors unless those entities are receiving Federal funds directly from another Federal agency.

Background: The Drug-Free Workplace Act of 1988 requires that all grantees receiving grants from any Federal agency certify that they will maintain a drug-free workplace. Furthermore, grantees are required to take steps to provide a drug-free workplace and impose sanctions against employees that violate the drug-free workplace requirements.

The final rule, amending the then existing Government-wide nonprocurement suspension and debarment regulations (49 CFR 29) to include

the drug-free workplace requirements, became effective on July 24, 1990. However, on November 26, 2003, several federal agencies, including the USDOT, published a final rule [68 FR 66534] on the Government-wide suspension and debarment regulations which also shifted the Government-wide drug-free workplace regulations to 49 CFR Part 32. In 2005, the Office of Management and Budget moved the Government-wide nonprocurement suspension and debarment regulations to 2 CFR Part 180.

Guidance: The regulations require that prior to apportioning or allocating Federal-aid funds, the STA must annually certify that it will maintain a drug-free workplace. However, for the FAHP, the State's certification for maintaining a drug-free workplace is made when it signs the Federal-aid project agreement. By doing so, it certifies that it will maintain a drug-free workplace as required in 49 CFR Part 32, Appendix C. In addition to the certification, the STA is required to publish a policy statement and implement a drug-awareness program.

Failure to comply with the requirements of the drug-free workplace requirement may result in:

- suspension of payment under the grant,
- suspension or termination of the grant, or
- suspension and debarment of the grantee, up to a maximum of five years.

7. Certification Regarding the Use of Contract Funds for Lobbying

References:

23 CFR 635.112(g)

49 CFR 20

HQ memo - "*Limitation on Use of Grant or Contract Funds for Lobbying,*"

February 7, 1990

Applicability: Applies to all FA construction contracts and subcontracts exceeding \$100,000.

Background: Lobbying limitations were established by Section 319 of Public Law 101-121 (Department of the Interior and Related Agencies Appropriations Act for fiscal year 1990). The law prohibits Federal funds from being expended to influence, or attempt to influence, a Federal agency or Congress in connection with the awarding of any Federal contract or grant. This prohibition applies to all recipients, including lower tier subrecipients of a Federal contract or grant.

Interim guidance on implementation of the lobbying certification requirements was issued by OMB as an Interim Final Rule and published in the Federal Register on February 26, 1990. The FHWA field offices were advised of the interim guidance by memorandum dated February 7, 1990.

Prior to the Lobbying Disclosure Act of 1995 (Public Law 104-65, as amended), the disclosure forms were forwarded to the FHWA Headquarters for further processing in accordance with OMB guidance. However, the Lobbying Disclosure Act eliminated the requirement for agencies to forward this information to Congress.

Guidance: Prior to receiving funds in excess of \$100,000 per grant, the STA must submit to the FHWA a certification that it has not and will not make any prohibited payments for lobbying. By signing the project agreement form, the STA certifies to FHWA that it will agree to comply with the lobbying restrictions in 49 CFR Part 20 (see 23 CFR 630.307(c)(5)). Local agencies, subrecipients, contractors, subcontractors and consultants on contracts and subcontracts that exceed \$100,000 are also required to make a lobbying certification. By signing a contract or subcontract, a prime contractor or subcontract is certifying that it will comply with lobbying restrictions.

Any participant that has made, or agreed to make, payments for lobbying activities using non-Federal funds, is required to disclose such activities on [SF-LLL, "Disclosure of Lobbying Activities."](#) This form is available on the Office of Management and Budget website. Payments of non-Federal funds to regularly employed officers or employees of the agency or firm are exempt from the disclosure requirement.

The STA certification is to be retained by the FHWA Division Office. Lower tier certifications are to be retained by the next higher tier (i.e., the STA retains LPA and prime contractor certifications; prime contractors retain their subcontractors' certifications, etc.). However, any disclosure forms, including those by lower tier recipients, are to be forwarded to the Division Administrator by the STA as required by 49 CFR 20.100(e). Therefore, the lobbying disclosure forms are to be maintained at the Division Office.

The lobbying certification and disclosure requirement becomes part of any FA construction contract as part XI of the FHWA Form 1273, and therefore, applies to construction contractors.

8. Certification Regarding Debarment, Suspension, Ineligibility, and Voluntary Exclusion

References:

2 CFR Parts 180 and 1200

Applicability: Applies to all Federal-aid contracts, and related subcontracts, purchase orders, and other lower tier transactions of \$25,000 or more.

Background: Government-wide suspension and debarment regulations were updated August 31, 2005 (2 CFR Part 180). The regulations are part of the

Administration's initiatives to curb fraud, waste, and abuse through a comprehensive suspension and debarment system encompassing the full range of Federal activities.

On May 2, 2008, the USDOT issued a Final Rule (73 FR 24139) which adopted and supplemented the Government-wide nonprocurement suspension and debarment regulations for USDOT.

Guidance: Each participant in the FAHP must certify *“that it and its principals are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency . . . and that they have not been convicted or had civil judgment rendered within the past three years for certain types of offenses.”* (2 CFR 180.320)

The STA provides this certification as part of the boilerplate language on each project agreement. (23 CFR 630.112)

Section X of the FHWA Form 1273 requires that the prime contractor and lower tier participants to certify as to their current eligibility status. Certification is also required of all prospective participants in lower tier transactions. This includes subcontractors, material suppliers, vendors, etc. More discussion of the suspension and debarment process as it relates to FA construction contracts is contained in Section III.B.10.n.

The General Services Administration (GSA) maintains a government-wide list of excluded parties, including individuals and companies. The Excluded Parties List System (EPLS) which was previously maintained by GSA, became a component of the federal System for Award Management (www.sam.gov) in June 2012. To determine whether an individual is excluded as a suspended or debarred party, the database at www.sam.gov allows search by name. To determine whether a company is excluded as a suspended or debarred party, the database at www.sam.gov allows search by name and DUNS number.

9. Research, Technology Transfer and Education

The Federal Highway Administration’s Research and Technology (R&T) program includes fundamental, long-term highway research, research aimed at significant highway research gaps and emerging issues with national implications, and research related to policy and planning. FHWA also is responsible for addressing the needs of stakeholders, and facilitating a competitive approach to grants, contracts, and cooperative agreements for research and development projects and programs.

The basic principles governing R&T investments are outlined in 23 U.S.C., Chapter 5: Research, Technology, and Education, and reinforced in MAP-21, Division E, Research and Education. These guiding principles state that the Federal Government has the responsibility to fund and conduct surface transportation research, and technology transfer activities when the work is of national significance and in research areas where there is a clear public benefit

and private investment is not optimal. FHWA's role is to assure that State and local governments use national resources efficiently, and to present the best means to support Federal policy goals compared with other policy alternatives. Additional information about FHWA's R&T efforts and role is available at www.fhwa.dot.gov/research.

Federal-aid highway construction projects that support a research effort must comply with applicable FA requirements.

10. Safety

Although Congress began investigating the problems earlier, the first comprehensive Federal effort to reduce the number and severity of highway crashes was the Highway Safety Act of 1966 (P.L. 89-564). The essence of the highway safety program required each STA to develop a highway safety program that met uniform standards established by FHWA. In 1973, dedicated safety funding categories were established through the Highway Safety Act of 1973 (P.L. 93-87, Title II). While the specifics of the highway safety program and funding categories have been modified over time, the basic goal has not. In a continuing effort to reduce the number and severity of highway crashes, each STA must have a formalized Highway Safety Improvement Program (HSIP) which enables the STA to identify and correct highway safety problems in an organized, systematic manner that maximizes the use of Federal-aid funds.

Unless otherwise specified in law, HSIP projects must comply with applicable FA requirements.

Additional information about the HSIP requirements and FHWA's safety programs may be found on the FHWA website at safety.fhwa.dot.gov.

11. Preventative Maintenance

As stated in the August 27, 2008, memorandum on snow removal, the maintenance requirements of [23 U.S.C. § 116](#) apply to all transportation facilities that are constructed with Federal funds. Section 116 requires an STA to maintain projects constructed with Federal-aid funding or enter into a maintenance agreement with the appropriate local officials where such projects are located. 23 CFR 1.27 clarifies that the STA is ultimately responsible for ensuring that any necessary maintenance is performed.

When the FAHP was established, no maintenance activities were eligible for FA participation. However, during the 1990s, Congress incrementally broadened the eligibility criteria for several FAHP components to include preventive maintenance activities. As defined in the October 8, 2004 memorandum on preventive maintenance, eligible preventive maintenance activities must extend the service life of a roadway asset or facility in a cost-effective manner.

Preventive maintenance contracts are generally subject to FA contract requirements.

Additional information on this topic is available at www.fhwa.dot.gov/preservation.

12. Locally-administered Projects

In accordance with the FA project agreement signed for each project, the STA is responsible for ensuring that locally-administered projects within the state are carried out in accordance with Federal requirements. In 2006, a nationwide review led by the Office of Professional and Corporate Development found that from state to state, there were inconsistencies and ineffectiveness in the oversight of locally-administered projects by the STAs. See Mr. Wright's April 4, 2007 memorandum on "*Oversight of Federal-aid Projects Administered by Local Public Agencies*" for additional information on the required actions of Divisions and STAs in response to the review findings. In addition, the August 8, 2011 memorandum on "*Responsible Charge*" discusses what project level actions are required by a local public agency (LPA).

On August 14, 2014, FHWA issued Order 5020.2 "*Stewardship and Oversight of Federal-aid Projects Administered by Local Public Agencies (LPAs)*." The Order outlines official internal policy and procedures relative to stewardship and oversight (S&O) of LPA-administered Federal-aid projects. It defines State Transportation Agency's (STA's) roles and responsibilities, establishes a uniform methodology for assessing risk in the STA's S&O, and establishes a uniform methodology for ensuring compliance with Federal requirements.

When a FA project is to be constructed on a facility not under the STA's jurisdiction, the STA may arrange for the local public agency (LPA) having jurisdiction to complete the work either with its own forces or by contract, provided that the following conditions are met:

- All Federal requirements including those prescribed in 23 CFR 635A must be met for work performed under a contract awarded by the LPA.
- Force account work must comply with 23 CFR 635B – see section III.B.8.c for additional information.
- The LPA must be adequately staffed and suitably equipped to undertake and satisfactorily complete the work – see section III.A.1 for additional information.
- The LPA must provide a full-time employee of the agency to be in responsible charge of each FA project including those that employ consultants for construction engineering – see section III.B.10.b.
- The Division Administrator concurs with the arrangement.

While the STA may delegate many project decisions to the LPA through an agreement with the LPA, the STA cannot delegate overall project responsibility since the FA project agreement is between FHWA and the STA.

Under 23 CFR 1.11(b), an STA may “utilize, under its supervision, the services of well-qualified and suitably equipped engineering organizations of other governmental instrumentalities for making surveys, preparing plans, specifications and estimates, and for supervising the construction of any project,” however, 23 CFR 1.11(e) clearly states that doing so does not relieve the STA of its responsibilities under Federal law and regulations.

B. Process Requirements

1. Project authorization/project agreement

Title 23 U.S.C. 106 requires that the STA enter into an agreement with FHWA for each Federal-aid highway project. This agreement, normally referred to as the “project agreement obligates funds and is considered (deemed) a contractual obligation between the State and the Federal government defining the scope of work and other project-related commitments. The project agreement assures FHWA that the project will be constructed by the State in accordance with Federal requirements. More important, the project agreement is the document which constitutes the Federal government’s obligation to pay its share of eligible project costs. The amount of Federal funds obligated on a project should reflect the best estimate of costs, and the State is required to ensure consistent with 23 CFR 630.106 that funds no longer needed are de-obligated in a timely manner. This requirement is consistent with Federal appropriation law principles requiring Federal obligations to be based on a documented cost estimate, and revised as the estimate changes.

In 2006, FHWA revised the regulations in 23 CFR 630A governing project agreements. The changes were made to improve FHWA’s management of the Federal Highway Trust Fund. Under the revised regulations, States must monitor all projects and 1) de-obligate Federal funds when the amount obligated exceeds the current cost estimate by \$250,000 or more; and 2) re-evaluate cost estimates for inactive projects and release unneeded funds. Any de-obligated funds are then available for use on other projects to the extent permitted by law. The FHWA may revise the Federal obligation amount if the State fails to take action as required by the regulations.

Prior to 1997, the project agreement was executed on the FHWA Form PR-2. At that time, however, the regulations were tailored to allow an STA the flexibility to develop its own format for providing the required information. The same changes allowed for electronic submission of a project agreement and any subsequent modifications as long as the format is compatible with the FHWA’s Fiscal Management Information System (FMIS). In addition, the changes allowed the project agreement to include project authorization which obligates FA funds to a specific project and/or phase of work.

The STA must prepare a formal modification to the project agreement as changes occur through the life of the project. These changes may vary from an

adjustment in project limits (within the governing environmental document limits); addition of a phase of work; or an increase/decrease in construction cost due to a major change order. By regulation, the project's legal federal share, once established, cannot be changed. As long as the information required by the regulations is provided in a format compatible with FMIS, the STA may establish the format of the modification.

2. FHWA funding

While the FAHP is considered a Federal assistance or "grant" program, no cash is actually disbursed at the time of project authorization. Rather, the STA seeks reimbursement as eligible project costs are incurred consistent with 23 U.S.C. 121. Federal-aid projects may be approved and authorized for several different phases of the project development process. Under 23 U.S.C. 145, the State has the right to decide if and when to apply its FA funds to a specific project. As such, some STAs have chosen to use FA funds primarily for construction while other STAs also use FA funds for preliminary engineering, environmental clearance activities, and/or right-of-way acquisition. Authorization to proceed with one phase of a project is not authorization to proceed with any other phase. For FHWA to participate in additional project phases, the project agreement must be modified prior to the STA incurring costs in the additional phases.

In any case, once a FA highway project is authorized by project agreement, unless the project is authorized as an advance construction project, the funds are considered to be "obligated" to the project which means that the STA has established, in essence, a maximum line of credit for the Federal share of the eligible cost of a specific project based upon the project cost estimate. As the STA incurs actual costs for the project, it submits a "voucher" for those costs to FHWA which then reimburses the State through the U.S. Treasury. Typically the billing and reimbursement are done electronically which results in reimbursements within 2-3 days of the voucher submittal.

Since 23 U.S.C. 145 provides the statutory authority for a STA to select projects for the FAHP, if a STA chooses to use FA funds for early phases of project development (preliminary engineering, environmental coordination/documentation, right-of-way acquisition, etc.), there is no requirement for the STA to also use FA funds for construction. If the STA chooses to use only State funds for preliminary engineering, FA requirements related to the construction phase such as Davis-Bacon prevailing wage rates, or inclusion of the FHWA-1273, do not apply. However, due to section 1518 of MAP-21, Buy America may apply. Any environmental commitments made by FHWA must be honored during construction.

Court cases on "de-federalizing" a project previously funded with FAHP funds in order to avoid certain Federal requirements have focused primarily on the relationship between the environmental clearance process and FA funding.

In one case a State had proceeded through the preliminary engineering phase using FA funds, and was beginning right-of-way acquisition when a lawsuit was filed against the State for failure to prepare an Environmental Impact Statement. In response to the suit, the State decided to de-federalize the project by paying back all FA funds used in the preliminary engineering phase. However the court ruled that the State's seeking and receiving Federal approval at various stages of the project made it a FA project that required compliance with Federal environmental laws.

If a STA has used FA funds for any of the initial project development phases, and chooses to use state or local funds for actual construction, it may do so provided that it complies with Federal environment requirements and any commitments made during the environmental clearance process. A STA that can demonstrate its compliance with Federal environmental requirements for the project may elect to use State funds for the construction.

If, conversely, the STA used state funds for preliminary engineering, environmental reviews and/or right-of-way acquisition, and now chooses to use FA funds for the actual construction, it may do so provided that all the Federal requirements have been met in developing the project (such as planning, NEPA, and the Uniform Act); for the PS&E; and are included in construction.

If FA funds have been obligated for construction and the STA, for whatever reason, wants the project to revert to a state-funded project, the issue of de-obligation/re-obligation under Federal appropriation law comes into play. Under the Principles of Federal Appropriations Law (PoFAL), "*a proper and unliquidated obligation should not be de-obligated unless there is a valid reason for doing so.*" (See PoFAL Third Edition, Vol. II Chapter 7 at 7-60). Absent a valid reason (reduction of costs, correction of recorded estimates, initial obligation determined to be invalid, cancellation of projects), funds cannot be de-obligated to free the funds up to be used for new obligations. Avoidance of Federal requirements for construction projects is not a valid reason for de-obligating the funds. If the STA decides not to use FA funds for construction, that decision should be made before authorizing the construction project.

On occasion, a STA or local agency will want to tie two or more construction projects into one contract with the goal of creating a single construction contract that is either more attractive to the contracting community due to its size, or because it simplifies traffic control. This can be problematic if one of the construction projects uses Federal-aid funds but the other project(s) are purely state or locally funded. Since some Federal requirements apply on the "contract" rather than "project" level, tying a Federal-aid project to a state or locally funded project will cause those Federal requirements, such as Davis-Bacon wage rates, to apply to the contract as a whole.

Questions about this topic should be referred to FHWA's Office of Chief Financial Officer (OCFO).

a. *Non-federal Match*

References:

23 U.S.C. 120 – *Federal Share Payable*

23 U.S.C. 323 – *Donations and Credits*

23 CFR 630.106(a)

23 CFR 630.110(a)

49 CFR 18 (2 CFR 200)

HQ memo, “*Non-Federal Matching Requirements*,” December 29, 2009

Applicability: All Federal-aid projects

Background: The FAHP was designed to be a program jointly administered and funded by the FHWA and STAs. With few exceptions, FHWA does not provide full project funding. Generally, 23 U.S.C. 120 establishes the Federal share of costs under the FAHP; occasionally a program statute will establish a federal share; in both instances the established funding ratio defines the legal Federal share of eligible project costs. Any remaining funding must come from the State or local agency. State and local funds may come from a variety of sources including cash, in-kind contributions, toll credits, and in limited cases, may include Federal funds from another Federal agency when permitted by statute.

Guidance: The December 29, 2009 memorandum consolidated and provided uniform guidance for matching FAHP on a project.

b. *Funding from other Federal Agencies*

In limited circumstances, funds from another Federal agency (for example HUD Community Development Block grant funds) may be used as the non-Federal match provided that the implementing legislation for the funds allows them to be used in this way. Prior to doing so, it is important to ensure that there are no conflicts in the requirements imposed by the other agency with FA requirements. There may also be restrictions on the total Federal funds allowed for a project.

Some FHWA programs have additional guidance on this issue, for example, the Transportation Enhancement and Recreational Trails programs. The December 29, 2009 memorandum consolidated and provided uniform guidance for matching FAHP on a project.

c. Funding Transferred to other Federal Agencies

References:

23 U.S.C. 104 – *Apportionment*

23 U.S.C. 132 – *Payments on Federal aid projects undertaken by a Federal agency*

FHWA Order 4551.1 – *“Fund Transfers to Other Agencies and Among Title 23 Programs,”* August 12, 2013

Applicability: All Federal-aid projects

Background: As a way to improve the efficient and effective use of program funds, the Federal government allows funding to be transferred among agencies, programs and projects. Some FAHP funding has limited transferability by law.

Guidance: Order 4551.1 consolidates FHWA policy for the following types of transfers:

- Between FHWA and FTA;
- From a State to FHWA, or to another State;
- Between programs;
- To other Federal agencies; and
- Between designated projects.

d. Tapered Match

References:

23 CFR 630A

HQ memo, *“Tapered Match on Federal-aid Projects,”* December 29, 2009

HQ memo, *“Non-Federal Matching Requirements,”* December 29, 2009

Applicability: All Federal-aid projects except advance construction, STP program approval or §122 bond projects.

Background: Prior to TEA-21, FHWA required reimbursement of eligible project costs at the established Federal share on each progress payment. However, TEA-21, §1302 amended 23 U.S.C. 121 and eliminated the requirement that at no time payments exceed the Federal share of costs incurred under each voucher submitted, to permit FHWA to reimburse the STA for 100% of the eligible costs on each progress payment up to the maximum participation limit in the project agreement, with a final adjustment when the final actual costs are known.

Guidance: At the time of project authorization, the Division Administrator may approve the use of tapered match when one or more of the following objectives will result:

- The use of tapered match, when compared to the use of traditional match, will result in an earlier project completion;
- The project costs would be reduced by using tapered match;
- Use of tapered match would allow for additional non-Federal funds to be leveraged for the project; and/or
- When costs for services are donated by a public agency (see memo for additional guidance).

The project authorization request from the STA must clearly state that tapered match is requested and which of the above objective(s) will be met. The STA must also provide an assurance that the State will meet its non-Federal share commitment and make provision for reconciliation and cost recovery as necessary. The authorization request must specify when the non-Federal share will be provided.

At no time during the project are cumulative Federal payments to exceed the total amount of Federal funds authorized for the project. The authorized Federal funding must be adjusted to reflect project cost estimates per 23 CFR 630A. If the non-Federal share is not provided as specified in the authorization, the Division Administrator may rescind the tapered match approval and apply the Federal share to the project costs incurred to date.

e. Highway construction funding source signs

References:

23 U.S.C. 114 – *Construction*

23 U.S.C. 321 – *Signs identifying funding sources*

23 CFR 635.309(n) & (o)

[Non-regulatory Supplement to 23 CFR 635C, "Right-of-way, Utility and Railroad Coordination,"](#) December 9, 1991

[FHWA Order 5160.1A, "Policy on Sponsorship Acknowledgment and Agreements within the Highway Right-of-Way."](#) April 7, 2014

Applicability: All FA highway construction projects within a State, if the STA routinely installs funding source signs.

Background: The 1960 Highway Act contained a mandate that funding source signs be placed on all FA projects. This resulted in the "Your Highway Taxes at Work" signs which were erected on all projects from 1960 until 1973.

However, the 1973 Highway Act removed the mandate and additionally, specifically prohibited the erection of any signing other than official traffic control devices on FA projects.

Section 154 of the 1987 Surface Transportation and Uniform Relocation Assistance Act (STURAA) mandated that any State which routinely required funding source signs on State projects must also erect such signs on FA projects. The intent of §154 was to require those States that had adopted innovative funding strategies which may use a mix of funding sources to provide the traveling public with a factual statement about the project's funding. States that do not routinely erect funding source signs would not be required to start the practice (House Report 99-665, July 2, 1986, pp. 11-12).

Section 1901 of SAFETEA-LU codified the requirements as 23 U.S.C. 321.

Guidance: The legislative language on funding source signs is quite clear. If a State has a policy of erecting funding source signs for its non-FA highway projects, the State must erect funding source signs on ALL FA projects without regard to the dollar value of the project.

The signs must conform to the Manual on Uniform Traffic Control Devices (MUTCD). Only essential information regarding the source and amount of funding shall be included on the sign. Promotional information such as the identification of public officials, contractors, organizational affiliations, symbols, logos or other items are prohibited.

Costs associated with erecting the signs are eligible for FA participation as part of the FA project. The cost will be reimbursed at the same Federal share as the construction. Signs may be considered an incidental item or bid as a separate pay item.

The regulations apply to both temporary and permanent sign installations.

Advertising vs. Acknowledgement

The FHWA has a long-standing policy against the use of advertising on highway rights-of-way. However, acknowledgment signs are permitted in certain circumstances. The FHWA Office of Traffic Operations has drawn a distinction between signing intended as advertising and signing intended as an acknowledgment for services provided. See FHWA Order 5160.1, "Policy on Sponsorship Acknowledgment and Agreements within the Public Right-of-Way" for additional guidance concerning the use of acknowledgement signs on FA construction projects.

f. State reimbursement

References:

23 U.S.C. 121 - *Payment to States for construction*

23 U.S.C. 302 - *State transportation department*

49 CFR 18 (2 CFR 200.305)

HQ memo, "Indirect Costs Eligibility and other TEA-21 Revisions to Title 23 U.S.C. Section 302," September 24, 1998

HQ memo, "Clarification of Policy on Indirect Costs of States and Local Governments," May 5, 2004

HQ memo, "Indirect Cost Allocation Dispute Resolution Process for State DOTs," August 8, 2008

Applicability: All Federal-aid projects

Guidance: Federal-aid participation is limited to the defined federal share of the actual, reasonable and allocable costs paid out by the STA for an approved phase of a FA project.

Questions about whether a specific cost is eligible for the FAHP component program should be referred to the Federal-aid Programs Group within the Office of Program Administration.

Questions about the reimbursement process should be referred to FHWA's Chief Financial Officer.

g. Single Audit

References:

2 CFR 200 Subpart F (moving here from OMB Circular A-133)

49 CFR 18.26 (2 CFR 200 Subpart F)

Applicability: The Single Audit process applies at the program level.

Background: [OMB Circular A-133](#) was issued pursuant to the Single Audit Act of 1984, P.L. 98-502, and the Single Audit Act Amendments of 1996, P.L. 104-156. It sets forth standards for obtaining consistency and uniformity among Federal agencies for the audit of States, local governments, and non-profit organizations expending Federal awards. Non-Federal entities expending \$500,000¹ or more in a year in Federal awards must have a single or program-specific audit conducted for that year in accordance with the provisions of the circular. The A-133 Circular has been incorporated into and superseded by the new 2 CFR 200 "super" Circular. Implementation will vary depending on the fiscal year end of the recipient and or subrecipient.

Guidance: Federal agencies shall apply the provisions of the sections of 2 CFR 200 Subpart F to non-Federal entities, whether they are recipients expending Federal awards received directly from Federal awarding agencies, or are subrecipients expending Federal awards received from a pass-through entity (a recipient or another subrecipient). If any statute specifically prescribes policies

¹ This threshold will change to \$750,000 after USDOT adopts 2 CFR 200.

or specific requirements that differ from the standards provided herein, the provisions of the subsequent statute shall govern.

This Circular does not apply to non-U.S. based entities expending Federal awards received either directly as a recipient or indirectly as a subrecipient.

Within FHWA, the Office of the Chief Financial Officer provides guidance on audit requirements. Additional general information may be found at:

http://www.whitehouse.gov/omb/grants_circulars

<http://www.gpo.gov/fdsys/pkg/FR-2013-12-26/pdf/2013-30465.pdf>

3. Uniform Grant Administration Requirements (49 CFR 18)

Federally assisted grants, and contracts under those grants, are currently covered by 49 CFR 18 – *Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments* (referred to as the Common Rule). Statutory requirements relating to contracts for highway construction or architect/engineering (A/E) associated with a FA highway project must follow the applicable statutory and regulatory procurement requirements in titles 23 U.S.C. and CFR. In addition, the location and type of work to be done may affect the procurement options available to a STA. On June 26, 2008, FHWA issued a memorandum synthesizing the procurement methods applicable to typical FAHP projects.

Currently when an LPA is a subrecipient of the STA, and the work is located outside of the highway right-of-way, the STA must be satisfied that the procurement process used by the LPA is consistent with the Common Rule procedures required of a subgrantee, i.e., applicable State law procurement requirements which State law requires the subgrantee to follow.

In cases where the FAHP funds are distributed to a LPA as the direct recipient, and the project is located outside of the highway right-of-way, the LPA's procurement process must meet the requirements of 49 CFR 18.36 (b) through (i).

Currently if the subrecipient is a non-profit organization, the grant must comply with the requirements of 49 CFR 19 - *Uniform Administrative Requirements for Grants and Agreements with Institutions of Higher Education, Hospitals, and other Non-profit organizations*.

Note: the USDOT, including FHWA, is expected to adopt the requirements of 2 CFR 200 (also known as the Supercircular) by December 26, 2014. At that time 49 CFR parts 18 and 19 will be withdrawn. The Supercircular consolidates the requirements of the Common Rule and eight OMB Circulars including: A-50 – *Audit Follow-up*; A-87 – *Cost Principles for State, Local, and Indian Tribal Governments*; A-102 – *Grants and Cooperative Agreements with States and Local Governments*; and A-133 – *Audits of States, Local Governments, and Non-profit Organizations*. In several areas the new regulations expand and make substantive changes to the existing requirements. When the USDOT regulation

implementing the Supercircular is published, this manual will be updated to reflect applicable requirements and citations. For more information see 78 Fed. Register 78590 (December 26, 2013).

4. Qualification-based selection of Architect-Engineering Services

References:

23 U.S.C. 112 – *Letting of contracts*

40 U.S.C. 1101-1104 – *Brooks Act*

23 CFR 172

48 CFR 31 – Federal Acquisition Regulation (FAR) Cost Principles

49 CFR 18 – Common Grant Rule (2 CFR 200 Subpart E)

HQ memo – “*Awarding Engineering and Design Services Contracts Based on Brooks Act Requirements*,” December 12, 2005

FHWA Consultant Services webpage:

<http://www.fhwa.dot.gov/programadmin/consultant.cfm>

Procurement, Management, and Administration of Engineering and Design Related Services - Questions and Answers webpage:

<http://www.fhwa.dot.gov/programadmin/172qa.cfm>

Applicability: Any contract for engineering and design related consultant services using FAHP funding and directly related to a construction project.

Background: On November 30, 2005, Section 174 of the FY2006 Appropriations Act (Public Law 109-115) amended 23 U.S.C. 112(b)(2) to require all engineering and design related services contracts to be awarded in accordance with the provisions of the Brooks Act (40 U.S.C. 1101-1104). Prior to this amendment, States were permitted to follow alternative or equivalent procedures which had been enacted by State statute prior to June 9, 1998. The December 12, 2005, memorandum issued by FHWA HQ provides additional discussion on the prohibition of alternative procedures and requirement for full Brooks Act compliance in the procurement of engineering and design related services.

Guidance: Consultant services funded in whole, or in part, with FAHP funds shall be procured and administered in accordance with the requirements of the Common Grant Rule (49 CFR 18). Contracts for engineering and design related services which utilize FA funds and are directly related to an ultimate construction project must also comply with the specific requirements established in 23 U.S.C. 112 and 23 CFR 172.

Engineering and design related services are defined as: program management, construction management, feasibility studies, preliminary engineering, design, engineering, surveying, mapping, or architectural related services (as specified in 23 U.S.C. 112(b)(2)(A) and 23 CFR 172.3). The Brooks Act

further defines architectural and engineering related services as professional services of an architectural or engineering nature, as defined by State law, if applicable, that are required to be performed, approved, or logically/justifiably performed by a person licensed, registered, or certified as an engineer or architect to provide the services (as specified in 40 U.S.C. 1102(2)).

Contracting agencies must prepare and maintain written policies and procedures for the procurement, management, and administration of engineering and design related services using FAHP funding (as specified in 23 CFR 172). Written policies and procedures prepared by States shall be reviewed and approved by FHWA. The policies and procedures of LPAs must either be provided by or reviewed and approved by the administering State.

Competitive negotiation (as specified in 23 U.S.C. 112 (b)(2)(A) and 23 CFR 172) is based on Brooks Act qualifications based selection procedures (as specified in 40 U.S.C. 1101-1104) and is the primary method of procurement for engineering and design related services using FAHP funding. In general, competitive negotiation/qualifications based selection procedures must be followed when procuring engineering and design related services using FAHP funds where those services are directly related to a construction project.

The Brooks Act requires the selection of engineering and design related services on the basis of demonstrated competence and qualifications for the type of professional services required and negotiation of a fair and reasonable compensation. The qualifications based selection procedures prescribed in the Brooks Act require public announcement/advertisement of all requirements for the desired services (as specified in 40 U.S.C. 1101). The Brooks Act further requires evaluation of current statements of qualifications, performance data, and statements regarding the proposed project or services submitted by prospective consultant engineering firms. Contracting agencies shall then select and rank a minimum of three firms based on demonstrated competence and qualifications in accordance with the established/advertised criteria (as specified in 40 U.S.C. 1103). Price and in-State or local preferences shall not be used as criteria in the evaluation, ranking, and selection of the most highly qualified firm.

Upon completion of the qualifications based evaluation and ranking of proposals, the contracting agency initiates negotiations with the most highly qualified firm to arrive at a fair and reasonable compensation for the solicited services which considers the scope, complexity, professional nature, and estimated value of the services to be rendered (as specified in 40 U.S.C. 1104). The contracting agency must prepare an independent estimate to serve as the basis for negotiation with the selected consultant. The focus of negotiations should be on the scope or tasks to be performed and the level of effort and experience of staff required to complete those tasks. Only work/tasks included within the advertised scope of services and evaluation criteria of the solicitation from which a consultant was selected based on qualifications to perform may be incorporated into the contract.

If the contracting agency and most highly qualified firm are unable to negotiate a fair and reasonable contract, the agency may formally terminate negotiations and undertake negotiations with the next most qualified firm, continuing the process until an agreement is reached.

Small purchase/simplified acquisition and noncompetitive procedures are the only two alternative methods for the procurement of engineering and design related services, but each method may only be utilized under limited conditions.

- Small purchase procedures may be used to procure engineering and design related services where the total contract costs are below the lesser of the Federal simplified acquisition threshold (as specified in 48 CFR 2.101) or the State's established threshold.
- Noncompetitive procedures are limited to circumstances where the service is only available from a single source, there is an emergency which will not permit the time necessary to conduct competitive negotiations, or after solicitation, competition is determined to be inadequate. Use of this method requires a justification submittal and FHWA approval.

Federally funded contracts for services that are not considered engineering and design related or not directly related to a construction project shall be procured in accordance with State and local procurement policies and procedures and other Federal requirements applicable to such activities (as specified in 49 CFR 18.4 and 18.36(a)).

The allowability of consultant costs are determined by the Federal Acquisition Regulation (FAR) cost principles contained in 48 CFR 31 (as specified in 49 CFR 18.22(b)). Contracting agencies shall accept cognizant approved indirect cost rates established in accordance with the FAR cost principles (as specified in 48 CFR 31) for a consultant firm's applicable one-year accounting period (as specified in 23 U.S.C. 112(b)(2)(C)). Contracting agencies shall apply accepted indirect cost rates for the purposes of contract estimation, negotiation, administration, reporting, and contract payment; and the rates shall not be limited by administrative or de facto ceilings of any kind (as specified in 23 U.S.C. 112(b)(2)(D)). Note that the States of Minnesota and West Virginia are granted exceptions from these indirect cost rate requirements (as specified in 23 U.S.C. 112(b)(2)(F)).

The aforementioned requirements will not apply to consultant services contracts which do not use FA funds, even for design phase services contracts where the agency intends to use FAHP funding for the subsequent physical construction phase. A physical construction authorization is a separate Federal action which carries its own eligibility requirements.

In satisfying the requirements for the delivery and administration of the FAHP, States and local public agencies may engage the services of consultants to the extent necessary or desirable. However, these agencies must have adequate powers and be suitably equipped and organized to fulfill the requirements of the

FAHP (as specified in 23 U.S.C. 302(a) and 23 U.S.C. 106(g)(4)). This includes providing the necessary controls to prevent or mitigate conflicts of interest to protect the public's interest against fraud, waste, and abuse. General conflicts of interest provisions are provided in 23 CFR 1.33. It is important to understand that conflicts of interest may be direct or indirect (e.g., as result of a personal or business relationship). Additionally, the appearance of a conflict of interest should be avoided as an apparent conflict may undermine public trust if not sufficiently mitigated.

A comprehensive set of question and answer guidance to clarify the statutory and regulatory requirements of the FHWA associated with the use of engineering and design related consultant services is provided at:

<http://www.fhwa.dot.gov/programadmin/172qa.cfm>.

Additional questions regarding this subject should be referred to FHWA's Office of Infrastructure Pre-Construction Group (HIPA-20).

5. Planning

To ensure that FA funds are used to the maximum effect, each State is required to develop a comprehensive statewide transportation improvement plan. This plan is to be developed in a continuous, comprehensive and cooperative process which considers the needs and available resources of the entire state and its constituent communities. The resulting plan which has been developed in cooperation with metropolitan areas and transportation management areas within the State identifies project priorities that will facilitate the efficient movement of people and goods within the state.

Statewide and metropolitan transportation planning processes are governed by Federal law contained in 23 USC 134 and 135. To assist State and local agencies in carrying out the requirements, FHWA and FTA have developed the regulations in 23 CFR 450. FTA also has regulations for transit-related planning in 49 CFR 613. Both sets of regulations were substantially revised on February 14, 2007 (see 72 FR 7224-7286) to conform with legislative changes made by SAFETEA-LU and TEA-21. On June 2, 2014, FHWA and FTA proposed revisions to these regulations to conform to legislative changes made by MAP 21 (see 79 FR 31784-31841).

To assist the Divisions and STAs, FHWA's Office of Environment, Planning and Realty (HEP) maintains a planning guidance page on the FHWA Internet website.

6. Environment

While the transportation planning process reflects the desires of communities within a state, every project must be developed with consideration for avoiding or minimizing adverse impacts on the human and natural environment. Before any project can be constructed on the ground, FHWA must

address and comply with Federal requirements covering the social, economic and environmental concerns which range from community cohesion to endangered species. The procedures FHWA uses to evaluate environmental impacts of projects include 23 CFR 771 (FHWA's procedures implementing the National Environmental Policy Act (NEPA)) and 23 CFR 774 (FHWA's procedures for implementing 23 U.S.C. 138 (Section 4(f) of the U.S. DOT Act)).

Two offices within FHWA focus on environmental protection and enhancement. The Office of Natural and Human Environment primarily focuses on environmental programs associated with air and water quality; noise; and programs associated with improving the "built" environment such as transportation enhancements; scenic byways; and installation of pedestrian and bicycle facilities. The Office of Project Development and Environmental Review focuses on the procedural requirements of NEPA with a goal of developing a balanced approach to streamlined transportation decision making that takes into account both the project's environmental impacts and the local community's needs for safe and efficient transportation.

Policy guidance for both offices is available on the HEP website under "Environment" (see www.fhwa.dot.gov/environment/).

See section III.B.9.a.viii for additional discussion on the inclusion of environmental commitments in PS&E documents.

7. Right-of-way Acquisition

Concern for fair and equitable treatment of private landowners by public agencies in the process of acquiring private property of public purposes goes back to the beginning of the United States. As is clearly shown by the Fifth Amendment to the U.S. Constitution, the Founding Fathers placed a high value on the protection of private property:

"No person shall... be deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use without just compensation."

The Federal government monitors the acquisition of private property for to ensure that:

1. the Fifth Amendment mandates are met when private property is acquired with Federal funding;
2. private property is acquired without delay to the associated project;
3. Federal funds are spent appropriately.

The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act, Public Law 91-646, as amended, codified as 42 U.S.C. 4601 *et seq.*) is the primary Federal law governing real property acquisition and relocation activities for Federal and federally assisted projects and programs. Government-wide regulations to implement the Uniform Act are located in 49 CFR Part 24; however, FHWA has promulgated regulations on right-of-way

acquisition related to the FAHP in 23 CFR 710. To assist local agencies in understanding the Uniform Act requirements, the Office of Realty has published the [Real Estate Acquisition Guide for Local Public Agencies](#). Additional documents are available on the HEP website. However, since other Federal, State and local laws may affect the right-of-way process within a State, each Division has a realty specialist on staff.

Regardless of whether FA funds are used for the purchase of right-of-way, the Uniform Act applies to any project receiving Federal funds or Federal financial assistance for any phase of project development. The Uniform Act applies even when private funds are used to purchase right-of-way for a Federal or federally assisted project.

8. Design and Preconstruction

a. Definition of "Preliminary Design"

References:

23 CFR 636

FHWA Order 6640.1 – *"FHWA Policy on Permissible Project Related Activities During the NEPA Process,"*

Applicability: All FA construction projects

Guidance: "Preliminary design" defines the general project location and design concepts. As defined in 23 CFR 636.103, preliminary design includes any activity needed to establish parameters for the final design. Preliminary design activities may be carried out prior to, and, in fact, may be necessary for, the completion of the required environmental clearance of the project under the National Environmental Policy Act (NEPA). However, the Division and STA must ensure that any preliminary design activities undertaken prior to completion of the NEPA review process do not materially affect the objective consideration of project alternatives.

b. Design standards

References:

23 U.S.C. 109 -- *Standards*

23 CFR 625

Non-regulatory supplement to 23 CFR 635

HQ memo, *"Interstate Standards,"* May 8, 2006

HQ memo, *"2004 Green Book,"* February 23, 2005

HQ memo, *"2001 Green Book,"* February 15, 2002

HQ memo, *"Implementing Guidance – Project Review, Oversight, and Administration,"* March 11, 1992

HQ memo, *"Design Speed,"* November 4, 1988

HQ memo, "Design Speed," August 21, 1985
Horizontal Clearance and Clear Zone FAQ

Applicability:

Projects on the NHS must be designed to meet FHWA approved standards.

Projects off the NHS may be designed to meet State or local standards.

Background: The STAs, working through AASHTO, develop design standards through a series of committees and task forces. FHWA contributes to the development of the design standards through membership on these working units, sponsoring and participating in research efforts, and many other initiatives. Following STA acceptance of the AASHTO standards, FHWA uses a formal rulemaking process to adopt those it considers suitable for the NHS.

Guidance: Title 23 U.S.C. 109 provides that design standards for projects on the NHS must be approved by the Secretary of the US Department of Transportation in cooperation with the STAs. The Secretary has delegated this authority to the Federal Highway Administrator.

Section 109(o) of title 23 U.S.C. specifies that non-NHS projects may be designed, constructed, operated, and maintained in accordance with State laws, regulations and directives. FHWA has interpreted this section to mean that a State would follow the same laws and procedures for the design, construction and maintenance of non-NHS projects as it would for any State-funded projects.

The following subsections provide a brief look at several design topics. Questions related to design should be referred to HIPA-20.

i. Design Exceptions

FHWA policy on design standards has consistently held that its formal adoption of a standard makes the minimum value for each design element the minimum design standard for Federal-aid highway projects. Therefore, a formal design exception is required if a project's design uses less than the minimum criteria in an adopted standard. The STA may evaluate, document and approve design exceptions on state-delegated or state-funded projects, provided it follows FHWA design exception guidelines for projects on the NHS. The approval of design exceptions is a Federal Action regardless of the source of funding (e.g., State, local, private, FAHP) or if a State DOT or local agency approves the design exceptions on behalf of FHWA. More information on design exceptions can be found at <http://www.fhwa.dot.gov/design/standards/qa.cfm>

ii. Interstate access modifications

Any project which adds or modifies Interstate access as defined in the guidance must be preceded by a FHWA-approved Interstate Access Request (IAR) regardless of whether the project will use Federal-aid funding for any phase. FHWA has developed guidance on the implementation of MAP-21, Section 1505 which allows FHWA the option of permitting STAs under a programmatic agreement to approve Interstate access modifications. Guidance on Interstate access programmatic agreements can be found at <http://www.fhwa.dot.gov/design/interstate/130822.cfm>.

iii. Requirements of the Americans with Disability Act

Reference:

28 CFR 35

49 CFR 27.3

49 CFR 37, Appendix A

[FHWA/DOJ Joint Technical Assistance, 2013](#)

[FHWA's ADA and Section 504 FAQ webpage](#)

Guidance: The FHWA has responsibility of implementing the pedestrian access requirements of ensuring that new construction and alterations are readily accessible to and usable by pedestrians with disabilities in accordance with the Americans with Disabilities Act of 1990 (P.L. 101-336, or ADA) and Section 504 of the Rehabilitation Act of 1973. While neither ADA nor Section 504 requires public agencies to provide pedestrian facilities, when such facilities are provided or exist, they must be accessible to the maximum extent feasible. FHWA's Offices of Civil Rights; Infrastructure; Planning, Environment, and Realty; and Safety maintain a comprehensive library of documents related to ADA and Section 504. In 2013, FHWA and the Department of Justice issued Joint Technical Assistance on the ADA's curb ramp requirements when roads, streets, or highways are altered through resurfacing treatments. The Joint Technical Assistance is available at http://www.fhwa.dot.gov/civilrights/programs/doj_fhwa_ta.cfm.

FHWA maintains a set of questions and answers on the ADA/Section 504 at http://www.fhwa.dot.gov/civilrights/programs/ada_sect504qa.cfm.

iv. Accommodation of bicyclists and pedestrians

References:

OST policy statement, [*“United States Department of Transportation Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations,”*](#) March 2010

[HEP Bicycle and Pedestrian program webpage](#)

Guidance:

Public support of improved facilities for bicyclists and pedestrians has been an element of the FAHP since the creation of the Office of Road Inquiry in 1893. Bicycle and pedestrian accommodation has received increasing emphasis since the passage of ISTEA in 1991. The March 2010 OST policy statement states: *“The DOT policy is to incorporate safe and convenient walking and bicycling facilities into transportation projects.”* While Section 1202 of TEA-21 requires that bicycle and pedestrian accommodation be considered where appropriate, USDOT policy is to incorporate safe and convenient walking and bicycling facilities into transportation projects. FHWA’s general program guidance for bicycle and pedestrian travel is available at

http://www.fhwa.dot.gov/environment/bicycle_pedestrian/guidance/. Specific guidance on the integration of bicycle and pedestrian facilities into highways is available at

http://www.fhwa.dot.gov/environment/bicycle_pedestrian/guidance/design_guidance/design.cfm. Prior guidance “Accommodating Bicycle and Pedestrian Travel: A Recommended Approach” issued in 2001, developed in cooperation with AASHTO, ITE, the Access Board and others, and is available at http://www.fhwa.dot.gov/environment/bicycle_pedestrian/guidance/design_guidance/supdesgn.cfm.

Questions on this area may be referred to HEP or HEPA-20.

v. Context-sensitive solutions

In simple terms, the objective of context-sensitive solutions (CSS) is to arrive at balanced decisions in developing transportation facilities that fit their physical setting and preserve scenic, historic and environmental resources while maintaining safety and mobility. The process of CSS uses early, continuous and meaningful involvement of the public and all stakeholders to consider the context (location, traffic volume, mix of traffic, etc.) of a specific highway facility; the objectives of the project; and public input in the development of solutions to project issues. Additional information about the use of CSS may be found at <http://www.fhwa.dot.gov/planning/csstp/>.

vi. Coordination with other Federal agencies

Several project activities require formal coordination with other Federal agencies. These activities and applicable regulations are:

Highway improvements in the vicinity of airports - 23 CFR 620A

Geodetic markers - 23 CFR 630D

Bridges on Federal dams - 23 CFR 630H

Projects funded through the Appalachian Regional Development Commission - 23 CFR 633B

Navigational clearances for bridges - 23 CFR 650H

Vertical clearance of bridges on the Interstate System for the Strategic Highway Network - www.fhwa.dot.gov/design/090415.cfm.

vii. Utility accommodation

References:

23 CFR 635.309

23 CFR 645 Subpart A

Utility Program Guide, January 2003

Applicability: The provisions of 23 CFR 645 Subpart A apply to reimbursement claimed by the State Transportation Agency (STA) for costs incurred under an approved and properly executed transportation department (TD) utility agreement. The FHWA's reimbursement to the STA is governed by State law (or State regulation) or the provisions of 23 CFR 645 Subpart A whichever is more restrictive.

Background: It is recognized to be in the public interest for utility facilities to jointly use the right-of-way of public roads and streets when such use does not interfere with primary highway purposes. The opportunity for such joint use avoids the additional cost of acquiring separate right-of-way for the exclusive accommodation of utilities.

Guidance: To ensure that highway operations and safety are not impaired, each STA has a formal utility accommodation policy governing when, how and which utilities may use highway right-of-way, and under what conditions public funds may be used to relocate utility facilities to accommodate highway construction. This policy requires FHWA approval prior to participation in utility relocation as part of a Federal-aid project.

Agreements and Authorizations:

A utility agreement is required for all utilities requiring relocation on a Federal-aid and direct Federal project regardless of who actually pays for the

relocation. The purpose of the utility agreement is to minimize construction impacts on federally funded projects by requiring the TD and the utility to agree upon their separate responsibilities for financing and accomplishing the relocation work. When Federal participation is requested the agreement shall incorporate the requirements of 23 CFR 645 Subpart A and designate the method of construction to be used for performing the work (by contract or force account) and for developing a detailed estimate of the relocation costs. The agreement shall be supported by plans, specifications when required, an itemized cost estimate of the work agreed upon and a detailed schedule for accomplishing the relocation work.

Authorization to advertise the physical construction for bids shall not be given until a statement (utility certification) is received from the state that either all utility work has been completed or that all necessary arrangements have been made for it to be undertaken and completed as required for proper coordination with the physical construction schedules. If the utility work is to be completed concurrently with the highway construction, there shall be appropriate notification provided in the bid proposals identifying the utility work which is to be underway concurrently with the highway construction (23 CFR 635.309(b)).

The FHWA Office of Program Administration, Pre-construction Group, HIPA-20, has considerable guidance on utility accommodation and relocation available at: <http://www.fhwa.dot.gov/programadmin/utility.cfm>. Additionally the January 2003, Utility Program Guide provides policy guidance which is available at: <http://www.fhwa.dot.gov/reports/utilguid/>

viii Pavement design

References:

23 CFR 626

Applicability: All Federal-aid highway projects

Background: Selecting an appropriate pavement structure is critical to long-term performance of a highway facility.

Guidance: The regulation requires that a Federal-aid highway project's pavement be designed to accommodate both current and future traffic volumes in a safe, durable, and cost-effective manner. Among the factors to be considered in developing a pavement design are: materials, traffic, climate, maintenance, drainage and life-cycle costs.

For additional policy, guidance, and information, please review the Pavement Technology webpages on the FHWA website.

c. Basis of contract award

i. Competitive low bid

References:

23 U.S.C. 112(a)

23 U.S.C. 112(b)

23 CFR 635.114

23 CFR 635 Subpart B

HQ memo – [“Deviation from Competitive Bidding Requirements,” April 30, 1985](#)

HQ memo – [“Procurement of Federal-aid Construction Projects,” June 26, 2008](#)

Applicability: All FA highway construction projects .

Background: Since 1938 Congress has required that FAHP contracts be awarded competitively. The requirement was codified in 23 U.S.C. 112 as a result of Public Law 85-767 in August 1958. In the Federal-Aid Highway Act of 1968 (Pub. L. 90-495), Congress amended 23 U.S.C. 112(b) to require award to the lowest responsive and responsible bidder.

The requirement of award to the “lowest responsible bidder” existed in the FAHP regulations starting about 1945 although prior versions of the regulations only referred to competition. Several of the regulatory requirements which support full and open competition such as minimum advertisement period, in-State preference, pre-qualification and concurrence in award became part of the regulations in 1934.

Guidance: One of the most basic tenets of FA contracting is that construction contracts are to be awarded competitively to the responsible contractor which submits the lowest responsive bid. This mandate is set forth in 23 U.S.C. 112 and reinforced by 23 CFR 635.114(a) which require that:

“Federal-aid contracts shall be awarded only on the basis of the lowest responsive bid submitted by a bidder meeting the criteria of responsibility as may have been established by the STD . . .”

This principle is the basis for Federal assistance to the STA highway construction programs. The act of a contracting agency negotiating with an apparent low bidder prior to award is defined as “bid rigging in reverse,” and is expressly prohibited by 23 CFR 635.113(a) which states the following:

“Negotiation with contractors, during the period following the opening of bids and before the award of the contract shall not be permitted.”

See also Headquarters memorandum dated April 30, 1985 titled “Deviation from Competitive Bidding Requirements” (Appendix A).

Exceptions to Competitive Bidding. Competitive bidding is the principal means to award FA contracts. However, there may be situations that support the use of a contracting method other than competitive bidding. Prior to the STURAA of 1987, Title 23 allowed the competitive bidding requirement to be waived only if the alternate method was shown to be more cost effective. However, section 111(a) of the STURAA of 1987 amended the provisions of 23 U.S.C. 112(b) to permit noncompetitive construction contracting under emergency conditions. Therefore, noncompetitive construction contracting or other unusual methods of construction may be approved in one of three conditions:

- the option is proven to be more cost effective,
- an emergency exists and time is a critical factor, or
- the project will use the Youth Conservation Corps per MAP-21 Section 1524.

Circumstances that justify a negotiated construction contract should be even more of an exception, making approvals of this basis for contract award extremely rare.

Under certain conditions, transportation enhancement projects may be procured using State or LPA small purchase procedures. See Section IV.B for additional information.

Projects that do not fully comply with the provisions of 23 CFR 635 or 23 CFR 636 may be pursued under Special Experimental Projects No. 14 - Innovative Contracting with the prior approval of HIPA-30.

ii. Public agency force account

References:

23 CFR 635B

Non-regulatory Supplement 23 CFR 635B, December 9, 1991

Order 5060.1 "FHWA Policy on Agency Force Account Use," March 12, 2012

Applicability: All FA highway construction projects

Background: The use of public agency force account to accomplish an FAHP project has been allowed since the inception of the FAHP, provided that the STA could demonstrate that using public agency force account was more cost-effective than awarding the work through competitive low bid.

Guidance: FHWA's regulations state that competitive bidding must be used for highway construction "...unless the State transportation department demonstrates, to the satisfaction of the Secretary, that some other method is more cost effective or that an emergency exists." FHWA expects that competitive bidding will be used to award the vast majority of FA highway construction contracts.

However, in emergency situations or in cases where the STA can demonstrate its cost-effectiveness, the use of public agency forces to construct the project is acceptable.

Force account work using State or other public forces is discussed in 23 CFR 635B and is defined as *“the direct performance of highway construction work by a State highway agency, a county, a railroad, or a public utility company by use of labor, equipment, materials, and supplies furnished by them and used under their direct control.”* For guidance on the documentation and approval of a cost effectiveness finding, see FHWA Order 5060.1 - *“FHWA Policy on Agency Force Account Use.”*

A cost effectiveness finding is required for the FHWA / STA approval of any proposal to use a noncompetitive method of contracting. Title 23 CFR 635.205 cites the following situations as possible reasons for the use of noncompetitive construction contracting:

- when the rights or responsibilities of the community are so affected as to require a special course of action, including situations where there is a lack of competition or unreasonable bids, it may be determined to be cost effective to use force account, and
- when by reason of the inherent nature of the operation, it is deemed cost effective to do minor adjustments of railroad and utility facilities (major work still to be accomplished by competitive bidding) by force account.

Under the first circumstance the use of force account may be found cost effective when properly documented. Under the second circumstance, FHWA has determined in the regulation that the use of force account is always cost effective; therefore, no additional documentation is required.

Force account contracts with a private contractor are an exception to normal construction contracting procedures.

iii. Emergency work

References:

23 CFR 635B

23 CFR 668

Emergency Relief Manual, May 2013

Applicability: Emergency FA highway construction projects

Background: In an emergency, the competitive bidding requirements may be waived. An emergency is a situation that requires repair work, as provided for under the Emergency Relief (ER) program (23 CFR 668.105(i)), or when a major element or segment of the highway system has failed and the situation is such that competitive bidding is not possible or is impractical. Competitive bidding under such circumstances may not be possible or may be impractical because immediate action is necessary to:

- minimize the extent of the damage,
- protect remaining facilities, or
- restore essential travel.

Guidance: Therefore, the temporary work necessary to restore the traffic flow on the facility may be performed by either force account or negotiated contract. The regulation clarifies that this definition of emergency is only for the purpose of determining the applicability of the provisions and is not intended to define an “emergency” under 23 CFR 668.105(i) and 23 CFR 635 Subpart B.

FHWA’s policy for carrying out emergency repair work under the ER Program is contained in 23 CFR 668 and the [Emergency Relief Manual](#). Due to the urgency and nature of emergency repairs performed under the ER Program, the regulations allow the STA to select the method of construction contracting based on the immediate need to protect public health and safety. This policy only applies to emergency repairs as defined in 23 CFR 668. Reconstruction and permanent repair work is subject to the competitive bidding policy of 23 CFR 635.

iv. Alternative contracting

a) Special Experimental Project 14 (SEP-14)

References:

- 23 U.S.C. 502(b) – *Surface transportation research, development, and technology*
- HQ memo - *“Innovative Contracting Practices and Special Experimental Project No. 14,”* February 13, 1990
- HQ memo – *“Transportation Research Circular No. 386, Innovative Contracting Practices,”* February 19, 1992
- HQ memo – *“Special Experimental Project No. 14,”* May 4, 1995

Applicability: All FA highway construction projects

Background: In 1988 a Transportation Research Board (TRB) task force, comprised of representatives from all segments of the highway industry, was formed to evaluate innovative contracting practices for possible applications to highway construction. The task force’s mission was to:

- research and compile information on contracting practices used by government agencies in the United States and other countries;
- assess how current practice affect quality, progress and cost; and
- suggest measures for improving contracting practices and promoting quality in construction.

The TRB task force requested that FHWA establish a program that could evaluate and validate the task force findings which were eventually published in

December 1991 as TRB Circular 386, *"Innovative Contracting Practices."* FHWA established its Special Experimental Project No. 14 (SEP14) – *"Innovative Contracting Practices"* based on preliminary information from the task force about promising methods.

Guidance: Within the regulatory requirements of the FA program, some flexibility does exist. SEP-14 strives to *"identify, evaluate and document innovative contracting practices that have the potential to reduce the life cycle cost of projects while, at the same time, maintain product quality.* As stated, SEP-14 is an effort to identify the maximum flexibility and appropriateness of a broad range of project delivery methods, procurement procedures and contract payment methods that may be used separately or together to achieve specific project goals.

To assist STAs with understanding the range of alternative contracting tools, FHWA through NHI has developed a two-day course *"Alternative Contracting"* (#134058) which explores the available tools through a combination of lecture and case study.

Additional information about specific techniques may be found on the SEP-14 webpage at www.fhwa.dot.gov/construction/cqit/sep14.cfm.

Other resources are:

- NCHRP Report 652 *"Effects of Incentive and Disincentive Contract Provisions on Highway Construction Duration and Quality,"* 2010. The report includes discussion of the use of incentives within the context of alternative contracting.
- NCHRP Synthesis Report 379 *"Selection and Evaluation of Alternative Contracting Methods to Accelerate Project Completion,"* 2008. The report explores the process for selection of alternative contracting methods that can potentially accelerate project completion. The report also examines factors associated with selecting one type of alternative contracting technique over another.
- AASHTO *"Primer on Contracting for the 21st Century"* – a generic overview of techniques.
- ASCE *"Alternative Project Delivery, Procurement, and Contracting Methods for Highways,"* 2007.

b) Operational methods

During the first few years of evaluation under SEP-14, STAs focused on the evaluation of cost-plus-time bidding, lane rental, warranties, and design-build. Based on the collective experience of the STAs trying one or more of these techniques, FHWA now considers them operational. An STA may use an operational technique without additional SEP-14 approval.

The National Specifications website provides the sample specifications and contracting provisions for these techniques from various transportation

agencies. The National Specifications website address is:
<https://fhwapap04.fhwa.dot.gov/nhswp>.

1) *Cost-plus-time (A+B)*

Cost plus time bidding, more commonly referred to as A+B bidding, reduces construction time by making time a factor, in addition to cost, when awarding a contract.

Under the A+B method, each submitted bid consists of two components:

- the "A" component is the traditional bid for the contract items based on unit bid prices and quantities while
- the "B" component is the bidder's estimate of the time required to complete critical construction as defined in the contract. Calendar days are typically used to reduce the potential for disputes.

For the purposes of determining the apparent low bidder, the B component is converted to a dollar value by multiplying the number of days by the daily road user cost identified in the contract. The simplest version of the formula looks like this:

$$A + (B \times \text{Daily Road User Cost}) = \text{Bid value}$$

The proposal documents may require the bidder to provide time estimates for complete construction and/or require time estimates for different phases which may have differing road user costs depending upon the phase's impact on traffic. An STA may elect to limit the minimum and/or maximum number of days that may be bid depending on the desired end result.

The bid value is only used to determine the low bidder. Total payments over the life of the contract will be based on the schedule of quantities and bid prices provided as component A. Over the life of the contract, the quantities (and potentially unit prices) may be adjusted based on plan changes, unforeseen conditions, etc.

The contractor's time estimate provided in the B component becomes the contract time for the application of incentives, disincentives, and liquidated damages (LD). Approved time extensions would affect the final completion date required for the contract.

When an A+B bidding procedure is used, the contracting agency should incorporate an incentive/disincentive provision (I/D, see section 9.a.iii for additional information) in the contract to maintain a level playing field in the procurement process. The incentive/disincentive provision must be based on the 'daily road user cost rate' and not LD rates used elsewhere in the contract.

Final compensation to the contractor will depend on whether the contract included an incentive/disincentive clause for completion of one or more milestones within the contract, and LD.

For projects with high road user costs, the A+B method has proven to be effective since it provides the contractor with the flexibility to establish the completion time. When combined with the use of a I/D clause, the method

rewards contractor innovation, operational efficiency, and potential use of accelerated construction techniques. However, some of the issues associated with the method are:

- unresolved problems with right-of-way, utility or railroad clearances that adversely impact contract time;
- shift of contractor resources from non-A+B projects, especially those without an incentive or with low LD rates, within the area to the A+B project in order to meet the project timetable or maximize the earned incentive; and
- conflict either within the contract (phasing requirements, traffic control, etc.) or external to the contract (such as adjacent contractors).

An STA must not use A+B bidding procedures without an appropriate I/D provision that is based on the same road user factor used to determine the apparent low bidder.

An STA may use a disincentive only provision (without an incentive) provided the daily disincentive amount is based on the same road user cost factor used to determine the apparent low bidder.

2) *Design-build*

References:

23 CFR 636

FHWA Final Rule, "*Design-Build Contracting*," February 12, 2014

Applicability:

Any FA project a STA chooses to deliver through design-build

Background: The design-build project delivery method requires that the owner-agency define its overall project goals and requirements, and then selects the design-builder based on the ability to meet the established goals.

Among the advantages of design-build are the potential for:

- Expedited construction (since construction may begin prior to the completion of all design details);
- Use of more innovative construction methods, phasing or materials;
- Ability to require extended liability or product warranties for a broader range of items since the contractor controls both design and construction;
- Reduction of contract changes and time extensions;
- Establishment of a firm, fixed price for project completion at the time of contract award; and
- A potential decrease in the demands on the STA's design personnel.

Among the disadvantages are:

- The potential need for an STA to modify its internal construction, materials, and quality assurance procedures to provide timely responses to the contractor;
- Loss of control over the project's final design, and
- The probable high cost for any scope change that may be required once the contract has been awarded, especially if construction has begun.

Guidance: Section 1307 of TEA-21 required the promulgation of design-build regulations for highway construction. Published on December 10, 2002, the regulations contained in 23 CFR 636 fulfill this requirement. On August 14, 2007 FHWA published a final rule modifying those regulations in response to the requirements of SAFETEA-LU, Section 1503. On February 12, 2014, FHWA published a final rule which eliminates the requirement that proposers of an alternative technical concept (ATC) must also submit a base proposal. An STA interested in using a process that deviates from the requirements of 23 CFR 636 may do so only with prior approval of an SEP-14 work plan.

Additional information about design-build contracting may be found in several NCHRP reports including:

- NCHRP Report 561: *Best Value Procurement for Highway Construction Projects*, 2006
- NCHRP Synthesis 376: *Quality Assurance in Design-Build Projects*, 2008
- NCHRP Synthesis 429: *Geotechnical Information Practices in Design-Build Projects*, 2012

3) *Lane rental*

Lane rental is a contract provision that incentivizes contractors to schedule and work during non-peak periods by charging rental fees for lane or shoulder use, with higher fees during peak periods.

A lane rental provision may be relatively simple (applying a standard hourly rate whenever a lane is taken out of service) or more complex (applying a variety of rates depending on time of day, number and types of lanes taken out of service and direction of traffic). The provision may require the bidders to provide an initial bid of lane rental hours which will be charged against during construction, or may establish some other format for applying the lane rental charges.

4) *Additive or deductive alternates*

Additive alternate bidding is a technique used by owner-agencies to achieve the maximum project scope within an available budget. Under this procedure, the owner-agency defines its critical project scope components as the

'base' and defines specific additional components as 'alternates' which will be added to the base in a pre-defined order to establish the low bid. The contract will be awarded to the bidder providing the maximum scope within the budget. While this alternative bidding method is considered to be non-traditional, when implemented in a fair and transparent manner, it is consistent with the competitive bidding principles in 23 U.S.C. 112, and therefore, does not need SEP-14 approval.

The owner-agency must clearly define the priority order in which the alternatives will be considered and added to the base. Some owner-agencies identify the available budget in the bid documents while others do not. Additionally the bid documents may establish whether the bid prices for unselected alternatives will apply should the owner-agency receive additional funds for the contract.

For a deductive alternate contract, the predefined alternate packets will be deducted from the base in a predefined order to result in a contract that fits the budget.

5) *Warranty*

References:

23 CFR 635.413

Applicability: All FA highway construction projects on the NHS.

Background: The FHWA had a longstanding policy, with few exceptions, against the use of warranties on any FA project. The policy was based on the reasoning that participation in a warranty payment constituted indirect FA participation in routine maintenance.

The TRB task force found that warranties have been successfully used by other countries and by STAs on non-FA projects to protect highway elements against early failure. Many European countries use 1 to 5 year warranties in their highway construction contracts. The consensus among European transportation agencies is that warranties do improve construction quality which typically extends project life.

Guidance: Following an extensive evaluation by STAs of a variety of warrantied highway elements, FHWA revised its policy on warranties by publishing a final rule on April 19, 1996, which allows STAs to include warranty provisions for specific highway construction products or features in FA contracts on NHS routes.

General warranties for the entire project are not acceptable unless the project in question is to be delivered by a design-builder (see 23 CFR 635.413(e)). If an STA's standard General Provisions require the contractor to provide a

general warranty upon project completion, the STA must negate the requirement by special provision for any non-design-build FA project.

A warranty may not cover any item ineligible for FA participation. Damage caused by others and routine maintenance remain the responsibility of the STA. Preventive maintenance work as defined by the October 8, 2004, memorandum on "*Preventive Maintenance Eligibility*" may be eligible for warranties.

The warranty must be for a specific construction product or feature under the contractor's control. A contractor cannot be required to warrant items over which they have no control. For example, for a project which has the contractor placing an asphaltic overlay on a pre-existing concrete pavement, the contractor could be required to warrant the pavement smoothness and/or rutting performance but could not be required to warrant reflective cracking which would be dependent on subsurface conditions more than the contractor's construction quality control.

As it relates to the enforcement of contract warranty requirements, with appropriate documentation, an STA may accept the transfer of responsibility from the prime contractor to a specific subcontractor for all warranties, guarantees and obligations with respect to the design, materials, workmanship, equipment, tools and supplies furnished by that subcontractor.

The length of a warranty is dependent on the surety industry's willingness to underwrite the warranty. In general, warranties tend to be restricted to a maximum of five years due to bonding and/or surety limitations.

Prior approval by the Division Administrator of the warranty provision is required before the provision may be used on NHS projects. An STA may elect to use warranty provisions on non-NHS projects at its own discretion.

Other resources that may be helpful are:

- [NCHRP Report 699](#) - "*Guidelines for the Use of Pavement Warranties on Highway Construction Projects*," 2011.
- FHWA - [Basic Pavement Warranty Guidance](#)
- FHWA - [Basic Pavement Warranty Workshop](#)

6) *Construction Manager/General Contractor (CM/GC)*

Construction Manager/General Contractor (CM/GC) is a method that has been derived from a method called Construction Manager at Risk (CMR, CM@R or CMAR) which is prevalent in the vertical construction industry. CM/GC may be referred to as Construction Manager at Risk (CMR) project delivery method in some states when mandated by state statute.

CM/GC provides for project acceleration by allowing the owner-agency to contract with a construction manager early in the design process and to negotiate price and schedule for construction before all design is complete. CM/GC is particularly recommended for projects that are technically complex, have challenging schedules, and/or when a high degree of construction phasing

may be necessary (e.g. long corridor) since the CM will be involved in the final design and can provide direct input on constructability, project phasing, risk allocation and innovations. Owner-agencies may also choose CM/GC as a means of obtaining technical expertise not available in-house.

Section 1303 of MAP-21 made CM/GC operational on October 1, 2012, meaning that SEP-14 approval is no longer required; however, SEP-14 reports on projects approved under SEP-14 would be helpful to agencies interested in learning more about the method. FHWA is formulating policy to fully implement CM/GC.

Several reference documents may be useful to owner-agencies interested in trying CM/GC for one or more projects. Among the references are:

- Various evaluation reports for projects completed under SEP-14 available at www.fhwa.dot.gov/programadmin/contracts/sep14list.cfm;
- FHWA's CM/GC webpage at www.fhwa.dot.gov/construction/cqit/cm.cfm;
- TCRP Legal Research Digest 39, "Competition Requirements of the Design/Build, Construction Manager at Risk, and Public-Private Partnership Contracts – Seven Case Studies," 2012; and
- NCHRP Synthesis 402, "Construction Manager-at-Risk Project Delivery for Highway Programs," 2010. This report explores current methods in which state departments of transportation and other public engineering agencies are applying construction manager-at-risk (CMR) project delivery to their construction projects.

7) *Alternate pavement type bidding using life-cycle cost adjustment factors*

References:

HQ memorandum, "[Alternative Pavement Type Bidding](#)," November 8, 2012
Technical Advisory, T 5040.39 -- "[Use of Alternate Bidding for Pavement Type Selection](#)," December 20, 2012

Due to the difficulties in developing truly equivalent alternate pavement designs, FHWA does not encourage the use of alternate bids for mainline pavement. In rare instances when the STA can clearly demonstrate through engineering and economic analysis that there is no clear cut choice between two or more equivalent pavement designs, alternate pavement bidding procedures may be used. Equivalent design implies that each alternative is designed to perform equally over the same performance period with similar life-cycle costs.

When the successful bidder is determined without the adjustment of the bids by life-cycle-cost factors based on the bidders' selected alternates, SEP-14 approval is not required.

On November 8, 2012, FHWA issued a memorandum allowing the use of alternative pavement type bidding without SEP-14 approval when the bids are adjusted by life-cycle-cost factors based on the guidance in the TA.

A post-award change order to the other pavement type should never be allowed since it negates the rationale for contract award.

c) Experimental methods

The use of an experimental method on a FA highway construction project requires prior approval of the SEP-14 workplan by HIPA-30.

1) *Best value*

A few States have evaluated the award of a contract based on the best value to be provided. "Best value" may be defined based on either the value of the product to be received (a 10-year warranty compared with a 3 or 5 year warranty) or the bidder's past performance based on some objective criteria. In general the project award is based on a composite of price data and non-price factors.

2) *Indefinite delivery/indefinite quantity (ID/IQ)*

The ID/IQ concept may also be referred to as "on-call," "job order," or "task order" contracting. This is a concept that many owner-agencies currently use for design, maintenance or traffic control activities, and for other recurrent activities with a definable 'typical' scope. For an ID/IQ contract, the bidders bid on a unit of defined work (examples: lane-mile of pavement striping; lane mile of asphalt overlay of a defined depth; traffic signal installation for a 'typical' intersection; or installation of a defined 'typical' off-system bridge) with a guaranteed minimum number of work units over the life of the contract. Actual work locations will be determined during the contract, and there may be some room for price adjustments based on location specifics. The owner-agency may craft the bid documents to allow multiple awards to cover different geographic areas, or to allow mutually agreed upon contract extensions beyond the initial contract period. The owner-agency eliminates the need to advertise and award several small contracts during the same contract period while the contractor gains by having a guaranteed minimum level of work for the core crew over the same period.

3) *No excuse incentive/bonus*

Under this concept, the STA gives the contractor a "drop-dead date" or incentive date for completion of a phase or project. If the work is completed in advance of that date, the contractor receives a bonus. However, the STA will accept no excuses for delay in meeting that date. Other than the no-excuse bonus date, normal contract administration procedures are followed.

This concept works well when an owner wants to provide an incentive for project completion by a specific date and when there's no value to paying an incentive if the stipulated date is not met by the contractor.

4) *Lump sum bidding*

Lump sum bidding may be carried out in two ways. Under the non-experimental method, the STA provides the bidders with complete plans including quantity take-offs as the basis for the bids to be submitted. The experimental method requires each bidder to develop the quantity take-offs based on the provided plans in order to develop a lump sum bid for the work. This method was developed to reduce quantity overruns due to errors in quantity calculations. Another benefit is the reduction in paperwork related to quantity measurement and verification, allowing STA construction personnel to spend more time on inspection of the work. Changes associated with changed or unforeseen conditions as well as added or deleted work are negotiated using the STA's standard construction procedures.

The Florida DOT has used this method extensively for simple projects such as resurfacing, bike path construction, box culvert extensions or minor bridge widening. Based on past experience, Florida DOT now requires bidders to include a bid unit price and quantities for specific items of work. These unit prices enable the Florida DOT to keep the statewide historic bid database up-to-date and expedite the negotiation of change orders for those items of work.

d) Disallowed methods

1) *Bid averaging*

Based on the rationale that the award based on the average bid might more closely reflect the actual cost of construction since bidders would submit bids based on their own actual costs, one STA suggested an experiment with bid averaging. Under bid averaging, the high and low bids are thrown out; the remaining bids are averaged and the contract is awarded to the contractor that comes closest to that average. To work well, a minimum of five bidders is required for each contract. However, since this method clearly violates the requirements in 23 USC 112, FHWA rejected the proposal.

2) *Reverse auction*

Reverse auction bidding is another method that draws on STA maintenance experience. Under reverse auction bidding, the STA posts a scope of work on a website and allows bidders to bid until the closing time. In some ways this method is conducted similar to a silent auction except that bids for construction are expected to drop as each bidder reacts to subsequent bids. Award is based on the low bidder at the advertised bid closing time. FHWA rejected this proposal for several reasons, primarily it violates the confidentiality

of bids and it pushes bidders to look for contract ambiguities that may allow them recover the cost of bidding low in an effort to get the work. The latter creates an adversarial relationship between the contractor and STA before the contract has even been awarded.

d. Major project requirements

References:

23 U.S.C. 106(h) – *Project approval and oversight*

Applicability:

Any Federal-aid project with a total estimated cost of \$500 million or more, or that meets other criteria as defined in the major project FAQs.

Background: Recognizing that undertaking a very large, highly complex project has the potential to adversely impact a STA's ability to fulfill the FAHP requirements for the remaining program within the State, SAFETEA-LU, section 1904 instituted the requirement for financial and project management plans for each major project.

Guidance: Major projects have a total estimated cost, including environment, PE, ROW, construction, construction inspection, etc., greater than \$500 million. Other factors that may trigger a major project designation is national significance, complexity, receiving a TIFIA loan, or public interest. Major projects require cost estimate reviews, submission and approval of an annual finance plan, and submission and approval of a project management plan at various milestones in the project's development. Additional information about major project requirements may be found on the FHWA website at http://www.fhwa.dot.gov/ipd/project_delivery/defined/major_project.aspx.

e. Standard plans and specifications

References:

23 CFR 630 Subpart B

HQ memo – *“National Highway Specifications Website,”* October 24, 2008

HIAM TA – *“Development and Review of Specifications,”* March 24, 2010

Applicability: All FA highway construction projects on the NHS

Background: Contract plans and specifications must describe the location and design features as well as the construction requirements in sufficient detail to allow a bidder to submit an accurate bid; to facilitate construction; and to enable the STA to control the contract.

The primary function of contract specifications is to communicate to the prospective bidders, and ultimately, the prime contractor:

- The owner's construction, material, and operational requirements for a project,
- The owner's criteria for verifying conformance with the requirements; and
- The basis of payment.

Specifications are categorized as one of two types:

- Method or prescriptive specifications - which tell the contractor exactly how to build a contract item by specifying the materials, equipment and process to be followed; or
- Performance specifications - which tell the contractor what the desired end result is and leave it to the contractor to achieve that result. Performance specifications are an umbrella term that can include end-result specifications, performance-related specifications (PRS), and performance-based specifications (PBS). It may also include quality assurance, long-term maintenance and warranty specifications.

Guidance: FHWA regulations do not require the use of standard plans or specifications. However, the regulations do require that FHWA must approve the plans, specifications, and estimate (PS&E) of any contract prior to its advertisement for bids. In the absence of pre-approved standard specifications and standard plans, all of the required specifications and plan information would have to be included and approved as part of the PS&E package for each contract. To simplify and speed up the approval process, the STAs have developed standard plans and specifications. Once approved by FHWA, the standard plans and specifications may be used on any FA construction project in the State without additional review.

Approval of the standard plans, specifications and standard special provisions has been delegated to the Division Administrator.

A review of claims cases around the country make it clear that any ambiguity in a specification that allows an alternate reasonable interpretation of the specification typically will result in a ruling against the writer. Some considerations in developing standard specifications are:

- Use clear, concise and complete language.
- Use imperative mood, active voice. Example: *"All bolts shall be countersunk"* - passive voice; *"Countersink all bolts."* - imperative mood, active voice.
- Use short words, phrases and sentences for clarity.
- Remove redundancies.
- Organize instructions sequentially.
- Separate instructions for the contractor and the agency.
- Write for acceptance rather than rejection.

- Avoid escape clauses and unnecessary approvals.
- Eliminate ambiguity by using specific rather than general words
- Seek peer review for clarity and content.
- Consider moving to performance specifications.

Method specifications are the most common form of contract specifications used for highway construction; however, the increasing use of alternate project delivery methods such as design-build has led to the increased interest in performance specifications as a means of fostering contractor innovation, flexibility and shifting some of the performance risk to the contractor. The development of appropriate performance specifications is the focus of one of the SHRP2 Rapid Renewal projects, R07, Performance Specifications for Rapid Renewal. Among the products to be produced by the project are implementation guidelines for decision makers and specification writers, and guide specifications for hot mix asphalt; Portland cement concrete pavement; concrete bridge deck replacement; work zone traffic control; and quality management. These products should be available in 2013.

In addition to the technical advisory on writing specifications, FHWA has other resources available to the STAs.

Through the National Highway Institute (NHI), FHWA offers training course 13401, *“Principles of Writing Highway Construction Specifications.”* The objectives of this course are to study the legal ramifications of highway construction specifications, and to identify and describe specific elements of specifications that result in contractor claims. Case studies are used to identify ways to avoid or minimize claims.

Additionally, FHWA maintains the National Specification Website (address: www.specs.fhwa.dot.gov) with copies of the current standard specifications and construction manuals for each STA, AASHTO, and FHWA. Also available from several STAs are their special provisions and “emerging” specifications. Typically emerging specifications are the contract provisions an STA has developed for a new construction method, product or alternative contracting technique. The website allows users to search the database in a variety of ways.

In 2003, the AASHTO Subcommittee on Construction’s Quality Construction Task Force developed a task force report on *“Major Types of Transportation Construction Specifications.”* The report provides an expanded discussion of the various types of construction specifications and their appropriate use. The report is available as a reference on the FHWA website at <http://www.fhwa.dot.gov/construction/specstoc.cfm>.

The recently completed SHRP2 R07 project *“Performance Specifications for Rapid Highway Renewal”* has resulted in the development of an implementation guide for STA decisionmakers interested in the use of performance specifications, a guide for development of a performance specification, and thirteen model specifications that may be adapted by an STA for use.

f. Constructability Reviews

References:

None

Applicability: State option

Background: In order for a transportation agency to receive the best price for any project, the plans and specifications for the project must be both “biddable” and “buildable”. In recent years, there has been increasing concern among transportation officials, contractors and design professionals that the plans and specifications do not always allow the project to be constructed as detailed. When this occurs, projects are delayed, project costs increase, and frequently costly construction claims develop. Of equal concern are the delays and disruptions to motorists that occur, and the impact of delayed transportation projects on the economy in the area of the work and the agency’s public image.

Constructability reviews are focused efforts that address issues relating to a highway project’s constructability. Occurring at key points in the project’s development, a constructability review provides an opportunity to ensure the quality goals for the project can be achieved. An important concept behind constructability reviews is the understanding that the early infusion of construction knowledge into the project development process results in the greatest design impact with the least disruption in cost and/or project development time.

Additional resources for this topic are:

- NCHRP Report 390, “*Constructability Review Process for Transportation Facilities*,” 1997. Report 390 identified many of the issues related to constructability review practices, or the lack of them, and defined a recommended constructability review process. While several agencies are concerned that the recommended program in NCHRP Report 390 is too resource intensive for full implementation, NCHRP Report 390 does provide some valuable information for any agency to consider as they adopt a constructability review program that meets their needs.
- AASHTO *Constructability Review Best Practices Guide*, 2000.

Guidance: An effective constructability review process will accomplish several goals that are important to any transportation agency. The specific objective of a Constructability Review should be to minimize or eliminate potential change orders and delay claims during construction by ensuring that a project’s construction documents are fully coordinated, complete, and buildable. All elements that make up the contract documents need to be concurrently reviewed including drawings, as-built conditions, specifications, geotechnical

reports, environmental documents, site topographic and utility surveys, etc. The constructability review process should assure that:

1. The project, as detailed in the plans and specifications, can be constructed using standard construction methods, materials and techniques;
2. The plans and specifications provide the contractor with clear, concise information that can be utilized to prepare a competitive, cost-effective bid; and
3. The work when constructed in accordance with the plans and specifications will result in a project that can be maintained in a cost-effective manner by the agency over the life of the project.

While FHWA advocates the use of constructability reviews as a means of appropriate risk assignment and cost containment, there is no requirement that a STA use them.

In addition to the AASHTO Best Practices Guide, several STAs have developed constructability guidelines.

g. Value engineering

References:

23 U.S.C. 106(e) and 106(f)

23 CFR 627

[OMB Circular A-131](#), *Value Engineering*, December 26, 2013

FHWA Order 1311.1B, "FHWA Value Engineering (VE) Policy," August 28, 2013

Applicability:

Value engineering (VE) analysis must be performed for:

- 1) all federally funded projects on the NHS with an estimated total cost of \$50,000,000 or more;
- 2) any federally funded bridge project on the NHS with an estimated total cost of \$40,000,000 or more; or
- 3) any federally funded project on or off the NHS; or
- 4) any other project the Secretary deems appropriate.

To determine whether a project exceeds the VE threshold, the estimated cost must include the costs associated with environmental studies, preliminary engineering, final design, right-of-way acquisition and construction.

MAP-21 modified 23 U.S.C. 106(e)(5) to exempt design-build projects from the VE requirements.

Background: Value engineering (VE) is a systematic review process that:

- Analyzes a project's design, and
- Develops recommendations to improve design and/or reduce cost.

FHWA believes that VE, when used during project development, is an effective technique for improving quality, fostering innovation, reducing cost, while eliminating unnecessary and/or costly design elements. Following a study

in the mid-1990s of States with active VE program, FHWA determined that the potential for significant program savings existed if all States would initiate VE. Consequently FHWA promulgated the VE regulations in 23 CFR 627.

Guidance: FHWA Divisions have general program oversight responsibility for VE through monitoring the STA's overall implementation of the program.

Section 1503(a)(3) of MAP-21 codifies in 23 U.S.C. 106(e)(4) several of the requirements for STA VE programs contained in the regulations . Among the newly codified program components for a STA's VE program are:

- Documented VE policies and procedures;
- Completion of the required VE analysis prior to completion of final design;
- Documenting the completed VE analysis; all the resulting recommendations; and the implemented recommendations in a final report for the project; and
- An annual report to FHWA on the results of conducted VE analyses, and the recommendations implemented for each project in the State.

Design-build projects are no longer subject to the VE requirements (23 U.S.C. 106(e)(5)).

There is no provision in law that authorizes FHWA to grant a waiver or exemption to the VE analysis requirement.

The cost of performing a VE analysis is project-related and, therefore, eligible for reimbursement with Federal-aid highway funds.

In 2001, AASHTO published its Guidelines for Value Engineering, 2nd Edition.

Another component of the VE program in many States occurs during the construction phase. This aspect will be discussed in the section on Contract Changes (see section III.B.10.i).

As a result of the MAP-21 changes, FHWA will be undertaking a revision of 23 CFR 627 and FHWA Order 1311.1A. Additional information about FHWA's VE program may be found on the FHWA website at <http://www.fhwa.dot.gov/ve/vepolicy.cfm>. Questions about FHWA's VE efforts should be directed to HIPA-20.

h. Life cycle cost analysis (LCCA)

References:

23 U.S.C. 106(f) - *Life-Cycle Cost Analysis*

[Executive Order 12893](#), "Principles for Federal Infrastructure Investment,"

January 26, 1994

Life Cycle Cost Analysis Primer, FHWA-IF-02-047, August 9, 2002

Applicability: State option

Background: Life-cycle cost analysis (LCCA) is an economic evaluation of all current and future costs associated with investment alternative. It is a valuable economic analysis technique for evaluating highway and other transportation programs and projects that require long-term capital and maintenance expenditures over the extended lives of facilities. Future costs are discounted using an appropriate discount rate to compare costs incurred at different points in time.

Section 1305(c) of TEA-21 required FHWA to develop recommendations for the use of LCCA by STAs. The recommendations were based on the requirements of Executive Order 12893, "*Principles for Federal Infrastructure Investments*," January 26, 1994, and were developed in consultation with AASHTO.

Guidance: Use of LCCA is voluntary for STAs.

FHWA promotes Life-Cycle Cost Analysis (LCCA) as an engineering economic analysis tool that allows transportation officials to quantify the differential costs of alternative investment options for a given project. LCCA can be used to study either new construction projects or to examine preservation strategies for existing transportation assets.

FHWA published its recommendations in the interim policy statement contained in the Federal Register on July 11, 1994. Other sources of information on LCCA include:

- NCHRP Synthesis Report 122, "Life-Cycle Cost Analysis of Pavements," (1985)
- NCHRP Synthesis Report 142, "Methods of Cost-Effectiveness Analysis for Highway Projects," (1988)
- NCHRP Synthesis Report 424, "Engineering Economic Analysis Practices for Highway Investment," (2012)
- "AASHTO Guide for Design of Pavement Structures," (1993)
- FHWA-SA-98-079, "Life-Cycle Cost Analysis in Pavement Design" and
- FHWA-IF-02-047, "Life-Cycle Cost Analysis Primer."

To assist STAs to developing expertise in applying LCCA to pavement design, FHWA offers a distance learning workshop entitled "Fundamentals of Life-Cycle Cost Analysis;" peer exchange opportunities; and on-site training in the use of the RealCost software.

For additional information on LCCA, contact the Office of Transportation Performance Management (HIPM-10).

i. Road user cost analysis

References:

FHWA-RD-97-087, "Contract Management Techniques for Improving Construction Quality," July 1997, Attachment C-1: Guide for Calculation of Road User Costs.

FHWA Work Zone Road User Costs – Concepts and Applications

Applicability: Any FA highway construction contract with an incentive/disincentive clause, lane rental fees, or a liquidated damages charge which includes road user costs.

Background: Road user cost (RUC) calculations provide one measure of the impacts of a transportation facility on its users. Since RUC typically include such components as travel time, vehicle operation, crashes, and air quality, RUC can be used to assist in determining the benefits associated with a proposed highway improvement, or the adverse impacts of constraining the facility in some manner.

The ability to analyze traffic flow for adverse impacts allows the STA to develop mitigation methods to be used during construction through a variety of means. Some of these means include traffic phasing; construction sequencing; alternate construction techniques such as the use of pre-cast elements or in-place asphalt pavement recycling; incentives/disincentives; lane rental fees; project milestones; or the inclusion of RUC in the liquidated damages charge for the contract.

Guidance: The average road user may experience some delay due to construction on any project. The delay may be minimal or extreme depending on the project location, specific construction operations and traffic flow on any given day and time. The credibility of any given RUC method depends on the validity of the value assigned to the variables based on the project specifics. As will be discussed in Section III. "Time-related Incentive/Disincentive Clauses," any RUC that provides the basis for an I/D clause must be a reasonable approximation of the actual costs experienced by the road users, and not an arbitrary value that's used to punish the contractor for causing construction delays.

Therefore, to be credible, an RUC method must use valid unit costs, have repeatable results, and be appropriate for the project.

Other references that may be useful are:

- FHWA-SA-98-079, "Life Cycle Cost Analysis in Pavement Design," Chapter 3 – Work Zone User Costs, August 1998;
- FHWA-IP-81-6, "Planning and Scheduling Work Zone Traffic Control," October 1981;

- FHWA Participant Notebook, "Traffic Control for Streets and Highway Construction and Maintenance Activities," 1978; and
- "A Manual of User Benefit Analysis for Highways," AASHTO, 2003.

Several computer programs also exist for RUC. Among them are QUEWZ, MicroBENCOST, and Alternat. Each program will require some customization to fit State conditions.

FHWA, in cooperation with Mitretek Systems, has developed Quickzone to estimate work zone delays. Additional information about Quickzone is available at

<http://www.fhwa.dot.gov/research/topics/operations/travelanalysis/quickzone/> or <http://xtrip.mitretek.org/quickzone>.

j. Wrap-up insurance

References:

2 CFR 200.447 - *Insurance and Indemnification*

Applicability: State option

Background: A wrap-up insurance policy, which may also be referred to as "owner controlled insurance program," (OCIP) is the purchase of all insurance needed for a project by the owner on behalf of the builder/contractor and subcontractors, rather than the standard arrangement of the owner and contractor purchasing their own insurance policies. The types of insurance typically included are: Workers Compensation, General Liability, Excess Liability, Pollution Liability, Professional Liability, Builders Risk, and if needed, Railroad Protective Liability. The policy covers all contractors, subcontractors, construction management, and owner agency employees working on the construction site who are approved by the owner agency for participation in the program. The contractors are required to carry any insurance needed to cover work offsite and to pay a deductible when claims occur.

Guidance: An STA has the prerogative to consider and develop an OCIP when it may be beneficial or appropriate to a project. Such insurance would be an eligible CE expense under the FAHP; however, there are several points that need to be considered in its implementation:

- The STA must have internal administrative policies and procedures to assure that insurance cost components can be identified. Typically an OCIP puts a greater administrative burden on the owner.
- The process used to select the insurer must be clearly defined and conducted through open competition.

- The bid packet must clearly inform prospective bidders that an OCIP will be in place so that insurance costs are not included in the bid prices.
- The STA must clearly demonstrate that using an OCIP is in the public interest, rather than the standard practice.
- FA participation is subject to the requirements in 2 CFR 200.447 generally, and contributions for insurance reserves are subject to 2 CFR 200.447.
- OCIPs are typically used only for projects greater than \$75 million.

While several large FA highway projects have included OCIPs, their use is not standard practice. The FTA has also used OCIPs although their recommendation to transit agencies is to consider the use of OCIPs for any project over \$1 billion or any high-risk project over \$50 million.

Following its experience with an OCIP for the I-15 reconstruction, the Utah DOT established an OCIP for its entire highway construction program but discontinued it after two years. The primary reason Utah cited for discontinuing the program was that prime contractors were still being required by their sureties to carry insurance which resulted in the UDOT paying double premiums.

k. Labor

The following sections discuss several labor related issues which may affect a FA highway construction project.

i. Prohibition on the use of convict labor

Reference:

23 U.S.C. 114(b) – *Construction*

23 CFR 635.117

HQ memo – “*Applicability of Convict Labor Prohibition to Transportation Enhancement Projects*,” May 9, 1996.

HQ memo – “*Applicability of Prevailing Wage Rate Requirements to Federal-aid Construction Contracts*,” June 26, 2008

[MAP-21 Question and Answer webpage](#)

Applicability:

Applies to FA highway construction contracts on FA highways.

Background: The prohibition on use of convict labor was codified in 1958 as a result of the 1957 Commerce Appropriations Act.

Section 1506 of MAP-21 clarified the applicability of the convict labor prohibitions.

Guidance: As stated in 23 CFR 635.117(a):

“No construction work shall be performed by convict labor at the site or within the limits of any Federal-aid highway construction project from the time of award of the contract or the start of work on force account until final acceptance of the work by the STA unless it is labor performed by convicts who are on parole, supervised release, or probation.”

The principle behind the prohibition of convict labor is that use of convicts restricts competition, since convict labor can be furnished at rates substantially below market labor costs or force account rates.

The terms “parole, supervised release, or probation” refer to the status of a person who has completed the condition of imprisonment. “Supervised release” does not include inmates currently serving their prison time while performing supervised work either inside or outside the walls of the incarcerating facility. Thus, it is unacceptable to have inmates currently serving time working on a FA highway construction project.

Note: since the legal reference is specifically to FA highways, convict labor may be used on routes that are not FA highways (local roads or rural minor collectors) as long as the project is not tied to a project on a FA highway. See the prevailing wage rate discussion (III.B.8.j.vii) for additional details.

Section I.4 of the Form FHWA-1273 prohibits the contractor from employing convict labor on a FA highway project.

Limitations on the use of convict-produced materials is discussed in Section III.B.8.k.

ii. Prohibition on use of state or local preferences

Reference:

23 U.S.C. 112 - *Letting of contracts*

23 CFR 635.117(b)

HQ memo - “*Local Hiring Preferences*,” April 20, 1994.

FR notice - “*Livability Initiative under Special Experimental Project No. 14*,” June 25, 2010.

Construction Program Guide, “[Special Experimental Project 14 - FHWA/HUD Livability Initiative](#)”

Applicability: All FA construction projects.

Background: Only the Federal government may establish a hiring preference for FA projects. The EEO/Affirmative Action, Appalachian employment preference and Indian preference programs resulted from Federal laws.

Guidance: The STA may not include a provision that requires a contractor to meet any preference in hiring on a FA project. Furthermore when a

STA or local public agency (LPA) has a policy that requires or creates a preference for local hiring, the contracting agency may not require the contractor to comply with this policy on a FA project (even if the hiring requirement is not included in the contract).

If a STA or LPA has developed a local hiring/contracting preference program within its standard specifications, the bid documents for a FA construction contract must inform potential bidders that that program does not apply to the FA contract. Compliance with local preference provisions cannot be considered a condition of responsiveness or responsibility in the consideration of bids prior to the award of a FA contract.

On June 25, 2010, FHWA announced a livability initiative to harmonize and coordinate the FAHP with grant-in-aid programs administered by the Department of Housing and Urban Development (HUD) and the Environmental Protection Agency (EPA). Under this initiative, the FHWA is using SEP-14 to permit, on a case-by-case basis, the application of HUD requirements on FA highway projects that may otherwise conflict with FAHP requirements. One such requirement is contained in HUD's Section 3 Program, the goal of which is to provide training, employment and contracting opportunities to low and very low income persons residing within the metropolitan area (or nonmetropolitan county) in which the project is located and businesses that substantially employ such persons. The FHWA will only consider the possible use of HUD's economic opportunity requirements under SEP-14 in the context of a joint FHWA/HUD project and only to the extent necessary to comply with applicable HUD statutes. The FHWA will not consider the use of such preferences unless necessary to meet the requirements of a Federal grant-in-aid program.

The primary objective of the SEP-14 initiative is to determine what contracting efficiencies can be realized by harmonizing the HUD and FHWA contracting requirements. In particular, with respect to projects involving activities that otherwise meet the requirements for the use of FHWA and HUD funds, States may experiment under SEP-14 with combining these funding sources for single, integrated projects that are procured and bid under a single contract while complying with training, employment, and contracting requirements of HUD's Section 3, to the greatest extent feasible. The purpose of the experiment is to gauge the extent to which HUD funding may be used for highway projects, the effects on competition whenever HUD's economic opportunity requirements are used on a joint FHWA/HUD project, and the extent to which the alignment of FHWA and HUD requirements further livability. See the Federal Register notice and the Construction Program Guide page for additional details about project selection and required SEP-14 workplan elements.

For consultant contracts, an in-state preference cannot be used during advertisement or selection. A locality criteria based on the project's location, complexity and need but not political subdivisions may be used as a minor factor

during selection; however any firm from outside the locality boundaries that indicates in its proposal its intent to meet the criteria must be considered as meeting the locality criteria. See the A/E Contract Administration Q&A (www.fhwa.dot.gov/programadmin/172qa.cfm) for additional information.

iii. Indian preference

References:

23 U.S.C. 101 – *Definitions and declaration of policy*

23 U.S.C. 140 – *Nondiscrimination*

23 U.S.C. 201 – *Federal lands and tribal transportation programs*

23 U.S.C. 202 – *Tribal transportation program*

23 CFR 635.117

Order 5060.1 “FHWA Policy on Agency Force Account Use,” March 12, 2012

FHWA Notice 4720.7, “Indian Preference in Employment on Federal-Aid Highway Projects on or near Indian Reservations,” March 15, 1993

Applicability:

Applies to any FA highway construction project meeting the criteria described below.

Background: In 1987 after a determination by FHWA that STAs were not required to provide a hiring preference for Native Americans, Congress amended 23 U.S.C. 140 to allow States to use such preference for projects on “Indian reservation roads,” as defined in 23 U.S.C. 101. The passage of ISTEA continued the basic program elements as defined in the 1987 STURAA but expanded the program to allow the preference on projects “near” Indian reservations. Use of the preference is permissive, not mandatory.

Guidance: An STA may implement procedures or requirements which extend preferential employment to all Native Americans. While recruiting efforts may be targeted towards individuals living on or near a reservation or Indian lands, the preference must be applied without regard to tribal affiliation or place of enrollment.

Native Americans who are already on a contractor’s payroll are considered to be part of the “core crew.” Under no circumstances may a contractor be required to lay-off or fire core crew employees to meet a preference goal.

Projects eligible for Indian employment preference are those located on roads within, or providing access to an Indian reservation or other Indian lands. The term “Indian Reservation Road” that was previously used in 23 U.S.C. 101 is no longer used. Instead, MAP-21 refers to Tribal Transportation Facilities which are defined as a public highway, road, bridge, trail, or transit system that is located on or provides access to tribal land and appears on the National

Transportation Facility Inventory described in 23 U.S.C. 202 (b)(1). [23 U.S.C. 101(31).] Projects located on Tribal Transportation Facilities that are “near” the boundaries of an Indian reservation are those considered to be within a reasonable commuting distance of the reservation.

An STA should work with the tribal government(s) and their Tribal Employment Rights Office (TERO) to develop contract provisions which will promote employment opportunities for Native Americans on eligible FA highway projects. Reasonable overall employment goals for Native Americans and the methods to achieve those goals should be agreed upon in advance and made part of the contract documents.

In setting the employment goals, the scope and length of the contract must be considered, in addition to the potential employment requirements of the contractor beyond his core crew. Once established, the goals should only be changed by the State following consultation with the Tribe and contractor, and only after good faith efforts to achieve the original goals. Sanctions for failure to meet the employment goals should be part of the initial contract to facilitate enforcement.

TERO Tax (or Fee): To improve employment opportunities for Tribal members, most Tribes have established a Tribal Employment Rights Office (TERO). To support the operations of the TERO, a TERO tax (or fee) is applied to contracts done within the reservation. FHWA will participate in any State or local tax as long as the tax is uniformly applied and does not apply only to FA highway work. Therefore, if the TERO tax rate on a FA highway construction contract is the same rate used for other contracts on the reservation, the cost is eligible for FA reimbursement.

Since Tribes have no tax authority off reservation lands, typically a TERO will bill a contractor at an agreed upon rate for services rendered such as recruitment, referral and other supportive services for contract work done on the reservation. The PS&E for the project needs to clearly indicate for which portion of work the TERO tax will be applied and which portion will be subject to a TERO service fee. Again, there is no tribal preference in employment on Federal-aid contracts.

Tribal Construction of FA projects: In general, FA projects are subject to the competitive bidding requirements of 23 U.S.C. §112. However, as with other local public agencies, there may be times when it is appropriate to allow the Tribe to perform the work with its own forces provided it is cost-effective to do so or an emergency exists. The Division Administrator has the authority to make cost-effectiveness determinations with the State.

If the STA agrees, the STA may assume the cost-effectiveness determinations in the Stewardship/Oversight Agreement for non-NHS projects. Based on experience gained through Transportation Enhancement projects constructed on Indian lands, some STAs enter into a formal agreement with the Tribe (similar to a local agency project agreement) which allows the Tribe to both

administer and construct the project. On FA projects, the STA determines whether the Tribe is equipped to administer the work prior to the agreement being signed. The determination includes a review of the Tribe's accounting procedures to ensure appropriate project cost allocation, and a review of the Tribe's equipment and personnel capabilities. Per FHWA Order 5060.1, the Tribe should not need to purchase or rent substantial amounts of equipment to undertake the work in question. The State may also enter into an Agreement with the BIA pursuant to 23 U.S.C. 132 whereby the BIA undertakes the delivery of the FA project. If the BIA undertakes the delivery of the project, the BIA's contracting procedures under Public Law 93-638 apply.

iv. Appalachian Development labor preference

References:

40 U.S.C. Appendix 201
23 CFR 633B

Applicability:

Applies to projects funded by the Appalachian Regional Commission (ARC).

Background: The Appalachian Region, as defined in ARC's authorizing legislation, is a 205,000-square-mile region that follows the spine of the Appalachian Mountains from southern New York to northern Mississippi. It includes all of West Virginia and parts of 12 other states: Alabama, Georgia, Kentucky, Maryland, Mississippi, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, and Virginia. Forty-two percent of the Region's population is rural, compared with 20 percent of the national population. Throughout much of its history, Appalachia suffered the economic consequences of physical isolation caused by its rugged terrain. A balanced, integrated, and efficient transportation system is critical to the Region's future economic success.

The Appalachian Regional Commission (ARC) is a regional economic development agency that represents a partnership of federal, state, and local government. Established by an act of Congress in 1965, ARC is composed of the governors of the 13 Appalachian states and a federal co-chair, who is appointed by the president. Local participation is provided through multi-county local development districts.

ARC funds projects that address the four goals identified in the Commission's strategic plan:

1. Increase job opportunities and per capita income in Appalachia to reach parity with the nation.
2. Strengthen the capacity of the people of Appalachia to compete in the global economy.

3. Develop and improve Appalachia's infrastructure to make the Region economically competitive.
4. Build the Appalachian Development Highway System to reduce Appalachia's isolation.

Each year ARC provides funding for several hundred projects in the Appalachian Region, in areas such as business development, education and job training, telecommunications, infrastructure, community development, housing, and transportation. These projects create thousands of new jobs; improve local water and sewer systems; increase school readiness; expand access to health care; assist local communities with strategic planning; and provide technical and managerial assistance to emerging businesses.

[The Appalachian Development Highway System \(ADHS\)](#), a 3,090-mile system of modern highways that connects with the Interstate Highway System, is the cornerstone of ARC's transportation efforts. Now approximately 80 percent complete, the ADHS has stimulated economic and employment opportunity throughout the Appalachian Region.

Building on the foundation of the ADHS, ARC supports transportation activities aimed at improving travel within the Region as well as enhancing access to coastal cities and ports. Connecting Appalachia to both a domestic and a worldwide chain of suppliers and markets is essential to the economic and employment success of its businesses, communities, and people. By coordinating the ADHS with rail and inland waterway systems, Appalachia can help its existing businesses become more competitive and attract new businesses and employment to the Region.

ARC's transportation development strategies include

- Completing the Appalachian Development Highway System;
- Improving the capacity, efficiency, and responsiveness of Appalachia's railways, including the development of new intermodal corridors and critical short line rail links to smaller communities and rural areas;
- Enhancing the growth and success of Appalachia's waterway navigation system, including obtaining Marine Highway Corridor designation for key inland navigation links;
- Strengthening Appalachia's access to key coastal ports, which serve as Appalachian gateways to international commerce; and
- Developing new intermodal terminals throughout the Region to better coordinate highway, rail, and inland navigation services and to ensure convenient access to the transportation system by Appalachia's businesses, communities, and people.

Guidance: Appalachian Development Highway System (ADHS) projects are comparable to FA highway construction projects. Any ADHS project must be designed in accordance with the prevailing FA highway standards,

specifications, policies and guidelines applicable to the project type and design year traffic volumes.

At least 80% of the employees, excluding supervisory personnel, working on any ADHS project must be from the local labor market. Certain craft classifications that require specific experience or expertise may be excluded from the initial calculation. Rates of less than 80% may be permitted upon certification from the State Employment Board that sufficient employees from the specified area are not available. To verify compliance, the contractor is required to show of the certified payrolls whether or not each employee normally resides in the specified labor area. Subcontractor payroll records will also need to show whether the employees normally reside within the specified labor area.

See section III.B.8.1.iii – Appalachian Development Materials Preference – for a similar discussion on materials used for ADHS projects.

This requirement is conveyed to the contractor through the use of Appendix A to the FHWA-1273.

v. Veteran Employment Provision

References:

MAP-21, §1506

EO 13518 “*Veterans Employment Initiative*”

MAP-21 *Questions and Answers* webpage

Applicability: State option for any FA project not on an Indian reservation road.

Background: Section 1506 of MAP-21 adds a requirement that STAs encourage contractors to hire veterans on FA highway construction contracts.

Guidance: To assist veterans in moving back into the civilian workforce, MAP-21, Section 1506 enables STAs to encourage contractors to use best faith efforts in hiring veterans. To qualify as a veteran, individuals must satisfy the criteria in 5 U.S.C. 2108.

An STA cannot require bidders to hire veterans as a condition of bid responsiveness, or otherwise penalize a contractor for failing to hire veterans.

Projects or contracts located on Indian reservation roads are specifically exempted from this effort.

Additional information about this program element is available on the MAP-21 *Questions and Answers* webpage.

vi. Prevailing wage rates

References:

23 U.S.C. 113, as amended by ISTEA, Section 1006(g)(2)

40 U.S.C. 276(a) – Davis-Bacon Act

40 U.S.C. 276(c) – Copeland Act

23 CFR 633A

23 CFR 635.118

23 CFR 635.309

29 CFR Parts 1, 3, and 5

FHWA-1273, Section IV and V

USDOL AAM 213, *“Application of the Davis-Bacon and Related Acts requirement that wage rates for additional classifications, when ‘conformed’ to an existing wage determination, bear a ‘reasonable relationship’ to the wage rates in that wage determination,”* March 22, 2013

HQ memo, *“Applicability of Prevailing Wage Rate Requirements to Federal-aid Construction Contracts,”* June 26, 2008

HQ memo - *“Interim Guidance on the use of Project Labor Agreements,”* May 7, 2010

FHWA webpage for *“Frequently Asked Questions on Wage Rates”*

Applicability:

Applies to all FA construction contracts within Federal highway right-of-way when the prime contract value is in excess of \$2000, and all related subcontracts.

NOTES: Prevailing wage rates would not normally apply to a FA highway construction project on a local road or rural minor collector, or for work done outside FA highway right-of-way. However, if the project is linked to or required by an FA construction project on an FA route (through NEPA or other contract requirements), prevailing wage rates will apply to the off-system project. Examples would be the separate construction of a required wetland mitigation site, or construction of a required bicycle path.

Purchase orders, rental agreements, and other agreements for supplies or services do not require prevailing wage rates – see paragraph I-1.

A project completed through state or local public agency force account does not require prevailing wage rates.

Work completed by a utility or railroad using its own forces or pre-existing contracts does not require prevailing wage rates.

Prevailing wage rates are not required for contracts covering only debris removal resulting from a natural disaster per USDOL letter.

Remedial work required under the warranty clause of a contract is to be paid at the prevailing wage rates in the original contract.

Labor provided by the Youth Conservation Corps may be paid at the State's prevailing wage rates per MAP-21, Section 1524.

Background: The use of prevailing wage rates for Federal-aid construction contracts is based on the Davis-Bacon Act of 1931 through 23 USC 113. In an effort to prevent contractors from harming local economies by importing cheap labor from other areas of the country, the Davis-Bacon Act requires that laborers and mechanics be paid the local prevailing wages and fringe benefits on any Federal contract worth at least \$2000 for the construction, alteration, or repair (including painting and decorating) or public buildings or public works. The Davis-Bacon Act was extended to federally-assisted contracts through a series of related acts such as 23 U.S.C. 113 which applies Davis-Bacon requirements to the Federal-aid highway construction program.

Guidance: While FHWA has responsibility for determining the breadth of application of Davis-Bacon to FA projects, the US Department of Labor (USDOL) is responsible for overall administration of the Davis-Bacon requirements. The FHWA-1273 notifies FA construction contractors of the need to comply with these requirements and contains the relevant contract clauses required by USDOT regulations.

The prime contractor must retain all associated payroll records for a minimum of three years after the completion of the contract work or final payment by the STA. If the contract includes a warranty, the work is not considered complete until the warranty period is over.

Enforcement of FHWA-1273 section IV and V provisions on a daily basis is the FHWA and STA's responsibility per 29 CFR 5.6. While the regulation is written to define the Federal agency's actions, the STA, as the actual owner-agency for a FA project, must undertake the actions. In addition to the withholdings and liquidated damages specified by sections IV.6, 8 and 9, the STA may terminate of the contract for continued violations by the prime contractor. The STA may also consider recommending that the prime contractor be suspended or debarred by the USDOL.

The following paragraphs detail the elements of the FHWA-1273 which cover prevailing wage rates and payrolls.

Section IV - establishes the applicability of prevailing wage rates to the contract.

Section IV.1: establishes the general requirement that the prime contractor and all associated subcontractors must pay all "laborers and mechanics employed directly on the site of work" at least the minimum wage rate and fringe benefits associated with the work classification.

The USDOL develops the prevailing wage rates for Federal contracts and publishes them in the form of a wage determination for a specific geographic

area or project. The STA must physically incorporate the applicable wage determination into each contract. For electronic contract documents, the wage determination as incorporated into the final contract needs to be in a format which is difficult to alter. During the bidding phase, the STA may incorporate the wage rates by reference.

When a new wage determination has issued ten or more days prior to bid opening, the USDOL requires that the new wage determination be applied to any work currently being bid. This requirement is generally referred to as the "10-day rule," and is based on the date the STA receives the revised determination. (See Weiseman memo dated 5-24-1995.)

Many States have their own prevailing wage rates which may vary from the Federal rates. State wage rates are generally referred to as "Little Davis-Bacon" rates. The higher wage rate must be paid for any given work classification. If the State's labor laws require that the state wage rates be physically incorporated into the contract, the contract must contain both the State and Federal wage determination. As an aid to bidders, the STA may elect to develop a co-mingled wage determination, however, the bidders need to be aware that the co-mingled document is not definitive. For enforcement purposes the actual wage determinations will govern.

"Site of work" affects the wage rates that must be paid. Various court decisions since the 1970s have affected USDOL's definition of "site of work." In general, the "site of work" is considered to include the project limits and any facilities that are dedicated exclusively to the project, accomplish a 'significant' portion of the work and are 'adjacent or virtually adjacent' to the project. Truck drivers transporting materials between 'site of work' locations must be paid prevailing wages. While the December 20, 2000 final rulemaking issued by USDOL may assist an STA with defining the 'site of work' for a specific project, the STA may also contact the regional USDOL office for issues and clarification.

For a FA construction project which covers work at an unknown location at the time bids are solicited (example - construction of a ferry boat which might be undertaken by any one of several different shipyards), no appropriate wage determination can be included in the bid packet. Therefore, the bid packet must include:

- A statement that explains why the wage determination is not included;
- A statement that the contractor must pay at least the Federal minimum wage rate;
- A statement that the contractor must submit weekly certified payroll statements; and
- A statement that the contractor must comply with all other USDOL labor standards.

The Federal minimum wage applies to FA construction contracts on local roads and rural minor collectors. The bid packet must identify any applicable

wage rate requirements including those listed for a contract with an unknown primary work location.

Section IV.2: requires that each employee covered by Section IV be appropriately classified for the work they complete during the pay period. If the wage determination does not include a specific work classification, an appropriate wage rate must be requested through the USDOL. Depending on whether the need is discovered before or after contract award will determine the form and process used to make the request. See the Q&A for details.

The USDOL Wage Resource Book discusses the various work types that may or may not require prevailing wage rates.

Section IV.3: requires the payment of fringe benefits.

Section IV.4: allows the payment of less than the specified prevailing wage rate for employees classified as apprentices, trainees or helpers. Each of these programs are defined with the USDOL Wage Resource Book.

“Helpers” are permitted on covered contracts only if the helper classification is included on the applicable wage determination. The USDOL has a long-standing policy of recognizing helper classifications only where:

- Their duties are clearly defined and distinct from those of journeyworker and laborer classifications for the area,
- The use of helpers is an established industry practice for the area, and
- The term ‘helper’ is not used synonymously with ‘trainee’ for an informal training program.

Section IV.5: clarifies that the USDOT apprenticeship and trainee programs do not fall under the USDOL programs covered by Section IV.4. See the section covering ‘on-the-job’ training for details about the USDOT programs.

Section IV.6: grants the STA the authority to withhold funds from the prime contractor, as determined necessary, to pay employees for the full amount of wages and fringe benefits required by the contract. Since the prime contractor is responsible for ensuring the subcontractors fulfill contract requirements, the STA may withhold funds from the prime contractor to cover the underpayment of subcontractor personnel.

Funds may be withheld from any progress payment due to the prime contractor.

The STA must withhold the funds until restitution is evidenced from the underpaid employees. If an underpaid employee(s) cannot be located by the contractor or STA to make restitution, the USDOL’s assistance is locating the employees should be requested. See the Q&A for process and forms to be used.

Section IV.7: requires overtime pay of one-and-one-half times the employee's basic pay rate for all hours worked in excess of 40 hours per week.

Section IV.8: requires the assessment and withholding of liquidated damages for each employee per day on which the prime contractor or any subcontractor did not pay overtime as required by section IV.7.

This withholding is a liability assessment against the prime contractor for \$10/day for each employee that was underpaid. The withheld funds are to be transferred to the USDOL through the FHWA. See the Q&A for process and forms to be used.

Section IV.9: grants the STA the authority to withhold funds from the prime contractor, as determined necessary, to cover the liquidated damages and to pay underpaid employees as required by sections IV.7 and IV.8.

Section V: establishes the requirements for various payroll and statement submissions by the contractor.

Section V-1: incorporates the USDOL regulations on payroll and statements into the contract.

Section V-2: requires the prime contractor and subcontractors to submit weekly certified payroll statements to the STA. The weekly payroll statement provides sufficient information on employees and wages for the STA, FHWA and USDOL to carry out compliance reviews; however the USDOL's December 19, 2008 rulemaking requires contractors to safeguard employee identities by limiting the personal information included on payrolls. Compliance reviews must be carried out frequently enough to assure compliance. See Q&A for additional discussion.

Electronic submission of the payroll and certification is acceptable provided the electronic records meet the engineering, legal and audit sufficiency requirements.

Semi-annually the prime contractor must provide employment data to the STA for the FHWA-1494 - "Semiannual Labor Compliance Enforcement Report" which is passed on through the FHWA to the USDOL. See the Q&A for the current procedure and format.

Use of project labor agreements - generally, a project labor agreement (PLA) is a project specific agreement between the project owner, contractor, subcontractors, and the labor unions representing the crafts that are needed for the construction project. Under the PLA, the contractor, subcontractors, and the unions enter into an agreement (typically negotiated between the contracting agency and relevant unions) containing the terms and conditions of employment for the duration of the project, establishing a framework for labor-management

cooperation and prohibiting strikes, lockouts, and other types of labor disruptions. The execution of the PLA is made a project requirement by the contracting agency and, once executed between the contractor, subcontractors and unions, binds the contractor and all subcontractors to the terms of the agreement.

Typically, PLAs cover new construction, as well as maintenance, repairs and alterations. PLA provisions typically:

- apply to all work performed under a specific contract or project, or at a specific location,
- require recognition of the signatory unions as the sole bargaining representatives for all workers, whether or not they are union members,
- supersede all other collective bargaining agreements, or incorporate other area-wide collective bargaining agreements with the provisions of the PLA being controlling and superseding all conflicting provisions;
- prohibit strikes, lockouts, or other types of labor disruptions;
- require hiring through union referral systems,
- require all subcontractors to become signatory to the agreements,
- establish uniform work rules covering overtime, working hours, dispute resolution, and other matters, and
- prescribe craft wages (usually equal to or greater than Davis-Bacon rates).

On February 6, 2009, President Barack Obama signed Executive Order 13502 titled "*Use of Project Labor Agreements for Federal Construction.*" By revoking EO 13202 and 13208, EO 13502 allows project labor agreements (PLAs) to be used on Federal construction and encourages their use on Federally assisted construction.

On May 5, 2010, FHWA issued interim guidance on the use of PLAs. Under this guidance, the FHWA may approve the use of a PLA on a project-by-project basis when the STA can demonstrate that the PLA will advance the government's interests in reducing costs and achieving economy and efficiency, producing labor management stability, and ensuring compliance with applicable laws and regulations governing safety and health, equal employment opportunity, and labor and employment standards. The memo includes a partial listing of the factors that may provide the basis for demonstrating this.

In addition, any proposed PLA must be consistent with law. The proposed PLA must not stifle competition by precluding any contractor from submitting a bid or working as a subcontractor on the project. Use of a PLA must lead to a more cost effective use of Federal funds. Other Federal requirements that must be met by the proposed PLA are: 49 CFR 26 – Disadvantaged Business Enterprise; 23 CFR 230 – Equal Employment

Opportunity; and 23 CFR 635.117(b) – restrictions on the use of labor employment preferences.

Prior to approving the PLA, the FHWA must review the terms of the proposal to ensure it meets the validity requirements in the memo.

vii. On-the-job training

References:

23 U.S.C. 140(a), *Federal-aid Highway Act of 1968, (OJT Program)*

23 U.S.C. 140(b), *Federal-aid Highway Act of 1970, (OJT Supportive Services Program)*

23 CFR 230 Subpart A

Applicability: All FA highway construction projects.

Background: During the late 1960s, changing demographics within the US population made it clear that, to maintain a viable employment pool, the highway construction industry needed to attract more skilled minority employees. While minorities had been employed in highway construction for many years, they were typically assigned to more labor-intensive, low skill or lower paying jobs in the semi-skilled or unskilled labor classifications.

Also, while discrimination based on sex has always been prohibited in the highway construction program, women were not recruited into the labor pool until 1975. Since then, a conscious effort to train women for non-traditional jobs (skilled trades within highway construction) has been underway.

Section 1208(a) of TEA-21 allows STAs to reserve training positions for welfare recipients. The law requires doing so without the displacement or supplanting of any current employee.

The OJT and its Supportive Services programs are continued without change by MAP-21.

Guidance: The objectives of the on-the-job training (OJT) program are to:

- Provide training and improve the skills of women and minorities so that they have the opportunity and access to higher paying skilled trade jobs and journeyworker positions, and
- Broaden the labor pool to meet the projected future labor needs in the construction industry.

FHWA does not require that 100 percent of the trainees and apprentices on a project be minority or women. However, for trades in which minorities or women are under-represented, a majority of the training positions must be filled by minorities or women. The contractor must demonstrate a systematic and direct recruiting effort to comply with the contract's training special provisions.

Traditionally, the OJT program involves several major components and requires involvement by FHWA, the STA and the contractor. The components are:

Development of statewide training goals - currently FHWA requests that each STA submit for approval recommended calendar year goals based on the estimated number of projects to be awarded during the year; type and duration of the projects, letting referrals, changing character of projects, the interrelationship of these factors and any other relevant factors.

Assignment of contract training goals - the STA assigns the training goals for each contract based on the project duration, scope and duration; total anticipated work force, dollar value (slots should not be assigned based on contract value alone); potential for effective training; satisfactory ratio of journeyworker to trainees; availability of women and minorities in the project vicinity; statewide goals; and the future anticipated need for journeyworkers in the area and by trade. The contract training goal will be the actual number of training positions required on the contract.

Development and acceptance of the OJT program at the project level prior to commencing construction - the contractor shall submit for approval to the STA the commitment in terms of the number of trainees to be trained for each selected classification and the training programs to be used. The STA must review, analyze accept or reject the proposed training programs.

Provide training - once the contractor's training program has been approved by the STA, the contractor recruits and selects the trainees for hands-on training on the project site. Normally trainees are paid a percentage of the prevailing wage rate for a journeyman in the trade. The following payment plan is a required element of the FHWA Training Special Provisions (23 CFR 230A, Appendix B)

- 60% of the journeyworker wage for the first half of the training period
- 75% of the journeyworker wage for the third quarter , and
- 90% of the journeyworker wage for the last quarter.

Determination of the effectiveness of the training - periodically the contractor must assess the training provided and the trainee's progress.

Reporting requirements - since 1983, FHWA has required information to be submitted on the number of trainees, and the job classifications in which training is occurring. The information is submitted by the STA (FHWA 1391) and contractor (FHWA 1392) to the FHWA Office of Civil Rights (HCR-10).

Responsibilities - the STA has the primary responsibility to monitor and determine the effectiveness of the project training programs. FHWA has oversight responsibility, and concurs in the proposed project training provisions, project goals and training programs. The STA and FHWA share responsibility for assessing the effectiveness of the statewide program in terms of skill-level achievements, number of trainees completing their programs, number of trainees

reaching journeyworker status; and whether the program is meeting the construction industry's needs for skilled personnel.

Reimbursement options – the STA may reimburse the contractor at \$0.80/training hour, or on the basis of a contract bid item. Federal-aid reimbursement to the STA is at the pro rata share for the contract. Some STAs have chosen to make training incidental to the cost of construction.

Modified OJT programs – several northern states have determined that the short construction season within their state makes it difficult for trainees to complete the training needed to achieve journeyman status. To ameliorate this, some of these states have developed OJT programs which allow a contractor to use his workforce more flexibly and therefore, enable trainees to be shifted between contracts where appropriate work is on-going. Under these programs, a prequalified contractor is assigned training slots based on the firm's average annual receipts for all work. (Some STAs use a 3-year average for the annual receipts; others use just the previous year's receipts.) Among the states using these programs are Michigan, North Dakota, Ohio and Colorado. Use of an alternate program requires a pilot approval from HIPA-30.

Sanctions – the STA, contractor, and FHWA should take appropriate corrective actions to ensure the adequacy and effectiveness of the training provided despite the lack of sanctions within the regulations. FHWA encourages each STA to develop and adopt sanctions that encourage the construction industry to pursue "good faith efforts" to achieve the OJT program goals. Such sanctions could include withholding progress payments or removal of prequalification status.

OJT Supportive Services – the OJT supportive services program was initiated to increase the effectiveness of the OJT program by providing additional services to trainees through outside organizations. The services may include remedial training, counseling, recruiting, etc. Since 1994, reimbursement of the supportive services program has been limited to the optional use of one half of one percent of the STA's allocations for the STP, and the Bridge Replacement and Rehabilitation Programs, matched with State funds.

viii. Employee Lease Agreements

In response to an inquiry about the appropriateness of employee lease agreements, FHWA issued a July 5, 2000, memorandum which states that employee lease arrangements are acceptable for FA projects if the leased employees are under the direct supervision and control of the prime contractor's superintendent and/or supervisor. Leased employees may be considered to be part of the prime contractor's own organization if:

- The prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
- The prime contractor remains responsible for the quality of work of the leased employees;

- The prime contractor retains all power to accept or exclude individual employees from work on the project; and
- The prime contractor remains ultimately responsible for the payment of prevailing wages, payroll submissions; compliance statements, and all other Federal regulatory requirements.

l. Materials selection

In general, as indicated in 23 CFR 635.407(a), the STA is responsible for selecting materials to be incorporated into Federal-aid highway projects based on the minimum needs of the project; environmental conditions within the project area; and engineering judgment. As will be discussed in the various subsections, the basis for project-specific decisions which vary from standard STA practice needs to be clearly documented within the project file, and may depending on the project oversight level, require review and approval by the Division.

i. Buy America

References:

23 U.S.C. 313 - *Buy America*

23 CFR 635.410

FR, "[Buy America Requirements,](#)" November 25, 1983

FR, "[Buy America,](#)" July 21, 1993

FR, "[Notice of nationwide waiver of Buy America for ferryboat equipment and machinery,](#)" February 9, 1994

FR, "[Notice of nationwide waiver of Buy America for pig iron and processed, pelletized, and reduced iron ore,](#)" March 24, 1995

HQ memo, "[Buy America Requirements,](#)" July 6, 1989

HQ memo, "[Buy America Policy Response,](#)" December 22, 1997

HQ memo, "[Sense of Congress Concerning Buy America,](#)" October 4, 2005

HQ memo, "[Revised Policy for the Approval of Buy America Waivers,](#)" March 13, 2008

HQ memo, "[Buy America Interpretation,](#)" June 11, 2011

HQ letter to AASHTO, "[Buy America Clarification,](#)" December 20, 2012

HQ memo, "[Clarification of Manufactured Products under Buy America,](#)" December 21, 2012

HQ memo, "[Application of Buy America to non-FHWA-funded Utility Relocation,](#)" July 11, 2013

[MAP-21 Question and Answer webpage](#)

[Construction Program Guide Buy America webpage](#)

[Buy America FAQ webpage](#)

Applicability: All FA highway contracts

Background: Federal domestic procurement requirements have been around since 1933. The original requirements, commonly referred to as the “Buy American Act” requirements, are found in 41 U.S.C. 8301 et seq. but apply only to direct Federal procurement activities. A direct Federal procurement is when a Federal government agency makes the purchase or awards a contract. Construction contracts awarded by a Federal Lands Division are direct Federal procurements.

The STAA of 1978 (Pub. L. 95-599), §401 expanded domestic procurement coverage to the FAHP by establishing “Buy America” requirements. Current FHWA Buy America requirements are based on §165 of the STAA of 1982 (Pub. L. 97-424), as amended by ISTEA, and codified by SAFETEA-LU, §1903 as 23 U.S.C. 313. The requirements apply to all FA construction projects. Projects located on highways classified as local roads and rural minor collectors; transportation enhancement projects; and non-highway construction are also covered by these requirements when funded by Federal Highway Trust Fund money.

The coverage initially mandated by §165 included cement, steel and manufactured products. However, while developing the implementing regulations, FHWA determined that Congress had not intended to cover all manufactured products; therefore, FHWA’s regulations only cover manufactured products that are predominantly steel or iron products. In addition, due to concerns about the inadequate supply of domestically manufactured concrete, §165 was amended in 1983 to limit Buy America coverage to steel materials and products only. Subsequently ISTEA, §1048(a) amended §165 to expand coverage to iron materials and supplies while ISTEA, §1041(a) included the application of any coating as a manufacturing process that must occur domestically.

In August 2005, SAFETEA-LU, §1903 codified the Buy America requirements as 23 U.S.C. 313 without substantive changes to the requirements.

Effective October 1, 2012, MAP-21, §1518 amends 23 U.S.C. 313 to require the application of Buy America to all contracts eligible for assistance under title 23 within the scope of a finding, determination, or decision under the National Environmental Policy Act (NEPA), regardless of funding source, if at least one contract within the scope of the NEPA decision is funded with Federal funding provided under Title 23.

Guidance: Simply stated, Buy America requires the use of domestic steel and iron in Title 23 funded highway contracts. The use of foreign steel or iron materials or products in a Federal-aid project is prohibited with few exceptions (e.g., temporary basis; manufactured products that are not predominantly steel and iron; minimal use; nationwide or individual waivers; etc.). The regulations included provisions for minimal use, alternative bids and, as a last resort, a waiver of the requirements for products which are not domestically available in sufficient quantity or quality to fulfill the project requirements.

Section 1518 of MAP-21 has modified 23 U.S.C. 313 to require Buy America on the basis of a contract's associated NEPA document. On or after October 1, 2012, if any contract to construct a portion of the NEPA project is or has been funded under Title 23, all contracts, irrespective of funding source, are subject to Buy America. Non-FA contracts awarded prior to October 1, 2012, are not subject to the requirement. If a non-FA contract is awarded without the Buy America provisions on or after October 1, 2012, all subsequent contracts within the scope of the NEPA document would become ineligible for FA participation. Additional guidance on this change will be forthcoming.

While the Buy America requirements do not apply to the non-ferrous alloy materials used to make steel, insufficient domestic supplies of raw materials caused FHWA to issue the March 24, 1995, nationwide waiver for pig iron and processed, pelletized and reduced iron ore. Consequently Buy America does not apply to any raw materials (iron ore and alloys), scrap, pig iron, or processed, pelletized, and reduced iron ore.

All manufacturing processes must take place domestically. Manufacturing begins with the initial melting and mixing, and continues through the coating stage. Any process which modifies the chemical content, the physical size or shape, or the final finish is considered a manufacturing process. These processes include rolling, extruding, machining, bending, grinding, drilling and coating. "Coating" includes any surface treatment that protects and/or enhances the value of the material.

If a domestically produced product is sent outside the country for any manufacturing process, it loses its domestic character. Similarly a foreign source steel billet brought to the USA for further manufacturing processes does not comply with Buy America since the initial melt and mix did not occur domestically.

In general, international trade agreements do not impact FHWA's administration of Buy America since most trade agreements exempt Federally assisted programs from coverage. For example, in the North American Free Trade Agreement (NAFTA), section 100 expressly exempts grants, loans, cooperative agreements, and other forms of Federal assistance from its coverage.

The manufacturing process for a steel/iron product is considered complete when the product is ready for use as an item (e.g., fencing, posts, girders, pipe, manhole cover, etc.) or could be incorporated as a component of a more complex product through assembly. The final assembly could occur abroad as long as the steel/iron component is installed without any manufacturing modification.

Buy America applies to any steel or iron permanently incorporated into the project. Buy America does not apply to temporary elements of the project such as falsework, temporary sheet piling, detour bridges and the like. Buy America would not apply to any temporary element left in place at the contractor's convenience unless the contract plans and specifications require steel

or iron components (for example, stay-in-place forms, ties for steel, sheet piling) or imply that the item is to be left in place. Buy America also does not apply to items that are simply moved from one place to another within the same project. For example, Buy America would not apply to utility poles that are merely moved from one location to another under the same project since no new or added steel or iron items are being used for the project.

Buy America applies to materials donated to the project by an STA, LPA, or third party. While donated materials that come from pre-existing inventory may qualify for a waiver in the public interest, materials purchased expressly for the project and then donated must comply with Buy America.

Buy America applies to all materials required for the project and regardless of whether the item is eligible for FA participation or actually being reimbursed with FA funding.

Minimal Use: Buy America does not apply to minimal use of steel/iron materials provided that the total cost of all foreign source items used in the contract, as delivered to the project site, is less than \$2500 or one-tenth-of-one-percent of the total contract amount, whichever is greater. The STA should keep a log of foreign source items to ensure that the minimal use threshold is not exceeded during the life of the contract.

Alternative Bidding: An STA may use an alternative bidding procedure to justify the use of foreign steel or iron without requesting a waiver. Under this procedure, the total project is bid with two alternatives: one which is based on foreign source iron/steel materials while the second alternative requires domestic iron/steel materials. All bidders must submit a bid using domestic source iron/steel and have the option of submitting a bid using foreign source iron/steel. The use of foreign products is justified if the lowest total bid with domestic iron/steel products is at least 25 percent more than the lowest bid with foreign source iron/steel. The 25 percent differential applies to the total bid for the entire project, not just the bid prices for items with iron or steel elements.

Waivers: The FHWA Administrator may grant a Buy America waiver for one or more items on a specific contract when:

- Following the requirements is inconsistent with the public interest, or,
- Insufficient quantities of satisfactory quality domestic products are available.

Buy America requirements need to be considered during the design phase of a project since only under very limited circumstances will materials delivery delay be considered adequate grounds for a waiver. When domestic materials are available, meeting the contractor's construction schedule will not be an adequate basis for a waiver. The cost differential between domestic and foreign products is generally not grounds for a waiver.

An STA may request a waiver with its Division's concurrence. The waiver request must include the project number, description, cost, waiver item(s), item

cost(s), country of origin for each item and reason for the waiver. An essential element of any waiver request will be a thorough discussion of why project requirements cannot be met with domestic products.

By law, FHWA must provide a minimum 15-day public comment period before granting a waiver. Any significant comments received during the comment period must be resolved prior to the issue of a waiver. See FHWA's "Notice of Buy America Waiver Request" webpage for details.

Enforcement: The STA is responsible for enforcing the Buy America provisions. Generally, the materials certification process has been adequate for determining compliance. The contract provisions should require the contractor to provide a definitive statement about the origin of all products covered by Buy America prior to payment for the item, or installation.

Alternatively the STA may require the use of step certification for any product covered by Buy America. Under step certification, each handler of the product (supplier, fabricator, manufacturer, processor, etc.) certifies that their step in the process was domestically performed. Both AASHTO and FHWA encourage the use of step certification. Refer to AASHTO guidance for more details on step certification.

There is no clear-cut policy on resolving an after-the-fact discovery of foreign materials permanently incorporated in a project. Each situation will be resolved on a case-by-case basis.

State-specific Buy America Restrictions: When required by State law, a State may have Buy America provisions that are more restrictive than the Federal requirements. The restrictions may require domestic manufacture of additional products such as crumb rubber, glass, plastic, wood and/or aluminum but may not establish an in-State preference. When more restrictive requirements are proposed as a matter of State policy, directive or regulation, FHWA will require a State legal opinion that the requirements are authorized under State law and do not conflict with the competitive bidding statutes of the State.

ii. Convict-produced materials

References:

23 U.S.C. 114(b)(2) – *Convict Labor and Convict Produced Materials*

23 CFR 635.417

HQ memo, "[Procurement of Signing Materials,](#)" May 8, 1985

HQ memo, "[Convict Labor and Convict Produced Materials,](#)" February 5, 1988

HQ memo, "[Applicability of Convict Labor Prohibition – Transportation Enhancement Projects,](#)" May 9, 1996

[MAP-21](#) Question and Answer webpage

Construction Program Guide – [Convict Produced Material/Convict Labor](#)

Applicability:

FHWA's prohibition against the use of convict material only applies to FA highways. It does not apply to projects on roadways functionally classified as local roads or rural minor collectors (see Mr. Schimmoller's May 9, 1996 memorandum).

Background: The present policy was established by Section 112 of the STURAA of 1987, which amended 23 U.S.C. 114(b) to include limitations on convict produced materials. A final rule implementing the provisions of Section 112 was published in the Federal Register on January 25, 1988.

Subsequently, language in DOJ Appropriation Acts of FY 1989 and FY 1990 was interpreted by the FHWA Chief Counsel's Office to negate the limitations established by 23 U.S.C. 114. However, Section 1019 of the ISTEA of 1991 amended 23 U.S.C. 114(b)(2) by inserting "after July 1, 1991." This action clarified Congressional intent that the language in the DOJ Appropriation Acts relative to the permissible use of convict produced materials on FA highway projects did not override the requirements placed on such use by the STURAA of 1987.

Section 1506 of MAP-21 clarified the applicability of the convict labor prohibitions.

Guidance: The use of convicts as part of a project's labor force is prohibited. See section III.B.8.j. for additional discussion.

Materials produced after July 1, 1991, by convict labor may only be incorporated in a FA highway construction project if:

- such materials have been produced by convicts who are on parole, supervised release, or probation from a prison, or
- such material has been produced in a qualified prison facility, e.g., prison industry, with the amount produced during any 12-month period, for use in FA projects, not exceeding the amount produced, for such use, during the 12-month period ending July 1, 1987. A table with the allowable amounts can be found on the Construction Program Guide page on [Convict Produced Materials](#).

Use of Convict Produced Materials Within the Statutory Limitation

Materials obtained from prison facilities (e.g., prison industries complying with the statutory limitations) are subject to the same requirements for FA participation that are imposed upon materials acquired from other sources. Materials manufactured or produced by convict labor will be given no preferential treatment.

The preferred method of obtaining materials for a project is through normal contracting procedures which require the contractor to furnish all materials to be incorporated in the work. The contractor selects the source,

public or private, from which the materials are to be obtained (23 CFR 635.407). Prison industries are prohibited from bidding on projects directly (23 CFR 635.112(e)), but may act as a material supplier to construction contractors (subject to the statutory limitations).

Such materials may also be approved as State-furnished material. However, since public agencies may not bid in competition with private firms, direct acquisition of materials from a prison industry for use as State-furnished material is subject to a public interest finding with the Division Administrator's concurrence (23 CFR 635.407(d)).

Use of Convict Produced Materials In Excess of the Statutory Limitation

The use of convict-produced materials in excess of the statutory limitations is prohibited. There should be no usage of these materials on a FA project, with or without Federal participation in this material. It is not satisfactory to designate this material as non-participating in an attempt to circumvent FHWA's policy.

iii. Appalachian Development Materials Preference

References:

23 CFR 633B

Applicability:

Projects selected by the Appalachian Regional Development Commission.

Background: The "Appalachian" projects are administered by the STAs within the Appalachian region under the direction of the Appalachian Regional Commission (ARC) which was established by the Appalachian Regional Development Act of 1965. The ARC which is comprised of the Governors of the thirteen States within the Region, formulates the rules and selects the projects to be funded through the program. The program is funded from the Federal government's general funds, and includes work on schools, public utilities, medical facilities as well as highways. The States within the Region are: Alabama, Georgia, Kentucky, Maryland, Mississippi, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, and West Virginia. See section III.B.8.k.iv – Appalachian Development Labor Preference for a more detailed background discussion.

Guidance: As a means of encouraging economic development within Appalachia, the ARC requires that the majority of mineral resource materials used in an ADHS project be native to Appalachia. This requirement is reflected by 23 CFR 633.207.

The ARC works with FHWA's Federal-aid Programs Group (HIPA-10) to administer the ADHS program.

iv. Recycled materials

References:

HQ memo, "[*Formal Policy on the Use of Recycled Materials*](#)," February 7, 2002

Applicability: State option

Background: A growing awareness of the problems associated with the disposal of highway construction debris as well as the decreasing availability of acceptable quality virgin materials, particularly aggregates, has led to increased interest in the recycling of highway materials during reconstruction and in some instances, new construction.

Guidance: The FHWA policy is:

1. Recycling and reuse can offer engineering, economic and environmental benefits.
2. Recycled materials should get first consideration in materials selection.
3. Determination of the use of recycled materials should include an initial review of engineering and environmental suitability.
4. An assessment of economic benefits should follow in the selection process.
5. Restrictions that prohibit the use of recycled materials without technical basis should be removed from specifications.

FHWA has a longstanding position that any material used in highway or bridge construction, be it virgin or recycled, shall not adversely affect the performance, safety or the environment of the highway system.

For additional information about FHWA's recycling efforts, contact the Office of Asset Management, Pavements and Construction.

v. Patented and/or proprietary materials

References:

23 U.S.C. 112 - *Letting of contracts*

23 CFR 635.411

HQ memo- "Product Selection," November 25, 1987

HQ memo- "[*Guidance on Patented and Proprietary Product Approvals*](#)," January 11, 2006

HQ memo- "*Information: Guidance on Patented and Proprietary Product Approvals*," November 30, 2011

Questions and Answers Regarding Title 23 CFR 635.411 webpage

Applicability: All FA highway construction projects

Background: This requirement derived from the competitive bidding requirement is based on the concept that allowing bidders the maximum flexibility to select materials and/or products to meet the contract specifications will result in the lowest bid prices for the project. Limiting the range of possible materials/products will result in higher bid prices.

Guidance: The primary purpose of the policy is to have competition in selection of materials while encouraging the development of new materials and products.

Trade names are generally the key to identifying patented or proprietary materials. Trade name examples include 3M, Corten, etc. Generally, products identified by their brand or trade name are not to be specified without an "or equal" phrase, and, if trade names are used, all, or at least a reasonable number of acceptable "equal" materials or products should be listed. The licensing of several suppliers to produce a product does not change the fact that it is a single product and should not be specified to the exclusion of other equally suitable products.

In general, FHWA will not participate, directly or indirectly, in payment for any premium or royalty on any patented or proprietary material, specification, or process specifically set forth in the plans and specifications for a project. However, FHWA may participate in the costs of a proprietary product under the following circumstances:

- a. Competitive bidding, provided under 23 CFR 635.411(a)(1)
 1. The proprietary product is obtained through competitive bidding with equally suitable proprietary or nonproprietary products from multiple manufacturers. Where both proprietary and nonproprietary products are available, the contracting agency must compose specifications that allow the contractor to choose amongst as many acceptable products and technologies as possible. If the specification lists specific products, it must list all or at least a reasonable number of products, and must include the words "or equal" to ensure the broadest range of choice.

Note: the term "reasonable" as it applies to the list of specific products varies from State to State. The determination of the "reasonable number" in a particular State is made by the Division. Specifications may reference the STA's "Approved Product List" (APL) as long as the APL contains a reasonable number of equally suitable products for a given use, and the specification includes the words "or equal."

2. A competitively bid performance based warranty specification is permitted if it does not limit product selection to a single

source. The warranty specification must clearly describe all potential products that are acceptable for use at the time of contract advertisement.

b. As provided in 23 CFR 635.411(a)(2), the STA certifies that the proprietary or patented item is either:

1. essential for synchronization with the existing highway facilities or
2. a unique product for which there is no equally suitable alternative exists.

c. The proprietary product is to be used for research or for a distinctive type of construction on relatively short sections of road for experimental purposes as provided in 23 CFR 635.411(a)(3). States should follow FHWA's procedures for "*Construction Projects Incorporating Experimental Features*" (<http://www.fhwa.dot.gov/programadmin/contracts/expermnt.cfm>) for the submittal of work plans and evaluations.

d. If there are other equally acceptable materials or products available, the contracting agency may require a specific material or product when the Division Administrator approves of its use as being in the public interest as provided in 23 CFR 635.411(c).

Scenarios:

Below are examples of conditions under which patented or proprietary materials may be approved on FA projects.

Case a: The item is identified by the contract specifications along with a listing of other acceptable products, and the list includes a reasonable number of acceptable products. The FHWA may then participate in the cost of a patented or proprietary item since it is acquired competitively.

Case b.1 - Synchronization: The STA certifies that the product is essential for synchronization. This is particularly appropriate when there are aesthetic considerations. If a contracting agency has special aesthetic features to replicate (i.e., historic light poles and luminaires in a historic district), it should reference in its certification statement the appropriate decision document from the relevant authority (such as the State Historic Preservation Office determination, city planning documents, etc.). Since the certification document must include a signed certification by the STA, approval of the decision by FHWA is not required; however, FHWA may contest certifications which seem in error.

Case b.2 – No Equally Suitable Alternate: The STA certifies that there is no equally suitable alternate. An example may be a proprietary surface treatment process that has performance characteristics that exceed the standards normally specified by the contracting agency for the highway facility using other nonproprietary surface treatment processes. In its certification statement, the contracting agency should justify the need for a higher performance standard. Since the certification document must include a signed certification by the STA, approval of the decision by FHWA is not required; however, FHWA may contest certifications which seem in error.

Case c – Experimental Use: Products appear from time to time that are new and innovative, i.e., research item or experimental feature. Based on the developer's claim, manufacturer's claims, or because of certain local conditions, there may be sufficient justification to evaluate the product in actual highway use. The STA may then elect to submit a detailed plan of research and evaluation (work plan) for the product. The work plan may also be used to develop specifications in order to provide a basis for future competition with other materials. The work plan should be approved with or prior to PS&E approval, and the specifications may then require the proprietary item. An example of this application would be installation of an animal-vehicle crash avoidance system to be deployed on an experimental basis in areas with a high incidence rate of animal-vehicle crashes. In accordance with the experimental work plan approved by the Division, the contracting agency would be responsible for the construction, monitoring and evaluation of the system.

Case d – Public Interest Finding (PIF): When one or more products meet project requirements but the contracting agency desires to require the use of a specific product, a PIF will be necessary. An example would be a STA decision to use a particular crash cushion on urban freeways with an ADT>10,000. In order to do so with FA participation, the STA would petition the Division for permission. The petition would include sufficient documentation such as engineering analyses, benefit-cost analyses, market analysis, product analysis to support the decision. The Division's decision will be written and should be referenced in the file of each associated project.

A good discussion of FHWA's policy on product selection was included in Mr. Ronald E. [Heinz's memorandum dated November 25, 1987](#) (Appendix A).

On January 11, 2006, the Office of Program Administration issued a policy memo titled: [Guidance on Patented and Proprietary Product Approvals](#). The memo references a series of [Questions and Answers Regarding Title 23 CFR 635.411](#), which have been updated periodically. The intent of this memo is to establish more uniform interpretations concerning the material selection and product approval issues relating to 23 CFR 635.411.

In response to industry complaints about a perceived stifling effect on innovation in highway construction, FHWA began tracking the PIFs for use of specific proprietary products approved by Divisions. The database of these approved PIFs is available on the FHWA website at:

www.fhwa.dot.gov/construction/contracts/pnpapprovals/index.cfm.

In the November 30, 2011 memorandum entitled "*Guidance on Patented and Proprietary Product Approvals*", FHWA distinguished between "PIFs" and "certifications" as follows:

Public Interest Finding (PIF) – as discussed in Section II.C.5.a, a PIF is a document that FHWA agrees with the STA that a deviation from regulatory requirements is in the public interest. In order to maintain FA participation when requiring a contractor to use a specific proprietary product when other proprietary or nonproprietary products exist for the application, the STA must demonstrate to the Division's satisfaction the rationale for doing so.

Certification – while similar to a PIF in purpose, a certification allows the appropriate STA official to attest that the proprietary product is either essential for synchronization, or that no equally suitable alternative exists. (23 CFR 635.411(a)(2)). Because the certification document fulfills a similar purpose to a PIF, it has similar documentation requirements such as the extent and period of applicability; basis for decision; description of the public benefit; evaluation of the other possible products and why they were not selected; and an estimate of the additional costs, if any, incurred by selecting the specified product. Since the certification document must include a signed certification by the STA, approval of the decision by FHWA is not required; however, FHWA may contest certifications which seem in error.

vi Pipe material selection

References:

MAP-21, Section 1525

FR, "Construction and Maintenance - Culvert Pipe Selection", January 28, 2013

HQ memo, "Final Rule: Culvert Pipe Selection", April 22, 2013,"
Construction Program Guide page on [Culvert Selection](#)

Applicability: All Federal-aid highway construction projects

Background: A series of culvert failures due to lack of experience with the installation of highway culverts made of products other than reinforced concrete or corrugated steel pipe led to the development of installation guidelines by FHWA in the form of an appendix to 23 CFR 411 in 1974. Thirty years of experience with alternative pipe materials has resulted in a much broader range

of pipe materials suitable to a broader range of conditions which negates the need for FHWA to limit the pipe materials used in FA projects.

Section 5514 of SAFETEA-LU (2005) required the FHWA to ensure that States provide for competition with respect to the specification of alternative types of culvert pipes through requirements that were commensurate with competition requirements for other construction materials. The FHWA published a Final Rule in the Federal Register on November 15, 2006 to implement Section 5514.

Section 1525 of MAP-21 (2012) required that FHWA modify its regulations at 23 CFR 635.411 to “ensure that States shall have the autonomy to determine culvert and storm sewer material types to be included in the construction of a project on a Federal-aid highway.” The FHWA published a Final Rule in the Federal Register on January 28, 2013 to implement this change.

Guidance: The language of MAP-21, Section 1525 allows STAs the autonomy to specify the culvert and storm sewer materials to be used in its FA highway construction projects; however, the STA must comply with the design standards for highways in 23 CFR 625 as well as the general materials requirements of 23 CFR 635D. A STA may choose to exercise this autonomy by either:

- a) Including all material types deemed acceptable as a result of engineering and economic analysis, or
- b) Restricting the pool of possible culvert and storm sewer material types based on STA preferences.

Under the Final Rule, the following paragraph has been added to 23 CFR 635.411.:

(f) State transportation departments (State DOTs) shall have the autonomy to determine culvert and storm sewer material types to be included in the construction of a project on a Federal-aid highway.

The implementation guidance responds to several questions about the impact of the Final Rule such as:

- A STA, or direct recipient of FA highway construction funds, has the authority to determine culvert and storm sewer material types to be included in its FA highway construction projects. With the approval of the STA, a LPA may similarly select culvert and storm sewer materials.
- FHWA will not limit FA participation related to the selection of culvert or storm sewer material types on a specific project.
- The culvert and/or storm sewer selection made by the STA must comply with all other applicable Federal requirements, including

Buy America, culvert design standards, and the restrictions on the use of patented and proprietary products.

vii. State owned/furnished/designated materials

References:

23 U.S.C. 112 – *Letting of contracts*

23 CFR 635.407

Construction Program Guide page on [Public Agency Provided Materials](#)

Applicability: All FA highway construction projects

Background: As discussed in earlier sections of the manual, FHWA believes that the lowest bid prices are achieved by allowing the bidders the broadest discretion in supplying materials for a given project. By restricting the bidder to using materials supplied by the STA, the STA takes on greater risk for acceptable performance but also loses an opportunity to learn about other possibly acceptable materials for the specific purpose.

Guidance: Current FHWA policy requires that the contractor must furnish all materials to be incorporated in the work, and the contractor shall be permitted to select the sources from which the materials are to be obtained. Exceptions to this requirement may be made when there is a definite finding, by the STA and concurred in by the Division Administrator, that it is in the public interest to require the contractor to use materials furnished by the STA or from sources designated by the STA. The exception policy can best be understood by separating State-furnished materials into the categories of manufactured materials and local natural materials.

Manufactured Materials: When the use of State-furnished manufactured materials is approved based on a public interest finding, such use must be made mandatory. The optional use of State-furnished manufactured materials is in violation of our policy prohibiting public agencies from competing with private firms. Manufactured materials to be furnished by the State must be acquired through competitive bidding, unless there is a public interest finding for another method, and concurred in by the Division Administrator.

Local Natural Materials: When the STA owns or controls a local natural materials source, such as a borrow pit or a stockpile of salvaged pavement material, etc., the materials may be designated for either optional or mandatory use; however, mandatory use will require a public interest finding and the Division Administrator's concurrence. In order to permit prospective bidders to properly prepare their bids, the location, cost, and any conditions to be met for obtaining materials that are made available to the contractor shall be stated in the bidding documents.

Mandatory Disposal Sites: Normally, the disposal site for surplus excavated materials is to be of the contractor's choosing; although, an optional site(s) may be shown in the contract provisions. A mandatory site shall be specified when there is a finding by the STA, with the concurrence of the Division Administrator, that such placement is the most economical or that the environment would be substantially enhanced without excessive cost. Discussion of the mandatory use of a disposal site in the environmental document may serve as the basis for the public interest finding.

Summarizing FHWA policy for the mandatory use of borrow or disposal sites:

- Mandatory use of either requires a public interest finding and the Division Administrator's concurrence;
- Mandatory use of either may be based on environmental consideration where the environment will be substantially enhanced without excessive additional cost; and
- Where the use is based on environmental considerations, the discussion in the environmental document may be used as the basis for the public interest finding.
- Factors to justify a public interest finding should include such items as cost effectiveness, system integrity, and local shortages of material.

viii. Salvaged materials

References:

49 CFR 18.36 (2 CFR 200.313)

HQ memo, "OMB Circular A-102 and the Common Grant Management Regulation," October 3, 1988

Applicability: All FA construction projects

Background: When FHWA participates in the purchase of equipment or materials for an FA project, the items are generally fully expended by the end of the project's useful life. However, changes in construction techniques and reconstruction within the project limits may result in an item that has a salvage value.

Guidance: On October 3, 1988, the FHWA Office of Fiscal Services issued a memorandum clarifying the agency's policy relative to operating under the revised 2 CFR 200.313 and the DOT common rule (49 CFR 18). Accordingly, salvage credit to Federal-aid projects is governed by State procedures. If the State has procedures that do not require credit to the project, then credit to a Federal-aid project is also not required. However, if a State does not have procedures

addressing salvage credit, then salvage credit is required unless one of the following circumstances is met:

- the salvaged item has a value less than \$5,000,
- the salvaged item becomes the contractor's property by virtue of the contract provisions, or
- the salvaged item will be reused in future projects eligible under Title 23 U.S.C. until its useful life is expended.

When salvage is required, careful attention should be given to the contract provisions for salvage to ensure that the cost of the operation (i.e., removal or salvage) does not exceed the value of the item(s) to be salvaged. Items to be salvaged may be unused construction materials, salvaged highway appurtenances, or other equipment or material for which the useful life is greater than one year.

ix. Replacement parts

References:

HQ memo, *"Guidance on Federal-aid Eligibility of Operating Costs for Transportation Management Systems,"* January 3, 2000

HQ memo, *"Eligibility of Replacement Parts for Safety-related Hardware,"* June 10, 2008

Applicability: State option

Background: Ensuring the safety of the travelling public is of paramount importance to the FHWA. Managing traffic, both during and after construction, is necessary to minimize traffic delays, maintain or improve motorist and worker safety, complete roadwork in a timely manner, and maintain access for businesses and residents. Once roadside hardware is in place, it needs to be consistently monitored and maintained to ensure it is in good working order and effective in managing impacts.

Guidance: The prompt replacement and, if needed, upgrade of highway safety appurtenances remains a priority for FHWA, especially for situations where appurtenances have been damaged through highway crashes. Therefore, the June 10, 2008 memo identifies three ways for securing replacement parts with FA participation:

1. The purchase of a minimal number of essential replacement parts as a component of an FA construction or safety project which installs or upgrades the relevant safety appurtenances. This is intended to ensure the immediate availability of essential parts that are damaged through no fault of the contractor during construction. The specific parts and quantities should be determined based on the project scope and intent of this eligibility in mind. Any unused replacement parts may be

retained by the STA for use on any public road in the State. Should the STA collect the cost of replacement for damaged appurtenances at a specific location from the responsible party, FA participation is limited to the uncollected cost of the parts.

2. FA highway and safety funds may be used for upgrading damaged safety appurtenances in locations where the existing safety appurtenances do not meet the current safety standards. Should the STA collect the cost of replacement for damaged appurtenances at a specific location from the responsible party, FA participation is limited to the betterment cost for upgrading the appurtenances.
3. Some combination of state funds, FA highway construction and safety funds may be used for an established statewide program of safety-related upgrades in response to a change in safety standards.

The June 10th memo broadened the concept of 'safety-related' appurtenances to include Intelligent Transportation System (ITS) components that can clearly be shown to enhance the safety of the travelling public. Additional information about the potential eligibility of ITS components is discussed in the January 3, 2000 memo issued by the Office of Operations.

m. Equipment

Generally a contractor is expected to provide all necessary equipment to complete the construction. The equipment may be owned by the contractor or leased from a third party.

i. Use of publicly owned equipment

References:

2 CFR 200.313; 200.439; 200.465

23 CFR 635.106

Applicability: All FA highway construction projects

Background: This requirement is derived from the prohibition on public agencies competing with the private sector.

Guidance: The policy definition of publicly owned equipment is ". . . equipment previously purchased or otherwise acquired by the public agency involved for use in its own operations." The policy goes on to state that ". . . publicly owned equipment should not normally compete with privately owned equipment on a project to be let to contract."

However, in exceptional cases, a showing that it would clearly be cost effective to use publicly owned equipment may be justified. When supported by a public interest finding, the Division Administrator may approve the STA's

proposal to use publicly owned equipment. Federal-aid funds may participate in the costs associated with the use of publicly owned equipment provided that:

- the PS&E submittal clearly sets forth the proposed use,
- the specifications indicate the items of equipment that are available, the rates to be charged, and the point(s) of availability or delivery, and
- the specifications include the express condition that the contractor has the option to rent all or part of the available equipment, or to provide the equipment.

The public agency cannot benefit from the rental of its own equipment by virtue of a FA contract. Accordingly, the rental rates must reasonably represent the cost of providing the equipment or there shall be a lump sum credit to Federal reimbursement on the project equal to the amount of profit on rental that the agency receives.

In unforeseen circumstances, publicly owned equipment may be used after award of contract based on rental rates agreed to between the public agency and the contractor. However, these rates shall not form the basis for an increase in Federal participation.

In 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 price, 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.

ii. Contractor-purchased equipment for state ownership

References:

23 U.S.C. 302 - *State transportation department*

49 CFR 18 (2 CFR 200)

[HQ memorandum, "Equipment Purchases for State Construction Engineering Use," May 5, 1993](#)

HQ memorandum, "*Indirect Costs Eligibility and Other TEA-21 Revisions to Title 23 U.S.C. Section 302,*" September 24, 1998

HQ memorandum, "*Clarification of Policy on Indirect Costs of State and Local Governments,*" May 5, 2004

HQ memo, "*Indirect Cost Allocation Dispute Resolution Process for State DOTs,*" August 8, 2008

Applicability: All FA construction projects

Background: In the mid 1980's, several inquiries were received regarding participation in equipment purchased by the construction contractor, as a condition of the contract, with ownership transferred to the STA at the end of the

project. Guidance was subsequently issued by Headquarters memorandum dated September 11, 1986. It provided that when a STA proposed that equipment be purchased by a contractor, under the terms of a FA contract, for ultimate ownership by the State, a lease versus purchase analysis must first be conducted. If the STA was able to justify purchase as being the most economical approach, approval would be given by the FHWA. However, once the equipment was removed from the FA project, the State was to provide an appropriate credit to the project for its remaining value.

Following the establishment of this policy, a number of significant events occurred which made this procedure difficult to effectively manage. In 1988, the DOT issued the "Common Rule" or 49 CFR Part 18, which required credit to be based on the State's own established practices for salvaging equipment, if any. Subsequently ISTEA provided that States could exercise approval authority in-lieu-of FHWA's approval.

Guidance: Equipment, as defined in 49 CFR 18.3, means "tangible, nonexpendable, personal property having a useful life of more than one year and an acquisition cost of \$5,000 or more per unit." A State may use its own definition of equipment provided that such definition would at least include all equipment as defined above. Any other tangible personal property item is considered to be a "supply."

When a State must purchase equipment to adequately meet the construction engineering (CE) requirements of a FA project, how the equipment is purchased (e.g., by the State directly or by a construction contractor with ownership transferred to the State) is irrelevant to FA participation.

A STA now has two options for requesting FA participation in eligible program costs. As noted in Mr. Wright's September 24, 1998 memorandum titled, "Indirect Costs Eligibility and Other TEA-21 Revisions to Title 23 U.S.C. Section 302" (see <http://www.fhwa.dot.gov/tea21/indcosts.htm>), most costs incurred by STAs are now eligible for FA reimbursement either as a direct cost or an indirect cost. STAs may request FHWA participation for indirect costs following the procedures detailed in the memo.

Conversely, a STA may request FHWA participation in direct costs. Federal-aid funds will participate only in the portion of the amortized cost directly attributable to the time the equipment is used on a specific FA project(s). (See 2 CFR 200.436) The STA must amortize the initial purchase cost over the useful life of the equipment, and include the time attributable to the project in the reimbursement request. The allocable cost for this item could be used on subsequent FA projects until its useful life is expended (using the item on other FA projects will require a PIF for the use of publicly owned equipment).

This procedure may also be used for non-CE equipment items, acquired by the State, for use on construction projects by either the State or contractor.

Examples include: variable message signs, temporary bridges (e.g., Bailey Bridge), construction barrier systems, etc.

Ms. Weisman's May 5, 2004 memorandum titled "Clarification of Policy on Indirect Costs of State and Local Governments" provides additional guidance on this subject. A separate Federal-aid project cannot be established for the sole purpose of claiming indirect costs. Since indirect costs are not specified as a purpose of any specific Federal-aid program, it is not appropriate for the FHWA to authorize a specific project for indirect costs. Furthermore, when indirect costs are claimed, the FHWA is required to distribute the costs to each Federal award (i.e., project) that benefits from the indirect costs.

iii. Equipment rental rates

References:

2 CFR 200 Subpart E

48 CFR Part 31

Non-regulatory Supplement 23 CFR 635.120

[HQ memorandum, "Equipment Rental Rates," November 7, 1988](#)

Applicability: All FA construction projects

Background: In 1986, an Office of the Inspector General (OIG) audit of rental rates used by STAs found that a significant number of contractors were being reimbursed for equipment usage based on predetermined rates which included ineligible costs. Ineligible costs included use of contingencies and replacement cost escalator factors, and premium rental rates for rental periods less than one month.

The FHWA subsequently advised all field offices on August 22, 1986, that those STAs using predetermined rate guides must modify the equipment rental rates to eliminate the identified ineligible costs. Dataquest, then the publisher of the Rental Rate Blue Book (Blue Book), responded by developing rate adjustment tables which corrected the discovered shortcomings. The adjustment tables were subsequently found acceptable by the OIG. The FHWA field offices were advised of this determination on December 23, 1986. Further rental rate guidance was issued by [Headquarters' memorandum dated November 7, 1988](#) (See Appendix A).

Guidance: Federal policy requires that actual costs be used to determine extra work payments; however, typically actual equipment costs are not readily available. Therefore, the FHWA permits the STAs to specify in their construction contracts the predetermined rate guides as well as equipment rate schedules developed by STAs which conform to the Federal cost principles and FHWA policy.

The Federal cost principles applicable to rental rates for contractor furnished equipment are contained in 48 CFR, Part 31. The provisions in 2 CFR 200 Subpart E apply when State-owned equipment is used.

Rental Rate Guides - A State may, subject to the FHWA's concurrence, adopt the Blue Book (currently published by Equipment Watch) or another industry rate guide, or it may develop its own guide. The State must make the determination that the equipment rental rates developed or adopted fairly estimate a contractor's actual cost to own and operate the equipment within its State. The Division must review their State's rates for compliance with the policy.

Adjustment Factors - The introductory section of the Blue Book provides an excellent overview of how the rates are developed and the factors that need to be considered in selecting and applying a rate. Equipment is not expected to operate for 12 consecutive months. Maps at the beginning of each Blue Book equipment section indicate adjustment factors based on climate and regional costs. Rate adjustment tables indicate adjustment factors based on equipment age. The adjustment factors in the maps and tables are to be applied when determining the eligible rate.

Maximum Rate - The Blue Book adjusted rates cover all eligible equipment related costs. Therefore, they are considered to be the maximum eligible rates for FA participation purposes.

Hourly Rates - The developer of the Blue Book accumulates all contractor costs for owning a piece of equipment on an hourly basis. The monthly rate displayed in the rental guide is determined by multiplying the hourly accumulated costs by the monthly standard of 176 hours. Therefore, for periods of equipment use less than the standard 176 hours per month, FA participation shall be limited to the hourly rate obtained by dividing the monthly rate by 176. Premium rates contained in the rate guides shall not be used.

Standby Equipment Rates - The contractor continues to incur certain ownership costs when equipment is required to be on standby. The use of a standby rate is appropriate when equipment has been ordered to be available for force account work but is idle for reasons which are not the fault of the contractor. While an industry standard does not exist for standby rates, it has been the normal practice of the courts to reduce published ownership rental guide rates by 50 percent for standby rate usage. Therefore, the FHWA will accept use of 50 percent of the ownership rental rates of an approved guide as the standby rate in lieu of a contractor's actual standby costs. There should be no operating costs included in the rate used and standby time should not exceed 8 hours per day, 40 hours per week, or the annual usage hours as established by the rate guide.

Mobilization - The costs required to mobilize and demobilize equipment not available on the project is eligible for reimbursement. Standby rates should be used for equipment while being hauled to and from the project. This will be

in addition to applicable rates for the hauling equipment. All costs associated with the assembly and disassembly of the equipment for transport should also be considered in the mobilization costs.

Overhead – Equipment overhead includes such items as insurance, property taxes, storage, licenses and record keeping. The Blue Book rates include all equipment overhead costs. Therefore, when a project or home office overhead rate is applied to a Blue Book rate, the State must assure that it contains no equipment overhead cost factors. The Division Administrator shall determine the reasonableness of such a rate.

Profit – Profit on equipment rental is not provided for in the Blue Book published rates. There is no Federal regulation which prevents the addition of an amount for profit. If a State has a policy for the payment of profit, it should be followed on FA contracts. If a profit amount is to be used, the Division Administrator based on experience must determine the reasonableness.

Contractor Leased Equipment – When a contractor obtains equipment through a third party rental agreement for use in a force account situation, the cost will normally be the invoice cost. The invoice cost should be comparable with other rental rates of the area. The Associated Equipment Distributors (AED) Rental Rate and Specifications may be used to evaluate the costs for such equipment rental. Since rental agreements vary, the specific operating costs included in the rental agreement may need to be determined. There may be additional eligible operating costs not covered by the agreement which the contractor incurs and should be reimbursed (i.e., fuel, lubrication, field repairs, etc.).

(Note: The AED book is not acceptable as a rate guide for contractor owned equipment. The AED rates are based on national averages of lease rates charged by equipment distributors and do not reflect a contractor's cost of owning and operating the equipment.)

9. Advertisement and award

a. Plans, specifications and estimate (PS&E) requirements

i. Project estimate

References:

23 U.S.C. 106 – *Project approval and oversight*

23 CFR 630 Subpart A

23 CFR 630 Subpart B

23 CFR 635.115

“Guidelines on Preparing Engineer’s Estimates, Bid Reviews and Evaluation,”
January 20, 2004.

Applicability: All FA highway construction projects

Background: Federal appropriation law principles require that a Federal obligation be based on a documented cost estimate, and revised as the estimate changes.

Guidance: The engineer's estimate is crucial to project approval by FHWA, as discussed in the section on project agreements. The estimate must reflect the anticipated cost of the project in sufficient detail to permit an effective review and comparison of the bids received. In addition, the estimate serves as a guide for analyzing specific line items within a bid.

Estimates may be developed in any combination of three methods:

Historical data derived from the unit prices of recently awarded contracts - under this approach, bid data is summarized and adjusted for project and market conditions. This method requires the least level of effort as long as noncompetitive bid prices are excluded from the database since this method is the most susceptible to inflated bid prices associated with contracts that had little or no competition;

Actual cost derived from an evaluation of the production rates and cost of performing specific work - under this approach, the work is broken down into specific operations with an associated level of effort. Doing so requires that an estimator have a good working knowledge of construction methods and equipment. This method generally produces an accurate estimate but requires a far greater level of effort and knowledge on the part of the estimator.

Combination - under this approach, the estimator uses a combination of historical data and actual costs. Major contract items such as structural components or paving are estimated using actual costs adjusted for the specific project while minor contract items are estimated based on historical data adjusted for the specific project.

Regardless of the approach used to estimate the unit costs, the impact of allowable contract time, construction staging and any other unique project requirements needs to be considered in preparing the engineer's estimate.

ii. Contract time

References:

23 CFR 635.121

Applicability: All FA highway construction projects on the NHS

Background: Contract time is defined as the maximum time allowed in the contract for completion of all work contained in the contract documents. Contract time can become a public relations issue if the travelling public is

inconvenienced for no apparent reason. While a project may be dormant for a variety of reasons, the cause is frequently traced to excessive contract time or poor scheduling by the contractor.

While excessive contract time may encourage inefficiency by the contractor with resulting increased costs for the contractor and STA, and increased travel disruption or delay for the general public due to the work zone being in place for an extended period of time. On the other hand, insufficient contract time may result in higher bid prices, safety issues, increased time overruns, and claims.

Guidance: The FHWA, working with the STA, should strive for the least practical number and duration of traffic interruption during highway construction. The STA should submit adequate written procedures for determining contract time for the Division Administrator's approval (23 CFR 635.121(a)).

The impact on contract time needs to be considered in the development of any change order adding or deleting work from the contract. Any extension of contract time (further discussed in the Contract Changes section III.B.10.i) must be considered carefully in the context of the project; adjacent project activities; and impact on traffic. The Division must approve modifications to contract time (23 CFR 635.121(b)).

The STA should periodically review its procedures for determining contract time, which should include a comparison of actual construction time against the original estimated contract time for several completed projects to determine whether the procedures result in appropriate contract times. Several different methods and software packages exist for determining contract time. To assist the STAs in developing/reviewing contract time procedures, FHWA developed its Technical Advisory T5080.15 - "*Construction Contract Time Determination Procedures*," which discusses various techniques in depth.

iii. Time-related I/D clauses

References:

23 CFR 635.127(d)

FHWA Technical Advisory T5080.10, "*Incentive/Disincentive(I/D) for Early Completion*," February 8, 1989

Applicability: All FA highway construction projects on the NHS

Background: Based on a 1921 statute which limited FA participation in project costs to the value of labor and materials, FHWA prohibited participation in bonus payments for either quality or early completion until 1984.

In February 2000, the Michigan DOT (MDOT) completed an evaluation of the impact of I/D provisions on 26 projects let and completed in 1998 and 1999.

MDOT reported that 65% of I/D projects were completed early; 12% were completed on time and 23% were completed late. MDOT found that the average net reduction in contract days was 19% in comparison with similar projects that were let with an expedited schedule clause which required the contractor to work a six calendar day workweek but without an I/D provision. The average I/D rate for the 26 projects was \$18,500/day and the average project user delay savings was \$610,500. MDOT indicated that the I/D provisions resulted in an average expenditure of 1.5% of the contract value.

Guidance: 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 should be restricted to critical projects where it is essential to minimize traffic delays. I/D provisions should not be used routinely. In general, the use of I/D provisions has proven to be very successful, with contractors usually completing projects ahead of schedule.

To keep from using I/D provisions routinely, each STA should develop specific criteria to facilitate early identification of projects which would benefit from the inclusion of a I/D provision. The following characteristics have been associated with projects appropriate for I/D provisions:

- projects on high traffic volume facilities, generally in urban areas;
- projects that will complete a gap in a significant highway system;
- major reconstruction or rehabilitation on an existing facility that will severely disrupt traffic;
- reconstruction or rehabilitation of major bridges; or
- projects with lengthy detours.

During the development of I/D projects, extra effort should be taken to ensure that the design, specifications, schedule, etc., are compatible and appropriate for the project. The plans and specifications should indicate any unusual condition or any restriction under which the contractor must work such as night noise restrictions or environmental conditions. To assist in identifying local restrictions, local stakeholders (local officials, traffic engineers, police, etc.) should be involved in the project development.

Field reviews of the project site are critical to ensure that the plans accurately reflect actual conditions. As-built plans may not reflect on-the-ground changes due to maintenance, utility adjustments, or field changes done during the original construction. A field change to correct plan errors, especially related to work in a I/D phase, will be very costly in both time and money.

The contract must clearly define the start and completion of the I/D phase(s) which may vary from the start and completion of the project. A

project may have one or more I/D phases, depending on the work involved. The contract specifications must clearly define the time and work requirements of each identified I/D phase.

Determination of I/D Time - when determining I/D time, the STA must consider to what extent and at what cost construction can be compressed from a normal construction schedule. If the set completion date is unreasonable, the bid prices will be excessively high, and may deter some bidders from submitting bids. On the other hand, a contract time with only nominal compression will allow a contractor to earn the maximum bonus for very little extra effort.

Development of a compressed schedule suitable for a I/D provision should consider the following items:

- use of calendar day or completion dates for controlling contract time;
- weather and season of the year; and
- impact of long periods of accelerated construction on contractor and STA workforces.

Determination of I/D Amounts - to effectively accomplish the objectives of the I/D provisions, the I/D amount must be large enough to encourage the contractor to be innovative, and to compensate the contractor for the additional expense of accelerating the work. The calculation of the I/D amount must be well justified and documented for each projects. Engineering judgment may be used to adjust the calculated daily amount downward to a daily I/D amount that balances the benefit to the travelling public against the cost of accelerating construction. To ensure that a contested disincentive is not viewed as a penalty, the STA must be able to demonstrate the rationale for the project's I/D value.

Administration of I/D contracts - additional work should generally be expected on any project; however, the impact of additional work on a I/D project may become problematic since management of contract time becomes critical for a project with a I/D provision. Therefore, cooperation and coordination between the contractor and the STA are essential since any delay in approval of a change order can be costly. Timely decision-making and approvals are needed to avoid owner-caused delay claims related to the I/D provision.

To facilitate the project engineer's ability to make prompt decisions, the contractor should be required to submit a project work schedule in an appropriate format for the complexity of the project. The initial submitted work schedule should be modified and resubmitted by the contractor in a timely manner as work progresses. Having a work schedule which accurately reflects contract work to date, and future operations, will enable the STA's project engineer to make better decisions about extra work, modified work, change orders and value engineering proposals.

During the life of the contract, the contract must meet all milestones and completion dates. Extension of time on an I/D date should not be given unless extraordinary circumstances occur. The burden of proof to extend the I/D date must be on the contractor who would need to demonstrate why concurrent operations, additional manpower, additional shifts, overtime, etc., cannot be used to keep the project on schedule. The STA should consider all alternatives which may require additional CE costs to keep the project on schedule.

Adjustments to a contract, or phase, I/D time should be limited to major work items which affect completion of items on the critical path. Field changes to contract work within an I/D phase must consider the impact to contract and I/D time since added work might adversely impact the contractor's ability to earn a bonus while deleting work might result in a bonus payout with very little public benefit. Additional work which does not affect the critical path is to be absorbed within the current CPM schedule without any adjustment in the I/D time whereas extra work which impacts the critical path may result in an equitable adjustment for both cost and contract time. The change orders which document the contract changes must clearly discuss the impact on time, especially the I/D time.

iv. Disadvantaged Business Enterprise

References:

23 U.S.C. 140 -- *Nondiscrimination*

MAP-21, § 1101(b)

23 CFR 200

23 CFR 230, Subpart B

49 CFR 21

49 CFR 23

49 CFR 26

[US DOT, Office of Small and Disadvantaged Business Utilization, Disadvantaged Business Enterprise home page](#)

Applicability: All Federal-aid highway construction projects

Background: The Disadvantaged Business Enterprise Program (DBE) is a legislatively mandated USDOT program that applies to Federal-aid highway dollars expended on federally-assisted contracts issued by USDOT recipients such as State Transportation Agencies (STAs). The U.S. Congress established the DBE program in 1982 to:

- Ensure nondiscrimination in the award and administration of DOT-assisted contracts;

- Help remove barriers to the participation of DBEs in DOT-assisted contracts, and
- Assist the development of firms that can compete successfully in the marketplace outside of the DBE program.

The DBE program was reauthorized by MAP-21, Moving Ahead for Progress in the 21st Century Act (P.L. 112-141). The program is administered by three modal administrations (i.e., FHWA, FTA, and FAA) with the FHWA maintaining a significant stewardship role for the program. Implementation of the DBE program is guided by USDOT regulations found at 49 CFR Part 26 (Part 23 for airport concessions).

Every three years, STAs are required to set an overall DBE participation goal that they must either meet, or show that they used good faith efforts to meet, annually. This goal is in the form of a percentage of federal funds apportioned annually to each STA and is calculated based primarily upon the relative availability of DBE firms as compared to all firms in the relevant geographic market area. STAs that do not meet their goal in any given year, must submit a document to their operating administrations, such as FHWA, identifying and analyzing the reasons why the goal was not met and creating specific steps to correct the problems going forward.

The U.S. Court of Appeals for the Ninth Circuit rendered a decision in 2005 (*Western States Paving Co. v. Washington State Department of Transportation*) that significantly impacted the ability of STAs within that Circuit to set race-conscious measures in implementing their DBE programs. As a result, USDOT issued guidance advising STAs in the Ninth Circuit to suspend the use of race-conscious contract goals until they could be supported by sufficient evidence of discrimination or its effects in the state's contracting market. All the STAs in the Ninth Circuit now have completed disparity and/or availability studies. Some STAs received DBE program waivers from USDOT to set DBE contract goals that include only those groups for whom significant disparities were shown based on evidence in their studies.

By regulatory definition, a DBE is:

"... a for profit small business concern -- (1) That is at least 51 percent owned by one or more individuals who are both socially and economically disadvantaged or, in the case of a corporation, in which 51 percent of the stock is owned by one or more such individuals; and (2) Whose management and daily business operations are controlled by one or more of the socially and economically disadvantaged individuals who own it."

All Federal-aid projects, regardless of system or oversight agency are subject to the legislative and regulatory DBE requirements. FHWA must continue to approve each State's DBE program and its annual goals to ensure compliance with all DBE Program requirements. The main objective of the DBE

Program is to ensure that DBE firms have an opportunity to participate in DOT funded contracts.

The DBE participation requirements in Federal-aid highway contracts are contract provisions like any other contract provisions (i.e., predetermined minimum wage, Buy America provisions, and statements and payrolls, etc.), and should be administered as such.

Key FHWA Stewardship/Oversight Responsibilities:

- Ensure that all FHWA recipients have an approved DBE program that is being implemented in accordance with regulations and reflects progress in meeting program objectives;
- Reduce fraud and ensure that the program benefits only qualified businesses;
- Ensure that recipients receive appropriate training and technical assistance; and
- Manage emerging risks associated with DBE Program delivery, such as ensuring DBEs to which a prime contractor has made a commitment are actually used and performing a commercially useful function on federally-assisted projects.

DBE/Supportive Services Program:

The DBE Supportive Services (DBE/SS) Program has been consistently operated as an adjunct to the DBE program. Statutory authorization exists for the FHWA's implementation of the program. The primary purpose of the DBE/SS Program is to provide training, assistance, and services to certified DBEs to increase their activity in the program, and to facilitate the firms' development into viable, self-sufficient organizations capable of competing for and performing on Federally- assisted highway projects. Since 1982, Congress has authorized up to \$10 million annually to accomplish these objectives.

FHWA annually apportions the DBE/SS funds to STAs for the purpose of carrying out a DBE/SS program. The FHWA approves the funding of STA programs only if they demonstrate the ability to directly assist certified DBEs' development through identifiable, metric-based results.

Questions about the DBE program including Supportive Services should be referred to the Office of Civil Rights. Other resources are the US DOT's DBE website and the FHWA's DBE Community of Practice.

v. Quality-related price adjustment clauses

References:

23 CFR 637

HQ memo – *Technical Guidance for Price Adjustment Clauses for Quality*,
January 24, 1992.

Applicability: All FA highway construction projects on the NHS

Background: The means and methods which a contracting agency will use to assess the quality of a product provided by the contractor are generally included in the specifications for that product. The AASHTO definition of “quality assurance” (QA) is “all those planned and systematic actions necessary to provide confidence that a product or facility will perform satisfactorily in service” or, put more simply, “making sure the quality of a product is what it should be.” (AASHTO R10-06) Quality assurance specifications generally include statistically based acceptance plans, require contractor process control testing, and may have provisions for pay adjustments based on the degree of compliance with specified requirements.

Guidance: FHWA has traditionally endorsed the use of incentive provisions for improved quality that range up to five percent of the unit bid price, provided the incentive is based on readily measure physical properties that reflect improved performance. Incentives greater than five percent may be considered on a case-by-case basis following an analysis of performance data.

In developing quality price adjustment provisions, responses to the following questions should be obtained and analyzed:

- What physical properties are considered to be critical?
- How are these physical properties tested/measured?
- To what degree does each physical property influence performance?
- What price adjustment, if any, should be applied to these physical properties?

The following table includes some physical properties for which STAs include quality price adjustments:

Asphalt Concrete	Portland Cement Concrete
Asphalt content	Strength (compressive and flexural)
Aggregate gradation	Aggregate gradation
Compaction (in-place density)	Air content
Air voids	Pavement ride quality
Stability	Pavement thickness
Pavement ride quality	

An acceptance plan must be developed for each property. Acceptance plans are an agreed upon method of taking and evaluating measurements for determining the degree of acceptability of material or construction. An acceptance plan defines the lot size (i.e., the maximum amount of work that will be judged at a time), sample size, sampling procedure, testing, method, process for judging the acceptability of the test results, and payment provisions.

A quality price adjustment provision will include a pay schedule that uses one of two methods to adjustment the unit price. The first method which is typically referred to as a stepped schedule uses a table that defines the pay factor based on the degree of conformance to requirements. In the second method, usually referred to as a continuous schedule, the pay factor is determined by equation.

Quality price adjustments may be based on one or a combination of many physical properties. When a contracting agency determines that several physical properties contribute to a product's longevity, the agency should adjust the pay factor to reflect this. Some agencies use the lowest pay factor while others develop a combined pay factor as either a straight average, or some combined multiplier, of the individual pay factors for a lot. No method is currently considered more correct than another because the true effect of the property interactions is not fully understood. Therefore a STA should use performance studies coupled with testing data to determine the method that most closely matches its experience.

vi. Commodity price escalation clauses

References:

FHWA Technical Advisory TA 5080.3, *"Development and Use of Price Adjustment Contract Provisions,"* December 10, 1980

HQ memo, *"Price Adjustment Contract Provisions,"* August 21, 1990

HQ memo, *"Price Adjustment of Existing Contracts,"* November 30, 1990

HQ letter to Maryland SHA, *"Adjustment of Existing Contracts for Increases in Steel Prices,"* April 8, 2004

Applicability: All FA highway construction projects

Background: A commodity price escalation clause establishes a method within the contract to adjust the contract unit price of specific materials and/or supplies under specified economic conditions. While most typically used for contract items heavily influenced by the price of asphalt, fuel or cement, a commodity price escalation clause may be written more generically and not limited to these specific materials.

The value of a commodity price escalation clause is typically viewed as limiting the bidders' risk for commodity price volatility over the life of the

project and, therefore, reducing the contingency that bidders might otherwise include in the bid prices. Contracting agencies gain through the reduction of inflated bid prices.

Guidance: Price escalation clauses (PEC) should only be applied to materials with uncontrollable price volatility which may greatly affect contract prices. In general, PEC may be invoked if:

- The price trend is extremely volatile;
- Suppliers are unable to provide a price quotation for the usual term of the typical contract;
- The price quote may be based on date of delivery or spot market conditions; or
- Shortages may be expected.

The standard, upon which price escalations are to be based, should be real, quantifiable, and identified in the contract specifications. This standard should represent a price, or base index, which is not susceptible to manipulation by contractors or suppliers. The contracting agency may develop its own price index or adopt one of the published commonly available indices.

Using the valid price index, the contracting agency must then develop workable contract provisions. Some general principles for the development and use of PEC are:

- The PEC need not be a standard specification, thus enabling the contracting agency to insert it in appropriate projects. If the PEC is included in the standard specifications, the clause should include that it is only applicable when specified in the bid proposal;
- The PEC must provide for both upward and downward movement of prices;
- There should be upper and lower limits on the compensation;
- The PEC should be “triggered” by a significant change in the index, rather than minor fluctuations in price. AASHTO suggests a 5% trigger although 10% has become the norm. For trigger values of State PECs, see NCHRP 20-07, exhibit 1-3.
- The PEC must be in the original contract for FA participation in any price adjustments since FHWA is precluded by law from participating in a retroactive PEC (see 4/8/2004 HQ memo). However, FHWA does not object to an STA proposing the use of 100% state funds for such payments.
- The PEC should be automatically incorporated in progress and partial payment computations;
- Compensation should not be based on actual invoices or receipts; and
- Upward price adjustments should not be permitted after the contract time (including approved extensions) has elapsed.

A contracting agency should use discretion when including PEC in a contract since very short duration contracts or contracts without major price-sensitive items may not warrant their use. Among the factors to consider when deciding whether a PEC should be included are:

- Contract duration – multi-year contracts should probably include a PEC; and
- Contract items – if a single season contract has several major items that are price sensitive, a PEC may be beneficial.

Additional information about use of PEC may be found in:

- NCHRP Report 744: *Fuel Usage Factors in Highway and Bridge Construction*, 2013
- NCHRP Report 20-07/Task 274: *Price Indexing in Transportation Construction Projects*, 2011

Unanticipated state/local sales tax increases - unless the contracting agency has provided in the original contract for adjustments due to changes in sales taxes, FHWA is unable to participate in such adjustments.

vii. Standardized changed condition clauses

References:

23 U.S.C. 112(e) – *Standardized Contract Clause Concerning Site Conditions*
23 CFR 635.109
Geotechnical Engineering Notebook, Guidelines No. 15, April 30, 1996

Applicability:

All FA highway construction projects other than design-build projects where the applicability will be determined on a project-by-project basis.

Background: Due to the nature of highway construction and the conditions under which work is performed, designers cannot always accurately determine and/or describe the existing conditions at a project site. Consequently the actual conditions encountered during construction may differ from those indicated in the contract documents, resulting in a change of work type or amount which may ultimately impact the construction cost and/or schedule. In addition, a situation may arise which requires the contracting agency to slow or stop the contractor's progress, resulting in construction delays and possible increased costs.

The STURAA of 1987 required FHWA to develop standardized changed condition clauses to be included in all FA construction contracts unless prohibited or otherwise provided for by State law. The law required the clauses to establish the equitable adjustment of a contract in the event of a) differing site conditions; b) suspensions of work ordered by the STA; and c) material changes in the scope of the work.

In theory, the use of the standardized changed conditions clauses takes several risks out of the bidding process. Since bidders do not need to evaluate their costs of doing geotechnical work or include contingencies for unforeseen site conditions, owners benefit from more competitive bidding. And finally, the use of standardized changed condition clauses provides some uniformity for contractors pursuing work in several states.

Guidance: The standardized changed condition clauses in 23 CFR 635.109 must be included verbatim in all contracts unless State statute prohibits their inclusion. With the Division Administrator's approval, an alternative clause may be developed by the STA that either a) includes all the required sections of 23 CFR 109 but is structured to fit the STA's standard specifications; or b) fulfills the requirements of State statute.

While the standardized changed condition clauses are not required for design-build contracts, the regulation strongly encourages the contracting agency to include a contract provision covering suspensions of work ordered by the Engineer; and consider provisions for "differing site conditions" and "significant changes in the character of the work" as appropriate for the project's risk allocation.

The regulation includes three different clauses:

1) Differing site conditions

This clause provides for the equitable adjustment of the contract if the contractor encounters either a:

- Type I Condition - a subsurface or latent physical condition that differs materially from those indicated in the contract, or
- Type II Condition - unknown physical conditions of an unusual nature that differ materially from those ordinarily encountered and generally recognized as inherent to the work.

Additional guidance for design and construction engineers is found in FHWA's Geotechnical Engineering Notebook, Geotechnical Guidelines No. 15, dated April 30, 1996.

2) Suspensions of work ordered by the Engineer

The clause provides for the adjustment of contract terms if the performance of all or a portion of the work is suspended or delayed by the 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 Engineer within 7 calendar days of receipt of the notice to resume work. Recovery of profit on costs resulting from suspensions of work is not allowed.

To qualify for an adjustment, the suspension must be for an unreasonable period and does not include brief, customary suspensions for reasons inherent to

highway construction such as materials sampling and testing; approval of shop drawings, materials sources, etc.; and other reasonable and customary suspensions necessary for the supervision of construction by the contracting agency. However, this clause does not allow an adjustment if the work is suspended for other reasons, or if the adjustment is provided for, or excluded, under other terms or conditions of the contract.

This clause does not preclude the recognition of constructive suspensions or delays resulting from the contracting agency's actions, without written notification. Constructive delays are delays caused by the contracting agency's instructions or actions that are not in writing such as verbal orders by the Engineer, or excessive submittal review times.

3) Material changes in the scope of the work

This clause provides for the adjustment of the contract terms if the Engineer orders, in writing, an alteration of the work or in the quantities that significantly changes the character of the work. The term "significant change" is defined in the regulation to mean that a) the altered character of the work differs materially from the original contract; or b) a major item of work, as defined in the contract, is increased or decreased by more than 25%. Either party may initiate this adjustment but both must agree before the work is actually performed.

As with the suspension of work clause, this clause does not preclude recognition of the impacts of a constructive suspension or delay.

viii. Environmental commitments

References:

23 CFR 635 Subpart C

23 CFR 771

Applicability: All FA highway construction projects

Background: The FHWA uses the environmental review process to review the social, economic and environmental impacts of proposed projects prior to taking the action.

The environmental review process will not be discussed in this manual. Additional information about the process and its requirements is available through the Divisions or on the Office of Environment, Planning and Realty website.

Guidance: Any required environmental mitigation measures which result from the environmental review process must be incorporated as appropriate in the relevant construction projects [23 CFR 771.109(d), 23 CFR 635(j)]

ix. Required Contract Provisions (FHWA-1273)

References:

23 U.S.C. 114 – *Construction*

23 U.S.C. 315 – *Rules, regulations and recommendations*

23 CFR 633

40 CFR 1.48

Applicability: The provisions of the FHWA-1273 generally apply to all FA highway construction projects and therefore, must be physically incorporated into the construction contract and, if required, appropriate subcontracts and purchase orders. However, certain provisions, such as those derived from the Davis-Bacon and Related Acts, may only apply under specific conditions. Therefore, each provision of the FHWA-1273 will have an applicability section which discusses the applicability of the specific provision.

Background: The “Required Contracts Provisions” were initially compiled in Form PR-1273 in 1974, with subsequent revisions made in 1975, 1983, and 1986. In 1987, Form PR-1273 was replaced by Form FHWA-1273. As part of this update, the regulations were modified to remove the form text from 23 CFR 633A as a means of allowing the agency to make more timely modifications to the text.

In 1989, the FHWA-1273 was revised to require the certification related to suspension and/or debarment from bidders. Another change removed the requirement that the contractor submit a final certificate on wages paid upon completion of a Federal-aid construction contract.

In 1993, the FHWA-1273 was updated to include: the equal employment opportunity special provisions of 23 CFR 230 A, appendix A); requirements related to the Americans with Disabilities Act of 1990 (ADA); and the lobbying certification requirement. Other modifications were made to make the FHWA-1273 consistent with changes resulting from ISTEA. Finally, an appendix for the special requirements of the Appalachian Development Highway Program (ADHP) was created to simplify the forms used for ADHP projects.

Through the Federal Register published on June 25, 2012, FHWA provided notice of the revised FHWA-1273 to incorporate relatively minor changes.

Guidance: Contracting agencies are required to use the May 1, 2012 FHWA-1273 in contracts advertised after August 9, 2012. The revised Form FHWA-1273 is available at

<http://www.fhwa.dot.gov/construction/cqit/form1273.cfm>

The FHWA-1273 is provided to the STAs by FHWA either electronically or in hard-copy. The form is available electronically through the Division, or on the FHWA website. For reference, the form is included in the Appendix A.

Modification: An STA is not permitted to modify the provisions of the FHWA-1273. A similar form of state requirements may be developed into a separate supplemental specification or special provision; however, its contents may not conflict with Federal requirements, and may not change the intent of any FHWA-1273 provision.

The following paragraphs are very brief summaries of the critical provisions of the May 1, 2012 FHWA-1273:

I. General

This provision details the general provisions of the FHWA-1273.

Section I.1 -The form must be physically incorporated into each construction contract funded under Title 23, including design-build contracts. The only exception to the requirement for physical incorporation is emergency contracts solely for debris removal.

FHWA-1273 provisions are required to be physically incorporated into each subcontract and subsequent lower tier subcontracts, and shall not be incorporated by reference. The prime contractor or design-builder is responsible for compliance with FHWA-1273 provisions by all subcontractors and lower tier subcontractors. In the case of a design-build contract, the FHWA-1273 does not have to be physically incorporated into subcontracts for design services; purchase orders; rental agreements; or other agreements for supplies or services.

Section I.2 - the FHWA-1273 provisions apply to all work performed under the contract, including work performed by subcontract.

Section I.3 - failure to comply with the Required Contract Provisions may be grounds for withholding progress payments; withholding final payment; contract termination; suspension/debarment or any other action determined to be appropriate by the contracting agency and FHWA.

Section I.4 - prohibits the use of convict labor for any purpose within the limits of the construction project on a Federal-aid highway unless the labor is performed by convicts who are on parole, supervised release, or probation.

II. Nondiscrimination

Applying to Federal-aid construction contracts and subcontracts with a prime contract value greater than \$10,000, this provision applies the Federal nondiscrimination requirements discussed in section III.A.3 to the construction contractor. Among the specific actions the contractor must take to comply with the FHWA-1273 are:

- providing equal opportunity under Federal laws, executive orders, rules, regulations, and orders of the U.S. Secretary of Labor;
- adopting the statement in paragraph II.1.b as its operating policy for EEO;
- designating and empowering an EEO Officer responsible for ensuring the policy is followed;
- ensuring that all staff involved in personnel decisions are cognizant of the EEO requirements;
- making every effort to recruit women and minorities for vacancies that occur;
- ensuring that all personnel decisions (such as hiring, upgrading, promotion, transfer, demotion, lay off, and terminations) are made without regard to race, color, religion, sex, national origin, age or disability. The form includes a requirement that the contractor periodically review project sites, wage records, and personnel actions taken to ensure that employees are afforded equal opportunity. In addition, the contractor must promptly review and respond to any allegation of discrimination, taking corrective action as needed, and informing the complainant of all avenues of appeal;
- providing training opportunities to women and minorities with the goal of participants achieving the journeyman level;
- working with the unions (if reliant on union labor) to increase opportunities for minorities and women;
- providing reasonable accommodation for persons with disabilities;
- ensuring that the selection of subcontractors; purchase of materials; and leasing of equipment complies with the nondiscrimination requirements;
- complying with the USDOT Disadvantaged Business Enterprise requirements;
- submitting the annual project employment "snapshot" on Form FHWA-1391 for the last pay period preceding the end of July.
- maintaining all project documents related to EEO for a minimum of three (3) years after receipt of final payment by the contracting agency. This documentation must be available at reasonable times and places for inspection by authorized representatives of the contracting agency and/or FHWA.

III. Nonsegregated Facilities

Applying to Federal-aid construction contracts and subcontracts with a prime contract value greater than \$10,000, the contractor must ensure that

employee facilities provided on the project are provided such that segregation on the basis of race, color, religion, sex or national origin cannot result. Privacy between the sexes through the provision of single user or single sex facilities for restrooms, dressing rooms or sleeping facilities is the only exception.

IV. Davis-Bacon and Related Act Provisions

Applying to Federal-aid construction contracts and subcontracts with a prime contract value greater than \$2,000, this provision requires the contractor to comply with the Davis-Bacon and Related Acts pertaining to the payment of wages for laborers and mechanics (as defined by the Davis-Bacon Act). See the discussion of prevailing wage rates in III.B.k.v for additional information

Note: paragraph IV.10 states that entering into the contract is the prime contractor's certification that neither the firm nor any person or firm with an interest in the contractor's firm is ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

V. Contract Work Hours and Safety Standards Act

Applying to projects with a prime contract value greater than \$100,000, this provision requires the contractor to comply with the Contract Work Hours and Safety Standards Act by paying overtime for work hours in excess of 40 hours in a work week for laborers and mechanics (to include watchmen and guards). It also establishes liquidated damages and withholding requirements in the event the contractor fails to pay wages. Last, this section establishes that the prime contractor is responsible for compliance by any subcontractor or lower tier subcontractor.

VI. Subletting or Assigning the Contract

For projects on the National Highway System, this provision requires the contractor:

- to perform with its own organization contract work amounting to at least 30 percent of the original contract value, excluding specialty items designated by the contracting agency;
- to furnish a competent superintendent employed by the firm, and any additional project staff that may be needed to assure the performance of the contract;
- to obtain written consent from the contracting agency prior to subcontracting work.

In accordance with 23 CFR 635.116(d), the self-performance requirement is waived for a design-build contract unless the contracting agency may choose to establish a minimum percentage of work that must be completed by the design-builder.

VII. Safety: Accident Prevention

Applying to all Federal-aid construction contracts and to all related subcontracts, this provision requires the contractor and subcontractors:

- to comply with all applicable Federal, State and local laws governing safety, health and sanitation;
- to provide all safeguards, safety devices, and protective equipment and take any other needed actions to protect the life and health of employees and the public;
- to not permit any employee to work in surroundings or conditions which are unsanitary, hazardous or dangerous based on the construction safety and health standards of 23 CFR 1926; and
- to allow authorized representatives of the US Department of Labor right of entry to the project to inspect or investigate compliance with the construction safety and health standards and/or Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

VIII. False Statements Concerning Highway Projects

Applying to all Federal-aid construction contracts and to all related subcontracts, this provision requires the FHWA-1022 be posted on each Federal-aid highway projects in one or more locations where it may be easily read by all persons concerned the project. By posting the FHWA-1022, all project personnel are on notice that false statements about the *“character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction”* may result in fines and/or imprisonment. The FHWA-1022 is available at www.fhwa.dot.gov/programadmin/contracts/FHWA1022.pdf.

IX. Implementation of Clean Air Act and Federal Water Pollution Control Act

Applying to all Federal-aid construction contracts and to all related subcontracts, this provision makes submission of a bid and/or execution of the contract a stipulation by the bidder, proposer, contractor, or subcontractor that no one associated with the performance of the contract is prohibited from receiving an award due to a Clean Air or Clean Water Act violation.

X. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion

Applying to all Federal-aid construction contracts, design-build contracts, subcontracts, lower tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR 180 and 1200,

this provision makes submission of a bid the bidder's certification that it shall not knowingly enter into a lower tier covered transaction with a person who is debarred, suspended, declared ineligible or voluntarily excluded from participating in this covered transaction without approval by FHWA.

XI. Certification Regarding Use of Contract Funds for Lobbying

Applying to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000, this provision makes submission of a bid or proposal, the bidder/proposer's certification that no Federal appropriated funds have been paid to a person for the purpose of attempting to influence any member of Congress or a Federal employee in connection with any Federal grant, contract, loan or agreement.

Attachment A - Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts

Applying to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965, this attachment allows the establishment of a preference for local materials and hiring.

b. Non-collusion statement

References:

23 U.S.C. 112 - *Letting of Contracts*

23 CFR 635.112(f)

Applicability: All Federal-aid highway construction projects

Background: The submission of a noncollusion statement protects the integrity of the Federal-aid highway program by serving as a deterrent to bid rigging activities. The certification also becomes evidence in prosecuting cases involving construction contract bid rigging.

Prior to 1986, noncollusion affidavits were required only from the successful low bidders although the AASHTO encouraged States to require a signed certification from all bidders. A copy of the [1981 AASHTO publication Suggested Guidelines for Strengthening Bidding and Contract Procedures](#) is included in the Appendix A. Also, the [U.S. Department of Justice \(DOJ\) Antitrust Division](#) strongly encouraged that noncollusion affidavits be required from all bidders (Appendix A). In response, the FHWA changed the regulations and now all bidders are required to submit a noncollusion statement.

Guidance: A noncollusion statement is required from all bidders and is to be submitted as part of the bid proposal package. Failure to submit the required certification will result in the bid being considered as non-responsive and ineligible for award consideration.

The STAs must include provisions in the bidding proposals that require all bidders to include a noncollusion statement with their bid. The FHWA, in consultation with the DOJ, has concluded that the noncollusion statement may be either an unsworn declaration made under penalty of perjury under the laws of the U.S., or a sworn affidavit executed and sworn before a person who is authorized to administer oaths by the laws of the State.

All noncollusion certifications shall be retained by the STA in accordance with the retention policy of 49 CFR 18.42. These certifications could serve as important evidence in the event that collusion or bid rigging is discovered at a later date.

If for any reason, a person feels that fraud has occurred, they should contact the nearest USDOT/OIG office. This may be based on a suspicion or actual evidence of fraud, waste, and abuse in any project funded by FHWA. See [Appendix A](#) for details.

c. Bonding

References:

23 U.S.C. 112 - *Letting of contracts*

23 CFR 635.110

Applicability: All Federal-aid highway construction projects

Background: A bond is a document issued by an insurance company that guarantees that a contractor will perform a specific action. Typical bonds used in highway construction are:

Bid bonds - guarantees that the bidder will sign the contract;

Performance bonds - guarantees that the contractor will perform the work necessary to complete the contract;

Payment bonds - guarantees that the contractor will pay for materials, equipment and labor used on the contract; and

Warranty bonds - guarantees that the warranted contract items will perform as required by the contract. Warranties are discussed in greater detail in the section on alternative contracting.

Guidance: Bonding requirements may be established by a STA provided the requirements do not restrict competition. (see 23 CFR 635.110(b))

d. Prequalification of bidders

References:

23 U.S.C. 112 - *Letting of contracts*

23 CFR 635.110

Applicability: All FA highway construction projects

Background: AASHTO defines prequalification as a means of predetermining job experience and work capacity, and identifying individuals and organizations from whom an owner-agency may accept bids. In its 1981 Suggested Guidelines for Strengthening Bidding and Contract Procedures, AASHTO encouraged the use of prequalification procedures.

Generally prequalification consists of an evaluation of the contractor's experience, personnel, equipment, financial resources, and performance record. The evaluation is normally performed annually.

AASHTO recommends the following information be required for prequalification:

- detailed financial statement;
- identification of the resident agent;
- capacity and control classification;
- experience and performance;
- ownership and/or control;
- equipment, and
- updated information when there is a corporate or affiliate change, or a reduction of 10% or more of the firm's assets.

Once a firm has been prequalified, most STAs then rate the firm for capacity within a specific construction classification such as general highway construction, grading, grading and paving, or miscellaneous. In 1994, NCHRP Synthesis 190 - *Criteria for Qualifying Contractors for Bidding Purposes* found that all but fifteen STAs require prequalification. Of the fifteen not prequalifying, five generally undertake a post-bid qualification evaluation although the process is generally not as formalized as a prequalification evaluation.

Guidance: FHWA does not require the STAs to implement procedures or requirements for prequalification, qualification, bonding or licensing on FA projects. However, if an STA has these procedures or requirements, they must conform to FHWA's competitive bidding policy. In other words, to conform to the requirements of 23 CFR 635.110(a), any procedures or requirements related to qualifying and licensing contractors cannot restrict competition and must be approved in advance by the Division Administrator. In addition the requirements must be uniformly applied to all bidders and contractors.

While the information required for prequalification may be extensive, the STA's process time needs to fit within the standard advertising period for contract proposals to comply with the requirements of 23 CFR 635.110(c).

Similarly while a STA may require a license before a contract can be signed, the STA cannot require that a bidder be licensed in order to submit a bid or for that bid to be considered for award. Therefore, the license process must be

such that a prospective bidder could complete the process between advertisement and award.

Although a STA may have a compelling reason such as State law to use a procedure that differs from acceptable FA practice, that procedure cannot be applied to a FA project. In fact, 23 CFR 635.112(d) specifically requires that, for a FA project, the STA must inform bidders of contract provisions which do not apply. The information must be included in the advertisement, specifications, special provisions or other governing documents as appropriate.

An example of an inappropriate provision for an FA project would be a State preference clause in the standard specifications. Since the clause provides some competitive advantage of in-state contractors, it violates the Federal open competition requirements and therefore, could not be applied to a FA project. Another example would be a restriction on products or services from a specific foreign country.

e. Advertising for bids

References:

23 U.S.C. 112 – *Letting of contracts*

23 CFR 635.112

23 CFR 635.309

Applicability: All FA highway construction projects

Background: The AASHTO definition of advertisement is:

“...the public announcement to invite bids for work to be performed or materials to be furnished.”

Advertisement of a contract proposal can legally take the form of a classified ad in a newspaper or any other format that is permitted by State law or practices that is acceptable to the FHWA. Other acceptable formats for announcing upcoming projects may include advertisements in trade journals, bulletins, and mailed notices to potential bidders.

Electronic forms of advertising may also be acceptable provided the STA can demonstrate widespread knowledge of the website or process for obtaining the information by potential bidders. Several States have now established a single website for posting contract proposals by all State agencies.

Guidance: A project may be advertised following PS&E approval by the Division Administrator, as established in 23 CFR 635.112. Authorization must be based on the assurances prescribed in 23 CFR 635.309 which include:

- PS&E approval;
- Assurance that all right-of-way (ROW) clearances, utility, and railroad work has been completed, or that arrangements for proper coordination during construction are included in the bid proposal;

- Assurance that the relocations of any impacted individuals and/or families have been completed;
- Assurance that the public hearing process is complete and that the location and design approval requirements have been met;
- Assurance, where applicable, that any required area-wide agency reviews have been completed; and
- Assurance that funding is adequate for the project.

FHWA requires that the advertising policies and practices of the STA must assure free and open competition. This policy covers issues such as prequalification, licensing, bonding and bidding, as well as the announcement itself in relation to Title VI Nondiscrimination with regard to age, race, religion, color, sex, national origin, disability, etc.

The minimum advertisement period is three weeks. With the DA's approval, exceptions are permitted when circumstances warrant.

For large or complex projects, the advertisement period should be longer than three weeks to provide the prospective bidders adequate time to prepare a responsive bid proposal. Six or more weeks may be reasonable depending on the complexity of the work required by the contract. For major or specialty, consideration should be given to advertising regionally or nationally to attract the broadest pool of qualified bidders.

For complex projects, the STA may consider a pre-bid meeting to address concerns and questions posed by prospective bidders. If attendance of the pre-bid meeting is mandatory for a bid to be considered responsive, FHWA requires that the project advertisement and all bidding documents reflect this requirement. In addition, the STA must assure that prospective bidders have adequate notice of the requirement in order to comply.

Addenda – any addendum constitutes a deviation from the approved PS&E, and may impact the obligation of FA funds. Therefore, any addendum must be approved by the DA prior to its release to the prospective bidders. Any approval or concurrence will be based on the STA's assurance that all potential bidders will receive the approved addendum.

All bidders must bid the project on the same basis so that no particular advantage or disadvantage accrues to any potential bidder or to the contracting agency. An addendum issued during advertisement could have a profound impact on bid prices, and the basis for bid comparisons, the contracting agency must assure as expeditiously as possible that all prospective bidders are aware of any addendum.

The definition of "expeditious," in terms of an adequate time frame to provide an addendum to all prospective bidders prior to bid opening, is subjective. The complexity, impact and timing of an addendum on potential bids needs to be considered prior to issuing it. However, some State standard specifications include a definition of the minimum addenda review time. A common practice is to apply the same minimum time frame criteria for all

addenda as has been established by the “10-day rule” for USDOL wage rate decisions. Under the 10-day rule, all addenda must be issued 10 or more days prior to bid opening. Many STAs require that prospective bidders acknowledge receipt of major addenda to ensure that the bids reflect the changes in the proposal.

f. Bid opening and tabulation

References:

2 CFR 180

23 CFR 635.113

HQ memo, “Interim Guidance – Electronic Contracting,” July 14, 2006

[Q&A on Electronic Contracting](#) webpage

Applicability: All FA highway construction projects

Background: The bid opening is a public forum for the announcement of all bids, and historically is that point in time when the bids are opened and read aloud. For the bidder, the reading of bids provides an initial indication of the apparent low bidder. For the STA and the general public, this forum establishes the cost to build the project.

In general, the time stated in the advertisement is the last moment that the STA will accept bids. However, some geographically larger States set the final bid acceptance time early enough to allow all bids to be delivered to a central location for the bid opening.

The shift to electronic bidding by many STAs has changed the dynamic and concept of a ‘public’ bid opening.

Guidance: FHWA requires that all bids be opened publicly and read aloud either item-by-item, or by total amount. For any bid that is not read, the STA must identify the bidder and provide the reason for not reading the bid.

While FHWA does not have specific policies on how a bid opening should be conducted, the STA’s process must meet the intent of the regulatory requirement that “...[a]ll bids... shall be publicly opened and announced...” In common terms, “publicly opened’ means being opened in front of the ‘public’ – particularly those people who are stakeholders in the letting. Specific details of how a STA advertises, accepts, and opens bids for projects are governed by State statute.

Reasons for not reading a bid include the bid itself being non-responsive (or irregular), or the bidder is determined to be not responsible.

- A responsive bid is a bid that meets all the requirements of the advertisement and proposal; while

- A responsible bidder is a bidder who has the financial wherewithal, and is physically organized and equipped to undertake and complete the contract.

Each STA's standard general specifications have a section which defines what the STA considers a bidding irregularity. Some of the common reasons for not reading a bid due to an irregularity include:

- Failure to sign the bid;
- Failure to furnish the required bid bond;
- Failure to include a unit bid price for each item;
- Failure to include a total amount for the bid;
- Failure to prepare the bid in ink;
- Failure to submit a non-collusion affidavit;
- Failure to submit a required certification;
- Failure to commit to the achievement of the DBE contract goals, or adequately demonstrate good faith efforts to do so; or
- Inclusion of conditions or qualifications not provided for by the specifications.

The use of electronic bidding has diminished the occurrence of several of these issues since the software package ensures that bid unit prices, totals and the bid are completed correctly.

Just as the bid may be rejected for being irregular or nonresponsive, an apparent low bid may also be rejected on the grounds that the bidder is not responsible. A bidder may be considered not responsible due to unsatisfactory past performance, failure to the STA's qualification requirements; or because of State or Federal suspension/debarment action. A non-responsibility determination by the STA should be in writing, and the contractor should be allowed an opportunity to respond under 'due process.' To minimize the potential for delayed award, non-responsibility determinations should be done prior to the receipt of bids. In addition, 2 CFR 180.320 encourages that grantees use the [System of Award Management](http://www.sam.gov) (SAM) at www.sam.gov as part of their procedure to verify the eligibility of the apparent low bidder prior to the award of any contract.

In summary, a successful bid opening should identify the responsible bidder submitting the lowest responsive bid.

Bid revisions – in response to a field inquiry, FHWA's Contract Administration Group conducted a survey of STA policy on the acceptance of bid revisions. Of the seventeen Divisions responding, seven STAs allowed telephone or faxed bid revisions up to the time of bid opening. The remainder did not. Most of the STAs allowed bid revisions only in person by a properly identified bidder's representative. Three STAs required that a bidder withdraw the original

proposal before submitting the revised bid. The use of electronic bidding will impact the ability of a bidder to revise bids.

Combined Certification/Signature Sheets – frequently the reason for a bid’s rejection as non-responsive is the bidder’s failure to sign one or more of the required certifications. To maximize the competitive field, some States now use either a combined certification sheet, or include in the bid proposal package a detailed listing of the required certifications and their location within the packet.

The impact of the Internet on bidding practices - most STAs now use the Internet to some degree as a means of providing information about bid proposals; upcoming contracts; their bidding process and requirements; and other aspects of their construction program. See Section III.B.9.i for additional discussion of electronic contracting.

g. Bid analysis and award of contract

References:

23 U.S.C. 112 – *Letting of contracts*

23 CFR 635.114

HQ memo – “*Bid Analysis and Unbalanced Bidding*,” May 16, 1988

Guidelines on Preparing Engineer’s Estimates, Bid Reviews and Evaluation

Applicability: All FA highway construction projects.

Background: Bid analysis is the basis for justifying contract award or rejection of the bids. A proper bid analysis helps to ensure that funds are being used in the most effective manner. FHWA’s review of the bids should parallel the STA review. Together both agencies should be assured that good competition and the lowest possible price were received. The FHWA concurrence in award is a critical step in the obligation and expenditure of Federal funds.

Guidance: Title 23 CFR 635.114 requires FA highway construction contracts be awarded only on the basis of the lowest responsible bid submitted by a bidder meeting the criteria of responsibility. For a State-delegated project, the STA may act for FHWA in the bid analysis and award processes but must document their decisions as required by 23 CFR 635.114 (b) through (j) in the project files.

The bid analysis process, pursuant to 23 CFR 635.114(c), is an examination of the unit bid prices for reasonable conformance with the engineer’s estimated prices. Beyond the comparison of prices, other factors that a bid analysis may consider include:

- Number of bids,

- Distribution or range of the bids,
- Unbalancing of bids,
- Identity and geographic location of the bidders,
- Urgency of the project,
- Current market conditions and workloads,
- Comparison of bid prices with similar projects in the letting,
- Justification for significant bid price differences (between bidders and when compared with the engineer's estimate),
- Potential for savings if the project is re-advertised, and
- Other factors as warranted.

Not all of these factors need to be considered for bids that indicate reasonable prices or show good competition. However, when the low bid differs from the engineer's estimate by an unreasonable amount, a thorough analysis of all bids should be undertaken to justify award of a contract. In order to justify award of a contract under these circumstances, the following questions should be considered:

- Was competition adequate?
- Was there an error in the engineer's estimate?
- Is re-advertisement likely to result in higher or lower bids?
- Is the timing of the project award critical?
- Would deferral be contrary to the public interest?

The *Guidelines on Preparing Engineer's Estimates, Bid Reviews and Evaluation* contains additional information about the justification of contract award under different conditions. The guidelines also discuss an agency's assessment of the level of competition for a contract; and the possible impacts of re-advertisement. Deferral of essential projects may not be in the public interest in the following situations:

- Safety projects to correct an extremely hazardous condition which endangers the traveling public;
- Emergency repairs or replacement of damaged facilities;
- Projects to close substantial gaps in otherwise completed facilities;
- or
- Contracts that are critical to staged or phased construction such that delaying the contract would adversely impact the completion of the whole project.

Unbalanced bids were noted earlier as one of the review factors in a bid analysis. As defined in 23 CFR 635.102, the two types of unbalanced bids are:

- A mathematically unbalanced bid is a bid that contains lump sum or unit bid items that do not reasonably reflect the actual costs (plus reasonable profit, overhead costs, and other indirect costs) to construct the item; while

- A materially unbalanced bid is a bid that generates reasonable doubt that award to that bidder would result in the lowest ultimate cost to the government.

To detect mathematical unbalancing, the unit bid items should be evaluated for reasonable conformance with the engineer's estimate and compared with the other bids received. There are no definitive parameters (such as an amount or percent variation from the engineer's estimate) for what constitutes an unbalanced bid. The degree of unbalancing of a bid may depend on the reason for the unbalancing. Mathematically unbalanced bids, while not desirable, may be acceptable. Unbalanced bids are further discussed in HQ's May 16, 1988, memo on "*Bid Analysis and Unbalanced Bids.*"

In August 2001, 29 FHWA Divisions responded to a question about procedures for determining when a bid is materially unbalanced. Many states indicated that the determination of a materially unbalanced bid is done on a case-by-case basis. Five states indicated that they have a procedure for determining when a materially unbalanced bid exists; however, these procedures do not provide criteria for this determining whether a bid is materially unbalanced. The Texas DOT has a unique procedure for determining whether a bid is front-loaded to the point where the bid could be materially unbalanced. To do so, Texas DOT compares the estimated monthly payout based on the bidder's bid prices and assumed schedule against the Texas DOT's payout schedule.

As of June 2014, 37 STAs use the AASHTO Trns*port® BAMS/DSS software module which provides support in bid monitoring and evaluation. While the program can identify potentially materially unbalanced bids, the final decision must be based on engineering judgment. Among the items to review are:

- The amount bid for the mobilization item does not mask unbalancing, and
- "token bids" which are bids with large variations from the engineer's estimate should be considered mathematically unbalanced and subjected to further evaluation and other appropriate steps to protect the government's interest.

There may be situations where the quantity of an item could vary due to inaccuracies in the original quantity or cost estimating, errors on the plans, changes in site conditions or design, etc. In these situations, the bids should be further evaluated to determine if the low bidder would ultimately yield the lowest cost. If unbalancing creates reasonable doubt that award would result in the lowest ultimate cost, the bid is materially unbalanced and should be rejected or other steps should be taken to protect the government's interest.

h. Concurrence in award/authorization of physical construction

References:

23 CFR 635.114

Applicability: All FA highway construction contracts

Background: FHWA's initial authorization of a project indicates the agency's agreement that the project serves a public need and is eligible for Federal funds. However, that agreement only allows the owner-agency to develop the project's plans, specifications and estimate; it does not provide approval for actual construction.

Guidance: FHWA's concurrence in the owner-agency's contract award decision is not just a formality; it is *the* authorization for the owner-agency to proceed with construction. The basic policy is explained in 23 CFR 635.114(b) which states that

"Concurrence in award . . . is a prerequisite to Federal participation in construction costs and is considered as authority to proceed with construction, unless specifically stated otherwise."

The Division Administrator's concurrence shall be formally documented in writing and shall include any qualifying statements concerning the concurrence. Verbal concurrences in award should be avoided and should only be used in unusual circumstances. Verbal concurrences should be documented and should be followed by a written concurrence in award that reflects the date of verbal concurrence.

Oversight agreements between the STA and the division should include the procedures for documenting concurrence in award for different oversight levels, including the procedure that local agencies will need to follow for locally administered projects.

When the STA determines that the apparent low bidder is not qualified, 23 CFR 635.114(f) requires that:

"If the SHA determines that the lowest bidder is not responsive or the bidder is not responsible, it shall so notify and obtain the Division Administrator's concurrence before making an award to the next lowest responsible bidder."

Finally, 23 CFR 635.114(h) covers the situation when a STA makes a decision to reject all bids:

"Any proposal by the STA to reject all bids received for a Federal-aid contract shall be submitted to the Division Administrator for concurrence, accompanied by adequate justification."

i. Electronic contracting

References:

23 CFR 635

Guidelines on Preparing Engineer's Estimates, Bid Reviews and Evaluations
[Questions and Answers Regarding Electronic Contracting](#) webpage

Applicability: Any FA highway contract

Background: With the advent of the Internet which facilitates communications, many organizations have shifted to an all-electronic contracting process. Many STAs now have web pages that provide data on their contracting process including bid letting schedules, planholder lists, bid tabulations from prior lettings, average bid unit prices and other award data. These systems have the potential to save the STAs and contractors time and resources.

Electronic bidding is the transfer of proposal bid data between the owner-agency and bidders. Electronic bidding can either supplement or replace traditional paper bid documents in one of two ways:

- One-way electronic bidding is when the bidders provide the bid information to the owner-agency in an electronic format. In some cases the electronic bid must be supplemented with a paper proposal. The owner-agency must define in the bidding packet the order of precedence if there is a discrepancy between the two media. As of July 2014, 47 STAs allowed this method.
- Two-way electronic bidding (also known as Internet bidding) is based on two-way Internet communications between the owner-agency and the bidders. In this process the owner-agency provides the bidding packet in electronic form to prospective bidders and the bidders submit their bids through the Internet. As of July 2014, at least 42 STAs either permit or require electronic bidding.

Guidance: FHWA's bidding regulations in 23 CFR 635 were written prior to the advent of Internet bidding; however, FHWA encourages the use of electronic procedures to advertise, open bids, and award projects in the most efficient manner possible. A STA may use its own policies and procedures when using electronic means to advertise, receive bids and award contracts as long as the processes are competitive, open and fair.

While FHWA recognizes that electronic contracting has tremendous benefits to the STAs and highway contractors for time savings and reduction of minor errors, FHWA does caution STAs to avoid making information available that could aid in collusion. Specifically FHWA discourages the publication of planholder lists since the lists identify potential bidders. For areas or projects with limited competition, the list may support fraudulent bidding practices.

Bid Opening in the Internet bidding environment – as discussed previously, the intent of 23 CFR 635.113 is to maintain a transparent bidding process. While the regulation does not discuss electronic bidding specifically, the relevant text provides sufficient guidance when it states:

“All bids received in accordance with the terms of the advertisement shall be publicly opened and announced either by item or by total amount. If any bid received is not read aloud, the name of the bidder and the reason for not reading the bid aloud shall be publicly announced at the letting.”

In the era of paper bids, bidders would often attend the letting to learn who the successful bidders were. When bids are received exclusively over the Internet, some bidders, especially those from remote locations, have opted not to attend the bid opening. In response to the shift away from bidders attending their bid openings, many STAs have adopted a different format for bid openings. Among them are:

- Live video webcast of the bid opening
- Live audio webcast of the bid opening, and
- “Real Time” posting of bid opening results.

The FHWA Division will work with the STA to ensure that the proposed bid opening process fulfills the intent of 23 CFR 635.113 by providing bid information in an open, easily accessible, format.

10. Post-award procedures

a. Bid rigging and post-award reviews

References:

Guidelines on Preparing Engineer’s Estimates, Bid Reviews, and Evaluations Suggested Guidelines for Strengthening Bidding and Contract Procedures, AASHTO, 1981

Suggestions for the Detection and Prevention of Construction Contract Bid Rigging, USDOT/USDOJ, 1983

Applicability: All FA highway construction projects.

Background: Bid rigging, also referred to as bid collusion, is a conspiracy to disrupt or circumvent the competitive bidding environment by establishing a competitive advantage for certain bidders. Among the most common bid collusion schemes are:

Complementary bids – a scheme which creates the appearance of competition through the routine submission of consistently high or nonresponsive bids which result in contract award to a predetermined (by the colluding parties) bidder.

Territorial allocation – a scheme which assigns a “territory” to each colluder with the intent that any contract within the territory will be awarded to that colluder.

Bid rotation – a scheme which establishes the appearance of competition through complementary bids but results in a coordinated pattern of contract awards among the colluding bidders.

Joint venture -- a scheme in which the placement of complementary bid(s) is rewarded by subcontracts or materials supply contracts by the successful bidder. Note: this should not be confused with a legitimate joint venture bid which occurs when two (or more) bidders agree to combine their resources to bid and construct a project.

While the 1981 AASHTO Guidelines and the 1983 DOT/DOJ Suggestions are good initial reference documents for establishing a bid rigging detection program, the US Government Accounting Office recommends that agencies assume this information is more broadly available and monitor their programs to identify new and/or changing patterns of collusion. Additional information about antitrust issues is available through:

- the American Antitrust Institute (<http://www.antitrustinstitute.org/>),
- the Federal Trade Commission (www.ftc.gov) and
- the International Competition Network (<http://www.internationalcompetitionnetwork.org/>).

Guidance: The STAs are encouraged to continually improve their bid analysis procedures through the use of computers or other appropriate means. While many STAs have developed their own internal bid analysis processes, several others use the Bid Analysis and Management System/Decision Support System within AASHTO's Trns*port® software.

One element of a bid rigging detection program is a periodic post-award bid evaluation. To identify whether abnormal bid/award patterns exist, an STA would need to look at bid results over time – typically a five year period.

Among the items to be considered in the review are:

- number of contract awards to a specific firm;
- project bid tabulations;
- firms that submitted an unsuccessful bid and later become subcontractors for the contract;
- rotation of firms being the successful bidder;
- consistent difference in the bids;
- consistent percentage of the available work in a geographic area going to one firm or several firms over a period of time;
- consistent percentage difference between the successful bid and the engineer's estimate;

- location of the successful bidder's plant versus location of other bidders' plants;
- variations in unit bid prices submitted by a bidder on different contracts in the same letting;
- type of work involved;
- number of plans and proposals requested by potential bidders against the number of bids submitted;
- any other item that might indicate noncompetitive bidding; and
- for re-advertised contracts, whether the eventual successful bidder was also the apparent low bidder for the initial letting.

If, for any reason, an individual believes that bid rigging or fraud has occurred, the individual should contact the nearest USDOT/OIG office. The belief may be based on suspicion or evidence of fraud, waste or abuse for any project funded by FHWA. Contact information for the USDOT/OIG is available on the Internet at www.oig.dot.gov/Hotline.

b. Contracting agency supervision and staffing

References:

23 U.S.C. 114 – *Construction*

23 U.S.C. 302 – *State transportation department*

23 CFR 635.105

Applicability: All FA highway construction projects

Background: Section 302 of Title 23 U.S.C. requires STAs to be suitably equipped and organized to carry out the Federal-aid highway program. Therefore, each STA is responsible for the planning, design, contract administration and construction inspection of all Federal-aid projects. This responsibility is formalized by the project agreement that is executed for each Federal-aid project.

Guidance: Adequate construction personnel should be provided to ensure that quality highways are constructed. However, for a variety of reasons, most STAs are operating at lower staffing levels than historically. As a result, improved construction and workforce management techniques are emerging within the highway community. AASHTO continues to look for better ways to address staffing needs. Among the tools that STAs may use to ameliorate staffing shortages are:

- Systematic allocation of workforce and funding based on project location and complexity;
- Improved working relationships between STA and contractor personnel through partnering as a means of fostering innovation and quality construction;

- Improved materials testing processes that more rapidly and reliably predict final product performance;
- Improved training and joint inspector certification programs for STA and contractor personnel;
- Use of consultants with either specialist or general detailed construction backgrounds;
- Use of innovative project delivery methods which may shift more responsibility for project quality to the contractor;
- Use of performance specifications; and
- Updating state contract administration and construction procedures.

Project staffing levels should be based on the project's complexity, work types, urgency as well as location. The documented level of project staffing is essential to the determination of adequate staffing by FHWA. Issues to be considered in making the decision include:

- Sampling and testing needs for the project;
- Documentation of field control (detailed diary; completeness of field, inspection and materials reports; correspondence related to field issues, work orders, etc.)
- The engineer's candid opinions on staff, supervision, and job control; and
- The response time needed to resolve problems, plan changes or change orders.

i Eligibility and limits on construction engineering costs

In simple terms, "construction engineering" includes all of the post-award activities necessary for the contracting agency to inspect, manage and oversee the construction of a FA construction project. Since FHWA no longer has a regulatory definition of construction engineering, Division staff should base cost eligibility determinations on whether the cost in question is "necessary, reasonable, and allocable" for the FA construction project. [See 2 CFR 200 Subpart E: Cost Principles.]

ii. Use of consultants for construction engineering

An STA's responsibility for contract administration and construction inspection cannot be fully transferred to a consultant per 23 CFR 635.105(b). While FHWA does recognize that using consultant CEI services provides an STA increased flexibility in staffing projects, the STA is ultimately responsible for ensuring the project meets the FA requirements.

Therefore, the STA must assign a full-time engineer to be in responsible charge of the project at all times although the engineer need not be assigned

solely to that project. "Responsible charge" means the publicly employed engineer is:

- Aware of the day-to-day operations on the project;
- Aware of, and involved in, decisions about changed conditions which require change orders or supplemental agreements;
- Aware of the qualifications, assignments, on-the-job performance, etc., of the consultant staff at all stages of the project, and
- Visiting the project on a frequency that is commensurate with the magnitude and complexity of the project.

iii. Locally administered projects

When an FA project is to be constructed on a highway not under the STA's jurisdiction, the STA may arrange for the local public agency (LPA) having jurisdiction to perform the work with its own forces, or by contract, provided that all of the following conditions are met:

- All Federal requirements including those in 23 CFR 635 Subpart A must be met on work performed under a contract awarded by an LPA;
- Force account work must be in full compliance with 23 CFR 635 Subpart B;
- The LPA must be adequately staffed and suitably equipped to undertake and satisfactorily complete the work; and
- The LPA must provide a full-time employee of the agency to be in responsible charge of the FA project.

The DA's concurrence in the arrangement does not relieve the STA of overall responsibility for the project. While 23 CFR 1.11(b) allows an STA to "*utilize, under its supervision, the services of well-qualified and suitably equipped engineering organizations of other governmental instrumentalities for making surveys, preparing plans, specifications and estimates, and for supervising the construction of any project,*" 23 CFR 1.11(e) clearly states that the STA is not relieved of its responsibilities under Federal law and regulations if it chooses to use the services of other governmental engineering organizations.

c. Subcontracting

i. Contractor self-performance

References:

23 CFR 635.116(a)

FHWA Form 1273-VI, *Subletting or Assigning the Contract*

Applicability: All FA construction contracts on the NHS.

Background: This requirement prevents a company or individual from simply brokering a construction contract by subletting out all the work. By requiring a minimum self-performance level, FHWA ensures that the prime contractor has a strong financial interest in completing the work required by the contract within the time and quality requirements of the contracts.

Guidance: The prime contractor must perform at least 30% of the contract work using his/her own company resources. The Federal threshold is based on the original contract value less any specialty items identified by the contracting agency. A contracting agency may elect to require the prime contractor to perform more of the contract work. While the Federal self-performance requirement does not apply to design-build contracts, the regulations allow a contracting agency to establish self-performance criteria for its design-build project.

ii. Subcontracting

References:

23 CFR 635.116

Applicability: Any FA highway construction project

Guidance: By regulation, the STA must approve in writing each subcontract. Doing so provides the STA the opportunity to ensure that subcontractors are qualified for the work, and not debarred from performing work on an FA contract. During the subcontract review, the STA should ensure that the all required Federal and State requirements have been included in the subcontract document.

To reduce paperwork, the Division Administrator may allow the STA to develop a subcontract certification process. This process must include a required contractor certification that each subcontract arrangement will be in written form and contain all pertinent provisions and requirements of the prime contract. The STA must also demonstrate that it has an acceptable plan for monitoring such a certification.

FHWA does not have a regulatory definition of a “subcontract” detailing when a formal written document may be required. Therefore, the STA’s specifications or policies will govern. While it is generally understood that a subcontract is appropriate for the satisfactory completion of a specific element of the contract, the actual need for a written subcontract will depend upon STA requirements.

d. Inspection

References:

23 U.S.C. 109 -- *Standards*

23 U.S.C. 114 -- *Construction*

23 CFR 635.105

23 CFR 637 Subpart B

Nonregulatory Supplement 23 CFR 637 Subpart B

HQ memo, "*Quality Assurance Stewardship Reviews and Products*," February 17, 2004

HQ memo, "*Construction Program Management and Inspection Guide and Workshops*," April 11, 2006

FHWA Technical Advisory T5080.1 - "*Engineering Inspection of Highway and Street Construction on Federal-aid Projects*," May 18, 1979

FHWA Technical Advisory T5080.12, "*Specification Conformity Analysis*," June 23, 1989

FHWA Technical Advisory T6120.3 - "*Use of Contractor Test Results in the Acceptance Decision, Recommended Quality Measures, and the Identification of Contractor/Department Risks*," August 9, 2004

FHWA Area Engineer Manual, 2010

Applicability: All FA highway construction projects

Background: Congress requires that FHWA ensure each Federal-aid highway construction project be designed and constructed in a way that ensures that the use of Federal-aid funds results in the maximum public benefit. The primary purpose of construction inspection is to ensure that the actual construction conforms to the approved plans and specifications, and if not, that appropriate remedial action is taken as expeditiously as possible.

FHWA, and its predecessor agencies, have issued guidance on construction inspection at various times, including the Construction Manual associated with the FP-41. The first comprehensive compilation of guidance related to construction inspection of Federal-aid construction projects was issued by BPR as the Policy and Procedure Memorandum 20-6, "*Inspection of Construction Projects*," dated 11-16-54. Since the agency's inception, Headquarters has regularly reminded field personnel of their responsibility to ensure the uniformly high quality of construction.

Guidance: From FHWA's perspective, inspection of on-going construction projects is essential to determining that the project is being constructed in conformance with the approved PS&E, thereby maintaining its eligibility for FA participation. Construction inspection covers not just the

quality assurance aspects of a project but also considers the contract administration, including documentation.

In addition to the general references above, FHWA has developed reference and training materials related to the inspection and/or testing of specific construction elements. The NHI catalog provides the best listing of available training courses and materials; some of which are Web-based. Another source of web-based training is the Transportation Curriculum Coordination Council (TCCC) which has been working to assist the STAs in leveraging training resources by identifying available training courses within a topic area.

While additional references are linked on FHWA's [Construction](#) webpage, a non-comprehensive listing of reference materials includes:

- Technical Advisory T 5040.27 - *"Asphalt Concrete Mix Design and Field Control,"* March 10, 1988
- Technical Advisory T 5040.30 - *"Concrete Pavement Joints,"* November 30, 1990
- Technical Advisory T5080.17 - *"Portland Cement Concrete Mix Design and Field Control,"* July 14, 1994
- Technical Advisory T5140.11 - *"Quality Control and Quality Assurance Inspections on Welded-Steel Fracture-Critical Members,"* November 27, 1979
- Technical Advisory T5140.30 - *"Use and Inspection of Adhesive Anchors in Federal-aid Projects,"* March 31, 2008

e. Quality Assurance

References:

23 U.S.C. 109 - *Standards*

23 U.S.C. 114 - *Construction*

23 CFR 635.105

23 CFR 637 Subpart B

Nonregulatory Supplement 23 CFR 637 Subpart B

HQ memo, *"Quality Assurance Stewardship Reviews and Products,"* February 17, 2004

HQ memo, *"Construction Program Management and Inspection Guide and Workshops,"* April 11, 2006

Questions and Answers on the Quality Assurance Regulation (23 CFR 637)

FHWA Technical Advisory T5080.1 - *"Engineering Inspection of Highway and Street Construction on Federal-aid Projects,"* May 18, 1979

FHWA Technical Advisory T5080.12, *"Specification Conformity Analysis,"* June 23, 1989

FHWA Technical Advisory T6120.3 - *"Use of Contractor Test Results in the Acceptance Decision, Recommended Quality Measures, and the Identification of Contractor/Department Risks,"* August 9, 2004

FHWA Area Engineer Manual, 2010

Quality Assurance Stewardship Review Summary Report for Fiscal Years
2009 through 2012

TechBrief: Independent Assurance Program

Applicability: All FA highway construction projects on the NHS.

Background: Quality assurance is defined by AASHTO as “*all those planned and systematic actions necessary to provide confidence that a product or facility will perform satisfactorily in service*” or, more simply, as “*making sure the quality of a product is what it should be.*” Quality assurance is the umbrella under which fall the efforts of the contractor and owner-agency to monitor the quality of components and the overall project. Generally the following components are viewed as essential to an effective quality assurance program:

- Contractor quality control
- Owner-agency acceptance
- Independent assurance
- Dispute resolution
- Personnel qualification
- Laboratory accreditation and qualification.

Guidance: Each STA is required to develop, staff and maintain a QA program that assures that the materials and workmanship incorporated into each FA highway construction project on the NHS conform with the contract requirements. The regulations include the basic requirements for the basic QA program, independent assurance program, and personnel qualifications for carrying out the programs.

f. Job Site Safety

References:

40 U.S.C. 3704 - *Health and safety standards in building trades and construction industry*

23 CFR 635.108

29 CFR 1910

29 CFR 1926

FHWA Form 1273, part VII

Applicability: All FA highway construction projects

Background: The [Occupational Safety and Health Act of 1970](#) (OSH Act) was passed to prevent workers from being killed or seriously harmed at work.

While administration of the national program for occupational safety and health rests with the Occupational Safety and Health Administration (OSHA) of the DOL, many States have their own comparable programs administered by one

or more State agencies. An excellent summary of safety concerns and responsibilities is presented in the 1972 AASHTO "An Informational Guide on Occupational Safety."

In response to problems experienced by US DOL representatives regarding access to project sites, FHWA-1273, Section VII.3 was added to specifically grant US DOL representatives right of entry to worksites associated with Federal-aid highway construction projects.

Guidance: The law requires employers to provide their employees with working conditions that are free of known dangers. The Act created the Occupational Safety and Health Administration (OSHA), which sets and enforces protective workplace safety and health standards. OSHA also provides information, training and assistance to workers and employers. Workers may file a complaint to have OSHA inspect their workplace if they believe that their employer is not following OSHA standards or that there are serious hazards.

g. Work zone traffic control

References:

23 U.S.C. 109 – *Standards*

23 U.S.C. 112 – *Letting of contracts*

23 CFR 630 Subpart J – *Work Zone Safety and Mobility*

23 CFR 630 Subpart K – *Temporary Traffic Control Devices*

Manual of Uniform Traffic Control Devices

FAQ for the Work Zone Safety and Mobility Rule

Applicability: All Federal-aid highway projects

Background: In September 2004, the Federal Highway Administration (FHWA) published updates to the work zone regulations at 23 CFR 630 Subpart J. The updated rule is referred to as the Work Zone Safety and Mobility Rule (Rule) and applies to all State and local governments that receive Federal-aid highway funding. Transportation agencies were required to comply with the provisions of the Work Zone Final Rule by October 12, 2007.

In December 2007, FHWA added subpart K covering various temporary traffic control devices to 23 CFR 630. This regulatory subpart covers the appropriate use of, and expenditure of funds for, uniformed law enforcement officers; positive protective measures between workers and motorized traffic; and installation and maintenance of temporary traffic control devices during construction, utility and maintenance operations.

Guidance: As discussed in the September 9, 2004, Work Zone Final Rule (69 FR 54562), 23 CFR 630 Subpart J provides a decision-making framework that facilitates comprehensive consideration of the broader safety and mobility

impacts of work zones across project development stages, and the adoption of additional strategies that help manage these impacts during project implementation. At the heart of the Work Zone Final Rule is a requirement for agencies to develop an agency-level work zone safety and mobility policy. The policy is intended to support systematic consideration and management of work zone impacts across all stages of project development. Based on the policy, agencies will develop standard processes and procedures to support implementation of the policy. These processes and procedures shall include the use of work zone safety and operational data, work zone training, and work zone process reviews. Agencies are also encouraged to develop procedures for work zone impacts assessment. The third primary element of the Rule calls for the development of project-level procedures to address the work zone impacts of individual projects. These project-level procedures include identifying projects that an agency expects will cause a relatively high level of disruption (referred to in the Rule as significant projects) and developing and implementing transportation management plans (TMPs) for all projects.

To help transportation agencies understand and implement the provisions of the Rule, FHWA has been developing four guidance documents: the main Implementation Guide which provides a general overview of the Rule and overarching guidance for implementing the provisions of the Rule; and three technical guidance documents. The technical guides cover specific aspects of the Rule: work zone impacts assessment, TMPs for work zones, and work zone public information and outreach strategies. All four of the guides include guidelines and sample approaches, examples from transportation agencies using practices that relate to the Rule, and sources for more information.

h. Project documentation and progress payments

References:

23 U.S.C. 121 – *Payment to States for Construction*

2 CFR 200 Subpart E

23 CFR 635.122

23 CFR 635.123

49 CFR 26.29

HQ memo – “*Computerization of Construction Records*,” September 21, 1989

HQ memo – “*Electronic Security Issues – Kansas Department of Transportation’s (KDOT) Construction Management System (CMS)*,” July 7, 1993

HQ memo – “*Partial Payment of Stockpiled Material – Plates and Shapes*,” March 29, 2000

Applicability: FA highway construction projects on the NHS

Background: Progress payments are compensation to the prime contractor for the value of work completed during a covered period. While

AASHTO recommends that progress payments be made at least once each month as the work progresses, many STAs pay more frequently.

Guidance: As a highway construction project progresses, the STA may request reimbursement for the costs incurred from FHWA. The reimbursement request is typically based on the progress payment made to the contractor. In turn, the progress payment is based on an estimate, prepared by the engineer, of the value of the work performed and the materials delivered or stockpiled in accordance with the contract.

Since FHWA may only participate in the actual, allowable and allocable costs of a project, it is essential that the estimate that provides the basis for the reimbursement request be based on accurate quantities. FHWA policy requires the STA to have procedures in place which provide adequate assurance that the quantities of completed work are determined accurately and on a uniform basis throughout the state. As indicated in the September 21, 1989 and July 7, 1993 memos, the project record keeping system must provide for the reconstruction of the chain of events that occurs on a project. If the system is electronic, it must be acceptable from an engineering, audit and legal standpoint. The September 21, 1989 memo provides additional guidance about ensuring the “trustworthiness” of project records.

An essential component of any recordkeeping system is the need to ensure that records are retained for the minimum period required which, for the STA, is 3 years from the time of FHWA’s final voucher payment to the STA. For the contractor, the 3-year record retention period begins with the STA’s final payment.

For design-build contracts, some STAs have elected to use a pay-out formula to govern the progress payments over the life of the contract. In this instance, if the pay-out schedule is the basis for Federal-aid reimbursement requests, it is critical that the pay-out schedule be based on the likely sequence of actual construction and the engineer’s estimate with provision for adjustment of the pay-out in the event the construction sequence is delayed.

For any type of project, the STA may request reimbursement on a monthly, semi-monthly, or even weekly basis. Under the Federal “prompt payment” provisions, FHWA is obligated to reimburse the STA for eligible expenditures within one business day of the agreed upon date(s). Most STAs use electronic fund transfers to expedite the reimbursement process. Additional information about FHWA’s electronic voucher payment process is located in Non-regulatory Supplement G3015.1, Chapter 1 – *Electronic Progress Voucher System*.

Stockpiled materials may be included in the progress payment when allowed under the contract provided that:

- Stockpiled material is stored at or near the project site such that security and the inventory can be maintained;

- The material is supported by a paid invoice or receipt for delivery, with the contractor to furnish the paid invoice within a reasonable time after receiving payment from the STA;
- The material conforms with the contract requirements;
- The material has not been delivered or stockpiled prematurely in advance of the contractor's schedule of operations;
- The quantity of the material eligible for participation does not exceed the quantity required for the project, nor does the value exceed the appropriate portion of the contract item in which the material is to be incorporated; and
- For structural steel plates and shapes, specific controls conforming to the requirements in the March 20, 2000 memorandum are in place at the fabrication yard.

Past reviews by OIG have found several instances where various STAs paid contractors for stockpiled materials that did not conform to the materials requirements of the project; were improperly stored; grossly exceed the quantities required for the project; and/or which ultimately went into several projects. An increased scrutiny of "improper payments," by Federal agencies makes it especially important that any stockpiled material meet the specifications and not exceed the project quantities. An improper payment is defined as any payment that should not have been made or that was made in an incorrect amount (overpayments and underpayments) under statutory, contractual, administrative, or other legally applicable requirements; this also includes any payment to an ineligible recipient, any payment for an ineligible service, any duplicate payment, any payment for services not received, or any payment that does not account for credit for applicable discounts.

Retention for subcontract work on the part of the prime contractor may be limited by the USDOT's DBE regulation which requires recipients (i.e., the STAs) to include a "prompt pay" clause in all Federally-funded contracts. Under 49 CFR 26.29, a prime contractor must:

- Pay subcontractors for satisfactory performance of the subcontracted work no later than a specific number of days after receipt of payment for the work by the STA; and
- Return any retainage withheld within a specific number of days after the subcontractor's work is satisfactorily completed.

i. Contract changes and time extensions

References:

23 CFR 635.102

23 CFR 635.120

23 CFR 635.121

23 CFR 635.127

23 CFR 635C

[Non-regulatory supplement to 23 CFR 635A, October 9, 1996](#)

HQ memo – [“Participation in Engineering Errors,”](#) July 12, 1963

HQ memo – [“Participation in the Cost of Corrective Work Resulting from Construction Engineering Errors,”](#) September 8, 1978

HQ memo – [“Contract Procedures: Federal Participation in Premium Time \(Overtime\) Payments to Contractors,”](#) September 18, 1990

HQ letter – [\[Cardinal Changes\]](#), November 15, 1996

Construction Program Guide page on [Contract Changes](#)

Construction Program Guide page on [Contract Time](#)

FHWA’s *Management of Construction Contract Changes Final Report*, April 2009 (available only on Staffnet)

Applicability: All FA highway construction projects on the NHS.

Background: A construction contract is a formal agreement between two parties that requires an equally formal agreement when it is to be modified. The usual reference for the modifying document is a “change order;” however, an STA may use the term “extra work order,” “supplemental agreement,” or a combination of terms. This manual uses “change order” as any formal document that modifies the construction contract.

The construction industry recognizes that it is unrealistic to expect that any construction project could be built without deviating from the project plans. Although project designers should be diligent and exercise due care in developing the plans and specifications, designers are not omniscient. Many factors (unforeseen conditions, utility conflicts, VECs) may result in the need to modify the contract’s plans and/or specifications to fit field conditions and achieve the project goals.

Frequently, the design is modified through a contract to better fit actual field conditions. In addition, a contract change may result in a better product for no substantial increase in time or cost; or an equivalent product while saving cost and/or time. A contract change may involve any or all of the following:

- Plan changes or revisions,
- Specification changes,
- Change in cost (+/-), or
- Change in time (+/-).

Guidance: Establishing a strict set of rules to govern Federal-aid policy on contract changes is not practicable since the rules would need to recognize that every contract change has unique circumstances.

The regulations require that, consistent with the Federal need to preserve and protect the expenditure of FA funds, any proposal for major extra work or major change to the contract be formally approved by the Division Administrator in advance of the work being started. However, when emergency or unusual conditions justify it, the DA may give advance verbal approval which is to be ratified with a formal written approval as soon as practicable.

Prior approval should be documented in the project file; the form and format for documenting FHWA's prior approval should be agreed upon by the Division and STA. While many Divisions continue to use the FHWA-1365, others have moved to email.

Non-major changes and non-major extra work also require formal approval from the Division since that work may adversely impact the completion of work already underway. At the discretion of the Division, non-major change orders may be retroactively approved.

While 23 CFR 635.102 defines major change as "*a change which will significantly affect the cost of the project to the Federal government or alter the termini, character or scope of work,*" the STA, with the DA's concurrence, will need to establish and document operating procedures for handling change orders. The procedures need to ensure that coordination with FHWA will occur for FA project change orders without FA funds since the proposed work may adversely impact the original scope and timetable for the project (see 23 CFR 635.120(f)).

Early coordination between the STA and Division is essential in the review and handling of change orders. There are four basic components in FHWA's review of a proposed change order:

- *Federal-aid eligibility*
- *Impact on the "original scope of the work"*
- *Basis of payment, and*
- *Time adjustments*

Federal-aid eligibility – typically if the proposed work is eligible for FA reimbursement, then full participation will follow. However, participation may be limited if the proposed work involves routine maintenance or remedial work due to construction or design errors. Therefore, a Division may be selective in the change order work which will receive FA funds.

Generally speaking, FHWA is prohibited from participating in costs associated with routine or recurring maintenance but may participate in cost-effective preventive maintenance. (See the October 8, 2004 HQ memo for additional discussion.)

A change order involving remedial work associated with a construction engineering or design error may receive limited participation unless the STA can demonstrate that the errors were not a result of carelessness, negligence, understaffing or incompetence. (See the July 12, 1963 and September 8, 1978 HQ memos for additional discussion.)

Impact on the "original scope of the work" – typically if the proposed work is within the previously authorized scope of work, then full participation will follow. However, participation may be limited or denied if the proposed work extends beyond the project boundaries; adversely impacts work already underway; or work should be put out to contract. (See the MCCC report for additional discussion.)

Work outside the project boundaries (for example, a proposal to extend underdrains through an adjacent roadway segment) would likely require a change in project limits which would require environmental clearance and a project agreement modification prior to FHWA participation.

For major contract modifications beyond the original contract's scope of work, the Division must determine whether the additional work is simply a modification of the original scope or a significant change that would benefit from being competitively bid. The individual circumstances associated with the magnitude and quality of the change as well as the cumulative impact upon the whole project needs to be reviewed. Among the considerations are:

- Have the contract work elements changed?
- How does the additional work impact quantities and cost?
- Does the proposed change impact the complexity of the work?
- What is the cumulative impact on the project?
- Would there be a substantial benefit to the public for the proposed work to be bid out?

Basis of payment – the regulations require that the STA analyze and document the cost for each change order independent of the contractor's price proposal. While the method and degree of analysis are the STA's decision, the Division should concur in the process.

Force account procedures for managing and paying for change order work should be the last resort. (See the September 8, 1982 HQ memo for additional discussion.)

Time extensions – the regulations require that each change order provide the time needed to accomplish the work (or reduce contract time if work is reduced). In addition, the regulations require FHWA concurrence in any contract time extension that affects project costs and/or liquidated damages.

Managing the impact on contract time as contract changes occur and are resolved will enable the contractor to manage the project more successfully, and

avoid the possibility of a claim for constructive acceleration due to the added volume of work without a commensurate extension in contract time.

For the STA to properly assess the impact of a contractor's schedule for completing the contract, project staff must ensure the contractor is providing timely updates of any required project schedule information. In the absence of a critical path or activity schedule, the project staff needs to determine what the controlling operation(s) are and assess the potential impact of the proposed work.

When the proposed work affects a controlling operation, a change in contract time may be warranted and should be included in the change order. When the controlling operation will not be affected by the proposed work, a change in contract time is not warranted and the change order should reflect that.

Certain events are generally considered beyond the control of the STA and/or contractor. The STA's standard specifications list the events that fall in this category and may be the basis for an extension of contract time. The typical listing includes:

- Labor strikes (including job pickets),
- Public protests of the project,
- General riot,
- Declaration of war, and
- "Acts of God."

Events which do not warrant a time extension since they are generally considered to be under the contractor's control are:

- Maintenance shutdowns,
- Breakdowns,
- Suspensions or stop work orders due to safety, permit or pollution violations,
- Shutdowns due to construction accidents, and
- Material delays².

Inclement weather is rarely an acceptable basis for a time extension. In order to qualify the contractor would need to demonstrate that the weather during the contract period was unusually severe based on past weather history for the project site, and that the weather adversely impacted the contractor's ability to complete the work as required. While a comparison of actual weather conditions against weather statistics for the project area may demonstrate unexpected conditions during the period of construction, the project records

² Since the contractor is responsible for timely order and delivery of materials, material delays are not acceptable bases for contract time extension unless an unusual market condition (industry-wide strike, natural disaster, or area-wide shortage) occurs.

would need to be reviewed to determine the actual impact of those conditions on construction progress.

A time extension request due to a conflict with utility, railroad, or right-of-way clearances will generally be denied by FHWA due to the assurances provided by the STA at the time of FHWA's approval of advertising for bids. For FHWA approval of such an extension, the STA must show:

- The construction work was actually delayed by the ROW, railroad or utility issue;
- The contractor did everything required by the contract to minimize the delay, and
- The STA was unable to exercise effective control of the situation despite its best efforts.

(See NS 23 CFR 635A, Construction Program Guide and the MCCC report for additional discussion.)

State budgetary issues that impact contractor payment or staffing levels are not an acceptable basis for FHWA's participation in time extensions, contract changes, or claims since 23 U.S.C. 106(b)(1) requires the STA to make provision for its share of the required project funding at the time of the project agreement while the STA is required by 23 U.S.C. 302 to be adequately staffed to carry out the FA program.

For State-administered contracts, the STA will be acting for FHWA and, therefore, be making decisions which reflect FHWA's position on eligibility and impact within the State.

The National Highway Institute has three available training courses in this area:

- NHI 134037A - *Managing Highway Contract Claims: Analysis and Avoidance*
- NHI 134049 - *Use of Critical Path Method (CPM) for Estimating, Scheduling and Timely Completion*
- NHI 134060 - *Partnering: A Key Tool for Improving Project Delivery in the Field*

j. Alternative Dispute Resolution

References:

None

Applicability: State option

Background: Construction disputes cannot always be avoided. Research by the Construction Industry Institute (CII) has found that construction disputes arise from three major sources: project uncertainty, process problems and people issues. If the cause of the dispute is not addressed, resolving it can become increasingly difficult, resource-intensive and will likely result in a solution

satisfactory to no one. Dispute resolution methods range from negotiation up to extended litigation.

Guidance: The focus of alternative dispute resolution (ADR) techniques is to allow fair-minded people to resolve their differences in a manner that emphasizes reasonableness and fairness. ADR does not mean turning responsibility for project decisions over to others (i.e., lawyers) because litigation is costly and time-consuming.

The construction industry has developed a variety of ADR methods which vary in the level of outside assistance, and whether decision-making is taken away from the disputing parties. Research by CII shows that the most valuable techniques are those which prevent or resolve disputes as early as possible by the individuals directly involved at the project level. Commonly used methods include negotiation, mediation, binding or non-binding arbitration, dispute review boards, mini-trials, private judging, and ultimately, litigation.

The following is a short description of several of these methods:

Partnering - is technically not an ADR method. Rather, partnering is a change in the attitude and relationship between owner-agency and contractor. Partnering is the creation of a relationship that promote recognition and achievement of mutual and beneficial project goals. Partnering occurs when trust, cooperation, teamwork, and the successful attainment of those mutual goals become the hallmarks for the relationship.

The key to partnering is having a plan which is supported by open communications, willing participants, senior management support, and up-front commitment. Regularly scheduled partnering sessions to assess progress in achieving project goals and discuss potential issues are critical. The cost of the partnering sessions is typically borne equally by the owner-agency and contractor. The owner-agency's share of the cost of partnering sessions are an eligible CE expense and are eligible for FA reimbursement.

Additional information about partnering may be found in:

- Partnering, U.S. Army Corps of Engineers, IWR Working Paper 91-ADR-P-4, March 1990;
- In Search of Partnering Excellence, CII, 17-1, July 1991;
- Partnering - A Concept for Success, Associated General Contractors of America, September 1991;
- Partnering Manual, Central Artery/Tunnel Project, January 1998; and
- AASHTO Partnering Handbook, AASHTO, 2005.

Negotiation - occurs when parties resolve the issues themselves, usually at the project level. However, the STA's administrative processes are usually considered to be "negotiation" in a broad sense of the term.

Mediation – involves a neutral third party to depersonalize the dispute while facilitating its resolution, preferably in a “win-win” solution. The parties may jointly appoint a mediator or they may request that a mediator be appointed by an association such as the American Arbitration Association. The mediator provides assistance in resolving the dispute by narrowing and clarifying issues; however, the mediator does not decide the dispute. The mediator may meet with the parties individually or collectively but all information disclosed to the mediator is confidential. Mediation is normally non-binding

Mediation is a flexible method that can be adapted by the parties to fit their needs. While the American Arbitration Association has developed flexible rules of conduct, the parties need to agree of the process to be used; how the mediator will be selected and paid; who has authority to make decisions for each party; and what happens if mediation does not result in a resolution. The cost to the owner-agency of the mediation process is eligible for FA reimbursement.

Dispute Review Board – requires the creation of a three- member standing committee which meets on a regular basis to review and resolve all project disputes before they become formal claims. Based on the type of work required for the contract, each party selects a member who jointly select the third member. The dispute review board (DRB) members are considered to be “standing neutrals” independent of either party. In order to resolve issues at an early stage, the DRB typically keeps abreast of construction progress. While the DRB issues written decisions for the issues, those decisions are typically not-binding upon the parties. The parties split the cost of operating the DRB with the owner-agency’s share eligible for FA reimbursement.

Many STAs have used DRBs for both large and small projects. Some STAs maintain a standing DRB committee as an available resource to any project team. Additional information about the use of DRBs may be found in:

- Construction Dispute Review Board Manual, by A. Mathews, Bob Matyas, Bob Smith and Joe Sperry, 1996;
- Prevention and Resolution of Disputes Using Dispute Review Boards, CII, CII 23-2, October 1995; and
- Dispute Review Board Foundation – Practices and Procedures Manual, Dispute Review Board Foundation, May 2005.

Mini-trials – are more formal than mediation or a DRB in that the dispute is treated as a business problem. Lawyers and experts present a summary of their “best case” to an advisory panel drawn from senior officials of the owner-agency and the contractor with an independent neutral who provides an objective viewpoint. Typically the hearing documents and negotiation discussions are considered confidential and cannot be used in later litigation. The cost to the owner-agency of the mini-trial process is eligible for FA reimbursement.

Arbitration – uses one or three arbitrators, chosen by the parties, to decide the issue based on fact and law. Although decisions may or may not be binding and without appeal, in almost all cases, the arbitration decision is accepted by both parties. Usually the only cases carried on to litigation are those that involve a point of law. The cost to the owner-agency of the arbitration process is eligible for FA reimbursement.

Private Judging - is the middle ground between arbitration and litigation. This procedure allows the parties to state their case before a mutually accepted neutral and have the decision become the judgment of the appropriate trial court with the right of appeal. The neutral party is normally a retired judge. The parties may agree to simplify and expedite the process. The cost to the owner-agency of the private judging process is eligible for FA reimbursement.

k. Claims

References:

2 CFR 200 Subpart E

23 CFR 635.102

23 CFR 635.109

23 CFR 635.120

23 CFR 635.121

23 CFR 635.124

Nonregulatory Supplement to 23 CFR 635A

HQ memo – “*Eligibility for Federal-aid participation of claim awards made by States to Federal-aid contractors when based upon arbitration board awards or State court judgments,*” June 1, 1964

HQ memo – “*Federal liability of Federal-aid contract claims,*” March 9, 1967

HQ memo – “*Participation in Contract Claim Awards and Settlements,*” October 23, 1985

HQ letter – “*Home Office Overhead Cost Formulas,*” December 15, 1988

HQ memo – “*Alternative Dispute Resolution,*” December 16, 1992

HQ memo – “*Transmittal of Geotechnical Engineering Notebook Issuance GT-15, Geotechnical Differing Site Conditions,*” May 2, 1996

Construction Program Guide page on [Contract Claims](#)

Applicability: All FA highway construction projects on the NHS.

Background: A claim is generally considered to be a written demand for a specific sum resulting from a dispute which cannot be resolved by the STA’s normal contract change procedures. The dispute which resulted in the claim may be due to conflicts in interpretations of the contract requirements, impact of encountered changed conditions, or the impact of owner-caused delays.

Both the STA and the contractor share in the responsibility for claims. Many claims could be avoided by more thorough reviews of contract documents prior to advertisement or bidding a project. Problems occur most often when a project is rushed to contract to meet a politically defined schedule. Similarly shelf projects may be subject to claims if the plans and specifications were not updated to reflect changes that have occurred on the ground or in the STA's practices since the project was shelved. In addition, a contractor's own actions may impact a claim through ineffective project management, poor scheduling and/or substandard work.

Guidance: Federal-aid participation in the payment of any claim is not automatic. FHWA will determine on a case-by-case basis the FA eligibility of a contract claim awarded on the basis of an arbitration or mediation proceeding; administrative board hearing; court judgment; negotiated settlement; or other contract claim settlement. Federal-aid funds will participate to the extent that the claim can be supported by the facts and has a basis in the contract and under applicable State law. Further, the basis for the adjustment and contractor compensation should accord with prevailing principles of contract law (23 CFR 635.124(a)).

To reduce the perception that FHWA's decision about participation in any claim payment 'second guesses' the STA's resolution of the claim, the STA should involve the Division as early as practicable. FHWA does not mandate a particular time frame or coordination/involvement process so that each Division and STA may develop a process that accommodates State specific issues such as Sunshine Laws, state legal precedence, and STA preferences. While developing the coordination process, the STA should be cognizant that the contractor and other outside parties may obtain information from FHWA files through the Federal Freedom of Information Act.

The STA is responsible for demonstrating that FA participation in a claim is reasonable (23 CFR 635.124(c)).

For court judgments based on State law, FHWA will review the decision to ensure that the State law which provided the basis for the judgment does not conflict with Federal law.

When STA employee actions provide the basis for a claim award, FHWA will participate when those actions are reasonable and within the standards of the profession. FHWA will not participate in claim awards that arise from gross negligence, intentional acts or omissions, fraud, or other actions by STA employees which are not consistent with the usual State practices.

Interest associated with a claim award may be eligible if all three of the following conditions are met:

- The interest must be allowable by State statute or specification;
- The interest has not resulted from delays caused by dilatory actions by either the State or contractor; and

- The interest rate does not exceed the rate provided for by statute or specification.

The contractor's anticipated profit is not eligible for FA participation.

The contractor's attorney fees are not eligible for FA participation since there is no statutory authority for participation. However, the State's attorney fees for preparation and defense of the claim are reimbursable as part of the STA's administrative costs for the project.

For State-delegated projects, the STA will be acting for FHWA. The STA's decision for a claim on a Non-Interstate NHS project must be based on 23 CFR 635.124 and reflect previous decisions by the Division. For non-NHS project claims, the STA may determine the level of FA participation based on State procedures in compliance with the allowable cost principles in 2 CFR 200 Subpart E.

A STA may require the successful bidder to escrow the documents used to prepare the bid. These documents contain information about how the contractor interpreted the contract provisions, plans and specifications, and developed the bid; and therefore, are a great source of information that might facilitate an equitable resolution to a contract dispute thus avoiding a claim. Generally, the escrow documents remain in a repository and are not used unless the STA receives a notice of intent to file a claim from the contractor. A guide specification for escrowing bid documents can be found in the AASHTO Guide Specification for Highway Construction.

One component of many claims is the contractor's *home office overhead* (HOO). This component is made up of the expenses a contractor incurs for the benefit of all contracts that cannot be attributed to any individual contract. Examples of these expenses include home office staff that carry out estimating, personnel and administrative functions. HOO is allocated to all of a contractor's work, usually in proportion to the value of each project to the company's total receipts.

Any suspension of work or other delay in contract performance will disrupt or reduce the contractor's direct income from the project. However, the contractor continues to incur HOO. Two types of HOO may affect delay damage claims: unabsorbed and extended. Contract case law has developed distinct definitions for these terms. Unabsorbed HOO is the increased cost that must be borne by a contractor because delays in one project have prevented the contractor from defraying those costs over other projects, as originally intended. Extended HOO are the increased overhead costs borne by the contractor after the original completion date which are caused by project delays.

Because HOO costs are indirect costs to any given project, contractors claiming HOO as an element of a delay damage claim must establish that the claimed expenses are permissible and/or justified.

FHWA has allowed participation in HOO costs only in cases when the owner-agency caused the delay during which time the HOO costs could not be

charged off to earnings and the contractor was prevented from doing other work which could have been allocated HOO. Otherwise FHWA's position has been to disallow HOO when an STA's standard specification for extra work and force account work provide for full compensation at either the contract unit price, or a negotiated unit price.

Various formulas exist for distributing HOO across contracts. Among those formulas is the "Eichleay" formula which is the most commonly used by contractors. Other formulas are: original contract period formula; fixed overhead formula; burden fluctuation method; and comparative absorption rates. The appropriateness of any formula seems to depend on the circumstances of the claim. Federal and state courts vary in the acceptance and application of the various formulas.

Relevant resources available to STAs and local agencies are:

- NHI course 134037A - Managing Highway Contract Claims: Analysis and Avoidance.
- ASCE - Avoiding and Resolving Disputes During Construction: Successful Practices and Guidance by Underground Technology Research Council, 1991.
- ASCE - Construction Contract Claims by Paul Levin, 1998.
- ASCE - Interpreting Construction Contracts: Fundamental Principles for Contractors, Project Managers, and Contract Administrators, 2007.
- Business Publishers, Inc. - [Construction Claims Monthly](#) (by subscription).
- Association for the Advancement of Cost Engineering

l. Liquidated damages

References:

23 CFR 635.127

Applicability: All FA highway construction projects on the NHS

Background: Contract time is an essential element of the contract and it is important that the work be pressed vigorously to completion. The cost to the contracting agency for the administration of the contract, including engineering, inspection, and supervision, increases as the contract time increases. Likewise, the road user costs also increase when the completion date for the project is extended. The liquidated damages contract provision provides the mechanism for the contracting agency to recover its costs associated with a contract time overrun by the contractor. An STA is required to incorporate liquidated

damages provisions into its FA contracts as a condition of the project agreements.

Most STAs use a liquidated damage (LD) rate schedule based on a range of contract amounts. However, a STA may also opt to develop a project specific LD rate that is based on complexity and phasing. For projects that do not have an incentive/disincentive (ID) clause, the LD rate may include elements that are more commonly used to establish the ID rate.

In 1984, the Office of Inspector General reviewed the assessment of LDs over a three-year period. Based on the results, FHWA revised its regulations on LDs. The 1987 final rule moved the regulations to 23 CFR 635.127.

Guidance: The significant provisions of 23 CFR 635.127 are:

- Each STA is required to develop and maintain its own LD rates that will cover, as a minimum, the STA's average daily construction engineering (CE) costs attributable to a contract time overrun;
- The STA rates are subject to verification and approval by the Division Administrator;
- At least every two years, the STA must review and adjust as necessary the LD rates;
- In addition to CE costs, the STA may include in the LD rate the costs of project-related delays or inconveniences to the STA or the public provided the project does not have a time-related incentive/disincentive clause. If the STA does so, any costs recovered in excess of the actual CE costs should be deducted from the construction costs in proportion to the FA participation on the project; and
- Incentive/disincentive amounts are to be shown separately from the LD amounts, and are to be based on road user costs.

Business impact costs as an element of liquidated damages are not an acceptable component in the calculation of liquidated damages for the following reasons:

- The contractor could challenge the clause on the basis that such costs are not costs to the State or the public as required by 23 CFR 635.127(c) "*The STD may, with FHWA concurrence, include additional amounts as liquidated damages in each contract to cover other anticipated costs of project related delays or inconveniences to the **STD or the public.***" (bold added for emphasis).
- The FHWA's technical advisory on the use of incentive/disincentive clauses (TA 5080.10) provides that such costs should not be included.
- There are numerous problems associated with developing a fair, open, transparent process for estimating business damages and losses.

- Without Congressional approval, FHWA is prohibited from re-distributing any sums collected by this means.

m. Termination

References:

2 CFR 200 Subpart D and Appendix II

23 CFR 635.125

49 CFR 18

Applicability: Applies to FA highway construction projects valued more than \$10,000

Background: Termination is an action taken by the contracting agency to cancel a contract. There are a number of grounds for termination which are grouped into three basic categories. These categories which will be discussed in greater detail below are generally referred to as:

- Termination for cause,
- Termination for convenience, or
- Termination for default.

Guidance: Federal-aid contracts exceeding \$10,000 must contain suitable provisions for termination by the STA. The provisions must identify the manner by which the termination will be effected, and the basis for settlement.

Prior to the termination of any Federal-aid contract for which the Division Administrator has concurred in the award, the STA shall consult with and receive the concurrence of the Division Administrator. Federal-aid participation in a terminated contract is decided by the individual merits of each situation. However, in no instance will FHWA participate in any allowance for anticipated profits on work not performed. For projects assumed by States on the NHS, the STA assume the FHWA's responsibilities under the procedures in 23 CFR 635.125. For projects assumed by the States off the NHS, the STA will follow its own termination procedures.

If the STA awards a contract for completion of the work in a terminated Federal-aid contract, FHWA will limit its participation to the lesser of the original contract value (as amended through approved change orders) or the sum of the new contract value plus any payments made under the original contract.

Termination for cause or convenience is used in circumstances beyond the contractor's control. AASHTO has identified the following conditions as grounds for termination for cause:

- Executive orders by the President for war, national defense or national emergency;

- Restraining order or an injunction obtained by third party action, or
- “Acts of God.”

Termination for convenience is used when the contracting agency is best served by canceling the contract – for example, construction funding becomes depleted.

When terminating a contract for cause or convenience, the STA sends written notice to the contractor providing relief from further contractual obligation. The contractor is paid for all completed work and any work needed to preserve and protect the completed work, and for materials stockpiled for the project.

Termination for default is used in circumstances that are under the contractor’s control. AASHTO has identified the following situations as grounds for default terminations:

- Failure to begin work under the contract within the time specified in the “Notice to Proceed,”
- Failure to perform the work with sufficient workmen and equipment or sufficient materials to assure the prompt completion of the project,
- Performance of the work not in conformance with the contract requirements or refusal to remove/replace rejected materials or unacceptable work,
- Discontinuance of the work,
- Failure to resume work which has been discontinued within a reasonable period of time after notice to resume,
- Committal of any act of bankruptcy or insolvency,
- Allowing any final judgment to remain unsatisfied,
- Making an assignment for the benefit of creditors, or
- Failure to comply with contract requirements regarding payment of minimum prevailing wages or EEO.

Typically STA standard provisions require the contractor and surety to be notified of the STA’s default consideration. The notice gives both the contractor and the surety an opportunity to respond or proceed with the work within a specified time period. If no action is taken within the time period, the STA may declare the contractor in default and provide written notice that the contract is void to the contractor and surety. The surety is then liable under the conditions of the performance bond and must provide funds to complete the project, up to the full value of the bond. To avoid paying the bond, the surety may elect to assign another contractor to complete the work. If the surety is unable or unwilling to assign another contractor, the funds must be transferred to the STA.

If the surety awards the second contract, no action is required of FHWA since the surety’s contract is considered an extension of the original contract. However, if the STA has to award a contract to complete the work, normal Federal-aid procedures for PS&E approval, advertising and award must be

followed, with Federal-aid participation limited to the lesser of the original contract value or the sum of the amount spent under the defaulted contract plus the second contract.

n. Suspension & debarment

References:

2 CFR Parts 180 and 1200

DOT Order 4200.5E

FHWA Order 2000.2A - "FHWA Nonprocurement Suspension and Debarment Process (Federal-aid Program)," June 19, 2000

Applicability: All Federal-aid projects

Background: Suspension and debarment (S/D) are discretionary administrative actions taken to protect the Federal government by excluding persons and/or companies from participation in Federal assistance programs. An S/D action ensures that the Federal government does not conduct business with a person or company with an unsatisfactory record of integrity and business ethics. S/D actions are administered government-wide; consequently, a person excluded by one Federal agency is excluded from doing business with any Federal agency.

Causes for debarment are listed in 2 CFR 180.800 and include conviction, civil judgment or factual investigation showing:

- Fraud or a criminal offense in connection with a public or private agreement or transaction;
- Violation of Federal or State antitrust statutes such as price fixing, bid rigging, etc.,
- Embezzlement, theft, forgery, bribery, falsification or destruction of records, false statements, receiving stolen property, false claims, obstruction of justice, or
- Any other offense indicating a lack of business integrity or business honesty that seriously and directly affects the present responsibility of a person.
- Violation of the terms of a public agreement or transaction so serious as to affect the integrity of an agency program such as willful failure to perform, history of unsatisfactory performance, failure to perform, willful violation of a statutory or regulatory provision or requirement; and
- Any of the following causes:
 - A debarment by any Federal agency

- Knowingly doing business with a debarred, suspended, ineligible, or voluntarily excluded person, in connection with a covered transaction,
- Failure to pay substantial outstanding debts,
- Violation of a voluntary exclusion agreement or of any settlement of a debarment or suspension action,
- Violation of the Drug-Free Workplace Act of 1988, or
- Any other cause of so serious or compelling a nature that it affects the present responsibility of a person.

When circumstances warrant, a Federal agency may “suspend” or exclude persons and/or companies proposed for debarment. As an administrative action, a “suspension” protects the Federal government during the processing of a debarment which requires due process. Causes for suspension are given in 2 CFR 180.700 and include adequate evidence:

- That a cause for debarment exists, and
 - That immediate action is necessary to protect the public interest.
- An indictment for a debarment offense will constitute adequate evidence for a suspension action.

Suspension/debarment actions are prospective, meaning they do not apply to existing contracts. The actions only apply to “covered” contracts within the meaning of 2 CFR 180.200, et seq. and 180.970. Covered transactions include all primary transactions – any transaction between FHWA and a financial assistance recipient regardless of size, and lower tier transactions of at least \$25,000 – any transaction between an STA and prime contractor, local agency, MPO, or subcontract. Lower tier transactions, regardless of size, under which a person has critical influence or substantive control over a prime contract – such as auditing, construction inspection, quality assurance services or other activity that might influence a contract – are also covered.

Only those persons (individuals, corporations, or subsidiaries) listed in the suspension/debarment notice are excluded. These individuals and entities are listed in the publicly available database at the Federal System for Award Management (www.sam.gov) by name and, for the companies, DUNS number. If a parent company is debarred, this does not mean that subsidiary firms of the parent company are automatically debarred. However, subsidiary or affiliate firms of a debarred company should be required to demonstrate that debarred individuals involved in any affiliated firm cannot influence the affiliate’s business decisions or otherwise participate in a Federal project. 2 CFR 180.625

Guidance: FHWA will consider action against a person and/or company whenever a cause within the meaning of 2 CFR 180.800 has occurred.

Processing of the action should begin as quickly as possible after the cause has been identified. DOT Order 4200.5E details the process to be followed. The

STA should discuss state suspension/debarment procedures with relevant State agencies to ensure concurrent action.

Length of the debarment period will depend to some extent on the specifics of the case. Generally, a debarment is in place for three years; however, the period may be longer for more egregious violations. The debarment period is measured, retroactively, from the effective date of an associated suspension.

Implementation is facilitated by the GSA's government-wide web-based list of excluded parties. The Excluded Parties List System (EPLS) which was previously maintained by GSA, became a component of the Federal System for Award Management (www.sam.gov) in June 2012. Provisions in the Federal Acquisition Streamlining Act of 1994 ensure that suspensions, debarments, and other exclusions from Federal procurement and nonprocurement programs are applied reciprocally government-wide. In short, exclusion from **any** procurement or nonprocurement program initiated on or after August 25, 1995 means exclusion from **all** federally-funded contracts – both direct Federal procurement and grant/Federal-aid “nonprocurement.” Prior to the award of all consultant and construction contracts with direct Division oversight, the Division must check www.sam.gov to determine if the prospective participant is excluded from Federal procurement and nonprocurement programs. On state-delegated projects, the STA assumes responsibility to ensure that a certification or search of www.sam.gov verifies that individuals and companies involved in Federal-aid projects are not excluded by suspension or debarment.

Certifications are required from all participants in the Federal-aid highway program as follows:

- Each STA must certify verification of the current eligibility of their principals through certifications of prime and subcontractors or through checking www.sam.gov. The FHWA recommends verifications by checking www.sam.gov. This certification is now incorporated into the project agreement. 2 CFR 180.320. (See section III.A.8 for additional information.)
- Bidders for prime contracts and consultants are required to certify the eligibility of both the firm and its principals as part of each Federal-aid highway contract bid proposal and consultant agreement. 2 CFR 180.335; FHWA-1273, Part X.
- All lower tier participants (i.e., local agencies, subcontractors, material suppliers, vendors, etc.) are also required to certify the current eligibility of the entity and its principals. 2 CFR 180.335; FHWA-1273, Part X.

o. FHWA final acceptance

References:

23 U.S.C. 121 – *Payment to States for construction*

23 CFR 635

23 CFR 637

FAPG, G 6042.8 – *“Construction Monitoring”*

Applicability: All FA highway construction projects on the NHS

Guidance: In order to make final payment for a project, FHWA must accept the completed construction of the project. This acceptance includes a determination that the actual physical construction conforms to the approved plans and specifications including all approved changes. Therefore, under the guidance of G 6042.8, a critical component of final acceptance is a final inspection of the construction through:

- An actual on-site inspection conducted at or near project completion;
- An in-depth review of the STA’s project records at or near project completion; or
- A finding that is based on a process review of the STA’s internal project controls which demonstrates that the STA is properly exercising its internal controls.

The level of effort put into the final inspection should be based on the size, complexity and importance of the project, as well as the level of project oversight.

Final inspections should be documented on the FHWA-1446A, *“Construction Inspection Report”* (RCS-HHO-30-38), or in a format which provides the essential information. The final inspection report should include any findings, items or issues that must be addressed prior to final acceptance, the agreed-upon corrective measures, and the timetable. Any other items which must be submitted prior to final payment (such as materials certification) should also be noted on the report.

Once all outstanding issues are resolved, the project’s final acceptance should be documented on the FHWA-1446B, *“Final Acceptance Report”* (RCS-HHO-30-28) unless the Division and STA have developed an alternate format.

p. FHWA final voucher

References:

23 U.S.C. 121 – *Payment to States for construction*

2 CFR 200 Subpart D

23 CFR 635

23 CFR 637

49 CFR 18 (2 CFR 200)

FAPG, G 6042.8 – *“Construction Monitoring”*

Applicability: All FA highway construction projects on the NHS

Guidance: By statute (23 U.S.C. 121(b)), FHWA cannot make final payment to an STA for a project until the construction has been approved as completed.

Warranty periods may impact the final payment and retention depending on STA practice. Some STAs distribute payment for the warranted item over the warranty period while others require a warranty bond and, therefore, follow standard state procedures for making the final payment to the prime contractor.

Per 49 CFR 18.42, FHWA’s payment of the STA’s final voucher for a project starts the 3-year record retention clock for the STA.

IV. Issues related to specific FAHP components

A. *Intelligent Transportation Systems (ITS)*

References:

23 U.S.C. 101 – *Definitions and declaration of policy*

23 CFR 450.306(a)(7)

23 CFR 450.322(f)(10)(i)

23 CRF 635.411

23 CFR 940.09

23 CFR 940.11

FR, “*Intelligent Transportation System Architecture and Standards*,” January 8, 2001 [66 FR 1446]

HQ memo – “[Guidance on Federal-aid Eligibility of Operating Costs for Transportation Management Systems](#),” 1/3/2000

HQ memo– “*ITS Procurement Resource Guide*,” October 1, 1997

HQ memo– “[Procurement Information for ITS Projects](#),” May 1, 1997

HQ memo, “*Procurement of Federal-aid Construction Projects*,” June 26, 2008

HQ memo, “*Applicability of Prevailing Wage Rate Requirements to Federal-aid Construction Contracts*,” June 26, 2008

HQ memo, “[Procuring ITS Projects](#),” October, 6, 1999

[Questions and Answers Regarding Title 23 CFR 635.411 webpage](#)
[Construction Program Guide webpage on SEP-14](#)

Applicability: Determined by the scope of the ITS contract; see procurement discussion below.

Background: To recognize the need for improving the operational efficiency of existing highway facilities, Congress expanded the 23 USC 101 definition of “construction” to include installation and operation of Intelligent Transportation Systems (ITS).

Guidance: ITS projects and services vary significantly in scope. Title 23 Section 101(a)(3) provides a broad definition for construction for Federal-aid eligibility purposes. For the purpose of ITS project procurement, the terms shown in bold below have a unique meaning (bold added for emphasis).

*“The term “construction” means the supervising, inspecting, actual building, and incurrence of **all costs incidental to the construction or reconstruction of a highway**, including bond costs and other costs relating to the issuance in accordance with section 122 of bonds or other debt financing instruments and costs incurred by the State in performing Federal-aid project related audits that directly benefit the Federal-aid highway program. Such term includes –*

A) locating, surveying, and mapping (including the establishment of temporary and permanent geodetic markers in accordance with specifications of the National Oceanic and Atmospheric Administration of the Department of Commerce);

B) resurfacing, restoration, and rehabilitation;

C) acquisition of rights-of-way;

D) relocation assistance, acquisition of replacement housing sites, and acquisition and rehabilitation, relocation, and construction of replacement housing;

E) elimination of hazards of railway grade crossings;

F) elimination of roadside obstacles;

G) **improvements that directly facilitate and control traffic flow**, such as grade separation of intersections, widening of lanes, channelization of traffic, **traffic control systems**, and passenger loading and unloading areas; and

H) capital improvements that directly facilitate an effective vehicle weight enforcement program, such as scales (fixed and portable), scale pits, scale installation, and scale houses."

Specific questions regarding the application of the definition of construction to ITS projects should be directed to the HQ Operations Deployment Team and the TST Resource Center Operations Team.

Project Definition:

The scope of work included in the ITS contract needs to be based on the systems engineering requirements and deliverables as defined in 23 CFR 940.11:

1. Identify portions of the regional ITS architecture being implemented;
2. Identification of participating agencies roles and responsibilities;
3. Requirements definitions;
4. Analysis of technology options to meet requirements;
5. Procurement options;
6. Identification of applicable ITS standards and testing procedures; and
7. Procedures and resources necessary for operations and management of the system.

The scope of work for ITS projects following the systems engineering process should include Deliverables based on the high-level functional requirements of the regional ITS architecture. Among the deliverables needed for most ITS projects following the systems engineering process are:

- Concept of Operations
- Requirements
- High Level Design
- Verification Plan
- Validation Plan

Procurement - ITS improvements may be incorporated as part of a traditional Federal-aid construction contract, or the contracting agency may elect to procure ITS services under individual contracts. When procured as separate

contracts, the scope of the ITS contract will determine the applicability of Federal procurement requirements. In addition, the scope of work and project deliverables may define the method of procurement based on the expertise required of the prime.

If an ITS project meets the definition of construction in 23 U.S.C. 101(a) then the contract should be bid in accordance with the procurement procedures in 23 CFR 635 (competitive sealed bidding) and/or 23 CFR 636 (design-build). Examples include installing and/or purchasing ITS field devices such as variable message signs, traffic signal controllers, radios or computers. However if the ITS equipment involves considerable software development/integration (systems deployment) it would be considered non-construction and procured as a service contract.

If the ITS project primarily involves an “engineering service contract,” the procedures of 23 CFR 172 (qualifications-based selection) apply. Examples include hiring a systems manager/integrator for ITS design and installation support, inspection, design, and documentation and training.

If the ITS project does not meet the legal definition of “construction” (23 U.S.C. 101(a)(3)), in other words, if it does not “. . . directly facilitate and control traffic flow” and is not an engineering service contract, then the contract may be considered to be a service contract. Such contracts may be procured by an STA through its own procurement procedure in accordance with 49 CFR 18 (DOT’s implementation of the “Common Rule” for Grant’s and Cooperative Agreements to States and Local Governments). In accordance with 49 CFR 18.36(a), an STA must use the same procedures for procuring goods and services with Federal funds that would be used for procurement with State funds. While FHWA requirements for construction contracts do not generally apply to “service contracts,” there are some provisions which may apply to projects funded under Title 23 with specific limitations listed in each program (DBE, Buy America, non-discrimination, etc.). Examples of service contracts which could be procured using State procedures might include:

- the procurement of service patrol vehicles and hardware and software associated with incident management systems,
- software systems for arterial and freeway management systems,
- operating the 511 traveler information service, and
- non-professional services for system support such as independent validation and verification, testing and specification development, development of a concept of operations.

Additional Resources:

- [Best Practices in ITS Equipment Procurements](#)
- [NCHRP 560 - Guide to Contracting ITS Projects](#)
- [Guidelines for Successful ITS Procurement - archived webinar](#)
- [Guide to Contracting ITS Projects - web-based decision model](#)

- [FHWA-JPO-98-035, *The Road to Successful ITS Software Acquisition*, July 1998](#)
- [Systems Engineering guidebook](#)
- [*Developing Functional Requirements for ITS Projects*, April 2002](#)
- [Model Systems Engineering Documents for Adaptive Signal Control Technologies](#)
- [FHWA Resource Center Operations Technical Service Team](#)

B. *Transportation Enhancement (TE) Activities*

References:

- 23 U.S.C. 133(d)(2) [as in effect through September 30, 2012]
 49 CFR 18, "*The Common Rule*" (2 CFR 200)
 HQ memo - "*Transportation Enhancement Activities*," 4/24/92
 HQ memo - "*Applicability of Davis-Bacon to Transportation Enhancement Projects*," 7/28/94
 HQ memo - "*Procurement of Transportation Enhancement Projects*," 11/12/96
 HQ memo - "*Transmittal of Guidance on Transportation Enhancement Provisions of TEA-21*," 6/18/99; see also additional information at http://www.fhwa.dot.gov/environment/transportation_enhancements/guidance/.
 HQ memo, "*Procurement of Federal-aid Construction Projects*," June 26, 2008
 HQ memo, "*Applicability of Prevailing Wage Rate Requirements to Federal-aid Construction Contracts*," June 26, 2008

Applicability: Transportation Enhancement projects must conform to the eligible activities list in 23 U.S.C. 101(a)(35) as in effect through September 30, 2012. For Transportation Alternatives Program (TAP) funds apportioned under MAP-21, see the Transportation Alternatives Program section.

Background: Transportation Enhancements (TE) are transportation-related activities that are designed to strengthen the cultural, aesthetic, and environmental aspects of the Nation's intermodal transportation system. The TE program provides an opportunity to implement a variety of nontraditional projects. Eligible projects range from the restoration of historic transportation facilities; bike and pedestrian facilities; landscaping and scenic beautification; and the mitigation of water pollution from highway runoff. Section 1007(a) of ISTEA created the TE program by adding 23 U.S.C. 133(d)(2) which required that 10 percent of the new Surface Transportation Program (STP) funds be available only for TE activities. TEA-21 expanded the list of eligible activities, and SAFETEA-LU continued the program. MAP-21 replaced the TE Activities with

the Transportation Alternatives Program (TAP). The information below applies to TE funds apportioned prior to MAP-21.

Guidance: Many STAs allow nontraditional partners to carry out TE projects. Federal-aid requirements not related to competitive bidding (such as Buy America, DBE, and others) generally apply. However, the STA's procurement options may be broader for TE projects that are either nonhighway construction, or located outside the right-of-way for a Federal-aid route. That flexibility is discussed below.

Procurement: Mr. Ptak's November 12, 1996 memo provides flexibility for TE projects that are not located on the highway right-of-way. Such projects are not considered to be highway construction projects, and therefore, the FHWA's construction contracting requirements generally do not apply. FHWA has determined that the use of State procurement procedures (as provided in 49 CFR Part 18) is acceptable for projects not located within the highway right-of-way. The contracting agency may use State procurement procedures (or State-approved local procedures) and FHWA's policies for construction contracting relating to competitive bidding are not necessarily applicable. Other FHWA policies not related to competitive bidding, such as Buy America, DBE and others, may still apply as appropriate.

When a local public agency is the contracting agency for a Federal-aid nonhighway construction contract, it must follow State-approved procedures. Title 49 CFR 18.37(a) says that a State shall follow State law and procedures when awarding and administering subgrants to local governments. Therefore, a State must use its own administrative procedures, not those in 49 CFR part 18, for dealing with the locals. For such projects, the State DOT can tell the local government to follow State procedures, follow the local government's own procedures, or follow the procedures in 49 CFR 18.36(b) - (i).

In some States, the STA may allow a nongovernmental entity to administer the project. In this situation, the procedure must meet the requirements of 49 CFR 18.

Prevailing Wage Rates: As previously noted, Davis-Bacon only applies to projects located on highways functionally classified as Federal-aid highways (not local roads, rural minor collectors or projects not located on a highway system). However, the Fair Labor Standards Act and State labor laws may affect the contractor.

The Office of Planning, Environment, and Real Estate Services which oversees the TE program provides comprehensive technical assistance through its website:

www.fhwa.dot.gov/environment/transportation_enhancements/guidance/.

C. *Recreational Trails Program*

References:

23 U.S.C. 206 and 213.

HQ memo - *"Interim Recreational Trails Guidance,"* April 1, 1999; see also additional information at www.fhwa.dot.gov/environment/recreational_trails/guidance/.

HQ guidance, Transportation Alternatives Program, see www.fhwa.dot.gov/map21/guidance/index.cfm.

HQ memo, *"Procurement of Federal-aid Construction Projects,"* June 26, 2008

HQ memo, *"Applicability of Prevailing Wage Rate Requirements to Federal-aid Construction Contracts,"* June 26, 2008

Applicability: Recreational Trails Program projects must conform to the permissible uses under 23 U.S.C. 206(d).

Background: The Recreational Trails Program (RTP) provides funds to the States for motorized and nonmotorized recreational trail projects. The original National Recreational Trails Funding Program was first established under ISTEA. TEA-21 established the Recreational Trails Program and codified it in 23 U.S.C. 206, and SAFETEA-LU continued the program with a few amendments. MAP-21 changed the program to be an optional set-aside from the Transportation Alternatives Program (TAP), but the RTP requirements and provisions remain in effect. MAP-21 also permits recreational trails projects to be broadly eligible for STP funds (23 U.S.C. 133(b)(20)) and TAP funds (23 U.S.C. 213(b)(2)). The information below applies to RTP apportioned funds, including RTP funds set aside under TAP.

Guidance: In most States, the Governor has designated a State resource or park agency or State agency that provides grants to local governments as the State agency to administer the RTP. The 4/1/99 HQ memo should be used as guidance (see http://www.fhwa.dot.gov/environment/recreational_trails/guidance/), including supplemental documents that implemented changes under SAFETEA-LU.

Most RTP projects are located outside of highway rights-of-way, and may generally be procured using State (or State approved) procedures. Buy America provisions apply. However, prevailing wage provisions do not apply unless the project is located within a Federal-aid highway right-of-way.

The Office of Planning, Environment, and Real Estate Services which oversees the Recreational Trails Program provides comprehensive technical assistance through its website, www.fhwa.dot.gov/environment/recreational_trails/guidance/.

D. Safe Routes to Schools

References:

23 U.S.C. 402 (note)

HQ memo, "*Safe Routes to School*," January 3, 2006

HQ memo, "*Procurement of Federal-aid Construction Projects*," June 26, 2008

HQ memo, "*Applicability of Prevailing Wage Rate Requirements to Federal-aid Construction Contracts*," June 26, 2008

HQ guidance, "*Transportation Alternatives Program Interim Guidance*"

Applicability: Projects approved under the SRTS program

Background: The Safe Routes to School Program was created by SAFETEA-LU Section 1404 (Public Law 109-59), to provide funds to the States to improve the ability of primary and middle school students to walk and bicycle to school safely. MAP-21 eliminated funding for the program, but retained project eligibility under the Transportation Alternatives Program (23 U.S.C. 213(b)(3)). TAP projects (and therefore SRTS projects) also are eligible under the Surface Transportation Program (23 U.S.C. 133(b)(11)). The guidance below applies to SRTS funds apportioned under SAFETEA-LU (available until expended).

Guidance: The implementing legislation for this program requires the use of standard Federal-aid contracting and construction procedures without regard to the functional classification of the roadway or pathway on which the work is to be done. The Office of Planning, Environment, and Realty oversees this program (effective October 1, 2012). See [website to be moved from <http://safety.fhwa.dot.gov/saferoutes/> to HEP] for additional information.

E. Transportation Alternatives Program (TAP)

References:

23 U.S.C. 213 [effective October 1, 2012]

49 CFR 18, "*The Common Grant Rule*" (2 CFR 200)

HQ guidance, Transportation Alternatives Program,

www.fhwa.dot.gov/map21/guidance/index.cfm.

HQ Q&A, Section 1524 Use of Youth Service and Conservations Corps Questions and Answers, www.fhwa.dot.gov/map21/qandas/qayscc.cfm.

HQ memo, "*Procurement of Federal-aid Construction Projects*," June 26, 2008

HQ memo, "*Applicability of Prevailing Wage Rate Requirements to Federal-aid Construction Contracts*," June 26, 2008

Applicability: Transportation Alternatives Program (TAP) projects must conform to the eligible activities list in 23 U.S.C. 101(a)(29) effect October 1, 2012.

For Transportation Enhancement (TE) funds apportioned prior to MAP-21, see the Transportation Enhancement Activities section.

Background: The Transportation Alternatives Program (TAP) creates safe, accessible, attractive, transit-friendly, and environmentally-sensitive communities where people want to live, work, and recreate. The TAP provides an opportunity to implement a variety of nontraditional projects. Eligible projects include bicycle and pedestrian facilities; trails for transportation purposes; turnouts, overlooks, and viewing areas; historic preservation of historic transportation facilities; vegetation management; mitigation of water pollution from highway runoff; wildlife connectivity projects; safe routes to school projects; recreational trails; and boulevards developed within the right-of-way of former divided highways. The information below applies to TAP funds except for funds specifically set-aside for the Recreational Trails Program (RTP).

Guidance: TAP funds must be used for eligible projects and submitted by eligible entities. For TAP funds suballocated to urbanized areas with populations over 200,000, the MPO, through a competitive process, selects TAP projects in consultation with the State. For other TAP funds, the State selects projects through a competitive process.

Procurement: MAP-21 requires TAP projects to be treated as projects on a Federal-aid highway (excluding projects funded under the RTP setaside). Therefore, the bidding package for a TAP-funded project must notify the bidders that sections I and IV of the FHWA-1273 do apply to the project.

FHWA policies not related to competitive bidding, such as Buy America, DBE and others, apply. Contracting requirements and prevailing wage rates apply to TAP projects; however, MAP-21, Section 1524 provides exceptions for projects carried out through contracts or cooperative agreements with qualified youth service and conservation corps.

The Office of Planning, Environment, and Real Estate Services which oversees the TAP will provide comprehensive technical assistance through its website [under development].

F. *Emergency Relief (ER)*

References:

23 U.S.C. 120 & 125

23 CFR 668

Non-regulatory Supplement to 23 CFR 668A

USDOL letter, "*[Applicability of Davis-Bacon and related Acts to debris removal]*," August 25, 2006

HQ memo, "*Procurement of Federal-aid Construction Projects*," June 26, 2008

HQ memo, "*Applicability of Prevailing Wage Rate Requirements to Federal-aid Construction Contracts*," June 26, 2008

HQ memo, "Emergency Relief (ER) Program Review," October 1, 2008
HQ memo, "Emergency Relief (ER) Program Debris Removal Policy,"
February 16, 2012
HQ memo, "Management of Emergency Relief Funds," February 16, 2012
HQ memo, "Emergency Relief (ER) Program Eligibility of Work Performed by
the National Guard," April 4, 2012
Emergency Relief Manual, May 2013

Applicability: Projects on Federal-aid highways to repair serious damage by widespread natural disasters, or by catastrophic failure from an external cause.

Background: Recognizing that widespread natural disasters can place an unexpected burden on the resources of an STA, Congress has established an emergency fund for the repair or reconstruction of highways, roads, and trails that have suffered serious damage as the result of:

- A natural disaster over a wide area such as a flood, hurricane, tidal wave, earthquake, unusually severe storm or landslide; or
- A catastrophic failure from any external cause such as the sudden collapse of a bridge after being struck by a barge or ship.

Guidance: The following paragraphs are intended to be an introduction to the ER program. Detailed information on requirements of the ER program is contained in the CFR, the Emergency Relief Manual, and HQ memoranda. Damage to Federal roads that are not part of the Federal-aid highway network will be handled under the procedures described in the Emergency Relief Manual for Federal Roads. Damage to local roads, streets, or other routes not eligible under the ER program may be eligible for other Federal funds administered by the Federal Emergency Management Agency (FEMA). FEMA provides a brief overview of their programs in *A Guide to Federal Aid in Disasters*, June 1990.

Roads and bridges on Federal-aid highways that are damaged as a direct result of a natural disaster or catastrophic failure from an external cause are eligible for ER funds. Federal-aid highways are public roads that are classified as arterial, urban collectors and major rural collectors. Highways that are classified as minor rural collectors or local roads are not eligible for ER funding even if other Federal-aid funds have been used on those roads.

All repair or reconstruction work which is proposed for ER funding must be either on a Federal-aid highway, or on a Federal road as defined by 23 U.S.C. 125(e). Approved ER funds are available at the pro rata share that would normally apply to the Federal-aid highway under consideration and include a sliding scale. When a State incurs unusually high repair expenses accumulated over a fiscal year, the Federal share may be increased to 90% under certain conditions [see 23 U.S.C. 120(e)(4)]. Within the first 180 days after the disaster,

emergency repair work to restore essential travel, minimize damage, or protect remaining facilities may be reimbursed at 100% Federal share. This 180 day time period for 100% eligibility may be extended if the State cannot access a site to evaluate damages [see 23 U.S.C. 120(e)(3)]. Participation in debris removal is limited to that required for a fully functioning roadway (see the 2-16-2012 memo for additional details). Following MAP-21, FEMA has responsibility for debris removal on Federal-aid highways when the disaster is declared under the Stafford Act. Additional guidance on debris removal can be found in the ER Manual.

Unless specifically raised by Congress, FHWA can provide up to a maximum of \$100 million in ER funds per State per disaster for events that occurred prior to the effective date of MAP-21 (October 1, 2012). MAP-21 eliminated the \$100 million per State per disaster cap for events occurring after October 1, 2012. Unexpended ER funds from one disaster may not be used by a State to carry out repairs due to another disaster (see the 2-16-2012 funds management memo for additional details).

ER funding is intended to supplement the resources provided by a State, its political subdivisions, or other Federal agencies in repairing damage that is beyond that normally performed by the STA during ordinary and occasional heavy maintenance. A State should not expect that ER funds will cover all damage repair costs or interim emergency repairs. State and local agencies are responsible for planning and responding to extraordinary conditions. Economic hardship is not a factor in determining eligibility. To simplify the inspection and estimate process, the Federal share payable should be a minimum of \$5,000 per site, and \$700,000 per disaster.

ER funds are not intended to replace other Federal-aid, State or local funds for new construction to increase capacity, correct non-disaster related deficiencies, or otherwise improve highway facilities. Work already scheduled to repair or replace deficient structures/bridges damaged during a disaster will not be eligible for ER funds, and should be funded as originally intended. A project is considered scheduled if the construction phase is included in the current FHWA-approved STIP, or if contract plans are being prepared. Betterments to damaged facilities must be paid for using other funds.

Procurement: The competitive bidding requirements of 23 U.S.C. 112 and 23 CFR 635.104 may be waived when an emergency exists (see the discussion in III.B.8.c). The FHWA's emergency relief regulations in 23 CFR 668 indicate that "emergency repair" work may be done by contract, negotiated contract or highway agency force account (use of public agency forces) as determined by the contracting agency to protect public health and safety. These contracting methods only apply to emergency repair work as defined in 23 CFR 668.103 as that necessary for: ". . . (1) Minimizing the extent of the damage, (2) Protecting remaining facilities, or (3) Restoring essential traffic." Regular Federal-aid

procurement / contracting procedures apply to all other permanent repairs and reconstruction work regardless of funding source.

Public agencies may perform force account work but are not permitted to compete for solicited or negotiated contracts. In accordance with 23 CFR 635.204(b), a formal finding for force account work of emergency repairs is not required. National Guard units may assist a public agency during emergencies, provided the Guard has not been federalized and the work efforts of the Guard units is under the State's control and direction (see the 4-4-2012 HQ memo).

Most States require the contractor to take all necessary precautions to protect the section of all Federal-aid projects, including those financed with ER funds, under construction or practically completed, but not yet accepted by the State. Therefore, damage to an active construction project must be clearly shown to be beyond the contractor's responsibility before the rehabilitative work could be eligible for ER funds.

Since the objective of ER projects is to quickly restore traffic flow on a facility, they may be excellent candidates for innovative contracting techniques, such as design-build, incentive/disincentive, warranties and/or A+B bidding. Additional information about the use of innovative contracting techniques for ER projects is included in the ER Manual.

Davis-Bacon Act requirements may only be waived by the President. Such a waiver would require a specific Executive Order or Executive Proclamation (example: President Bush waived Davis-Bacon requirements for a short time period following Hurricane Katrina in 2005). Although Davis-Bacon wage rates may be waived, contractors may still have to pay more than the Federal minimum wage to secure an adequate workforce. Note that contracts for debris removal only (without any incidental construction or repair work) are not considered "construction" by USDOL, and therefore, are not subject to Davis-Bacon requirements (see the 8-25-2005 USDOL letter for additional discussion).

Buy America provisions apply. While the public interest provisions of 23 CFR 635.410(c)(1)(i) may provide the basis for a waiver, the law requiring public notice prior to FHWA granting a Buy America waiver does not allow any exceptions for emergency situations. For additional information about Buy America requirements, see section III.B.8.k.i - Buy America.

G. National Scenic Byways Program

References:

23 U.S.C. 162 - *National scenic byways program*

Notice of Interim Policy, "*National Scenic Byways Program*," May 18, 1995

HQ memo, "*Procurement of Federal-aid Construction Projects*," June 26, 2008

HQ memo, "*Applicability of Prevailing Wage Rate Requirements to Federal-aid Construction Contracts*," June 26, 2008

Applicability: Projects funded with National Scenic Byways Program funding – see 23 U.S.C. 162 for specific requirements

Background: The National Scenic Byways Program is part of the U.S. Department of Transportation, Federal Highway Administration. It was established by the Intermodal Surface Transportation Efficiency Act of 1991. It was codified at 23 USC 162 and expanded significantly in 1998 under TEA-21 and expanded again under [SAFETEA-LU](#) in 2005. The program is a grass-roots collaborative effort established to help recognize, preserve and enhance selected roads throughout the United States. Please note that the grant element for the National Scenic Byways Program was not funded under MAP-21. However, existing designations of National Scenic Byways and All-American Roads remain valid, and FHWA may make additional designations in the future.

Guidance: 23 U.S.C. 162 and FHWA's May 18, 1995 interim policy ([PDE, Text](#)) provide the criteria for the National Scenic Byways Program. (Please note that the Interim Policy – the principal policy for the Program – was established prior to SAFETEA-LU. In the case of inconsistencies in language between the Interim Policy and the statute, the statutory language governs.)

The law and policy set forth the procedures for the designation by the U.S. Secretary of Transportation of certain roads as National Scenic Byways or All-American Roads based on their archaeological, cultural, historic, natural, recreational, and scenic qualities. There are 150 such designated byways in 46 states. FHWA promotes the collection as America's Byways®. The law and policy also specify the type of projects eligible for funding and list the funding priority for grants.

National Scenic Byways Program projects are implemented as FA projects under Title 23 and, therefore, are subject to Federal-aid requirements appropriate to their physical location relative to highway right-of-way.

The National Scenic Byways Program is administered by the Office of Planning, Environment and Real Estate. Additional information about the National Scenic Byways Program may be found at <http://www.fhwa.dot.gov/hep/byways/>.

2014 CACC Appendix

Chronological Order

July 12 1963	Participation in Engineering Errors
September 8, 1978	Participation in the Cost of Corrective Work Resulting from Construction Engineering Errors
December 10, 1980	Technical Advisory T5080.3, Development and Use of Price Adjustment Contract Provisions
September 8, 1982	Audit of Construction Contract Change Orders
February 1983	DOT/DOJ – Suggestions for Detection and Prevention of Construction Contract Bid Rigging
April 30, 1985	Deviation for Competitive Bidding Requirements
March 1986	Form FHWA-1365, Record of Authorization to Proceed with Major Contract Revision
November 25, 1987	Product Selection
February 5, 1988	Convict Labor and Convict Produced Material
May 16, 1988	Bid Analysis and Unbalanced Bids
November 7, 1988	Equipment Rental Rates
February 8, 1989	Technical Advisory T5080.10, Incentive/Disincentive (I/D) for Early Completion
July 6, 1989	Buy America Requirements
February 13, 1990	Innovative Contracting Practices Initiative and Special Experimental Project No. 14
August 21, 1990	Price Adjustment Contract Provisions
November 30, 1990	Price Adjustments of Existing Contracts
October 1991	AASHTO – Suggested Guidelines for Strengthening Bidding and Contract Procedures
May 5, 1993	Equipment Purchases for State Construction Engineering Use
July 28, 1994	Applicability of Davis-Bacon to Transportation Enhancement Projects
November 12, 1996	Procurement of Transportation Enhancement Projects
June 26, 2008	Applicability of Prevailing Wage Rate Requirements to Federal-Aid Construction Projects
June 26, 2008	Procurement of Federal-aid Construction Projects
June 21, 2011	Buy America Interpretation
August 4, 2011	Responsible Charge
May 1, 2012	FHWA-1273, Required Contract Provisions for Federal-aid Construction Contracts
	FHWA-1273, Attachment A – Employment Preference for Appalachian Contracts
December 21, 2012	Clarification of Manufactured Products under Buy America

See <http://www.fhwa.dot.gov/programadmin/contracts/coretoc.cfm> for text version of memos.

UNITED STATES GOVERNMENT

U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

Memorandum

TO : Mr. August Schofer, Regional Engineer
02-00.2 Hagerstown, Maryland

DATE: JUL 12 1963

FROM : G. M. Williams, Director of Engineering and Operations
32-34

G.M.W.

SUBJECT: Participation in engineering errors.

Reference is made to your April 16 and June 27 memorandums, relative to the above-noted subject.

Your existing policy on this matter, as set forth in your April 21, 1960, memorandum to division engineers, was established with the advice of this office. This policy draws a distinction between engineering errors incorporated into the P.S.& E. approved by Public Roads and engineering errors committed by State personnel during construction operations. Federal participation in the costs of corrective work is allowed in the first instance but is denied in the second. As you indicate, our present thinking is that a more flexible policy would be appropriate in the latter instance.

In this regard, it is now considered that each such engineering error should be considered on its own merits to determine whether any corrective work is eligible for Federal participation. Where carelessness, negligence, incompetence, or understaffing on the part of the State are not contributing factors, favorable consideration may be justified for the type of errors that might occasionally occur despite the exercise of normal diligence. In all other instances Federal participation should continue to be denied. Questionable cases should be referred to this office for advance review and advice.

We believe that the foregoing will provide you with the requested information. Please advise if further comment is desired.

UNITED STATES GOVERNMENT

Memorandum

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

Washington, D.C. 20590

DATE: SEP 8 1978

In reply
refer to: HHO-32

SUBJECT: Participation in the Cost of Corrective Work
Resulting from Construction Engineering Errors

FROM : Chief, Construction and Maintenance Division
Office of Highway Operations

TO : Regional Federal Highway Administrators, Regions 1 - 10
Regional Engineer, Region 15

There was concern expressed by State Construction Engineers at the recent American Association of State Highway and Transportation Officials (AASHTO) Construction Committee in Portland, Maine, that there were inconsistencies in applying Federal-aid participation in the cost of corrective work resulting from construction engineering errors.

Our position remains unchanged. We have long considered that cases will arise where participation may be warranted in the cost of corrective work resulting from construction engineering errors.

It would be difficult to outline in detail specific guidelines where we should or should not participate in such costs, since circumstances surrounding each case will be different. Thus, each case should be evaluated individually. Broad generalities such as "all staking errors are ineligible" or "design errors are eligible - construction errors are not" should be avoided.

Where a State has exercised normal diligence in carrying out its construction engineering activities and an error does cause some increased cost, Federal-aid funds can be used.


Sanford P. LaHue



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

SUBJECT

DEVELOPMENT AND USE OF PRICE
ADJUSTMENT CONTRACT PROVISIONS

FHWA TECHNICAL ADVISORY

T 5080.3
December 10, 1980

- Par. 1. Purpose
2. Background
3. Criteria for Application to Specific Materials and Supplies
4. Project Conditions for Use of Price Adjustments
5. Development of Contract Provisions
6. Additional Considerations for Fuels

1. PURPOSE. To set forth procedures for development and use of price adjustment contract provisions to minimize the cost effects of price uncertainty for materials used in construction and to present sample wording successfully used in specifications by various States.
2. BACKGROUND. Price volatility of construction materials and supplies such as asphalt, fuel, cement, and steel can result in significant problems for contractors in preparing realistic bids. In many cases, prospective bidders cannot obtain firm price quotes from material suppliers for the duration of the project. This leads to price speculation and inflated bid prices to protect against possible price increases. This Technical Advisory will provide contracting authorities with information for development and application of price adjustment provisions to respond to this price volatility by transferring a portion of the risk to the contracting agency, resulting in lower bids.
3. CRITERIA FOR APPLICATION TO SPECIFIC MATERIALS AND SUPPLIES. Development and use of price adjustment provisions for specific materials or supplies should be based on the following criteria:
 - a. History of prices compared to current prices reveals unpredictable, uncontrollable shifts away from normal price trends over the longer term. Agencies should attempt to determine the primary cause for the indicated price variance and assess whether that condition could be expected to exist for the foreseeable future.

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OPI: HHO-32

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- b. Price quotations from material suppliers are not obtainable for the usual term of typical contracts. Agencies should attempt to verify that suppliers are not withholding quotes in hopes that price adjustments will be provided.
- c. Firm price quotations cannot be obtained due to shortages or prices are based on date of delivery or spot market conditions.

4. PROJECT CONDITIONS FOR USE OF PRICE ADJUSTMENTS

- a. Price adjustment provisions should not be incorporated into standard specifications for permanent application to all projects. If included in standard specifications, the price adjustment should apply only when provided for in the bidding proposal for a specific project.
- b. The use of price adjustment provisions for specific materials, once established using the criteria in paragraph 3, should not be adopted as a standard long-term policy for all projects. The need to include price adjustment provisions should be assessed on a project-by-project basis based on the following considerations:

- (1) For single season contracts, price adjustment provisions should apply to all price-volatile materials and supplies which significantly affect the unit costs of major items. For example, fuel costs would probably have a significant effect on major items of a grade and drain project, but not on a traffic signal installation project.
- (2) For multiple season contracts, all price-volatile material and supplies expected to be used should be subject to price adjustments.
- (3) Whenever price adjustment provisions are adopted, their need, effectiveness, and fairness should be continually evaluated by the contracting agency. Resulting administrative problems may indicate the need for incorporating revisions; a system for feedback from industry groups is desirable.

5. DEVELOPMENT OF CONTRACT PROVISIONS. The following points should be considered when developing contract provisions for calculation and payment of price adjustments:

- a. Price adjustments should apply for both upward and downward movement of prices. Typical specification wording is given below for two optional methods:
- (1) . . . a price adjustment clause is being inserted into this contract to provide for either additional compensation to the contractor, or credit to the State, depending upon an increase or decrease in the average price of (material or supply); or
 - (2) . . . if the current price shows a decrease from the base price, resulting in a negative adjustment, deductions for decreased cost will be made only to the extent of any increased compensation previously paid under this provision.
- b. Price adjustment provisions should contain a reasonable ceiling on upward adjustment, preferably in percentage form rather than in absolute dollars, and should also contain a lower limit on downward adjustment. Typical specification wording is given below for three optional methods:
- (1) . . . if the current price index indicates an increase of (25 - 100 percent suggested) or more over the base price for (material), the contractor shall not perform (the applicable item) for the remainder of the project without written approval of the engineer; or
 - (2) . . . the maximum adjustment allowable shall be limited to a (25 - 100 percent suggested) increase from the base price for (material); or
 - (3) . . . it shall be understood that a price increase adjustment may cause the State to decrease the quantities of work utilizing (material). If the current price index at any time exceeds (125 - 200 percent suggested) of the base, the (agency) reserves the right to cancel the remaining portions of those items utilizing (material). Provisions providing for decreased quantities and item cancellation in this paragraph are separate and take precedence, notwithstanding any other provisions of this contract.

c. Price adjustments should be based on an index or other economic barometer which is not susceptible to manipulation by contractors and suppliers acting singly or as a group. The contracting agency should develop the index to be used, or use other government price data for each material or product. Indices can be developed from statewide or areawide data secured from appropriate sources such as manufacturers, wholesalers, or retailers. The data should be secured on the same date each month. The basis for establishing the indices used in making price adjustments should be included in the contract provisions. Examples of index source descriptions are given below:

- (1) . . . the base price index will be the average of quotations from suppliers serving the area in which the project is located and will be determined at the beginning of the month in which bids are received. For the part of the State including (specify appropriate boundaries), the index will be based on quotations from (list of specific sources) . . . etc. The current index will be determined in the same manner for the (period) for which the price adjustment factor is being computed.
- (2) . . . the base price index for a specific item will be determined by the average unit bid price for the specific item on accepted low bids during the 12-month period ending with the month in which bids are received. The current price index will be determined by averaging the base prices established during the adjustment period. Note: This method cannot be used for non-bid items, or for items where the bid price includes other costs such as labor, equipment, or material independent of the price trends for the specific material to be adjusted.
- (3) . . . the base price index will be established by the State and included in the bidding proposal. This index will be the average of current quotations for (material) from the following sources currently supplying (material) to contractors on State highway work: (list the sources used). These quotations are the selling price per (unit) f.o.b. supplier's location. The current price index will be established by the same method on the first business day of each month following award of contract.

- (4) In lieu of the contracting agency developing its own index, the following sources have been successfully used for price indexing. These sources of price information are not meant to be exclusive of any other agency, organization, or publication which now provides, or may provide in the future, the type of price information which may be useful.
- (a) U.S. Department of Labor, Bureau of Labor (BLS) monthly publication titled, "Wholesale Prices and Prices Indexes." Address: BLS, Room 1539, 441 G Street, NW., Washington, D.C. 20212. (Monthly price information for virtually all construction materials and supplies.)
 - (b) Platt's Oilgram Price Service. \$400/year, published daily. Note: for petroleum products only. Address: McGraw-Hill, Inc., 1221 Avenue of the Americas, New York, New York 10020.
 - (c) Engineering News-Record. \$26/per year, published weekly. Address: Fulfillment Manager, ENGINEERING NEWS-RECORD, P. O. Box 430, Hightstown, New Jersey 08520. (Price information for various construction commodities in 20 U.S. and two Canadian cities - quotes approximately monthly.)
 - (d) The Oil Daily. \$150/year, published daily. Note: for petroleum products only. Address: Lee W. Huebner, Editor and Publisher, 75 Rockefeller Plaza, New York, New York 10019.
 - (e) The U.S. Oil Week. \$97/year, published weekly. Note: for petroleum products only. Address: Capitol Publications, Inc., 2430 Pennsylvania Avenue, NW., Suite G-12, Washington, D.C. 20037.
- d. Price adjustments should be "triggered" only by a significant change in the index rather than being responsive to minor fluctuations in price. Any trigger between 3 and 10 percent should accomplish this objective. The American Association of State Highway and Transportation Officials (AASHTO) suggests a 5 percent trigger level in its publication titled, "Suggestions and Guidelines for Combating Shortages and Minimizing the Effects of Price Uncertainties for Materials and Fuel in Construction" - 1974.

- e. Price adjustment computations should be performed at specified intervals, rather than as each change in price occurs. Computation on a monthly basis is suggested.
 - f. A "Basis of Payment" clause for each item being adjusted is necessary to adequately define the limits of application of the price adjustment. For example, if the asphalt cement in bituminous concrete mixtures may be adjusted, the basis of payment should clearly state that all other components other than the asphalt cement are compensated at the contract unit price.
 - g. The contractor should not be allowed any option to accept or reject price adjustment provisions in the contract. The contract's additional payment or any credit due the State for decreased prices should not depend on whether the contractor chooses to claim the difference. The adjustment calculations and payments or credits should be automatically incorporated into the normal estimate payment process.
 - h. Provisions for payment of actual cost increases based on receipted invoices or other documentation submitted by the contractor are not recommended because of the additional administrative and audit requirements imposed on States and contractors, and the potential for manipulation available in such cases.
 - i. Price adjustment provisions should provide an incentive for the contractor to complete the contract within the allotted time specified. States should limit any upward price adjustment, as a minimum, to the last current price index established within the contract time plus approved extensions, or require completion of the project at the contract prices without any adjustment applied during any unapproved time overrun.
6. ADDITIONAL CONSIDERATIONS FOR FUELS. Development of price adjustment provisions for motor fuels used in construction equipment is more difficult because fuel is usually considered to be incidental to the project and is not generally paid for directly. To provide price adjustments for fuel, a methodology for basis of payment has to be developed which estimates the amount of fuel used by a contractor in performing the work. It is important to note that the methods described below are not designed to estimate actual quantities of fuel used in construction operations, but to provide a reasonable basis for calculating a fuel price adjustment based on average conditions. The general information in paragraph 3 applies to fuel price adjustment provisions and is supplemented by the following additional considerations.

a. Fuel Usage Per Unit Method. This method estimates the amount of fuel used in accomplishment of various units of work under average conditions. The basic data for application of this method were published in Highway Research Circular Number 158 by the Highway (now Transportation) Research Board in July 1974 (Attachment 1). Additional fuel factors developed by States for use in fuel price adjustment clauses are given in Attachment 2.

- (1) For each non-structural unit of work (excavation, aggregates, asphaltic concrete, and portland cement concrete pavement), fuel usage factors for diesel and gasoline consumption per unit of work are given. The process involves applying the quantities of completed work to the fuel factors in the table, summing the total used for each separate item, and then applying price adjustment in accordance with the methods discussed in paragraph 5.
- (2) For structural and miscellaneous work, the fuel factors are given in terms of fuel consumed per \$1,000 of work.

b. Specified Total Fuel Requirement Method

- (1) The contracting agency develops its own estimate of fuel required to complete the project and enters this amount in the bidding documents. The estimate can either be given in total gallons or dollars, with the base price also furnished in the proposal.
- (2) This method also requires establishing a fuel allocation schedule which estimates the amount of fuel used by the contractor at various stages of project completion. The table below summarizes the allocation schedules developed and now in use by several States.

<u>Percentage of Work Complete</u>	<u>Average Fuel Used (%)</u>	<u>Range of Values (%)</u>
10	10	0- 20
20	28	10- 40
30	41	20- 60
40	55	35- 70
50	65	50- 80
60	78	60- 90
70	86	70-100
80	96	80-100
90	99	90-100
100	100	100-

(3) As each increment of work is completed, the contracting agency applies the percentage of fuel used to date (less previous amounts estimated) to the total estimated fuel. The adjustment may then be calculated using the procedures contained in paragraph 5. An example follows:

- (a) estimated total fuel required = 150,000 gallons;
- (b) work completed as of current date = 32 percent;
- (c) estimated fuel allocation for 30 percent completion = 30 percent;
- (d) adjustment calculated on previous estimates = 15 percent fuel usage;
- (e) fuel adjustment to be calculated = 15 percent of 150,000 gallons = 22,500 gallons; and
- (f) the adjustment is then calculated by averaging the current price indices for the monthly periods since the last adjustment. (If work was performed in the months of September, October, March, and April for the work increment from 20 percent complete to 30 percent complete, the current prices for fuel for those months would be averaged and then applied against the base price to determine if an adjustment was due.)

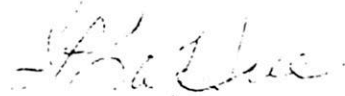
c. Bid Item Method

- (1) The bidder enters a lump sum amount for fuel cost in the proposal to construct the project. This lump sum bid is limited to a maximum amount set by the State, and must be warranted by the bidder to include all fuel to be used on the project.
- (2) The lump sum item is used in determining the rank of bidders, and is a pay item in the contract.
- (3) A fuel allocation schedule as described in paragraph 6b(2) is also required for the use of this method. The remaining procedure for calculating the adjustment is essentially the same as the method

in paragraph 6b, except that payment of the lump sum bid is made on progress estimates in accordance with the percentages given in the allocation schedule.

d. The Percent of Cost Method

- (1) This method requires the establishment of factors for different types of projects which represent the approximate cost of fuel as a percentage of total construction cost. Attachment 3 gives ranges of percentage factors currently used in some States.
- (2) The amount of fuel used is simply calculated periodically using the percentage factor applied against the actual dollar volume of work completed and paid on a progress estimate (with no retainage deducted) to establish the estimated amount (in dollars) of fuel costs expended by the contractor. The adjustment payment is then calculated using the procedures discussed in paragraph 5.
- (3) The percentage method can be used to easily establish estimated fuel requirements or maximum bid amounts for the two methods described in paragraph 6b and 6c, respectively.



Sanford P. LaHue, Director
Office of Highway Operations

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Number 158

Subject Areas: Transportation Administration July 1974
Construction
Construction and Maintenance Equipment

FUEL USAGE FACTORS FOR HIGHWAY CONSTRUCTION

INTRODUCTION

The Highway Equipment Committee of the Transportation Research Board at its annual meeting in January 1974 discussed the then current fuel crisis facing the construction industry. It was decided that immediate action was needed to formulate fuel usage factors which would enable computation of fuel requirements for highway construction jobs to comply with part 211.27 of the mandatory petroleum allocation regulation published in the January 15, 1974 Federal Register. The regulation reads as follows: "Any person, firm, or government agency planning to award a construction contract under competitive bidding to contractors who may be wholesale purchasers may apply to a supplier as a new end user."

"The volume shall be estimated in an amount sufficient to complete the project. Upon awarding of the contract the allocation must then be transferred to the successful bidder."

A Task Force was appointed by the committee to pursue this objective. The Task Force was assisted in this effort by the American Roadbuilders Association and the Associated General Contractors of America who mailed the questionnaires to their members and by the Federal Highway Administration whose Region 15 Office completed the data analysis.

This publication is the result of data submitted by more than 400 highway contractors in the United States in response to questionnaires mailed to more than 3,000 contractors.

GENERAL NOTES

The survey dealt only with fossil fuels.

An effort was made to analyze the data by types of terrain but in general the differences in fuel usage did not appear to be significant.

These figures are intended as guides only in making job estimates. The low, average and high factors represent figures for jobs having average conditions. Therefore, it will be necessary for an estimator to modify these factors to take into consideration peculiarities of the particular job he is estimating

HIGHWAY RESEARCH BOARD

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such as high altitude job sites, particularly rough terrain, heavy stop and go traffic in urban areas, or hauls longer than those indicated in the table.

The fuel usage factors in the table represent gallons of fuel required per unit of construction as shown in the units column, i.e. gallons per cubic yard for excavation and for portland cement concrete pavement, gallons per ton for aggregates and asphalt concrete and gallons per \$1000 of contract costs for structures and miscellaneous construction.

Haul distances shown in the table or mentioned in the notes are one-way distances but fuel factors include sufficient fuel for round-trip travel in every case.

SPECIAL NOTES

EXCAVATION

Fuel usage factors for all excavation items include mobilization, clearing and grubbing, excavating, hauling, compacting and preparing the subgrade. "Earth excavation" includes rippable rock. "Other excavation" includes all items of excavation not covered by earth or rock excavation.

Special consideration should be given if equipment is working at elevations above 4,000 ft. Unusually wet conditions would be reason for higher fuel usage. The factors shown would be applicable for hauls up to approximately 5,000 ft. in length. Beyond this distance, equipment may be changed, and additional fuel should be added for longer hauls. For urban construction requiring truck hauling the fuel factors shown may be low.

Fuel requirements for all three excavation items include the total of *both* diesel and gasoline. Basically the loading, hauling and compacting units are diesel fueled while supporting equipment such as pickup and service trucks may be gasoline powered.

AGGREGATES

On-site aggregate production fuel usage factors are to be used only when the contractor contemplates erecting a plant to produce aggregates for a particular project. The fuel usage factors do not include fuel for drilling and shooting. If a quarrying operation is to be used, fuels for this purpose should be added. These factors include fuel for generating all electric power needed for this operation.

Fuel requirements for aggregate production include the total of *both* diesel and gasoline, since gasoline is used to power support equipment.

The usage factors for aggregate base include fuel for hauling, spreading, compacting and finishing the base.

Fuel requirements for this item include the total of *both* gasoline and diesel; however, the balance between the two factors will vary depending upon the type of

fuel used for the placing equipment.

ASPHALT CONCRETE

The fuel usage factor for asphalt concrete production includes all requirements to produce a ton of asphalt concrete, including the material handling at the plant site, drying and heating of aggregates, heated asphalt storage and generating power for all plant machinery.

In the event natural gas is used for the drying and heating of aggregates, fuel demands for diesel should be reduced appropriately. For normal projects approximately two gallons of diesel per ton of asphalt concrete should be deducted. (This deduction represents removal of 6% moisture and raising aggregate temperature 250 degrees F.)

Fuel requirements for this item include the total of *both* diesel and gasoline since gasoline is used to power support equipment.

Either fuel usage factor shown for asphalt concrete hauling represents the total fuel requirement for the item. If both gasoline and diesel haul units are used, appropriate adjustments should be made.

Either fuel usage factor shown for asphalt concrete placement represents the total fuel requirement for the item. If both gasoline and diesel units are used, appropriate adjustments should be made.

Fuel usage factors represent requirements to place asphalt concrete with a paving machine and compact it with three rollers. Needs for this operation are not substantially affected by production rates.

PORTLAND CEMENT CONCRETE PAVING

Fuel usage factors for the production of portland cement concrete include all requirements to produce a cubic yard of concrete including material handling at the plant site, batching, mixing, and generating power for all plant machinery.

Fuel requirements for this item include the total of *both* diesel and gasoline since gasoline is used to power support equipment.

The fuel usage factor for hauling portland cement concrete for paving are valid up to four miles. Since most projects are built using a job site plant, very limited data was received for hauls over four miles. Since insufficient data was received on gasoline usage, the fuel usage factor for gasoline shown in the table is a conversion from the diesel fuel factor.

Either fuel usage factor shown for this item represents the total fuel requirement for the item. If both gasoline and diesel units are used, appropriate adjustments should be made.

The fuel usage factor for portland cement concrete placement includes all fuel to spread, place, finish and cure portland cement concrete paving. The fuel usage factor is valid for form riding or slip form equipment.

Either fuel usage factor shown for this item represents the total fuel requirement for the item. If both gasoline and diesel units are used, appropriate adjustments should be made.

STRUCTURES

Fuel usage factors for structures should cover all concrete and steel structures, excluding pipe. Fuel requirements for structures include the total of *both* diesel and gasoline.

MISCELLANEOUS CONSTRUCTION

The fuel usage factors for miscellaneous construction should cover all work not covered by any previously listed items.

Fuel requirements for this item include the total of *both* diesel and gasoline.

FUEL USAGE FACTORS

Item of Work	Units	Diesel			Gasoline		
		Low	Avg.	High	Low	Avg.	High
Excavation:	Gallons/Cu. Yd.						
Earth		0.27	0.29	0.30	0.11	0.15	0.21
Rock		0.37	0.39	0.42	0.17	0.18	0.22
Other		0.33	0.35	0.38	0.15	0.16	0.18
Aggregates:	Gallons/Ton						
Onsite Production		0.25	0.28	0.36	0.08	0.09	0.11
Aggregate Base							
0-10 Mi. Haul		0.24	0.27	0.33	0.22	0.24	0.28
10-20 Mi. Haul		0.35	0.42	0.54	0.27	0.39	0.49
Asphalt Concrete:	Gallons/Ton						
Production		1.75	2.43	3.50	0.07	0.14	0.18
Hauling							
0-10 Mi. Haul		0.28	0.33	0.34	0.35	0.43	0.53
10-20 Mi. Haul		0.30	0.49	0.56	0.35	0.58	0.89
Placement		0.06	0.14	0.20	0.08	0.14	0.22
Portland Cement Concrete Pavement:	Gallons/Cu. Yd.						
Production		0.15	0.28	0.45	0.12	0.15	0.21
Hauling		0.33	0.48	0.67		0.52*	
Placement		0.13	0.22	0.31	0.14	0.23	0.38
Structures:	Gallons/\$1,000	10	19	25	10	22	35
Miscellaneous:	Gallons/\$1,000	10	19	30	10	19	30

* Estimated Figure due to Insufficient Data.

INSTRUCTIONS FOR PROPER APPLICATION OF THESE FUEL USAGE FACTORS ARE CONTAINED IN THE BODY OF THIS REPORT.

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ADDITIONAL FUEL USAGE FACTORS DEVELOPED BY STATES

<u>Items of Work</u>	<u>Units</u>	<u>Diesel</u>	<u>Gasoline</u>	<u>Combined</u>
Clearing and Grubbing	Gal/Acre	-	-	200
Earthwork:				
-Excavation	Gal/C.Y.	-	-	0.25-0.30
-Borrow	Gal/C.Y.	-	-	0.25
-Borrow	Gal/Ton	-	-	0.45
-Loose Riprap	Gal/C.Y.	0.39	0.18	-
-Granular Backfill	Gal/C.Y.	1.00	0.16	-
<u>Aggregates:</u>				
-Base Course	Gal/C.Y.	0.82-0.88	0.55-0.57	1.30
-Base Course	Gal/Ton	0.55-0.63	0.09-0.40	0.65
-Stabilization (mixing)	Gal/S.Y.	0.04-0.044	0.028-0.03	-
-Uncrushed Base	Gal/C.Y.	-	-	0.45
-Uncrushed Base	Gal/Ton	-	-	0.25
<u>Asphalt Concrete:</u>				
-Pavement	Gal/Ton	2.57-2.90*	0.28-0.78	3.50
-Open-Graded	Gal/S.Y.	0.07	0.02	-
-Pavement Widening	Gal/S.Y.	0.86	0.24	-
*If natural gas is used for aggregate drying, deduct 2.00 gal/ton.				
<u>Portland Cement Concrete Pavement:</u>				
-Standard	Gal/S.Y.	0.11	0.15	-
-9 inch	Gal/S.Y.	0.245	0.038	-
-10 inch	Gal/S.Y.	0.272	0.042	-
-Shoulders	Gal/S.Y.	0.204	0.031	-
<u>Miscellaneous:</u>				
-Guard Rail	Gal/L.F.	-	-	0.23
-Concrete Barrier	Gal/L.F.	0.20	0.10	-
-Lighting and Signing	Gal/\$1000	-	-	15.0
-Fencing	Gal/\$1000	-	-	53.0

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FUEL FACTORS AS A PERCENTAGE OF TOTAL COST BY TYPE OF CONSTRUCTION

<u>Type of Construction</u>	<u>Fuel Cost Percentage</u>
Grade and drain	13-15
Grade, drain, and structures	9-10
Grade, drain, and pave	10-13
Grade, drain, pave, and structures	9-11
Surface and resurface - bituminous	9-15
Bituminous patching	11
Base and subbase	10
Portland cement concrete pavement - rural	5
Portland cement concrete pavement - urban	10
Concrete pavement patching	9
Structures and approaches - rural	5-6
Structures and approaches - urban	3-6
Deck repair, or minor widening	2
Electrical work	2
Landscaping	5
Pavement marking	1

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**SUGGESTED GUIDELINES FOR STRENGTHENING
BIDDING AND CONTRACT PROCEDURES**



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444 North Capitol Street, N.W., Suite 225
Washington, D.C. 20001

FORE WARD

These suggested guidelines result from the efforts of a special Task Force on Bidding and Estimating, created by the *AASHTO* Standing Committee on Highways in 1981. The Task Force members reviewed the bidding and estimating practices utilized by several member departments, and problems that have been encountered with existing procedures. . On the basis of that review these guidelines were prepared and later accepted by the Standing Committee on Highways. Subsequently, the *PASHTO* Executive Committee approved publication and distribution of the suggested guidelines in October, 1981, as an informational report to member departments and others interested in the subject.

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444 North Capitol Street. N. W.. Suite 225
Washington. D.C., 20001

The following guidelines are not intended to establish an absolute set of mandates that must be adopted by the States. Their purpose is to collate into one document suggestions, based upon experience, which will provide a state with a basis upon which it may build or add to its own antitrust overview program. Each state should carefully review these suggestions and apply, modify or reject each suggestion according to its own individual assessment of the suggestions balanced against the state's law, regulations, procedure, policy and requirements.

I. PRE-BID STAGE

A. Prequalification of Bidders and Subcontractors - A prequalification system is encouraged as a means of not only pre-determining job experience and work capacity but also to serve as a means of identifying individuals and organizations from whom the agency may be accepting a bid. Such system could cover the following as well as other areas:

1. Detailed Financial Statement - The financial statement is a means of establishing financial responsibility as well as providing a valuable "window" through which the agency may view the business association of individuals and organizations who wish to bid.

In addition to a balance sheet of assets, liabilities and net worth, the financial statement should also require detailed information such as the name and location of depositories, accounts receivable, investments, etc.

Include an affidavit in the financial statement which attests to the fact that the statements are true and which also authorizes any depository, vendor or other agency named in the application to supply information necessary to verify statements made.

2. Resident Agent - The out-of-state organization or individual proposing to bid should be required to have a resident Agent who is identified by name and address in the prequalification assembly. This will minimize the difficulty which could arise in serving a subpoena, etc. upon an out-of-state contractor.
3. Capacity and Classification (Type Work) for Which the Contractor Requests and is Subsequently Deemed Prequalified - Major classifications include
 - a. General Highway Construction
 - b. Grading and Minor Structure
 - c. Paving
 - d.. Miscellaneous (Signing, Fencing, Guardrail, etc.)

Suggested Guidelines for Strengthening Bidding and Contract Procedures

Note: Data of this nature serves to identify the type of work for which a contractor is qualified, thus deterring the submission of a complementary bid by a firm for work in which it has no genuine capability.

4. Experience and Performance - The applicant for prequalification should be required to list his classification and bidding capacity in other states as well as the number of years of experience his organization has had in each of the types of work he wishes to bid upon. The experience record should include both public and private work.

Principal individuals in the organization should be listed along with their position, type work in which they are most experienced and the number of years of such experience.

The contractor should be required to include in his application information regarding his failure to complete contracted work. He/she should also be required to give a full account of any instance in which prequalification was denied or in which the organization was removed from the bidding list in this or another state.

5. Ownership or Control

- a. The prequalification assembly should provide for a list of individuals, companies or corporations owning 10% or more of the applicant's firm.
- b. The applicant should be required to identify owners, officers, partners or individuals holding an office in his/her organization who have financial interest in and/or serve as an officer or partner in another firm prequalified to bid in this or another state.
- c. Affiliates, such as joint ventures, and/or subsidiary companies should be identified in the application.
- d. In addition to the aforementioned, the applicant should be required to identify any other individual or organization who, in any way, and to any extent, controls or influences the bidding effort in his/her firm or other firm qualified to bid on highway construction.

Note: This information could reveal possible monetary motive for collusive bidding where such is suspected.

6. Equipment - The applicant should be required to list the plants and equipment he owns or which are otherwise available through rental arrangements.

Note: This should deter the submission of a complementary bid by a firm which lacks the necessary equipment and access to same.

Suggested Guidelines for Strengthening Bidding and Contract Procedures

7. False Statements in Questionnaire or at Hearing - Include language in the prequalification assembly which prohibits the making of false, deceptive or fraudulent statements on the application or at the hearing under penalty of temporary or permanent debarment.

Note: This is an opportunity to forewarn the applicant of the seriousness of furnishing incomplete or inaccurate information. The providing of prior notice of the consequence of a prohibited act is a desirable element in supporting an action to revoke qualification.

8. Revocation of Certificate of Qualification - Provide for revocation of qualification if:
 - a. The contractor is declared in default in accordance with applicable provisions of the contract; or
 - b. It is determined that the contractor has made false, deceptive or fraudulent statement on his application or in the course of any hearing associated with his application for prequalification; or
 - c. It is determined that the contractor has participated in antitrust violations; or
 - d. It is determined that the contractor has employed agency personnel or offered or given gifts or gratuities to such agency personnel; or
 - e. The contractor has been debarred from performing work on Federal-aid projects; or
 - f. Any other action or inaction on the part of the contractor which the appropriate committee or agency representative deems to warrant revocation.
9. Appeals Procedure - There should be a well defined appeals procedure for a prospective bidder who may be dissatisfied with some decision affecting his/her classification, performance rating, and limits of prequalification. It is essential that the procedure include a reasonable opportunity for the prospective bidder to present his **case**. An appeals procedure strengthens the process by which the agency reaches its ultimate conclusion and helps insulate its action from a collateral judicial attack based upon an alleged lack of due process.
10. Up-Dating Prequalification Assembly - In addition to the required annual or other periodic renewal of qualification, the contractor should also be required to update his/her assembly within ten (10) days when there is a corporate or affiliate change and/or a reduction or more than 10 percent of stated assets.

Suggested Guidelines for Strengthening Bidding and Contract Procedures

- B. Specifications. - Include language in the agency's book of standard or general specifications which prohibits antitrust activities and the restraint of free competitive bidding. For example:
1. Under the section which sets forth various requirements for preparation of the proposal, the following or similar wording could be used to reinforce the required execution of a sworn statement

"A sworn statement shall be executed by the bidder or an agent hereof, on behalf of each person, firm, association or corporation submitting a proposal, certifying that such person, firm, association or corporation has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with such contract. The sworn statement shall be in the form of an affidavit, furnished by the Department and sworn to before a person who is authorized by the laws of the State to administer oaths. The original of such sworn statement shall be filed with the Department when the proposal is submitted."
 2. Under the section which lists various deficiencies which may result in a proposal being rejected, the following or similar wording could be used to lend additional support to the sworn statement

"If the bidder fails to submit a sworn statement concerning collusion or restraint of free competitive bidding."
 3. Under the section relating to the disqualification of a bidder, the following or similar wording could be used to reinforce the agency's authority to not only reject proposals by reason of antitrust violation on the project at hand but also to debar such contractor in so far as future projects are concerned:

"Evidence of collusion or restraint of free competition among the bidders. The contractor participating in such antitrust activity will not be permitted to bid upon future projects until reinstatement to the approved bidder's list."
- Note: This same subject is referred to in Section I I A.
- C. Estimate - In the interest of creating the best possible environment for open competition in the bidding process for public contracts, it is recommended that the detailed engineer's estimate be kept secret. Under such system, it is prudent to limit access to the estimate and to maintain a responsible level of security for files in which they are stored.
- D. Competition - Seek ways and means of improving competition on a continuing basis. For example:

Suggested Guidelines for Strengthening Bidding and Contract Procedures

1. Prebid meetings with contractors to discuss plans and specifications, especially- complex projects, are encouraged. Personal contacts after the taking of bids could prove helpful in determining why certain contractors did not bid. Could such work be divided or combined differently to attract additional bidders on future projects?
 2. Seek both agency and industry input on a continuing basis that will identify and eliminate superfluous, redundant or otherwise unnecessary requirements which encumber the entry of competent contractors.
 3. Make possible the bidding of basic improvement type projects by small contractors by tailoring prequalification requirements, specifications and acceptance criteria to such- projects.
 4. A list of those contractors who have picked up a **bid package** should not be made available to other contractors before the bid opening. A public disclosure will allow those contractors who would violate the antitrust laws to find out whether they will have competition on any particular contract. If they do not know who picked up the bid package, although they still are not prevented by this nondisclosure from colluding, they **will be uncomfortable** because they must worry that someone else, outside their circle and unknown to them, may take the bid by underbidding them. If they *know* that *no* one outside their circle picked up a bid package then they can be comfortable that their collusive plot will be successful.
- E. Debarment - Adopt policy for debarment of contractor and affiliate who commit a "bidding crime", defined as any act prohibited by state or federal law and committed in any jurisdiction, involving fraud, conspiracy, collusion, lying or material misrepresentation with respect to bidding on any contract, public or private.
1. Debarment should occur for any of the following reasons:
 - (a) Conviction of a bidding crime resulting from a jury or bench trial, any plea of guilty or nolo contendere, any public admission of any contractor, any presentation of an unindicted co-conspirator.
 - (b) Conviction of any offense indicating a lack of moral and ethical integrity as may reasonably be perceived to relate to or reflect upon the business practices of the company;
 - (c) Any other cause of a serious and compelling nature affecting responsibility as a contractor.
 - (d) Debarment by some other state or federal agency for substantially any of the reasons listed above.

Suggested Guidelines for Strengthening Bidding and Contract Procedures

Note: For a debarment process to be effective, states must adopt a reciprocating debarment process. This will be necessary to shut off the opportunity for a contractor who is debarred in one state from simply making a corresponding and offsetting increase in his bidding activity elsewhere. It should be noted that several states now have a policy whereby contractors who have been indicted are automatically suspended from bidding on projects. The AASHTO headquarters office will assume responsibility for notifying all member states of any reported debarment action.

2. The debarment policy should contain the following provisions:
 - a. Opportunity for hearing before or after debarment.
 - b. A uniform period of debarment - 36 months is suggested.
 - c. Authority on the part of the commission or agency head to lift or suspend debarment at any time if it is in the public interest to do so. The following mitigating circumstances may influence this decision:
 1. Degree of culpability
 2. Restitution of damages to state
 3. Cooperation in the investigation of other bidding crimes.
 4. Disassociation with those involved in bidding crimes.
 5. Whether lengthy debarment is required for protection of the state.
 - d. Authority on the part of the commission or agency head to hold a hearing no later than 15 days prior to the last day of the term of debarment and require the contractor to show cause why the debarment should not continue. Note: The passage of time may not necessarily cure a contractor's lack of responsibility in terms of business practices, associations or factors which contributed to the bidding crime.
3. Additional rules applicable to debarment:
 - a. Illegal or improper conduct of any individual may be fully imputed to the business firm with which he/she is or was associated or by whom he/she was employed where that conduct was engaged in within the course of his/her employment or with knowledge or approval of the business firm or thereafter ratified by it.
 - b. Debarment in no way affects the obligation of a contractor to the agency to complete services already under contract.
 - c. The commission or agency head may, in the public's best interest, suspend or otherwise delay inquiry into or review of any debarment in the event such action may impede, hinder or delay federal or state investigations into a bidding crime. Such decision will be made only after notice and as opportunity to be heard is afforded the affected contractor.

Suggested Guidelines for Strengthening Bidding and Contract Procedures

- d. Any-contractor currently qualified to bid upon agency contracts shall have a duty to notify the commission or agency head if it is convicted of any bidding crime within 30 days thereafter. Failure to furnish such notification is a serious and compelling offense sufficient to result in debarment in and of itself.
4. Notice to contractors

A copy of any policy and procedure for debarment should be mailed to each prequalified contractor and to each contractor previously debarred or suspended.

II. BIDDING STAGE

- A. Proposal Documents - Include an affidavit on a form furnished by the agency in bid document which contains the following elements:
 1. Appropriate references to applicable state -and federal law which deals with bidding crimes.
 2. An introductory statement which requires the execution of the affidavit as a prerequisite for consideration of the bid.
 3. A statement which in effect certifies that the contractor has not committed a bidding crime in connection with the project.
 4. A Notary Public statement witnessing the principal's signature.

Note: This same subject is referred to in Section I B 3.

23 U.S.C. Subsection 112(c) requires that before the Federal Highway Administration may approve a federal-aid highway contract, a noncollusion sworn statement must be submitted with the state's request for approval. In addition 23 CFR Subsection 635.107(i) requires that such statement must be on file with the state highway agency. Finally, under 18 U.S.C. Subsection 1020 filing a false statement can subject the affiant to a criminal penalty of \$10,000 or not more than five years in prison.

- B. Estimate - A statistical estimating system should be checked and monitored by the use of a rational estimating technique. Statistically based systems could be highly influenced by unit prices taken from bids which may not have been developed in a competitive environment.
- C. Submission of Proposal - Require proposals to be submitted in envelopes furnished by the agency and that they be sealed. This requirement provides for the ready recognition of bids versus other mail thus assisting in their prompt delivery to the contract office and assurance that the bid will not be casually opened.

Suggested Guidelines for Strengthening Bidding and Contract Procedures

- D. Location of Bid Depository - Proposals should be received at one location and address - the contract office. Avoid having a bid deposit or drop point at a location where bidders assemble for securing of subcontractor and vendor prices. Agency employees should avoid contacts of a personal nature with contractors during the preparation of bids - contacts of such nature create an image of impropriety.
- E. Opening and Reading of Bids - Provide for the public opening and reading of bids in order to maintain the highest level of credibility among bidders as well as the general public.
- F. Analysis of Bids - Bid prices should be reviewed and compared with the agency estimate for each of the items. Estimators and bid analysts should be trained in the identification of irregular bids, abnormal bidding patterns, etc.

Utilize information obtained from antitrust investigators and economists who specialize in the detection of such activities in the writing of specific guidelines for bid analysts. Such guidelines should include a charting of the contractors' bids and awards geographically for possible territorial arrangements. Look also for bidding patterns which indicate possible alternating of contracts. Attempt to detect bidding irregularities which suggest token or complementary bidding.

- G. Reporting of Suspected Antitrust Activities - Promptly report any indication of antitrust violations to the appropriate investigative authority for their review.
- H. Award - Adopt a policy in which a contract may be awarded when only one bid is received, assuming that the estimating procedure is reliable. **A policy** of not awarding a contract unless a single bid is received encourages the submission of complementary bids.

III. POST AWARD STAGE

- A. Internal Agency Audits - Include spot or periodic reviews of bids and bid analysis in the agency's internal audit process. Report results of these audits to management.
- B. State Antitrust Investigation Unit - Provide for spot or periodic review of bids and bid analysis by the state's antitrust unit.
- C. Increasing Competition - Inasmuch as the tendency to restrain free competitive bidding bears an inverse relationship to the number of bidders, a continuing effort should be made to determine the size and scope of various types of projects which are attracting the greatest number of bidders and to use such information in the establishment of future projects.
- A. Exchange of Information Among States Which Have Experienced Antitrust Activities - Participate in the collection and dissemination of information among states in connection with the detection of antitrust violations.

ANALYSIS OF BIDS

I. Identifying Bidding Patterns

- A. Division of the Work: A certain group of contractors bidding the same or many of the same contracts with a different low bidder on each.

Contract #1

Contractor "C" (low)
• "D" (second)
• "F" (third)
• "E" (fourth)

Contract #2

Contractor "F" (low)
" "E" (second)
" "R" (third)
" "C" (fourth)

Contract #3

Contractor "E" (low)
" "C" (second)
" "F" (third)
• "T" (fourth)

Contract #4

Contractor "D" (low)
" "W" (second)
" "C" (third)
" "E" (fourth)

Note: Contractors C, E and F bid 3 of the 4 contracts; Contractors C and E bid all 4 of the contracts; however, the 4 contractors in the group are low on at least one of the contracts.

- B. Territorial Arrangement: A certain group of contractors bidding the same or many of the same contracts within a given area and with a different low bidder on each.

County "V" is the territory in which Contractors Q, T and U have their headquarters or stationary plants.

Contract #1

Contractor "Q" (low)
• "T" (second)
• "U" (third)

Contract #2

Contractor "T" (low)
" "U" (second)
" "V" (third)
(fourth)

Contract #3

Contractor "U" (low)
• "Q" (second)

Note: Contractors Q and U bid 2 of the 3 contracts; however, the 3 contractors in the group are low on at least one of the contracts.

- C. Alternating Arrangement: A certain group of contractors bidding the same contracts in a given area and alternating the low bid.

Cite "P" is the territory in which Contractors D and G have their headquarters or stationary plants.

¹⁹⁷⁹ Contractor "D" (low) " " "G" (second) " " "R" (third)	¹⁹⁸⁰ Contractor "G" (low) <input type="checkbox"/> " " "D" (second)	¹⁹⁸¹ Contractor "D" (low) " " "T" (second) " " "G" (third)
--	--	--

II. Identifying Bidding Irregularities

A. Order of bidders decided on the basis of one or two items : Similar unit prices are submitted by the several bidders with one or two notable (unexplainable) exceptions:

	<u>Item</u>	<u>Unit Price</u>	<u>Est.</u>
Contractor "B" (low)	1	\$ 3.00	\$ 2.85
	2	5.00	5.15
	3	6.00	5.10
	4	3.00	3.05
	5	7.00	6.90
• Contractor "A" (second)			
	1	3.00	2.85
	2	(10.00)	5.15
	3	6.00	6.10
	4	3.00	3.05
	5	7.00	6.90
• Contractor "C"			
	1	3.00	2.85
	2	5.00	5.15
	3	(15.00)	6.10
	4	3.00	3.05
	5	7.00	6.90

B. Bidder(s) deviate from their usual unit pricing on Project #3 without apparent justification:

	<u>Project #1</u>	<u>Project#2</u>	<u>Project #3</u>
Contractor "B" Class A-4 Conc. (low)	\$210.00	\$220.00	\$195.00
• Contractor "A" Class A-4 Conc. (second)	\$200.00	\$214.00	(\$300.00)
• Contractor "C" Class A-3 Conc. (third)	\$175.00	\$180.00	(\$310.00)

• Possibly Complementary Bids

*



U.S. Department
of Transportation

Federal Highway
Administration

Washington, D.C. 20590

Memorandum

Subject: Audit of Construction Contract Change Orders Date: SEP 8 1991

From: Director, Office of Highway Operations Reply to: HHO-32
Action of:

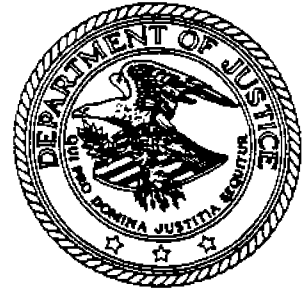
To: Regional Federal Highway Administrators
Regions 1-10
Direct Federal Program Administrator

The Office of the Inspector General has recently completed a Departmentwide review of construction contract change orders. In the draft report of this review, one of the findings and recommendations directly addresses the Federal Highway Administration's (FHWA) documentation and use of force account procedures. The report indicated instances where force account procedures were apparently being used as a matter of convenience. This impression was derived from the available change order documentation.

This is a reminder and a follow-up to the Inspector General's review, that contract changes should be settled primarily through negotiations. Force account type procedures should be used only when necessary and then be appropriately documented. We are not convinced that this is a growing problem, but take this opportunity to reaffirm the FHWA's commitment to providing for adequate controls in the administration of highway construction contracts.

DAVID S. GENDELL

David S. Gendell



SUGGESTIONS FOR THE DETECTION AND PREVENTION
OF CONSTRUCTION CONTRACT BID RIGGING

Prepared by:

The Interdepartmental Bid Rigging
Investigations Coordinating Committee

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U.S. Department of Transportation
Cochairman

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February 1983

INTRODUCTION

This paper was prepared by the Interdepartmental Bid Rigging Investigations Coordinating Committee, which was formed in August 1982 to refine the joint investigative efforts of the Department of Transportation and the Department of Justice in the area of highway and airport construction contract bid rigging.

The paper addresses the detection and prevention of bid rigging, and is designed primarily for procurement and contract specialists and for investigative and audit personnel. It provides suggestions for steps to be taken to identify evidence of collusion and to improve state procurement procedures with a view to stimulating competition and inhibiting anticompetitive behavior. The suggestions offered are derived from successful detection and prevention methodologies developed during past investigations.

While the paper specifically deals with the letting of highway construction contracts, most of the recommendations are readily adaptable to other categories of procurements.

SECTION 1 - DETECTION

Purpose. The object of this portion of the paper is to present a methodology that can be utilized to detect collusion in highway construction contracts. This methodology has been utilized successfully in previous bid rigging investigations. It is intended to disclose various bidding practices and patterns which might indicate that bid rigging is occurring. This will focus any subsequent investigation as well as allow you to gain background information on contractor activity within a particular state.

When feasible, the use of electronic data processing equipment should be considered to assist in this effort. The Department of Transportation, Office of Inspector General, and the Department of Justice, Antitrust Division's Information Systems Support Group can provide guidance and assistance in this regard.

We suggest that this analysis be conducted by a team composed of an investigator, an auditor, an attorney, and a state department of transportation engineer. This mix will be extremely beneficial as the analysis progresses, especially if the determination is made to proceed to the investigative phase.

A. INITIAL SCREENING

The initial screening consists of reviewing all bid tabs and selecting those projects that involved five or fewer bidders and where the low bid exceeded or was within 5 percent of the state engineer's estimate.

1. On These State and Federally-funded Contracts, Perform the Following Analysis:
 - a. Compute the percentage difference between the second place bidder and the winning bid,
 - b. Compute the percentage difference between the third place bidder and the winning bid, and
 - c. Compute the percentage difference between the first and last place bidder.
-

If the difference between the winning bidder and the second place bidder is within 6 percent, and the difference between the winning bidder and the third place bidder is less than 9 percent, and there is no more than 17 percent difference between the first and last place bidders, there is a significant possibility that the bids were rigged.*

2. The Contracts That Meet the Percentage Difference Criteria Should Be Considered Suspect and Should Be Examined in More Detail. This examination will, in most instances, require additional information which should be available in the state department of transportation. This information would include at a minimum:
 - a. A list of all prequalified bidders and their capabilities.
 - h. Line item prices on suspect jobs.
 - c. Identity of all subcontractors on suspect jobs.
 - d. A list of each company that received bid packages on the suspect jobs.
 - e. Location and capacity of each contractor's asphalt plants.

R. SECONDARY ANALYSIS

Having determined that the potential for bid rigging may exist, a closer examination should be made to determine if any of the following bidding practices are present. These practices have, in the past, indicated collusion:

1. Failure of Qualified Bidders to Bid;
2. Certain Contractors Repeatedly Bid Against One Another or, Conversely, Certain Contractors Do Not Bid Against One Another;
3. The Successful Bidder Repeatedly Subcontracts Work to Companies That Submitted Higher Bids on the Same Projects or That Picked Up Bid Packages But Did Not Submit Bids;
4. different Groups of Contractors Appear to Specialize in Federal, State, or Local Jobs Exclusively;

*Note that, with the wide distribution of this paper, it is conceivable that the information concerning these percentage criteria may become known among contractors. Colluding contractors might arrange to have future bids fall outside the specified ranges. Therefore, the percentage criteria presented in this paper may not be valid for bids received after February 1983.

- B. An Unusual Disparity in Front-end or Lump Sum Payment Items Among the Bidders;
6. A Particular Contractor Always Winning in a Certain Geographical Area;
7. Contractors Who Bid Frequently, Rut Never Win;
- R. Identical Bid Amounts on a Contract Line Item by Two or More Contractors. Some instances of identical line item bids are explainable, as suppliers often quote the same prices to several bidders. Rut a large number of identical bids, or identical bids on any service-related item, should he viewed critically.
9. Contractors Previously Convicted of Bid Rigging in Other States Who Are Operating in the State Under Review;
- iN. Joint Venture Bids Where Either Contractor Could Have Rid Individually as a Prime;
11. Failure of Original Bidders to Rebid, or an Identical Ranking of the Same Bidders upon Rebidding, Where Original Bids Were Rejected for Being Too Far Over Estimate; or
12. Discrepancies in Similar Line Items Rid by a Given Firm on Different Projects in the Same General Area at the Same Letting or on Comparable Projects at different Lettings Within a Relatively Short, Time Period.

Additional insight on bidding patterns/activities can be gained by:

1. Plotting Suspect Contracts in Relation to Fixed Asphalt Plants. This can be accomplished by assigning each vendor a different color and making the appropriate notation on a state map. This can be useful in detecting the existence of territorial divisions by contractors, provided due recognition is given to the fact that there are natural limits (usually 20 to 40 miles) to the transport of hot-mix asphalt.
 2. Preparing a Competition Matrix by Year for a 5-year Period. This matrix would include the major contractors, the number of contracts they were awarded during the period, the dollar volume these contracts represented, the percentage of the total contracts and the total dollar volume won by each vendor, and the ranking of the contractors based on the above. Additional information may be included in the matrix but it should, at this point in time, he kept simple enough so that it can be manually compiled in the shortest period of time. A more complex matrix can be developed once a determination has been made as to whether to proceed to the investigative stage.
-

3. Reviewing the State's Prequalified Bidders List, which Indicates the Extent of a Contractor's Capabilities (i.e., design, Grading, Total Project, etc.). When reviewing bids, it is important to note the qualifications of each of the bidders, not merely the low bidder. Cases have been recorded where the low bidder was fully qualified, but some of the other bidders were not capable of performing the entire project even though they bid on it.
4. Analyzing Changes in the Financial Position of Companies Over the Last 5 Years. In several states, it has been noted that companies winning contracts during the 1977-1980 time frame are currently experiencing financial difficulty. This may be attributable to the companies' inability to operate successfully in a truly competitive marketplace.
5. determining the Degree of Influence That Suppliers (e.g., Liquid Asphalt, Aggregate, Prestressed Concrete, Pipe, etc.) Have on Contract Awards. Investigations have indicated that prices quoted (or not quoted) for materials can be the determining factor in the eventual low bid. A supplier's refusal to quote material prices to potential bidders, or to quote substantially higher prices to some potential bidders, can have a significant impact on the degree of competition on a particular contract.

D. DETERMINATION

Having completed the foregoing, the team members should be in a position to make a determination as to the potential for bid rigging in the state and a determination as to whether an investigation should be initiated.

While the indicators and analyses described above have proven to be valuable in successful bid rigging investigations, they are not sufficient to prove collusion. They merely suggest where to look. They provide the background information and marketplace knowledge which enables investigators to conduct detailed interviews and ask specific questions of contractors. It must be remembered that successful prosecutions have resulted principally from the testimony of individuals who were directly involved in the bid rigging schemes. This analysis can lead you to those individuals.

SECTION 2 - PREVENTION

Purpose. This section focuses on three areas: Bidding/contracting procedures; Data collection/retention; and Utilization of computers. The administrative and technical suggestions presented herein can serve as effective deterrents to bid rigging and other forms of contractor collusion.

A. SUGGESTIONS CONCERNING STATE AGENCY BIDDING AND CONTRACTING PROCEDURES.

State agency procedures for soliciting competitive bids on road construction projects are generally designed to assure that the work is done by responsible bidders at the lowest available price. However, we have found that in many cases existing procedures are inadequate to deal with collusion among contractors. In light of the high incidence of collusive activity, we believe that state agencies should review their bidding and contracting procedures and consider modifying them to provide better protection against the submission of rigged bids. We believe that the suggestions set out below could significantly narrow the opportunities for collusion among contractors and assist Federal and state agencies in pinpointing instances of unlawful conduct.

1. The State Engineer's Estimate Should Not Be Disclosed Prior to the Award of the Job.

Some state agencies include their engineer's cost estimate for a project among the materials furnished to prospective bidders. The agency may provide either an estimate for each line item on the bidding form or a lump sum estimate for the entire project.

We suggest that state agencies maintain all such estimates as confidential until after the bids are received and a contract is awarded. Releasing this information earlier encourages and facilitates bid rigging by permitting prospective bidders to gauge what the state agency would consider to be a reasonable price for the project and to decide how far a rigged bid may exceed the estimate without jeopardizing the award of a contract.*

We are not aware of any compelling business reason for making the state engineer's estimate available to prospective bidders. It is not necessary to help them estimate the cost of materials, since bidders are intimately familiar with these costs. Relying on past experience, bidders can readily determine their own mobilization and labor costs. We are advised that state engineers in some cases obtain the data on which their estimates are based from the same contractors who later bid on the job.. We are persuaded, therefore, that the bidding process would not be impaired if the state engineer's estimates were withheld from prospective bidders prior to the letting of construction contracts.

*In some states, if the lowest bid exceeds the state estimate by 10 percent, the bidding process is repeated and the project is re-let.

2. Contractors Should Be Prequalified for Road Construction Work.

A number of states require contractors who wish to bid on state road construction jobs to be prequalified by the state agency having responsibility for the work. Based largely on information supplied by each contractor, the agency determines prior to soliciting bids for a particular job which contractors would be acceptable bidders.

We suggest that this procedure be followed uniformly by state agencies as to road construction contractors, and that contractors seeking prequalification be required to submit to the state agency information that will prove useful in conducting audits and investigating bidding practices. Such information includes (i) the identity of the officers and directors of the firm, the person in the firm having final bidding authority, and its chief estimator; (ii) a statement disclosing whether or not the firm or any of its officers or directors is affiliated with any other contractor, and, if so, providing the pertinent details; (iii) a statement of the assets of the firm, including a brief description of plants and heavy equipment that it owns or leases; and (iv) a brief description of the firm's prior work experience, if any, or other basis qualifying it for the type of work in question.

We also suggest that each prequalified contractor be required to update this information annually.

3. The State Agency Should Seek Line Item Bids Rather Than Lump Sum Bids.

Some states require that bidders submit their bids on a line item basis, i.e., the bidder must submit separate figures covering each of the principal cost elements of the project, such as materials, direct labor, and mobilization. Other state agencies require only the submission of a lump sum bid covering the entire work.

We believe that the former procedure is preferable. By obtaining bids on a line item basis, it is possible for the state agency to make a meaningful comparison of the submitted bids with the agency's own internal cost estimates. The disclosed fact that line item bids on a particular project deviate significantly from line item bids made on other, similar projects in the same geographic area will alert the state agency to the desirability of further investigation. Colluding contractors frequently increase the mobilization expense item to secure extra profits on the rigged job or to defray the costs of payoffs to coconspirators. Once an investigation is commenced, a comparison of the contractor's internal work sheets with his line item bids may reveal the arbitrary or unusual price changes that are indicative of bid rigging.

4. Bidders Should Identify Joint Venturers, Partners, and Major Subcontractors and Suppliers.

Collusion among contractors often takes the form of agreements whereby competitors become joint venturers or partners on a project, or assign subcontracts to each other. We recognize that such arrangements can serve entirely legitimate functions; it would be undesirable to prohibit them across-the-board. Nevertheless, it is advisable that the state contracting agency be informed of them at the time bids are submitted. The agency can then make its own determination as to whether or not to accept a particular bid. For example, if the state agency is informed that the lowest bidder proposes to utilize one of his principal competitors as a subcontractor, and on further inquiry no adequate justification for doing so is provided, the state agency could decide to disqualify the bid and either accept the next lowest bid or to invite a new round of bids.

The very fact that the rules of the state agency call for disclosure of this type of information will, we believe, inhibit the use of joint venture, partnership, subcontracting, or supplier arrangements among competitors as a means of implementing bid rigging schemes. Such information will also be useful for subsequent investigations if the state agency decides to award the bid to the party making the disclosure. Further, should a successful bidder fail to disclose the required information, the state agency would have a basis for later canceling the award of the contract, withholding payments, or imposing other penalties.

Accordingly, we suggest that state agencies require each bidder to identify his partners, joint venturers, and major subcontractors or suppliers on the project with respect to which bids are being solicited. To limit the possible burdensomeness of this requirement, the rules of the agency might define a "major" subcontractor or supplier as one who is responsible for not less than a specified minimum (e.g., 5 percent) of the project work, stated as a percentage of total costs. The term "joint venturer" should be defined to include all persons who will share in the profits or expenses of the work or provide capital for the work (other than regular lending institutions or investors not directly engaged as contractors in road construction work). The term "subcontractor" should be defined to include not only contractors handling a portion of the work directly but also lessors of equipment used by the bidder for the work (other than persons engaged principally in the business of leasing equipment and not directly engaged in road construction work).

Following the award of a contract, the successful bidder should be required periodically to update the information furnished at the time of the bid, and to promptly identify every person who at any time after the original submission of the bid has become a joint venturer, partner, or major subcontractor or supplier of the bidder on the project.

5. Review State Engineers' Estimating Techniques.

State engineers' estimating procedures vary from state to state, and often within a state from one estimator to another. The accuracy of the state engineering estimate is important for at least two reasons. First, it provides an approximate dollar amount for development of the state budget. Second, it serves as a benchmark for evaluating contractor bids.

Investigations in several states have disclosed weaknesses in estimating procedures. The most common fault lies in the use of historical estimates or bid prices as a basis for current estimates. This can have the effect of compounding an earlier erroneous estimate, particularly where prior data are based in whole or in part on rigged contracts. Even in situations where historical data have not been used in constructing the estimates, there have been wide swings in estimates for the same item, where quantities, letting dates, job sites, and other factors have remained essentially constant. These occurrences are normally attributable to different estimators, which further underscores the need for a consistent approach to estimating.

In the development of estimates for upcoming projects, states should rely on continuously updated material price and labor rate information. This information should be centrally recorded and readily retrievable for use by all state estimators.

Pricing data for many items will vary due to economies of scale, project location, and other factors. These variables should be noted in the central record so that equivalency can be determined. The resultant record will reflect a range of prices for an item. State estimates and bid amounts should normally fall within this established range; any variations beyond the range should be critically reviewed prior to contract award.

61j States Should Require Antitrust Audits.

States should conduct periodic antitrust audits to look for evidence of collusion or bid rigging. The focus should be on groups or types of contracts awarded through the competitive bidding process. Such audits should involve purchasing officials familiar with the industry and investigators familiar with the antitrust laws. These audits would serve both as a detection mechanism and as a deterrent.

7. All Bidders Should Execute an Affidavit of Non-Collusion.

A detailed discussion of this suggestion, including a sample affidavit, is currently under development and will be distributed at a later date following review by program management.

R. Additional Suggestions.

- a. States should consider withholding the names of prospective bidders until after the letting date.

The pre-letting release of the names of contractors and suppliers who picked up bid packages on a particular project offers no advantage to the state, and can provide colluding bidders with useful information concerning the universe of competition.

- b. States should consider increasing the frequency of bid lettings.

Many states open bids once a month or less frequently. During peak construction periods, when many projects are being bid, this facilitates collusion among contractors by requiring only one meeting per month, where they could set up several jobs at the same time. More frequent lettings during peak bidding periods would at a minimum make these meetings less convenient. This inconvenience could result in more overt collusive behavior, which might be more easily detected.

- c. States should consider dividing large projects into smaller segments when feasible.

Large volume contracts limit the number of bidders to large companies or those that have substantial excess capacity. Division of large contracts whenever possible, while perhaps administratively more cumbersome for the state, can result in a net savings due to increased competition.

R. SUGGESTIONS CONCERNING THE MAINTENANCE OF RECORDS AND DATA.

In many cases, the successful investigation and prosecution of unlawful collusion and bid rigging depends on the availability to Federal and state authorities of a substantial body of bidding and other job records and data. Set out below are our observations concerning the types of records and data that state contracting agencies should maintain. We believe that all of the items listed are relevant to the investigation and prosecution of bid riggers and the recovery of overcharges, and their unavailability to Federal and state investigators may, in some instances, bar any effective legal action against the guilty parties. The items to be retained should be indexed and filed or stored in a manner that will allow ready access and retrieval.

We suggest a minimum retention period of 5 years. Five years is the statutory period of limitations for :prosecutions under the Federal antitrust laws.* Although transactions occurring earlier than 5 years before the event in question will at times be relevant, experience indicates that it is seldom possible to establish the existence of an unlawful conspiracy if no evidence of collusion has surfaced within 5 years after the event. All things considered, therefore, we believe that a 5-year across-the-board retention period would be adequate. Presumably, where the state agency has reason to suspect bid rigging on a particular project, it would take steps to retain the relevant records even after the expiration of the normal retention period.

Many states currently retain some of the records and information listed below; other states either do not collect this type of information or do not retain it. Due to the disparity of state procedures, it may be necessary for some state agencies to develop a document retention program; to redraft or modify existing forms; or to develop new forms and applications that contractors will be required to submit during the bidding process. In most cases, the burden of modifying existing forms and developing new ones should be minimal.

We believe that the following documents and data should be retained:

1. Basic Information Concerning Each Project Let for Bidding:
 - a. Project number or identification,
 - b. Description of the project (type of work),
 - c. Location of the project (road or road segments involved),
 - d. Identification of the agency responsible for supervision of the project, and
 - e. Bid and award dates.
2. A List of Names and Addresses of Each Company Invited to Bid.
3. A List of Each Company Requesting Bid Specifications.
4. The hate-stamped Bid Proposal Submitted By Each Contractor.** This document should include the following information, whenever possible:

*Civil actions under the Federal antitrust laws to recover overcharges must ordinarily be brought within 4 years after the date of injury; this time period may be extended by the court in cases where the guilty parties have fraudulently concealed their collusive activities.

**Mailing envelopes used by bidders to submit bids, information, and non-collu-sion affidavits should be retained. Proof of mailing is necessary to establish a mail fraud violation under Federal law.

- a. Bid prices, including all line item prices;*
 - b. The identity of subcontractors whose quotations were used to formulate the bid, their addresses, and a description of the work to be performed by each;**
 - c. The identity of suppliers to be used, their addresses, and the quantity and value of materials or services to be provided by each;**
 - d. The identity of all joint venturers and partners involved in or underwriting the performance of work on the project;** and
 - e. A non-collusion affidavit.***
5. The State Engineer's Estimate Covering All Work To Be Performed on the Project. This estimate should disclose the following information:
- a. All line item price estimates,
 - b. Total project estimate,
 - c. Source of cost data used to formulate line item price estimates, and
 - d. Identification of the person preparing the estimate.
6. Memoranda of All Pre-award Conferences. These memoranda, should disclose the following information:
- a. Date and place of the conference,
 - b. Identity of all persons present,
 - c. Summary of subject matters discussed, and
 - d. Results of the conference.
7. All Documentation Relating To the Award of the Project.
- R. All Documentation Concerning the Source of Materials Used on the Project.

*Whenever possible, line item prices should be requested instead of a lump sum bid (see paragraph A.3.).

**The successful bidder should be required to update this information following the submission of his bid (see paragraph A.4.).

*** (See paragraph A.7.)

9. All Financial Records Concerning the Project, Including the Following:
 - a. Progress reports;
 - b. All invoices submitted by contractors;
 - c. All payment records, dates, and warrant numbers of checks issued; and
 - d. All change orders.

1R. Information and All Documentation Concerning the Expenditure of Federal Funds in Connection with Each Project, Including the Following:

- a. Each disbursement of Federal funds, together with warrant numbers and dates of checks issued; and
 - b. Total amount of Federal funds expended.
11. A List of All Prequalified Bidders. This list should be updated annually, and should provide the following information:
- a. The name and address of each company;
 - b. The names of all officers and directors of the company;
 - c. The names of all employees authorized to submit bids on behalf of the company;
 - d. The names of the person having final bidding authority, and of the chief estimator of the company;
 - e. A description of all affiliations between the company or any of its officers or directors with other firms in the road construction industry; and
 - f. Identification by description, location, and capacity of each production facility or plant (hot-mix, surface treatment, portable, stone crushing, etc.) owned or leased and operated by the bidder.

C. SUGGESTIONS CONCERNING THE MAINTENANCE OF INFORMATION IN COMPUTER-RETRIEVABLE FORM.

Due to the great number of road construction projects let each year around the country, it is not feasible for either Federal or state authorities to investigate every project as to possible collusion or bid rigging. Tools must be developed for identifying a select number of situations that may warrant further inquiries. To this end, the computer programming of key data is essential.



OFFICE OF
THE ADMINISTRATOR

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WASHINGTON, D.C. 20590

April 30, 1985

IN REPLY REFER TO:

HHO-30

SUBJECT: DEVIATION FROM COMPETITIVE BIDDING REQUIREMENTS.

TO: Chief Executive Officers
State Highway Agencies

Regional Federal Highway Administrators
Regions 1 - 10
Direct Federal Program Administrator

Recently, several member State agencies of the American Association of State Highway and Transportation Officials have asked us to consider changing our requirements on competitive bidding to allow negotiation of construction contracts with apparent low bidders. The States indicate that this change would be in the public interest because it would lead to lower prices and reduce the potential for bid rigging. In view of this interest, we have reviewed Federal law covering competitive bidding as well as the Federal Highway Administration's policy in this area.

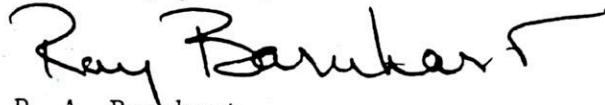
As a result of this review, we have concluded that the legal requirements of Section 112 of Title 23, United States Code, do not permit negotiation of prices with apparent low bidders. Under Section 112 and the regulations we issued to implement it, one of the most basic requirements is that the State highway agency must maintain nondiscriminatory procedures for inviting bids. These procedures should be free of requirements restricting competitive bidding on construction contracts. Bids must be opened publicly and the results announced. After tabulation and examination of the bids for errors, irregularities, responsibility, and responsiveness, the State highway agency must either accept or reject the bid.

The State highway agencies do not have the authority under any circumstances to negotiate with a bidder or bidders before an award to reduce the price of a construction contract. Such negotiations with the apparent low bidder are essentially bid rigging in reverse. They subvert the fair and open competitive bidding process, under which qualified firms are entitled to an equal opportunity to compete for contracts, and invite favoritism and collusion as well as legal difficulties with unsuccessful bidders. In short, we do not believe negotiations with the apparent low bidder promote the public interest. We remain a strong advocate of open and competitive bidding, which traditionally has produced quality construction at a fair and reasonable cost.

We recognize that the interest in negotiation may be a result of the desire to hold down prices. Although we cannot permit negotiation, we certainly share the States' desire to keep prices as low as possible. We believe the States have other ways of influencing price, such as trying to increase competition

among bidders, remaining on the lookout for collusion or other anticompetitive practices, improvements in design and specifications, alternative bidding, etc. I encourage you to continue working in these and other ways to achieve the lower prices we all desire.

Sincerely yours,

A handwritten signature in black ink that reads "Ray Barnhart". The signature is written in a cursive style with a long horizontal flourish extending to the right.

R. A. Barnhart
Federal Highway Administrator

RECORD OF AUTHORIZATION TO PROCEED WITH MAJOR CONTRACT REVISION

PROJECT NO.	COUNTY	STATE
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TYPE OF REVISION

CHANGE ORDER
 SUPPLEMENTAL AGREEMENT
 TIME EXTENSION
 SPECIFICATION CHANGE
 WORK ORDER
 OTHER:

REQUESTED BY	DATE
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NATURE OF AND REASON FOR PROPOSED REVISION (If additional space is required, use reverse side)

ESTIMATED <input type="checkbox"/> INCREASE IN COST: \$ _____ <input type="checkbox"/> DECREASE	METHOD OF PAYMENT <input type="checkbox"/> FORCE ACCOUNT <input type="checkbox"/> NEGOTIATED PRICE <input type="checkbox"/> LUMP SUM <input type="checkbox"/> UNIT BID PRICES <input type="checkbox"/> OTHER:
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THE WORK COVERED BY THE PROPOSED REVISION AS DESCRIBED ABOVE IS HEREBY AUTHORIZED SUBJECT TO THE CONDITIONS MARKED BELOW:

<input type="checkbox"/> EVALUATION OF COST DATA	<input type="checkbox"/> PROPOSED REVISION AUTHORIZED WITHOUT FEDERAL PARTICIPATION
<input type="checkbox"/> LIMITATIONS OF EXTENT OF FEDERAL PARTICIPATION	<input type="checkbox"/> OTHER (Explain)
<input type="checkbox"/> DETERMINATION OF SATISFACTORY ADJUSTMENT IN TIME	<input type="checkbox"/> NONE
<input type="checkbox"/> ADEQUATE SUBMITTAL OF WRITTEN SUPPORTING DATA	

RECOMMENDED BY AREA ENGINEER		DIVISION OFFICE APPROVAL	
SIGNATURE	DATE	SIGNATURE	DATE

Washington, D.C. 20590

Product Selection

NOV 25 1987

Associate Administrator for
Engineering and Program Development

HHO-32

Regional Federal Highway Administrators

Recently we have had discussions with the International Barrier Corporation (IBC) regarding the application of its patented sand-filled steel barrier system to Federal-aid highway projects. At issue is the proper manner in which IBC should compete with other similar barrier products. The FHWA policy relative to equally acceptable products was explained, and IBC was assured that its product would be given equal treatment under this policy. This memorandum is to advise you of these discussions and to assure uniform application of the agency's policy on product selection.

The IBC issue is a continuation of dialogue between the FHWA and IBC which began in 1985. At that time, IBC presented crash test data and information relative to several installations of its product in Canada and Florida. Based on an evaluation of the system's performance, the FHWA in a December 26, 1985, letter to IBC advised that its traffic barrier was acceptable as an operational barrier for Federal-aid highway projects and further that the demonstrated performance characteristics for automobiles and school buses were comparable to the standard (32 inch) concrete safety-shaped barrier. An information copy of this letter (attached for ready reference) was sent to all regional offices.

Basic FHWA policy on product selection is found in 23 CFR 635.411 and its companion directive, FHPM 6-4-1-16, paragraph 8. A review of this policy identifies a process which should be followed by States in product selection when: (1) more than one product is available which may fulfill the project requirements and (2) Federal-aid participation is desired.

Whenever there are several suitable products available which may fulfill project requirements, a State will undertake an engineering and economic analysis. The analysis should determine whether the products are of satisfactory quality and equally acceptable to meet the given requirements and whether the anticipated costs for the products are approximately the same. The degree of analysis should be commensurate with the value and complexity of the products involved, with cost comparisons based on comparable designs to meet project requirements using the anticipated service life for each product. The findings should be documented in the project file.

When, based on the analysis, more than one product is judged to be acceptable to fulfill project requirements, the PS&E for the project will either contain or include by reference specifications for each such product. The policy requires that this process be followed except when the State can document to the satisfaction of the Division Administrator that even though there are other acceptable products the specifying of a particular product is in the public interest. Failure to adhere to this policy may subject the State to loss of Federal-aid participation as discussed further in 23 CFR 635.411(c).

Although not specifically mentioned in the regulation, the previously described process is equally applicable to proprietary products as it is to nonproprietary products. This means, for example, that in the selection of a traffic barrier for a Federal-aid project, an engineering and economic analysis needs to be performed by the State of all available products which may fulfill the project requirements, both proprietary and nonproprietary.

Since the FHWA has determined the IBC proprietary barrier to be acceptable as an operational barrier for Federal-aid projects, this product is to be considered by the State when conducting the analysis of potential barrier designs. The analysis would typically include related aspects of the median design such as drainage and foundation requirements where they may differ. If, based upon the analysis, more than one product (i.e., barrier design) would adequately fulfill project requirements the contract should include these products as alternatives with the lowest bid determining the ultimate choice.

ORIGINAL SIGNED BY
RONALD E. HEINZ

Ronald E. Heinz

Attachment



U.S. Department
of Transportation
**Federal Highway
Administration**

Memorandum

Washington, D.C. 20590

Subject Convict Labor and Convict Produced Materials

Date FEB - 5 1988

From Associate Administrator for
Engineering and Program Development

Reply to
Attn of HHO-32

To Regional Federal Highway Administrators

Attached is a copy of a final rule on convict labor and convict produced materials (Attachment #1) which was published in the Federal Register on January 25, 1988.

The final rule prohibits the use of materials produced by convict labor on Federal-aid highway construction projects unless (1) produced by convicts who are on parole, supervised release, or probation or (2) if produced by convicts in a qualified prison facility, the quantity is limited to the amount produced during the 12-month period ending July 1, 1987.

Prison facilities are limited to quantities previously reported to this office. States should develop appropriate methods consistent with their standard procedures to ensure that the quantities are not exceeded.

Division office approval of convict produced materials on Federal-aid projects should remain unchanged. Our present procedure was outlined in Mr. Leathers' memorandum on Procurement of Signing Material, dated May 9, 1985. A copy of the memorandum is attached for your reference (Attachment #2).

Revisions to the companion documents, FHPM 6-4-1-6 and 6-4-1-16, have been prepared and will be issued shortly.

ORIGINAL SIGNED BY
RONALD E. HEINZ

Ronald E. Heinz



U.S. Department
of Transportation
Federal Highway
Administration

Memorandum

Washington, D.C. 20590

Subject: Procurement of Signing Materials

Date: MAY 8 1985

From: Associate Administrator for
Engineering and Operations

Reply to
Attn of HHO-32

To: Regional Federal Highway Administrators
Regions 1-10

When Section 148 of the Surface Transportation Assistance Act of 1982 was repealed by Congress in 1983, we reinstated our previous policy that allowed the use of convict-produced materials on Federal-aid projects. Since then we have learned that there has been some wide interpretation of the regulation especially concerning the procurement of signing materials.

Signing materials obtained from prison industries will be subject to the same requirements concerning approval for Federal-aid participation as are imposed upon materials derived from other sources. Signing materials manufactured or produced by convict labor in penal institutions (1) which are purchased by highway construction contractors, (2) which are furnished by the State highway departments to highway construction contractors, and (3) which are used by the State highway departments in force account construction, will be given no preferential treatment.

The following requirements are the principal Federal laws and regulations applicable to the procurement of signing material for use in Federal-aid highway construction projects regardless of whether the materials are manufactured or produced in penal institutions or by private industry.

1. Compliance with State and applicable Federal laws, (see Section 114(a) of 23 U.S.C.);
2. Requirements for competitive bidding, (see Section 112 of 23 U.S.C., 23 CFR 635.107(g));
3. Requirements for contractors to furnish material, (see 23 CFR 635.407); and
4. Prohibition against use of State restrictions upon out-of-State material (see 23 CFR 635.409).

Under our present policy, signing material may be obtained basically by two methods. The preferred method is through normal contracting procedures which requires the contractor to furnish all materials to be incorporated in the work and permits the contractor to select the source (private or public) from which the materials are to be obtained. Prison sign shops are prohibited from bidding on projects directly but may act as a material supplier to contractors bidding on the project in which case the prison sign shop is not considered a subcontractor.

The second method provides for the Division Administrator to approve an exception allowing for State-furnished material (or materials from a source designated by the State) if he determines it is in the public interest based on documentation provided by the State. When an exception is approved, the State-furnished materials are to be acquired through competitive bidding unless some other method of acquisition is approved by the Division Administrator. Other methods can include production in a prison or State highway agency sign shop.

The Division Administrators should review their procedures to insure that a public interest determination is being made each time the State proposes to use State-furnished materials. If the State is under CA, the State's procedures should be reviewed to insure that the public interest finding is documented for each project.


R/ Rex C. Leathers

REPORTED PRISON MADE MATERIAL

		<u>QUANTITY</u>	<u>COST</u>
RHODE ISLAND	SIGNING MATERIAL		\$195,521
VERMONT	POSTS	32,202 EA	
	OFFSET BLOCKS	11,149 EA	
	TIES	7,911 EA	
	LUMBER	76,604 BOARD FT	
	SIGNS	43,572 SQ FT	
VIRGINIA	SIGN BLANKS	45,977 SQ FT	\$ 92,413
DISTRICT OF COLUMBIA	SIGN MATERIAL		\$325,000
NORTH CAROLINA	SIGNS		\$850,652
	STRIPPING PAINT	25,900 GALS	
MICHIGAN	SIGNS		\$ 9,752
IOWA	SIGNS	21,408 SQ FT	\$152,384
KANSAS	SIGNS	7,500 SQ FT	\$ 18,000
	PAINT	29,376 GALS	
MISSOURI	SIGNS		\$506,573
NORTH DAKOTA	SIGNS	89,448 SQ FT	\$456,625
UTAH	SIGNS		\$ 12,000
CALIFORNIA	GUIDE PLATES		\$ 16,536
WASHINGTON	SIGNS	46,000 SQ FT	



U.S. Department
of Transportation
**Federal Highway
Administration**

Memorandum

Washington, D.C. 20590

Subject Bid Analysis and Unbalanced Bids

MAY 16 1985

From Associate Administrator for
Engineering and Program Development

HHO-32

To Regional Federal Highway Administrators
Direct Federal Program Administrator

As a result of a recent Office of Inspector General field audit in Region 6, we have been requested to issue additional guidance on the subject of bid analysis and unbalanced bidding. We offer the following for your information and use in administering the Federal-aid highway program.

Policy:

The FHWA policy on analysis of contract bids is found in FHPM 6-4-1-6, paragraph 11.c. It requires the evaluation of the unit bid prices for reasonable conformance with the engineer's estimate. Bids with extreme variations from the engineer's estimate, or where obvious unbalancing of unit prices has occurred, should be thoroughly evaluated by the State highway agency (SHA) and FHWA. If the award of the contract would result in an advantage to the contractor with a corresponding disadvantage to the SHA and FHWA or if the competitive bidding process is jeopardized, then appropriate steps must be taken by the SHA or Division Administrator to protect the public interest.

Accuracy of Estimated Quantities:

When items are bid unusually high or low in relationship to the engineer's estimate, the accuracy of the estimated quantities should be checked. If, after examination, the estimated quantities are determined to be a reasonably accurate representation of actual anticipated needs, then the low bid should be further evaluated for unbalancing.

On the other hand, in cases where it is concluded, after examination, that the estimated quantities are not a reasonably accurate representation of actual anticipated needs, the SHA and division office should consider rejecting all bids, correcting the quantities, and re-advertising. However, an error in estimated quantities should not cause an automatic rejection of bids. Two factors need to be considered: (1) whether the public interest would be best served by making the award and (2) whether any bidder would be treated in an unfair manner if the award were made.

The bids should be rejected if: (1) the public interest would be best served in cancelling the defectively estimated proposal or (2) awarding the contract to the apparent low bidder using a corrected quantity estimate would be unfair to the other bidders who had relied on the original quantity estimate to develop their bid. (Attached is an example.)

Unbalanced Bids:

In discussing unbalanced bids, it is best to define two terms: mathematically unbalanced and materially unbalanced. An unbalanced bid may be only mathematically unbalanced or the bid may be mathematically and materially unbalanced.

A mathematically unbalanced bid is one containing lump sum or unit bid items which do not reflect reasonable actual costs plus a reasonable proportionate share of the bidder's anticipated profit, overhead costs, and other indirect costs, which he/she anticipates for the performance of the items in question.

A Comptroller General's opinion further defined a mathematically unbalanced bid as follows:

"A bid is mathematically unbalanced if the bid is structured on the basis of nominal prices for some work and inflated prices for other work; that is, each element of the bid must carry its proportionate share of the total cost of the work plus profits."
Matter of: Howell Construction, Comp. Gen. B-225766 (1987)

There is no prohibition per se against a contractor submitting a mathematically unbalanced bid unless an SHA has adopted a specific contract requirement precluding such submittal.

While mathematically unbalanced bids are not prohibited per se, evidence of a mathematically unbalanced bid is the first step in proving a bid to be materially unbalanced. A materially unbalanced bid has been defined as:

"A bid is materially unbalanced if there is a reasonable doubt that award to the bidder submitting the mathematically unbalanced bid will result in the lowest ultimate cost to the Government. Consequently, a materially unbalanced bid may not be accepted."
Matter of: Crown Laundry and Dry Cleaners, Comp. Gen. B-208795.2, April 22, 1983.

To determine whether a bid is unbalanced, it needs to be evaluated for reasonable conformance with the engineer's estimate. There are no specific parameters, such as amount or percent of variance from the engineer's estimate, that constitute an unbalanced bid. However, any evaluation process should undertake to determine why the bid is unbalanced, what effect the unbalancing will have on the contract, and if there is an effect, will it be to the detriment of the SHA and/or FHWA. When evaluating for detrimental effects, contract administration and competitive issues should be included along with cost.

There are numerous reasons why a bidder may want to unbalance his/her bid on a contract. One reason is to get more money at the beginning of the project. The bidder does this by overpricing the work done early in the project. This is called "front loading" the contract. The leading case in the "front loading" area is Matter of: Riverport Industries, 64 Comp. Gen. 441 (1985). Here the Comptroller General held that if the bid is front loaded, regardless if it is the lowest bid, it "should be viewed as materially unbalanced since acceptance of the bid would result in the same evils as an advance payment. An advance payment is prohibited by law." The "front loading" may also be materially unbalanced due to the cost of money that must be paid out early versus over the normal construction of the project.

Another reason is to maximize profits. The bidder does this by overpricing bid items he/she believes will be used in greater quantities than estimated in the proposal and underpricing items he/she thinks will be used in significantly lesser quantities. Care should be exercised to ensure that mobilization bids do not mask unbalancing. If bidders are bidding too high on mobilization, the SHA should be encouraged to alter its specifications to reduce any accelerated payment for mobilization or to limit mobilization to a fixed percentage of the contract.

An unbalanced bid may be an attempt by the bidder to simplify the bidding. The SHA may have created bid items that lend themselves to unbalancing. As an example, a specification may call for specific items to be paid for by the hour, such as a roller for compacting embankment and water to aid compaction to be paid for by the gallon. In this case, it may be better to set up the bid item as "Embankment, Compacted," paid by the cubic yard. The roller and water usage would be necessary but incidental to the bid item. Another example which may encourage unbalancing is the establishment of bid items for equipment hours or activity hours which in all likelihood will not be needed. When unbalancing on these types of bid items occurs, agreement should be reached with the SHA to rewrite the specifications to provide bid items which will cover likely work activities. Only items for work and equipment that are expected to be used on the project should be included in the proposal.

One method which an SHA may want to consider to avoid the problems of unbalanced bids is to insert into its contract specifications a specific clause prohibiting unbalanced bidding. Bids subsequently shown to be mathematically unbalanced would be rejected as non-responsive. It is important that such a clause contain clear and explicit language as courts have noted that "contractors are entitled to know how their bids will be evaluated; they cannot effectively compete when the standards for judgment exist only in the contracting officer's head," North Virginia Van Company v. U.S., 3 Cl. Ct. 237 (1983).

All SHA's, as a minimum, should be encouraged to adopt the AASHTO Guide Specifications for Highway Construction provision found in Section 102.07(e) or similar language:

"102.07 Irregular Proposals. Proposals will be considered irregular and may be rejected for any of the following reasons: . . .

- (E) If the Department determines that any of the unit bid prices are significantly unbalanced to the potential detriment of the Department."

Use of the AASHTO Guide Specifications or similar provisions will facilitate the rejection of bids which are deemed to be materially unbalanced. States implementing unbalancing provisions should advise the bidders in the bid proposal that, when bid prices are not commensurate with the work involved, justification may be required and may involve delay in the award of the contract or possible rejection of the bid.

When a low bid contains token bid prices (i.e., penny unit bids), front loadings, or bid prices with large variations from the engineer's estimate, it should be considered a mathematically unbalanced bid and further evaluated. Engineers performing bid analysis should be aware that signs of apparent unbalancing in bidding may be an indication of more serious criminal activities such as collusion and bid rigging. Studies of collusion and bid rigging show that such activities are often accompanied by suspicious bidding patterns such as "unbalanced bids," "token bids," "front loading," "identical bidding," and "complimentary bidding."

Bid Analysis:

An analysis of unbalanced bids may be aided by the use of one of several computer software packages now available in many SHA's such as the Bid Analysis and Management System (BAMS) or Highway Collusion Detection System (HCDS) programs. However, the final analysis should not preclude the use of engineering judgment.

In analyzing bids, the following should be considered:

1. Is the bid mathematically unbalanced? Are the unit bid prices in reasonable conformance with the engineer's estimate and other bids?
2. If awarded, what effect will unbalanced bid items have on the total contract amount?
3. If quantities are incorrect, will the contract cost be increased when the quantities are corrected?
4. On items where the quantities may vary, will the lower bidder remain as low bidder?
5. If the bid is unbalanced, will the unbalance have a potential detrimental effect upon the competitive process or cause contract administration problems after award?

Where obvious unbalanced bid items exist, the SHA's recommendation to award or reject a bid needs to be supported by written justification. The justification should include the detrimental effect or lack of detrimental effect. A bid found to be mathematically unbalanced to some degree but not found to be materially unbalanced may be awarded if the SHA's specifications permit. However, prior to concurrence in the award of any mathematically unbalanced bid which is not materially unbalanced, the Division Administrator should determine the reason for the unbalancing and, when warranted, take appropriate steps to protect the Federal interest such as conditioning Federal participation.

When a low bid is determined to be mathematically and materially unbalanced, the Division Administrator must take appropriate steps to protect the Federal interest. This action may take the form of concurrence in an SHA's decision not to award the contract to the submitter of the unbalanced low bid. If on the other hand, the SHA decides to proceed with the award and requests FHWA concurrence, the Division Administrator's action could range from nonconcurrence to concurrence with contingency conditions limiting Federal participation.

Finally, if unbalancing is found to be caused in part by questionable SHA specifications or procedures, the division office should work with the SHA to facilitate appropriate and timely revisions.

ORIGINAL SIGNED BY
RONALD E. HEINZ
Ronald E. Heinz

Attachment



U.S. Department
of Transportation
**Federal Highway
Administration**

Memorandum

Washington, D.C. 20590

Subject: Equipment Rental Rates

Date: NOV 7 1988

From: Chief, Construction and Maintenance Division
Office of Highway Operations

Reply to
Attn. of: HHO-32

To: Regional Federal Highway Administrators
Direct Federal Program Administrator

Previous memorandums have addressed FHWA's policy concerning the acceptability and use of equipment rental rate guides for contractor owned equipment. These include Mr. Gendell's memorandums of August 22, 1986, October 30, 1986, and December 23, 1986, and Mr. Weseman's memorandum of January 27, 1988, (copies attached). The principle of equipment rental rate guides for contractor owned equipment is that they should fairly represent the contractor's actual cost of owning and operating equipment.

Several issues not covered in earlier guidance memorandums have been raised. These include the use of standby equipment rental rates, the use of equipment the contractor obtains through a third party rental agreement, and the eligibility of mobilization costs associated with the use of contractor furnished equipment. There also appears to be misunderstanding on how the Blue Book is developed. Specifically why the monthly rate should be divided by 176 to obtain the hourly rate and how reduced construction seasons are addressed.

Standby Equipment Rates

The contractor continues to incur certain ownership costs when equipment is required to be on standby. To allow an equitable compensation, standby rates which fairly reimburse the contractor for the expenses of owning the equipment may be approved for Federal-aid participation. The use of a standby rate is appropriate when equipment has been ordered to be available for force account work but is idle for reasons which are not the fault of the contractor. The standby rate may be based on the contractor's actual costs or data from an approved rate guide. In either instance, there should be no operating costs included in the rate used.

Generally, equipment rental rate guides are based on usage and time. Since there is no wear and tear to the equipment during idle time most rate guides usually will need to be modified to eliminate any costs associated with usage. Costs that are related to time include "cost of facilities capital (CFC)," equipment overhead, and possibly some depreciation.

The CFC is computed by multiplying the average value of the equipment by the cost of money rate, determined by the Secretary of the Treasury pursuant to Public Law 92-41 (85 Stat. 97), and prorating this amount over the annual usage hours.

Equipment overhead costs usually include annually occurring costs such as taxes, insurance, and licensing fees. Equipment overhead costs should not be included in a standby rate if recovered in other cost methods, for example, project overhead costs.

Depreciation is the decline in value of the equipment due to age and usage. It is normally computed using the straight-line method based on the overall economic life which is in turn based on anticipated usage (wear and tear) per year. Since there is no wear and tear to equipment during standby time, an appropriate adjustment should be made to the depreciation rate provided in most rental rate guides.

While an industry standard does not currently exist for standby rates, it has been the normal practice of the courts to reduce published ownership rental guide rates by 50 percent for standby rate usage. Therefore, the FHWA will accept use of 50 percent of the ownership rental rates of an approved guide as the standby rate in lieu of a contractor's actual standby costs. Standby time should not exceed 8 hours per day, 40 hours per week, or the annual usage hours as established by the rate guide.

Contractor Leased Equipment

When a contractor obtains equipment through a third party rental agreement for use in a force account situation, his/her cost will normally be the invoice cost. The invoice cost should be comparable with other rental rates of the area. The Associated Equipment Distributors (AED) Rental Rate and Specifications book may be used to evaluate the contractor's proposed costs for such equipment rental.

Since rental agreements vary, the specific operating costs included in the rental agreement may need to be determined. There may be additional eligible operating costs not covered by the agreement which the contractor has incurred and should be reimbursed for, such as fuel, lubrication, field repairs, etc.

Mobilization

The costs required to mobilize and/or demobilize equipment not available on the project is eligible for reimbursement. Standby rates should be used for equipment while being hauled to the project. This will be in addition to applicable rates for the hauling equipment. All costs associated with the assembly and disassembly of the equipment for transport should also be considered in the mobilization costs.

Development of Blue Book Equipment Rental Rates

The developer of the Blue Book accumulates all contractor costs for owning a piece of equipment for an entire year. These costs are then prorated over the months that the equipment is normally expected to work. The result gives a contractor's cost of owning the equipment for a month (established in the Blue Book as 176 hours). Equipment is not expected to work constantly for 12 months. For example, the developer of the Blue Book has determined that the paver has the shortest working season (6 months). Working seasons for other types of equipment are:

Tandem Roller	8.0 months
Hydraulic Excavator	9.5 months
Crawler Dozer	9.5 months
Wheel Loader	9.5 months
Motor Grader	8.5 months
On-Highway Rear Dump	10.0 months

Maps at the beginning of each Blue Book equipment section indicate adjustment factors for differences in climate and regional costs. Rate adjustment tables provide for the difference between current prices of new equipment and the price for equipment during the year of original purchase.

The Blue Book states that, "Weekly, daily and hourly rates are . . . derived from the monthly rate. Rates for shorter periods are increased to account for lost availability and productivity during shorter use periods." In actual practice, any loss in productivity will result in additional time needed to do the work. Since the basis of payment when rental rates are used during force account is actual hours worked, the contractor is thus fully reimbursed for any loss in productivity. Lost availability of equipment is not considered a viable factor since a contractor, in bidding a project, agrees to furnish all equipment required to complete the project. Further, a contractor has the option of renting needed equipment from a third party; such rental costs, as discussed earlier, are reimbursable.

Based on the above rationale, the FHWA has determined that when the Blue Book is used to calculate equipment rental costs for periods of less than a month, the most equitable approach is to utilize an hourly rate developed by dividing the Blue Book monthly equipment rental rate by 176.

Original Signed By
William A. Weseman

William A. Weseman



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

SUBJECT

INCENTIVE/DISINCENTIVE (I/D) FOR EARLY
COMPLETION

FHWA TECHNICAL ADVISORY

T 5080.10

February 8, 1989

Par.

1. Purpose
2. Definitions
3. Background
4. Guidance
5. Project Selection
6. Project Development
7. Determination of Incentive/Disincentive (I/D) Amount
8. Incentive/Disincentive Time Determination
9. Contract Administration
10. Road User Cost in Low Bid Determination

1. PURPOSE. To provide guidance for the development and administration of incentive/disincentive (I/D) provisions for early completion on highway construction projects or designated phase(s).

2. DEFINITIONS

- a. Incentive/disincentive for early completion - a contract provision which compensates the contractor a certain amount of money for each day identified critical work is completed ahead of schedule and assesses a deduction for each day the contractor overruns the I/D time. Its use is primarily intended for those critical projects where traffic inconvenience and delays are to be held to a minimum. The amounts are based upon estimates of such items as traffic safety, traffic maintenance, and road user delay costs.
- b. Liquidated damages - the daily amount set forth in the contract to be deducted from the contract price to cover additional costs incurred by a State highway agency (SHA) because of the contractor's failure to complete all the contract work within the number of calendar days or workdays specified or by the completion date specified.
- c. Contract time - the total time (calendar days or completion date) established to complete the project.

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- d. Incentive/disincentive time - the time (calendar days or completion date) established for the contractor to complete critical work on identified roadway(s) and/or structure(s). This time begins when traffic is impacted by the project and normally ends when unrestricted traffic is permitted on the identified roadway(s) and/or structure(s). This is the time upon which the I/D payment will be based. The I/D time and contract time may be the same in situations where traffic impact exists for the full duration of the project or I/D time may be for a shorter period when traffic is impacted only during a certain phase or phases of contract work.

3. BACKGROUND

- a. The FHWA policy which prohibited participation in bonus payments for early completion was rescinded effective July 13, 1984. The policy prohibiting bonus payments goes back to a 1927 interpretation of a statute that limited the Government's share of project costs to the value of labor and materials. In the 1970's the policy was based on the belief that FHWA should not have to pay "extra" just to have a project completed early. The present FHWA policy on bonus payments is based in part on the evaluation of National Experimental and Evaluation Program (NEEP) Project #24 which showed that I/D provisions are a valuable cost-effective construction tool.
- b. Present FHWA policy allows for approval of I/D provisions which are in compliance with the intent of the FHWA program. This may include, but is not limited to: (1) provisions for early completion of critical improvements which result in significant savings and/or positive benefits to the traveling public and (2) provisions which allow for product acceptance with pay adjustments. This Technical Advisory will only address I/D for early completion on highway construction projects. In accordance with Mr. Willetts' memorandum of January 22, 1988, to Mr. Leon Larson, I/D provisions are not to be used in Federal-aid participating consultant service contracts.

- c. In discussing I/D, a clear distinction needs to be made between the intent of I/D provisions and liquidated damages. Although they have similar mechanisms, the purpose or function of each is different. The liquidated damages policy has as a prime function the recovery of construction engineering (CE) and/or additional costs associated with the contractor's failure to complete the project on time. The I/D provision is intended to motivate the contractor so that work will be completed on or ahead of schedule. Liquidated damages provisions apply to all projects; however, I/D provisions apply only to special projects.
- d. The regulation change to 23 CFR Part 630 of August 20, 1987, concerning the assessment of liquidated damages allowed the SHA's to include costs of project-related delays or inconveniences to them or the public, in addition to CE costs, in their liquidated damages provisions. If an SHA includes delay related costs in its liquidated damage rate, those delay costs should be excluded from the disincentive amount on an I/D project so a contractor is not subjected to a double assessment for the same costs.

4. GUIDANCE

- a. The approval of I/D provisions will be reserved only for critical projects or phases of projects where traffic inconveniences and delays must be minimized. States should develop guidelines for selection of projects.
- b. The determination of I/D amount and time should be documented and retained in the project records. The I/D amount and time determination with supporting data should be submitted and concurred in by the FHWA Division Administrator prior to the State's request for approval of the plans, specifications, and estimate and authorization to advertise.

- c. Project time should be established on either a calendar day or completion date basis. Contractors should have an approved critical path method (CPM) schedule prior to starting work on the project.
 - d. For those States with an approved Certification Acceptance Plan, the procedure for developing I/D projects should be covered under the State's plan, or the projects should be handled as an exception and developed with the Division Administrator's approval.
5. PROJECT SELECTION. I/D provisions provide an effective method to motivate the contractor to complete projects or portions of projects faster than normal. However, it is recommended that I/D provisions not be used routinely. Generally, I/D provisions should be limited to those projects whose construction would severely disrupt highway traffic or highway services, significantly increase road users' costs, have a significant impact on adjacent neighborhoods or businesses, or close a gap thereby providing a major improvement in the highway system.
- a. The selection of projects during the early stages of project development is essential. This will allow for full deployment of resources needed to properly design and coordinate the project.
 - b. The development of criteria for possible projects will aid in early identification of projects. The following characteristics have been associated with projects appropriate for I/D provisions:
 - (1) High traffic volumes generally found in urban areas.
 - (2) Work that will complete a gap in the highway system.
 - (3) Major reconstruction or rehabilitation on an existing facility that will severely disrupt traffic.
 - (4) Major bridges out of service.
 - (5) Lengthy detours.

- c. The project should be such that the I/D phase(s) can be completed in one construction season or less.

6. PROJECT DEVELOPMENT

- a. Experience has shown that engineering time spent during project development pays dividends during construction and in obtaining a successful project. A field change to correct mistakes in plans can be very costly in time and money on an I/D project. The plans and specifications must be complete and accurate to permit a common and clear understanding of what is to be constructed.
- b. During the development of I/D projects, extra effort should be made to ensure that the design, specifications, schedule, etc., are compatible since all must be modified to fit the project. Any omission or error in the plans and specifications may result in a claim from the contractor. The plans and specifications should indicate any unusual condition or any restriction the contractor may be required to work under, such as restrictions prohibiting jack hammering or pile driving during the night due to noise problems.
 - (1) Available right-of-way and utility relocation work are two variables that play a very important role in I/D projects. If the right-of-way is not clear, then I/D provisions should not be used on the project. Utility work by other than the contractor should be limited to only work that will not interfere with the I/D phase(s) of the contract.
 - (2) The contract must clearly define what constitutes the start and the completion of the I/D phase(s). Either or both may differ from the start or completion of the project. The I/D time may be delayed until traffic is impacted, thus allowing the contractor time to fabricate steel, obtain mix design, etc. However, it is necessary to define in detail what is expected of the contractor. This can be done through the plans for stage construction or detailed description in the special provisions. Bid items to be completed should be referenced.

Completion of items such as signing, lighting, signals, striping, curb, shoulder, and cleanup should be addressed. Liquidated damages can be assigned for completion of work after the I/D phase has been accomplished.

- c. During the preconstruction phase of the project, all parties (local officials, police, local traffic engineers, and construction engineers) should become involved in the project development. A prebid meeting may be necessary to cover the I/D phase(s) and any unusual features of the project.
 - d. Predesign field reviews are essential since "as built" plans or old construction plans have not proven reliable due to maintenance operations or field changes not being recorded on the plans.
 - e. The development of I/D provisions must be related to each State's specifications. To assist in preparing I/D provisions, a checklist (formulated by Region 7) of items to consider when preparing contract provisions is included as Attachment 1.
7. DETERMINATION OF INCENTIVE/DISINCENTIVE AMOUNT. The major area of concern expressed on the use of I/D provisions is determination of the appropriate dollar amount per day for I/D provisions for early completion of projects. To be effective and accomplish the objectives of I/D provisions, the dollar amount must be of sufficient benefit to the contractor to encourage his/her interest, stimulate innovative ideas, and increase the profitability of meeting tight schedules. If the incentive payment is not sufficient to cover the contractor's cost for the extra work, then there is little incentive to accelerate production, and the I/D provisions will not produce the intended results.
- a. A daily I/D amount is calculated on a project-by-project basis using established construction engineering inspection costs, State related traffic control and maintenance costs, detour costs, and road user costs. Costs attributed to disruption of

adjacent businesses should not be included in the daily I/D amount. Engineering judgment may be used to adjust the calculated daily amount downward (not upward) to a final daily I/D amount that:

- (1) provides a favorable benefit/cost ratio to the traveling public where the cost is the daily I/D amount and the benefit is the calculated daily savings in road user and SHA costs.
 - (2) is large enough to motivate the contractor. If a favorable benefit/cost ratio cannot be realized and/or the resulting daily amount is not high enough to motivate a contractor, the project should not be further developed as an I/D project.
- b. Currently, accepted SHA procedures for estimating road user costs may be used, or one of the following references may be used for estimating road user costs.
- (1) A manual entitled "User Benefit Analysis of Highway and Bus--Transit Improvements," 1977, AASHTO, Washington, D.C.
 - (2) Participant Notebook: "Traffic Control for Streets and Highway Construction and Maintenance Operations," FHWA, 1978.
 - (3) "Planning and Scheduling Work Zone Traffic Control," Report #FHWA IP-81-6, FHWA, October 1981.
- c. The vehicle operating costs should be based on the most recent information available. The 1982 FHWA study entitled "Vehicle Operating Costs, Fuel Consumption and Pavement Type and Condition Factors" (NTS PB 82-238676) may be used to supplement costs for the methodologies listed above. Caution should be exercised in using the data as some items included may not be applicable to costs incurred due to the construction activity, i.e., insurance, parking, tolls, taxes, etc.

- d. Generally, the incentive daily rate should equal the disincentive daily rate. If different rates are selected, the incentive daily rate should not exceed the disincentive daily rate.
 - e. A cap of 5 percent of the total contract amount has been recommended as the maximum incentive payment. The 5 percent was based on the NEEP study average of incentive payments made on experimental I/D projects. In a survey by the Office of Program Review, "50 percent of the completed projects paid the maximum incentive." The placement of a cap on the incentive payment limits the funding requirements that may result if the time analysis was not realistic for an accelerated project time. With experience, the SHA may feel comfortable in not setting any maximum on the number of days for which an incentive can be earned. No cap should be placed on the maximum disincentive amount.
8. INCENTIVE/DISINCENTIVE TIME DETERMINATION. The determination of I/D time is one of the major problems facing an SHA when developing an I/D project. It must answer the question: to what extent and at what cost can construction be compressed from a normal construction time to an accelerated time? If the contractor feels that the completion date is impossible to meet, he/she will not even try. In fact, unreasonable completion dates may well discourage potential bidders. However, the use of a normal computed time may allow the contractor to earn the maximum amount without making an increased effort. This would also penalize the public since the I/D phase(s) would not be completed as soon as possible. Most highway agencies will normally use either past performance or a CPM schedule to determine time.
- a. Determination of I/D time based on past performance will require engineering judgment in determining to what extent the time can be compressed from normal construction time. Normal construction time is generally based on an average contractor working 5 days a week, 8 hours a day. To convert this to I/D time, the time should be based on the performance of a good contractor working extended shifts with extra workers for 6 or 7 days a week.

However, the use of a continuous 7-day workweek is cautioned against unless provisions can be made through shift assignments for days off. Extended periods of work with no days of rest has resulted in high turnover rates with contractor and inspection personnel.

- b. The use of a CPM schedule is based on breaking down the project into the separate operations or processes necessary for its completion. These separate operations can then, through a network analysis, determine a completion time for the project. By supplying additional incremental resources of manpower and equipment, a further evaluation can be made as to the effects of accelerating the project.
 - c. The use of calendar days or completion date has proven to be most effective in controlling contract times. The dates for beginning and completion of the I/D work are then readily understood. The use of working days has not been effective in having projects completed by a specific date. The use of working days has placed the project engineer under undue pressure in determining whether the contractor should be charged a working day. In addition, it has created unnecessary conflict between the contractor and the project engineer.
 - d. The season of the year in which the project will be constructed should also be considered in determining the I/D time for calendar day projects. Weather days and legal holidays should be included for calendar day projects.
9. CONTRACT ADMINISTRATION. Cooperation and coordination between the contractor and the SHA is essential. The delay in approval of a field change or working drawings can be costly in time. Decisionmaking and approval authority should be promptly provided at all times that I/D work is in progress. If nighttime or weekend work is allowed, all offices that have decisionmaking and approval authority should designate a contact person with authority to make decisions for the agency represented. Several projects have been set up with

periodic meetings of all decisionmaking personnel to discuss project development during design and construction. These discussions should consider future critical operations and potential problems.

- a. The contractor should be required to submit a CPM schedule for review and approval prior to commencement of work. This schedule will be the basic document to gauge and analyze the contractor's progress, determine time adjustments, and evaluate claims. Regularly scheduled job site progress meetings should be held for the purpose of updating the CPM schedule. Attachment 2 is a sample specification that is included in the "Construction Contract Claims" training manual. The reference to the Associated General Contractors of America CPM may be replaced by any other CPM the SHA has approved.
- b. Extension of time on an I/D date should not be given unless extraordinary circumstances occur. The burden of proof to extend the I/D date must be on the contractor. The contractor must fully justify why concurrent operations, additional manpower, additional shifts, overtime, 24-hour workdays, 7-day workweeks, etc., cannot be used to keep the project on schedule. The SHA should consider all alternatives, including additional CE cost, to keep the project on schedule.
- c. The I/D time adjustments shall be limited to only major work items affecting completion of items on the critical path and should be so identified in the contract. The effect of field changes and how field changes will be evaluated for time adjustments must be clearly spelled out in the project documents. The percentage of underrun or overrun should be substantial enough to warrant contract time changes.
 - (1) Extra and additional work should be expected by both the contractor and the SHA when establishing the I/D dates. Both parties should fully understand that the SHA is willing to pay for extra work, but it is to be absorbed within the current CPM schedule without any adjustment in the I/D dates.

- (2) Because I/D projects are normally limited to one construction season, extensions of time will often extend into periods of adverse weather, resulting in further delays and cost to both the contractor and the traveling public. Moving an I/D date should only be done when all other avenues have failed.
 - (3) Time limits for certain actions should be included in the contract -- for example, 7 days for review and approval of shop drawings and 3 days for review and approval of unforeseen problems, etc., after notification by the contractor to the engineer.
- d. Flow charts have proven very beneficial in establishing lines of communication and ensuring that all parties that have involvement in reviewing plans and shop drawings are contacted. Flow charts may include number of copies needed for submission, distribution of approved copies, and method of transmittal. Shop drawings may require handcarrying between contractor, reviewers, and approval authorities. However, the mail may be sufficient for transmitting copies for information or for files.

10. ROAD USER COSTS IN LOW BID DETERMINATION

- a. The use of road user costs in low bid determination was approved for use on an experimental basis by the Federal Highway Administrator's memorandum dated May 20, 1985. This procedure allows the State to award a project to the low bidder based on a combination of the aggregate bid of individual contract items and a "bid" for the total time the contractor will use on the project. Each bid submitted shall consist of two parts:
 - (1) The dollar amount for all work to be performed under the contract.
 - (2) The total number of calendar days required to complete the work.

- b. The lowest and best bid is then determined by the State according to the following formula:
(A) + [(B) X road user cost per day]. This formula shall only be used to determine the lowest and best bidder and shall not be used to determine payments to the contractor.

- c. Approval for the use of road user costs in low bid determination should be given on an experimental project basis in accordance with Mr. Rex Leathers' memorandum of May 30, 1985. As a minimum, both an interim report and final report shall be submitted to the Washington Headquarters Contract Administration Branch (HHO-32). The interim report of bid information and problems encountered by the contractors in the development of bids, if any, should be submitted after concurrence in award of the contract.



Thomas O. Willett
Acting Associate Administrator
for Engineering and Program
Development

Attachments

INCENTIVES/DISINCENTIVES (I/D)
CHECKLIST ITEMS

When using I/D for early completion to minimize public inconvenience, maximize public safety, and reduce total costs to the traveling public, the following items should be considered when preparing contract special provisions.

1. Clearly define the beginning and ending dates for the critical work elements that are to be accomplished.
2. The use of calendar day or completion date contracts have proven most effective in controlling contract times. The dates for beginning and completing the I/D work are fully understood.
3. State the time the contractor is permitted to work, such as multiple shifts, weekends, holidays, etc., or conversely, when work should not be permitted.
4. Describe what working operations the contractor may or may not perform during nighttime hours.
5. Include the pay schedule for I/D:
 - a. The pay schedule should relate money and time.
 - b. Incentive payments should have a specified maximum time.
 - c. Disincentive payments should be charged continuously until the critical elements have been completed.
6. List approved staging areas the contractor may use if this is a critical item.
7. Address underruns and overruns:
 - a. Contractor time adjustments should be limited to only major work items and should be so identified in the contract.

- b. The percent underrun or overrun should be substantial enough to warrant contract time changes.
 - c. Values and formulas can be specified that advise the contractor of the relationship between underruns and overruns and time extensions or time deletions.
8. The subject of strikes should be addressed as it relates to approving time extensions.
 9. The contractor should be encouraged to stockpile materials, and the contract should specify which materials will be paid for as stockpiled materials.
 10. All I/D projects shall require that the contractor have an approved critical path method (CPM) prior to starting work on the project.

Regularly scheduled job site progress meetings should be held for the purpose of keeping the CPM on schedule. If the contractor should fall behind the CPM schedule, extra work measures should be prescribed until the contractor is back on schedule.

11. Identify what work is considered preparation, fabrication, and clean-up that may be outside the critical time path for fully opening a project to traffic.
12. Consider having legal counsel review the "language" of the contract provisions to avoid possible future claims.
13. Contracts involving bridge construction should take into account the time factor associated with shop drawing and erection procedure reviews and approvals. These two items can be an important factor in measuring and assessing contract time.
14. Incentive/Disincentive can be considered for specialty items within a contract (for example, erecting steel over another roadway that carries high traffic volumes and would require lane closure).

SUGGESTED STATE HIGHWAY ADMINISTRATION
SCHEDULING SPECIFICATION

The construction of this project will be planned and recorded with a conventional critical path method (CPM) schedule based on the principles defined by the 1976 issue of "The Use of CPM in Construction" published by the Association of General Contractors. The schedule shall be used for coordination and monitoring of all work under the contract including all activity of subcontractors, vendors, and suppliers.

CONTRACTOR is responsible for preparing the initial schedule in the form of an activity on arrow diagram. All costs incurred by the CONTRACTOR in preparing the schedule shall be borne by the CONTRACTOR as part of its responsibility under this contract.

A. Preparation of Initial Schedule

Within 30 calendar days after the issuance of "Contract Award" prior to the "Notice to Proceed," CONTRACTOR will complete development of its initial schedule and present to the OWNER two copies of an activity on arrow diagram, an I node-J node computer sort and a Total Float Computer sort.

Following review of the initial submission and within 15 calendar days of its submission prior to "Notice to Proceed," OWNER and CONTRACTOR shall meet for joint review, correction, and adjustment of the schedule if required. The construction time, as determined by the schedule, for the entire project or any milestone shall not exceed the specified contract time. In the event that any milestone date or contract completion date is exceeded in the schedule, logic and/or time estimates will be revised.

After this meeting but within 15 calendar days after any changes in the logic and/or time estimates have been agreed upon, another submission of the schedule, including five copies of an activity on arrow diagram, an I node-J node computer sort, and a Total Float Computer sort, will be transmitted to the OWNER. If necessary, this process will be repeated; however, the schedule must be finalized within 30 days after "Notice to Proceed." Failure to finalize the

schedule by that date will result in withholding all contract payments until the schedule is approved. Note that time charges shall begin no later than the time stipulated in the "Notice to Proceed."

No contract work may be pursued at the site without an approved CPM schedule.

B. Schedule Requirements

All activity on arrow diagrams provided by CONTRACTOR shall include:

1. activity nodes,
2. activity description, and
3. activity duration.

The activity on arrow diagram shall show the sequence and interdependence of all activities required for complete performance of all items of work under this contract, including shop drawing submittals, approvals, fabrication, and delivery activities. All network "dummies" are to be shown on the diagram.

No activity duration shall be longer than 20 workdays without OWNER'S approval.

OWNER reserves the right to limit the number of activities on the schedule to between 50-500 activities.

The activities are to be described so that the work is readily identifiable and the progress on each activity can be readily measured. For each activity, CONTRACTOR shall identify the trade or subcontractor performing the work, the duration of the activity in workdays and the location of the work.

CONTRACTOR shall also provide the following information: workdays per week, holidays, number of shifts per day, number of hours per shift, and major equipment to be used.

C. Schedule Updates and Progress Payments

Job site progress meetings will be held monthly by OWNER and CONTRACTOR for the purpose of updating the project work schedule. Progress will be reviewed to verify finish dates of completed activities, remaining duration of uncompleted activities, and any proposed logic and/or time estimate revisions. It is CONTRACTOR'S responsibility to provide OWNER with the status of activities at this progress meeting and with the process schedule updates based on this information once it has been verified.

Each month of the project, the CONTRACTOR will submit five copies of an updated I node-J node and Total Float Computer sort illustrating verified progress. Included shall be a written narrative describing the critical path and logic revisions or modifications to the schedule, including, but not limited to, changes in the method or manner of the work, changes in specifications, extra work, changes in duration, etc.

CONTRACTOR will further submit two copies of revised activity on arrow diagrams for the following: delay in completion of any critical activity; actual prosecution of the work which is, as determined by OWNER, significantly different than that represented on the schedule; the addition, deletion, or revision of activities required by contract modification; or any logic revisions. The contract completion time will be adjusted only for causes specified in this contract.

As determined by CPM analysis, only delays in activities which affect milestone dates or contract completion dates will be considered for a time extension.

If CONTRACTOR does seek a time extension of any milestone or contract completion date, it shall furnish documentation as required by OWNER to enable OWNER to determine whether a time extension is appropriate under the terms of the contract.

It is understood by OWNER and CONTRACTOR that float is a shared commodity.



U.S. Department
of Transportation

**Federal Highway
Administration**

Memorandum

Washington, D.C. 20590

Subject: Buy America Requirements

Date: JUL 6 1989

From: Chief, Construction and Maintenance Division
Office of Highway Operations

Reply to
Attn. of: HHO-32

To: Regional Federal Highway Administrators
Division Administrators
Federal Lands Highway Program Administrator

A recent meeting with a material supplier to discuss FHWA Buy America requirements has brought up several issues which we believe warrant further clarification to FHWA field offices and States. These issues include certification of steel, determining the cost of foreign steel, and impacts of international trade agreements.

Certification of Steel:

It has been alleged that domestically produced steel billets have been shipped overseas for extrusion and/or rolling, and then returned to the United States, certified as domestic, for use on Federal-aid projects. If this is being done, it is not in conformance with the Buy America requirements set forth in 23 CFR 635.410.

All manufacturing processes of the steel material in a product (i.e., smelting, and any subsequent process which alters the steel material's physical form or shape or changes its chemical composition) must occur within the United States to be considered of domestic origin. This includes processes such as rolling, extruding, machining, bending, grinding, and drilling.

State highway agencies are expected to provide sufficient oversight to ensure compliance with the Buy America provisions. If State procedures require a certification, it is recommended that the State adopt language for the certification emphasizing that all manufacturing processes have occurred in the United States.

Regarding the use of certifications to ensure compliance, the AASHTO Executive Committee on June 7, 1989, approved a proposed policy resolution on Buy America. The proposed resolution, which is now before AASHTO's Policy Committee for consideration, contains two position statements on certifications. First, that a certification should be required, "on all steel mill test reports," and second, step certification should be required, "from each supplier/fabricator on transfer of intermediate product, thereby generating a chain of custody documentation trail." While the FHWA does not

mandate that States must use a certification approach to ensure Buy America compliance, it is an effective method some States are using especially for incidental steel items. The certification approach AASHTO is developing should further the effectiveness of certification controls. If a State chooses to use certification to ensure compliance, we encourage it to consider AASHTO's approach.

Cost of Foreign Steel:

Section 635.410(b)(4) of Title 23 CFR permits a minimal amount of foreign steel to be incorporated into a Federal-aid project. This amount is defined as one-tenth of one percent (0.1 percent) of the total contract cost or \$2,500, whichever is greater. The cost of the foreign steel is defined as its value delivered to the project.

Apparently, there has been some confusion as to exactly how this value should be calculated, especially when: (1) domestic steel has been shipped to a foreign country to facilitate one or more manufacturing process and/or (2) a product has been fabricated with foreign steel components as well as other components. If steel billets produced in the United States are sent out of the country for a subsequent manufacturing process and then brought back into the United States, the full value of the steel as it reenters the country, including the original billet cost, is considered to be foreign. If foreign steel components are combined with other components into a fabricated and/or assembled composite product, the foreign steel content of the composite product is not only the value of the foreign steel components, but also the pro-rata value of the fabrication and assembly labor and overhead used in combining the foreign steel and other components into the finished composite product.

International Trade Agreements:

Congress has, in recent years, approved several trade agreements including the U.S.-Canada Free-Trade Agreement in 1988 (Pub. L. 100-449, 102 Stat. 1951 (1988)). While such agreements may impact direct Federal procurement actions taken pursuant to the Federal Acquisition Regulations (Title 48 CFR), they have no effect on the Federal-aid highway program. Therefore, the Buy America requirements of 23 CFR 635.410 are unaffected by any current foreign trade agreement.

Similarly, the "In-Bond" or "Maguiladora" program which established international commercial zones surrounding U.S.-Mexico border communities has no effect on the Federal-aid highway program. Any manufacturing process of steel material in Mexico will result in the steel material being considered a foreign material and subject to the requirements of 23 CFR 635.410.



William A. Weseman

A. Rockne



U.S. Department
of Transportation
**Federal Highway
Administration**

Memorandum

Washington, D.C. 20590

Subject: Innovative Contracting Practices Initiative and
Special Experimental Project No. 14

Date: FEB 13 1988

From: Director, Office of Highway Operations

Reply to
Attn. of: HHO-32/HHO-41

To: Regional Federal Highway Administrators
Federal Lands Highway Program Administrator

In January 1988, a Transportation Research Board (TRB) task force was formed to explore innovative contracting practices. The task force, officially identified as Task Force A2T51 - Innovative Contracting Practices, is comprised of representatives from all segments of the highway industry, including contractors, consultants, trade associations, surety and bonding agents, academia, SHA's, and the FHWA. Its mission is to solicit, study, and compile information on the practices under which both U.S. and foreign agencies contract for construction as they affect quality, progress, and costs; call attention to practices that inhibit quality construction along with ways to improve them; and suggest methods for improving contracting processes.

The Task Force has requested that the FHWA establish an experimental project on Innovative Contracting Practices, which would be used to evaluate and validate the Task Force findings. In response, the FHWA Special Experimental Project No. 14, Innovative Contracting Practices, has been initiated.

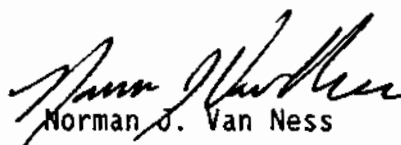
The objective of Special Experimental Project No. 14 is to identify for trial evaluation and documentation, innovative contracting practices which have the potential to reduce life cycle costs to SHA's while maintaining product quality and an acceptable level of contractor profitability. Through evaluation of new innovative techniques, FHWA will be in a better position to recommend and promote those found to be cost-effective.

Special Experimental Project No. 14 will be used to implement, on an experimental basis for evaluation, applicable Task Force recommendations and other innovative contracting practices which SHA's propose to undertake and are subsequently approved by the FHWA. Areas so far suggested for possible consideration include: (1) factoring in such aspects as time, quality and past performance with cost to determine the lowest responsible bidder; (2) design/build contracts; (3) incentives for improved quality; (4) warranties/guarantees; and (5) development of specifications to instill innovation, enhance the final product, and balance risk with reward.

While Federal-aid statutes and regulations set forth specific program requirements, some do provide a degree of flexibility. Under special Experimental Project No. 14, we intend to explore legislative and regulatory flexibility to the fullest. We recognize that some recommended or proposed innovative practices may not meet current statutes and would not be eligible for trial evaluation within the Federal-aid program. The areas noted earlier as suggested for possible consideration are currently under review by the Chief Counsel.

The TRB Task Force recommendations will be contained in a final report expected to be available in 1990. In the meantime, we are currently soliciting SHA conceptual proposals which they consider to be worthy for evaluation under this Special Experimental Project. States' proposals should be submitted to the Demonstration Projects Division (HHO-41), through the division and regional offices. The proposals should include a brief, conceptual description of the innovative practice(s) proposed for evaluation. Upon acceptance of a State's concept, more detailed information will be solicited.

Projects ultimately accepted and approved for the Special Experimental Project will be eligible for Demonstration Project funds to assist States in evaluating, documenting and reporting activities. Project construction costs will be eligible for reimbursement commensurate with the system on which the project is located, subject to normal Federal-aid eligibility policies.



Norman J. Van Ness



U.S. Department
of Transportation
**Federal Highway
Administration**

7353
Memorandum

Washington, D.C. 20590

Subject: Price Adjustment Contract Provisions

Date: AUG 21 1990

From: Associate Administrator for
Engineering and Program Development

Reply to
Attn. of: HHO-32

To: Regional Federal Highway Administrators
Division Administrators
Federal Lands Highway Program Administrator

We are again facing the possibility of oil shortages and price uncertainties because of the unrest in the Middle East. The oil embargoes of 1973, 1974, and 1979, led to price speculation and inflated prices for fuel and asphalt products. This resulted in significant problems for contractors in preparing realistic bids. The use of price adjustment clauses in contracts provided a mechanism to transfer the risk in bidding from the contractors to the contracting agencies.

Our basic guidance relative to price adjustment is contained in the Technical Advisory (TA) "Development and Use of Price Adjustment Contract Provisions" T 5080.3, dated December 10, 1980. Most State highway agencies (SHAs) developed provisions during past oil shortage periods. These States should review their provisions to ensure they are still current and that the price indexes previously used are still available.

The TA lists several sources of price information. The following corrections should be made to that list;

- (a) The Bureau of Labor Statistics monthly publication is now entitled Producer Price Indexes and may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Diskettes are also available, for information call the Office of Publications, Bureau of Labor Statistics, (202) 523-1090.
- (b) The Oil Daily may be obtained from the Oil Daily Co., 1401 New York Avenue N.W., Washington, D.C. 20005.
- (c) The U.S. Oil Week may be obtained from Capitol Publications, 1101 King Street, P.O. Box 1454, Alexandria, Virginia 22313-2054.

States should consider the need to place price adjustment provisions in projects presently being developed. Projects which have been authorized for letting but have not received bids may be considered for addendum. No action should be taken on projects which have been awarded. Although there may be projects currently under construction that are being affected by increased fuel and/or asphalt prices, no action is proposed at this time until the price impact can be fully addressed.

To afford the division offices and SHAs the maximum amount of time to evaluate their projects, copies of this memorandum are being sent directly to each division. If you have any questions regarding this matter, please contact Mr. David Geiger at FTS 366-0355.

A handwritten signature in black ink, appearing to read "A R Kane", with a long horizontal flourish extending to the right.

Anthony R. Kane



U.S. Department
of Transportation

**Federal Highway
Administration**

Memorandum

Washington, D.C. 20590

Subject: Price Adjustment of Existing Contracts

Date: November 30, 1990

From: Executive Director

Reply to
Attn. of: HNG-22

To: Regional Federal Highway Administrators
Federal Lands Highway Program Administrator

This memorandum is a follow up to Mr. Anthony Kane's August 21 memorandum which provided guidance relative to possible oil shortages and price uncertainties caused by the Middle East situation. At that time, you were advised that for existing Federal-aid construction contracts without price adjustment clauses no price adjustments should be approved pending our further evaluation of market conditions and project impacts.

Since August, the price of crude oil has increased, on a non-uniform basis, from \$20 per barrel on August 2 reaching a high of approximately \$40 per barrel in mid-October and is now selling at about \$33 per barrel. This increase has affected petroleum based products including asphaltic cement and fuel, however, the percentage of increased cost has not been consistent by product, supplier, nor by geographic region of the country.

During this period we have been evaluating the impacts on Federal-aid projects from the monetary and material availability aspects. Two surveys have been conducted, one by the National Asphalt Paving Association (NAPA) and one by the Federal Highway Administration (FHWA) Headquarters. Results of the NAPA survey indicated that asphalt suppliers were honoring their commitments to contractors for projects underway. The FHWA survey, conducted approximately 1 month later, provided the same information on both asphalt and fuel products. Our survey also indicated that increases in the cost of asphalt and fuel products were being encountered. However, the magnitude of increase was variable and difficult to assess. Neither of the surveys nor subsequent discussions with State officials or industry representatives indicated a national shortage of either asphalt or fuel products. One response to our survey indicated a limited shortage of asphalt by one supplier.

Based on our evaluation of current information available, we have determined it appropriate to maintain our position that Federal-aid funds not participate in price adjustments of contracts which have been awarded without a price adjustment clause. Considerations in arriving at this decision include a lack of information showing either significant supply shortages or cost impacts, the potential difficulty of assuring the accuracy of increased costs incurred by contractors, the significant number of States (22), which

have elected to not include a price adjustment clause in their newly awarded contracts and the relatively few States which have indicated support for a modification of existing contracts.

For your information, a copy of our survey results are attached. Also, due to the ongoing controversy in the Middle East, we continue to support the inclusion of price adjustment clauses, where applicable, in future construction projects.

A handwritten signature in black ink, appearing to read "E. Dean Carlson". The signature is fluid and cursive, with a prominent initial "E" and a long, sweeping underline.

E. Dean Carlson

Attachment



U.S. Department
of Transportation

Federal Highway
Administration

Memorandum

Subject **INFORMATION:** Equipment Purchases For State
Construction Engineering Use

Date MAY 5 1993

From Director, Office of Engineering

Reply to
Attn of HNG-22

To Regional Federal Highway Administrators
Federal Lands Highway Program Administrator

In the mid-1980's, several inquiries were received regarding the FHWA's position concerning participation when State highway agencies (SHA's) require construction contractors, as a condition of their contract, to purchase and transfer ownership of certain construction engineering equipment items to the SHA. Examples include field laboratories and various acceptance testing equipment items.

The FHWA guidance was issued by Mr. Leather's memorandum of September 11, 1986. It required that when an SHA proposed that equipment items be purchased by a contractor, under the terms of a Federal-aid contract, for ultimate ownership by the State, it must first conduct a lease versus purchase analysis. The FHWA's approval would then be given if the SHA was able to justify the purchase as being the most economical approach. Also, once the equipment was removed from the Federal-aid project, the State was to provide an appropriate salvage credit to the project.

Following the establishment of this policy, a number of significant events have occurred which make effective management using this procedure difficult. First, in 1988, the Department issued its federalism regulation, 49 CFR Part 18, which eliminated the agency's ability to require an appropriate salvage credit when the equipment was removed from the project for use elsewhere. Salvage credit was to be based on the State's own established practices. Next, in 1991, provisions of the ISTEA provided that States could exempt FHWA oversight and procedures under certain conditions.

As a result of these actions and a number of recent field inquiries, we have re-evaluated our previous position. Future construction project authorizations involving the purchase of construction engineering equipment items for State ownership and use will adhere to the following policy:

Pursuant to 23 U.S.C. 302, SHA's must be suitably equipped to carry out the requirements of the Federal-aid highway program. When a State needs to purchase equipment to adequately meet the construction engineering requirements of a Federal-aid project, it makes no difference, relative to Federal-aid participation, whether the equipment is purchased by the State directly or through the project contractor. In either case, it is not

acceptable to use Federal-aid funds to participate in the purchase of the equipment. Rather, the equipment's cost should be amortized over the equipment's useful life. Federal-aid funds will then participate only in that portion of the amortized cost attributable to the time the equipment is used on a specific Federal-aid project(s). Participation will, of course, be accounted for as a construction engineering cost.

If you have questions on this matter, please contact Mr. Allan Rockne or Mr. David Geiger of the Contract Administration Branch (HNG-22) at (202) 366-0355.


Thomas O. Willett



U.S. Department
of Transportation
**Federal Highway
Administration**

Memorandum

Subject: **INFORMATION:** Applicability of Davis-Bacon
to Transportation Enhancement Projects

Date: JUL 28 1994

From: Acting Chief, Construction and
Maintenance Division

Reply to
Attn of HNG-22

To: Mr. Andy Hughes
Director, Office of Engineering Services (HES-04)
Atlanta, Georgia

Your June 1 memorandum transmitted a request from the Alabama Division Office for guidance on the applicability of Davis-Bacon (D-B) wage rates to transportation enhancement projects. The following information is provided in response to this request.

The D-B predetermined minimum wage must be paid to all covered workers on Federal-aid projects exceeding \$2,000 that are located on a Federal-aid highway. Title 23 defines a Federal-aid highway as any highway eligible for Federal-aid, other than highways classified as local roads or rural minor collectors. The D-B requirements do not apply to force account work performed by highway agency forces.

The applicability of D-B to a transportation enhancement project is dependent on the relationship or linkage of the project to a Federal-aid highway. If the project is "linked" to a Federal-aid highway based on proximity or impact (i.e., without the Federal-aid highway the project would not exist), then D-B requirements apply. Examples of such projects include the removal of outdoor advertising, a wetland to filter highway drainage, etc.

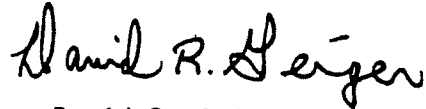
If the project is not "linked" to a particular Federal-aid highway and is eligible based solely on function (i.e., a transportation facility, such as an independent bike path, the restoration of a railroad station, etc.), then the D-B requirements do not apply. However, the D-B requirements apply to all projects greater than \$2,000 that are physically located within the existing right-of-way of a Federal-aid highway, regardless of the transportation enhancement characteristics.

Another D-B related issue, which has been raised on several occasions, is the acceptability of using volunteer labor on transportation enhancement projects. The Department of Labor states in its Field Operations Handbook (§15e23): "There are no exceptions to D-B coverage for volunteer labor unless an exception is specifically provided for in the particular D-B Related Act under which the project funds are derived." The D-B Related Act for the



Federal-aid Highway Program (23 U.S.C. §113) is silent on this subject. Therefore, on transportation enhancement projects subject to D-B coverage, a contractor or subcontractor may not use volunteer labor. On the other hand, a State highway or local government agency may use volunteer laborers under their direct control as a force account effort.

If you have further questions on the matter, please contact Mr. Robert S. Wright of my staff at (202) 366-1558.



David R. Geiger



US Department
of Transportation

**Federal Highway
Administration**

Memorandum

Subject INFORMATION: Procurement of
Transportation Enhancement Projects

Date November 12, 1996

From Associate Administrator for
Program Development

Reply to
Attn of HNG-22

To Regional Administrators

In response to several inquiries from the field, we have decided to authorize the State highway agencies (SHA's) to procure transportation enhancement projects, not located within the highway right-of-way, under the procedures of the "Common Rule." This decision is consistent with 49 CFR 18.36(j) and our treatment of other nontraditional programs funded with Federal-aid funds, such as the Recreational Trails Program.

The Federal Highway Administration (FHWA) was one of the 23 Federal Agencies that adopted the "Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments" (also known as the Common Rule - 49 CFR 18). The FHWA adopted the Common Rule on March 11, 1988. The Office of Management and Budget approved certain exceptions to the Common Rule based on existing legislation specific to each agency that adopted the rule.

One of the FHWA's exceptions to the Common Rule provides for competitive bidding on highway construction projects. Specifically, 49 CFR 18.36(j) states:

"23 U.S.C. 112(a) directs the Secretary to require the recipients of highway construction grants to use bidding methods that are "effective in securing competition." Detailed construction contracting procedures are contained in 23 CFR part 635, subpart A."

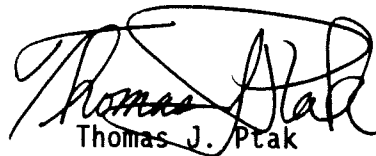
This exception to the Common Rule was developed prior to the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 and implementation of the transportation enhancement program established in the ISTEA. Since that time, SHA's and local public agencies have developed numerous enhancement projects that are transportation related, but may not always be located within the highway right-of-way. Some of these projects are relatively low cost (e.g., restoration of historic railroad stations, hiking/bicycle paths, landscaping and scenic beautification).

It is often not cost-effective to use the competitive bidding procedures in 23 CFR 635A to procure such services for low cost projects. The Common Rule offers more flexibility to the States with regard to the method of

procurement for such low cost projects. Therefore, transportation enhancement projects not located within the highway right-of-way may be procured under State procedures.

Highway related projects must still meet the linkage criteria noted in our July 28, 1994, memorandum concerning the applicability of Davis-Bacon to Transportation Enhancement Projects (copy attached). A project would be highway related if it is "linked" to a Federal-aid highway based on proximity or impact (i.e., without the Federal-aid highway the project would not exist). For transportation enhancement projects that are within the highway right-of-way, a contracting agency will continue to follow the procedures in 23 CFR 635A.

We intend to address these and other FHWA Common Rule exceptions in a future rulemaking.



Thomas J. Ptak

Attachment

Technical Advisory

FHWA Guide for Construction Contract Time Determination Procedures

10/15/02

TA 5080.15

Replaces TA 5080.15, dated 10/11/91

Section

1. Purpose
 2. Policy
 3. Background
 4. Elements in Determining Contract Time
 5. Establishing Production Rates
 6. Other Factors which Influence Contract Time
 7. Adapting Production Rates to a Particular Project
 8. Computation of Contract Time - Developing a Progress Schedule
 9. Contract Time Determination Techniques
 10. Other Project Considerations
 11. Conclusion
 12. References
 13. Training
-

1. **PURPOSE.** To provide procedures for determining contract time for construction projects.
2. **POLICY.** State Transportation Agencies (STAs) should have adequate written procedures for the determination of contract time. The FHWA's policy for contract time and contract time extensions is codified in 23 Code of Federal Regulations 635.121.
3. **BACKGROUND.**
 - a. Contract time is the maximum time allowed in the contract for completion of all work contained in the contract documents. Contract time often arises as an issue when the traveling public is being inconvenienced and the contractor does not appear to be aggressively pursuing the work. There may be a number of reasons for a project to appear dormant, such as weather limitations, concrete curing times, materials arriving late, etc. However, all too often the causes are traceable to excessive time originally established by the contracting agency to complete the project or poor contractor scheduling of construction operations.
 - b. In many instances, the duration of highway construction projects is more critical today than it was in the past. Several of the reasons are listed below:
 1. There are an increasing number of resurfacing, restoration, and rehabilitation type projects being constructed under traffic, resulting in an increase in the exposure of construction workers and motorists.
 2. Traffic volumes on most highways are significantly greater and are continuing to increase, thereby creating a greater impact on the motoring public in both safety considerations and cost.
 3. Proper selection of contract time allows for optimization of construction engineering costs and other resources.

- c. In addressing the need for completing critical construction projects where it is important to minimize traffic inconvenience and delay, many States have applied non-traditional contracting methods including time-based contractual provisions for early completion.

4. ELEMENTS IN DETERMINING CONTRACT TIME.

- a. The application of written procedures for the determination of contract time is important so that production rates and other considerations are applied uniformly throughout the State. Written procedures should address how to classify projects based upon appropriate factors such as high traffic volumes, projects with incentive/disincentive clauses, etc. Experience and judgment should be used in the final determination for which projects are critical. Written procedures should have specific provisions that address the determination of contract time for critical projects. These procedures should also account for significant geographic and climatic differences throughout the State, which could affect contractor productivity rates. The fact that some types of work can or cannot be undertaken during certain times of the year should also be addressed. Where applicable, the affect of working under traffic also needs to be considered.
- b. The reasonableness of the contract time included in contracts is important. If time is insufficient, bid prices may be higher and there may be an unusual number of time overruns and contractor claims. The agency needs to take into consideration the available contractors and their workload. Contractors should be provided the ability to schedule work to maximize equipment and labor, and if contract time is too short, these efficiencies are more difficult to obtain resulting in higher prices. If the time allowed is excessive, there may be cost inefficiencies by both the STA and the contractor. The public may be inconvenienced unnecessarily and subjected to traveling on a roadway where safety is less than desirable for an extended period of time. In establishing contract time, all highway agencies should strive for the shortest practical traffic interruptions to the road user. If the time set is such that all work on a project may be stopped for an extended period (not including necessary winter shutdowns) and the contractor can still complete the project on schedule, it means the contract time allowed was excessive.
- c. For most projects the essential elements in determining contract time include: (1) establishing production rates for each controlling item; (2) adopting production rates to a particular project; (3) understanding potential factors such as business closures, environmental constraints: and (4) computation of contract time with a progress schedule.

5. ESTABLISHING PRODUCTION RATES.

- a. A production rate is the quantity produced or constructed over a specified time period. Estimating realistic production rates is important when determining appropriate contract completion time. Production rates may vary considerably depending on project size, geographic location, and rural or urban setting, even for the same item of work. Production rate ranges should be established in the State's written procedures based on project type (grading, structures, etc.), size, and location for controlling items of work.
- b. In establishing production rates to be used for determining contract time, an accurate database should be established by using normal historical rates of efficient contractors. One method of establishing production rates is to divide the total quantity of an item on previously completed projects by the number of days/hours the contractor used to complete the item. Production rates based upon eight-hour crew days or per piece of equipment are recommended. Production rates developed by reviewing total quantities and total time are not recommended as they may result in misleading rates which tend to be low since they may include startup, cleanup, interruptions, etc.
- c. The most accurate data will be obtained from site visits or review of project records (i.e., field diaries and other construction documents) where the contractor's progress is clearly documented based on work effort, including work crew make up, during a particular time frame. A data file based on three to five years of historical data (time, weather, production rates, etc.) should be maintained.
- d. The production rates used should be based on the desired level of resource commitment (labor, equipment, etc.) deemed practical given the physical limitations of the project. Representatives of the construction industry are also usually willing to assist in developing rates and time schedules. Rates should be updated regularly to assure they accurately represent the statistical average rate of production in the area.

- e. Some jurisdictions apply production rate data taken from some of the published rate guides. This data may be useful as guidance; however, the relationship of these production rates to actual highway construction projects may be difficult to correlate.

6. OTHER FACTORS WHICH INFLUENCE CONTRACT TIME.

- a. In addition to production rates, the following items should be considered when determining contract time:

1. Effects of maintenance of traffic requirements on scheduling and the sequence of operations;
2. Curing time and waiting periods between successive paving courses or between concrete placement operations, as well as specified embankment settlement periods;
3. Seasonal limitations for certain items when determining both the number of days the contractor will be able to work as well as production rates;
4. Conflicting operations of adjacent projects, both public and private;
5. Time for reviewing false-work plans, shop drawings, post-tensioning plans, mix designs, etc.;
6. Time for fabrication of structural steel and other specialty items;
7. Coordination with utilities;
8. Time to obtain necessary permits;
9. The effect of permitting conditions and/or restrictions;
10. Restrictions for nighttime and weekend operations;
11. Time of the year of the letting as well as duration of the project;
12. Additional time for obtaining specialty items or materials with long-lead requirements;
13. Other pertinent items as determined by the STA.

- b. In setting contract time it is recommended that calendar days or a completion date be applied when project completion is critical or when a large volume of traffic is affected. Only on those projects where completion time is not a major factor should working days be considered. The significant advantage of applying calendar days or a calendar date for completion is the ease of time charge administration once the contract has begun.

- c. If the time is based on production rates per hour or per day on a working day basis, a conversion factor from working days to calendar days should be established. Conversion factors will vary by geographic location and by work type. Many contracting agencies use zero working days per month during the winter months while 20 to 25 working days per month are common during the summer. Bridgework is generally assigned the greatest number of working days per month. If historical working day data is not available, historical rain and temperature data is available from the National Weather Service to develop average working days per month.

- d. Since completion date and calendar day contracts are based on a specified award date or notice to proceed date, these types of contracts should contain a provision for adjusting the completion date if the anticipated notice to proceed date is changed.

7. ADAPTING PRODUCTION RATES TO A PARTICULAR PROJECT.

- a. Before time durations for individual work items can be computed, certain project specific information should be determined and some management decisions made. The relative urgency for the completion of a proposed project should be determined. The traffic volumes affected as well as the effect of detours should be analyzed. The size and location of the project should be reviewed, in addition to the effects of staging, working double shifts, nighttime operations, and restrictions on closing lanes. The availability of material for controlling items of work should be investigated. For example, it might be appropriate to consider the need for multiple crews on a specific item to expedite the completion when there are exceptionally large quantities or when there is a large impact on traffic.
- b. Procedures to accelerate project completion should be considered when construction will affect traffic substantially or when project completion is crucial. This is especially important in urban areas with high traffic volumes. When accelerating contract time for time sensitive projects, production rates should be based on an efficient contractor working more than eight hours per day, more than five days per week and possibly with additional workers. The development and application of a separate set of production rates for critical projects is recommended.

8. COMPUTATION OF CONTRACT TIME - DEVELOPING A PROGRESS SCHEDULE.

- a. The contract time for most construction projects can be determined by developing a progress schedule. A progress schedule shows the production durations associated with the chosen production rates for the items of work. The time to complete each controlling item of work included in the progress schedule is computed based on the production rates applicable to that project. Items should be arranged by chronological sequence of construction operations. Minor items that may be performed concurrently should be shown as parallel activities.
- b. In determining a progress schedule it should be remembered that the start and end dates for each controlling item need to be based on the earliest date for which work on that item will begin and how long it will take to complete. The earliest start date for each activity will be determined by the completion of preceding activities, and should allow for the fact that some activities can begin before the preceding activity is entirely completed. Additional time should be also allowed in the contract for initial mobilization.

9. CONTRACT TIME DETERMINATION TECHNIQUES.

Contract time determination techniques generally fall into the categories of bar charts and critical path techniques. These techniques are described below:

a. Bar Charts

1. Bar charts or Gantt charts are graphical representations of projects with specific completion dates and activities. Bars or lines are drawn proportional to the planned duration of each activity.
2. A brief description of the procedure used to develop a bar chart to determine contract time is as follows:
 - a. The first step in developing a bar chart is to break a project down into separate activities or operations necessary for project completion.
 - b. Once all the activities necessary to complete a project have been listed, the duration and completion date of each activity needs to be determined based on production rates.
 - c. With this data established, the bar chart can be prepared. A line or bar is drawn on the chart showing the time when work will be performed for each activity. The resulting diagram will represent a project, showing when each activity will be undertaken and completed.

- d. With bar charts, the progress of a project may be monitored for each activity by drawing a bar or line below the original scheduled performance to show the actual duration for each activity as it is completed.
3. Bar charts are advantageous in that they are simple to develop and easy to understand, and they offer a good method of determining contract time. Some disadvantages are that they do not show the interrelationship and interdependency among the various phases of work. Bar charts are difficult to properly evaluate when construction changes occur. Also, controlling items are shown in the same manner as minor items, thus making it more difficult to determine which items actually control the overall time progress of the project. The use of bar charts are not recommended for contract administration and project management of large or complex construction projects.
- b. **Estimated Cost Method** The Estimated Cost Method of contract time determination utilizes a comparison of dollar value to time. Based on historical information, tables illustrating project cost versus project time are developed for different project types, traffic volume, and geographic location. Examples of such project types include new construction, reconstruction, overlay and widening projects, pavement repair, and bridge construction. Contract time is essentially determined based solely on the amount of the engineer's estimate. For non-complex projects and projects affecting small volumes of traffic, this procedure may be appropriate. The estimated cost method is not recommended for use on projects where completion time is a major factor. Many items affecting the completion of a project are not taken into consideration when applying this method. Any special features that are unique to a specific project cannot easily be accounted for when using this very simplistic procedure.
- c. **Critical Path Method (CPM)**

The Critical Path Method (CPM) focuses on the relationship of the critical activities, specifically, those which must be completed before other activities are started. Working from the project's beginning and defining individual project tasks and the number of days to perform each task, a logical diagrammatic representation of the project is developed. A CPM depicts which tasks of a project will change the completion date if they are not completed on time. The evaluation of critical tasks allows for the determination of the time to complete projects. Because of the size and complexity of most projects, this method is most often applied using a computer software program. Within the CPM software, the ability to use a Program Evaluation Review Technique (PERT) provides a breakdown of each activity to boxes. This enables the user to view the connection of relationships to each activity. CPM software also has the ability to display the contract time in a bar chart view as well.

1. The first step in applying the CPM method is to break a project down into separate tasks or operations necessary for project completion. Each of these separate operations or processes is called an activity. The completion of an activity is called an event.
2. Once all the activities necessary to complete a project have been listed, the relationship of these activities to one another needs to be determined. In some instances, several activities can be undertaken concurrently, and at other times, certain activities cannot be undertaken until others have been completed. Generally, when determining the sequence of operations, some questions need to be asked such as: "What needs to be done before proceeding with this activity" or "what can be done concurrently?" Every activity has a definite event to mark its relationship with others with respect to completing a task.
3. In working with this procedure, a diagrammatic representation of the project is developed showing the correct sequence and relationship of activities and events. Each activity is shown as an arrow leading to a node, which indicates the completion of an event or the passage of time. The start of all activities leaving a node depends on the completion of all activities entering a node. Therefore, the event represented by any node is not achieved until all activities leading to the node have been completed. The resulting diagram will be a schematic representation of a project, showing all the relevant activities and events in correct sequence.
4. An actual time can be set to each activity based on production rates and other appropriate factors. The time to complete each activity is then shown on each arrow to indicate the duration. The "early start" for each activity is the earliest point in time that an activity can start, provided that all activities before it have finished. This is not necessarily the point in time that it will start; however, it is the earliest time that it can start. The "early finish" for an activity is merely the duration of the activity after its early start. As is the case with the "early start," this is not necessarily the point in time that the work represented by the activity will be over, but is the earliest point in time that it can occur. A "finish" date in CPM is the first day after the physical completion of the activity. The completion time of a project is the sum of the longest time path leading to completion of the project.
5. The optimum time and cost for performing the project can be evaluated by assigning resources i.e. equipment, labor hours, and materials to each activity. The diagrammatic representation of the project then provides a means to

evaluate the costs incurred with respect to the completion of specified activities.

6. Advantages of using the CPM include:

- It is an accurate technique for determining contract time and verifying that the project can be constructed as designed and with identified construction sequences;
- It is a useful tool for project managers in monitoring a project, especially when dealing with relationships of work items with respect to time; and
- Activities responsible for delays can be identified and corrective measures to keep a project on schedule can be determined.

Disadvantages of using the CPM include:

- The CPM requires experienced and knowledgeable staff to be used effectively;
- They require regular updates to assure that the contractor's operation is accurately represented.

10. OTHER PROJECT CONSIDERATIONS.

Construction time on certain projects such as lighting or signalization, may be governed by the long lead-time necessary to obtain materials. To minimize traffic disruption, the contract may specify a completion date several months after the notice to proceed, but the contractor should be limited to a relatively short on-site time. This may be accomplished by including in the contract a "conditional notice to proceed" clause which would allow a specified amount of time to purchase and assemble materials followed by issuance of a full work order which would be issued upon expiration of the assembly period or sooner, upon the contractor's request.

Delayed or flexible notice-to-proceed dates may be appropriate for certain projects where the ultimate completion date is not critical. The contracting agency may wish to provide a notice-to-proceed window in order to increase the probability of a competitive bid where only a limited number of contractors are available to perform the work. Such projects may include:

- Projects that consist of specialized work (seal coats, highway planting, pavement grooving or bridge painting) where a large number of these projects are being advertised within a short time period;
- Projects with a very limited number of working days;
- Building projects.

This allows the contractor to schedule this contract with consideration of other work he/she may have in the same paving season. Net benefits include lower project inspection cost and a minimal disruption to traffic.

An option that may be applicable to some projects is dividing a project into phases with each phase having its own completion date. This may be applicable when coordinating with other projects or activities in the area in order to meet tight deadlines.

11. CONCLUSION.

An essential element of every State's written contract time procedures should be the monitoring of existing projects to determine that the contract times being specified are appropriate. As a part of this process, updates and changes should be made as determined to be necessary.

12. REFERENCES.

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13. Training.

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GUIDELINES ON PREPARING ENGINEER'S ESTIMATE, BID REVIEWS AND EVALUATION

January 20, 2004

Par.

1. Purpose
2. Background
3. Pre-Bid Considerations
4. Preparing Engineer's Estimates
5. Bid Analysis and Contract Award
6. Post-Award Reviews
7. Removal from the Bidders List (Debarment)

1. PURPOSE

- a. To outline recommended procedures for preparing engineer's estimates and for reviewing bids prior to concurrence in award.
- b. To provide guidance for improving pre-bid, bid review and evaluation policies and procedures.
- c. To improve competitive bidding procedures.

2. BACKGROUND

A State Transportation Agency's (STA's) procedures for soliciting and awarding construction contracts are an important part of the competitive bidding process. To

ensure a competitive contracting environment, STAs should develop effective prequalification programs and other procedures to ensure fairness in the pre-bid solicitation process and post award review of construction bids. In addition, the STA's procedures for developing a reliable engineer's estimate are critical to the success of such programs. The engineer's estimate should reflect a fair and reasonable cost of the project in sufficient detail to provide an accurate estimate of the financial obligations to be incurred by the State and FHWA and permit an effective review and comparison of the bids received.

This guideline replaces Technical Advisory "T5080.4 - Preparing Engineer's Estimate and Reviewing Bids", dated December 29, 1980 and Technical Advisory "T5080.6; Guidelines on Contract Procedures with Emphasis on Bid Reviews and Evaluation", dated December 17, 1982.

3. PRE-BID CONSIDERATIONS

a. *Contractor Prequalification* In general, contractor prequalification is used to help determine the quantity and type of work a firm is capable of undertaking. Normally the firm's resources, its financial assets, work experience, and its staffing capability must all be identified for it to become prequalified. Some States that do not require prequalification find it necessary to collect some information via a financial statement or some other abbreviated process. These States do not specify the type of work or limit the size of project a firm may bid upon because they feel prequalification may restrict competition unduly. Other States do not prequalify but instead rely on the contractor's ability to provide a performance bond. The FHWA does not require prequalification, but if a STA elects to prequalify contractors, such procedures must not restrict competition.

Prequalification has been identified by some of the States as a useful tool for gathering pertinent information on the intricate management details of a contractor's firm. In the event of a conviction of a crime such as bid rigging, such information proves useful as an aid in determining the appropriate sanctions for the firm and/or the individuals involved. Another possible use would be to determine the relationship of firms bidding on any one project.

Specific information that should be collected from a firm includes the following: financial resources, principal individuals in the firm (anyone having a 10 percent or more interest in the firm), all affiliates or subsidiary companies including material sources, available equipment, work experience, individuals and organizations that have control or influence over the firm's bidding procedures, and whether the firm has ever been suspended or debarred from bidding and the related circumstances.

The instructions for completing the work experience section (of the pre-qualification form) should require that the firm identify all projects for which it was the prime contractor and those on which it worked as a subcontractor during at least the past two

years as well as the contracting agency for those projects. Also, the contracting agency should describe the penalties for making false statements in the pre-qualification process.

b. *Anti-collusion Statement* A sworn anti-collusion statement should be included as part of the bid proposal package. Under the 23 CFR 635.112(f), the STAs are required to include provisions in the bidding proposals that require all bidders to include a non-collusion statement with their bids. The FHWA in consultation with the DOJ has concluded that non-collusion statement may be either an un-sworn declaration made under penalty of perjury under the laws of the U.S., or a sworn affidavit executed and sworn before a person who is authorized to administer oaths by laws of the State. All non-collusion certifications shall be retained by the STA in accordance with the retention policy of 49 CFR 18.42. These certifications could serve as important evidence in the event that collusion or bid rigging is discovered at a later date. If any bidder submits a false statement, sanctions could then be taken against the firm.

c. *Standard Specifications* All States should have standard specifications that address the issue of evidence of collusion among bidders. Those State specifications that currently address this item generally specify that the STA may determine that the bidder is not responsible and reject his/her proposal based on evidence of collusion. In addition to rejection of a firm's proposal, the specification should advise that collusive bidding is a violation of the law and could result in criminal prosecution, civil damage actions, and State and Federal administrative sanctions.

d. *Bidders List* Confidentiality of the bidders' list (those firms that have taken out plans and a bid proposal document) has both advantages and possible disadvantages.

(1) With the availability of bid tabulation information and bidders lists on the Internet, the potential for bid collusion is higher than in previous years when such information was not readily available. In an effort to create the most competitive environment for potential bidders, a firm should not be aware of the identity of the other potential bidders. An advantage of keeping the bidders' list confidential is that bidders will submit what is believed to be a realistic competitive bid based upon the company's own individual circumstances. This is especially important for projects where there would be limited competition.

(2) A possible disadvantage of keeping the bidders' list confidential would be that potential material suppliers and subcontractors would not be informed of what firms to contact for upcoming projects. Therefore, a material supplier may fail to inform a potential bidder of its current prices. However, by the very nature of competitive bidding and the last-minute quotes traditionally provided contractors, it is felt both contractors and suppliers will continue to have adequate communication. Further, since the bidder must perform the contract work with his/her own firm and/or subcontract it, the burden actually lies with the bidder to determine what other firm he/she wants to work with on a project. Unless the project has new or unusual material or construction requirements, it is believed most contractors are aware of the available subcontractors and potential

material suppliers. Therefore, it is believed the bidder is generally the one seeking potential subcontractors, especially if Disadvantaged Business Enterprise goals are included in the proposal. During court testimony, defendants have stated the bidders' list was used to identify other potential prime contractors to be contacted to rig the project bids. Although there are other ways to find out who plans on bidding, i.e., from material suppliers, bonding companies, etc., at least the contracting agency is not providing this information when it keeps the bidders list confidential. It is recognized that State freedom of information or similar statutes may, however, preclude keeping the bidders' list confidential.

e. *Competition* Competition for projects by bidders is an integral part of a successful construction program. An effort should be made by the contracting agency to maximize the competition by a number of methods.

(1) Advertisement should be widespread enough to advise those potential bidders interested in the type of work and size of project involved. Based on the complexity of the project, extended advertisement periods are encouraged.

(2) Consideration should be given to the project's estimated cost/size to maximize the number of bidders. The size normally varies in each State depending on the makeup of the construction industry. In some situations, it may be desirable to divide the project into several smaller contracts to foster competition.

(3) Jobs should be allowed to be bid individually or in combination.

f. *Multiple Bid Requirements* If a State law or regulation exists which requires that more than one bid be submitted before award can be made, efforts should be made to revise or repeal it. There is evidence that in those cases where only one contractor was interested in a project and the multiple bid requirements existed, the firm actually contacted other contractors to submit a complementary bid so award could be made. If only one bid is submitted and it far exceeds the estimate, it should be rejected; but if it is at or below the estimate, it should be considered for award.

g. *Escrow of Bid Documents* The STAs should consider escrowing bid documents where it is administratively feasible to do so. Section 103.08 – “Escrow of Bid Documentation” of the AASHTO Guide Specifications for Highway Construction provides a sample specification for this requirement.

4. PREPARING ENGINEER'S ESTIMATE

The critical review of any bid depends on the reliability of the estimate it is being compared to. Therefore, State Transportation Agencies (STAs) are strongly urged to devote sufficient attention to preparation of estimates using the same level of detail as the contracting industry. The engineer's estimate should reflect the amount that the

contracting agency considers fair and reasonable and is willing to pay for performance of the contemplated work. Under-estimating causes project delay while additional funding has to be arranged to meet the contract costs. On the other hand, over-estimating causes inefficient use of funds that could be used for other projects. In addition, the engineer's estimate serves as the benchmark for analyzing bids and is an essential element in the project approval process. There are three basic approaches to estimating: actual cost, historic data, and a combination of historic data and actual cost. One of the most important factors in obtaining a good engineer's estimate is the experience of the estimator. While documented estimating procedures are helpful, contracting agencies are encouraged to provide sufficient training opportunities for their staff.

a. Estimating Methods

(1) *Actual Cost Approach* The actual cost approach takes into consideration factors related to actual performance of the work (i.e. the current cost of labor, equipment, and materials; sequence of operations; production rates; and a reasonable value of overhead and profit). This approach requires the estimator to have a good working knowledge of construction methods and equipment. Also the estimator should have resources available for determining production rates from actual work performed by the contracting industry on similar type projects as well as resources for determining current construction methods and equipment. While adjustments for current market conditions may be required, this approach typically produces an accurate estimate and is useful in the bid review process in aiding the decision to award or reject the project. However, this method may be more time consuming and may not be practical for all projects.

(2) *Historic Data Approach* The use of historic data from recently awarded contracts is a cost-effective method to develop the engineer's estimate, however, solely relying on historic data may not be appropriate when the data is based on a non-competitive bidding environment. A file of previous unit bid prices should be maintained according to type, size, and location of project. Upcoming projects should be matched to the most recent projects to develop base prices for estimating the value of the unit prices. Under this approach, bid data are summarized and adjusted for project conditions (i.e., project location, size, quantities, etc.) and the general market conditions.

This approach requires the least amount of time and personnel to develop and produces an adequate estimate for use in budgeting/programming, as long as competitive bid prices are used to build the estimate. Non-competitive bidding and unbalanced practices are the least recognizable using the historic data approach to estimating. Further adjustment of the base prices should be considered based upon the ages of the similar projects, but past inflation rates should not be projected into the future unless based on circumstances which can be reasonably expected to occur, such as labor rate increases through labor negotiations and known material price increases.

Where the magnitude and timing of future increases are uncertain and would have a major effect on critical unit prices, price adjustment clauses may be a better alternative.

(3) *Combination Approach* This approach combines the use historic bid data with actual cost data. Most projects contain a small number of items that together comprise a significant portion (e.g. 75 percent) of the total cost. These major contract items may include Portland cement concrete pavement, structural concrete, structural steel, asphalt concrete pavement, embankment, or other major items of work within the contract. To the extent practical, STAs should collect information on local market prices of materials, equipment manufacturers, dealers, and rental companies, and material suppliers to obtain current cost information on a regular basis. Davis-Bacon prevailing wage rates on Federal-aid contracts could be easily incorporated to provide labor costs as determined by Department of Labor. Current material costs are obtained from local approved sources. Equipment costs can be obtained through rental companies or equipment dealers based on a reasonable depreciation schedule. The remaining items are estimated based on historical prices and adjusted as appropriate for the specific project.

b. Confidentiality of the Engineer's Estimate

Procedures and policies concerning confidentiality range from including the total estimated construction cost in the bid proposal to keeping the estimate confidential from the public even after the project has been constructed and opened to traffic. Benefits of making the total estimate public include eliminating the possibility of only one or some of the bidders knowing what the State believes the project is worth plus removing any pressure from State employees to release the estimated cost secretly. One disadvantage of making the estimated cost public is that firms desiring to rig bids can use the engineer's estimate as a basis for determining the low-bid amount to be submitted. This is especially important in cases where the contracting agency anticipates minimal competition and/or a single bid for construction.

While confidentiality of the estimate obviously will not by itself successfully deter a firm from conspiring with other bidders, it does prevent bidders from knowing what approximate amount the contracting agency is willing to accept. For those agencies that believe total secrecy from the public is not realistic in their State, as a minimum attempt of confidentiality, a range for the estimated project cost could be provided and included in the bid proposal document. For example, a range could be established as follows:

Project Classification	Project Cost
A	\$ 0 - \$100,000
B	\$100,000 - \$250,000
C	\$250,000 - \$500,000

D	\$500,000 - \$1,000,000
E	\$1,000,000 - \$2,500,000
F	\$2,500,000 - \$5,000,000
G	\$5,000,000 - \$10,000,000
H	\$10,000,000 - \$15,000,000
I	\$15,000,000 - \$25,000,000
J	\$25,000,000 or greater

A policy of providing a specified dollar amount for a bid bond could indicate the amount of the estimate. This procedure should be revised to specify a percentage of the bid submitted, thus maintaining the confidentiality of the estimate.

c. Accuracy of Engineer's Estimate

The estimate must have credibility if the bid review process is to be effective. Estimate accuracy should be judged by comparing the estimate against the low bid (%). Estimate accuracy relies on the estimator using all the available resources to create a fair and reasonable value for the work given all particular job conditions and evaluating these conditions accurately to establish a credible estimate. It is realized that estimate preparation is not an exact science; however, it is felt the engineer's estimate should be within ± 10 percent of the low bid for at least 50 percent of the projects. If this degree of accuracy is not being achieved over a period of time, such as one year, confidence in the engineer's estimates may decline. Further, if estimated total costs are made available to the public, even after the letting, and are consistently running well above the low bid (say 15-20 percent) when a sufficient workload is available, bidders may be cognizant of the higher estimates and may submit higher bids accordingly.

Where confidence in the estimate has been established by the contracting agency, it follows that to be an effective tool, the agency must show that confidence by rejecting those low bids that are not within a reasonable percentage above the estimate. Adjustments to the estimate for projects to be re-advertised should not be made to correspond to the previous bids submitted without adequate justification.

Attachment A provides a review guide for assessing a contracting agency's procedures for developing the engineer's estimate.

5. BID ANALYSIS AND CONTRACT AWARD

In 1983, the Office of the Inspector General (OIG) performed a review of the STA's preparation of the engineer's estimate. They found that: 1). Estimates were overstated and unreliable for bid evaluation, and 2) The FHWA had not adequately reviewed the

STA's estimating procedures to assure that contracts were awarded at the lowest reasonable rates. In response to the OIG's findings and recommendations, the FHWA established criteria to support and assist the STAs to improve their estimating procedures. In addition, the FHWA Division Offices were advised to review their STA's procedures.

The engineer's estimate should be a fair and reasonable value for the work to be performed. It should be within plus or minus 10% of the low bid for at least 50% of the projects awarded. Specialized highway construction work should be evaluated on a case-by-case basis. The following guideline discusses circumstances where an apparently excessive bid may be justified as a basis for award:

a. *Assessing Competition* Competition should be considered excellent when there are six or more bids within 20 percent of the low bid, including the low bid. Fewer competitive bids should require evaluation to determine whether competition was adequate, and whether additional competition or better prices could be obtained. As a guideline to this determination, the following is offered as a suggestion for determining whether adequate competition was obtained:

Number of competitive bids * (*Range = low bid + 20 percent)	Competition May be considered adequate when low bid does not exceed **
5	120 percent of engineer's estimate
4	115 percent of engineer's estimate
3	110 percent of engineer's estimate
2	105 percent of engineer's estimate
1	The engineer's estimate

** (Exceptional types of projects should be identified where competition has been historically poor, and when the prospects of increased competition are not apparent. Such projects should be reviewed independently of this or any alternative guideline.)

b. *Considering Re-Advertisement* Few projects are considered so essential that deferral (even for 60 days to solicit re-advertised bids) would not be in the public interest. However, projects that are considered essential are of the following:

- (1) Safety projects which are to correct extremely hazardous conditions where the traveling public may be in danger.
- (2) Emergency repair or replacement of damaged facilities.
- (3) Projects to close gaps in otherwise completed facilities to allow opening to traffic.

(4) Projects that are critical elements in a staged or phased construction schedule, where a delay would mean substantial impact on the completion date of the facility.

It is difficult to justify that re-advertising would likely result in higher cost without concluding that all practical anti-inflation measures have been employed to the maximum extent possible.

Estimating errors should not be considered unless the magnitude of the error is significant and procedures are modified to attempt to prevent the occurrence of similar errors. Some errors are merely mistakes that can be corrected easily once discovered, while others are “errors of judgment” which cannot be as easily explained.

States are encouraged to track projects that are re-let and tabulate either savings or higher cost for each calendar year. If higher costs are found in the re-let projects, a thorough review of the current estimates and procedures should be performed. Also, current bid collusion detection techniques should be employed to identify potential bid rigging/collusion.

The analysis and award process for a project should be thorough even when the low bid is below or at a reasonable percentage above the engineer's estimate. It is reasonable, however, to expect that larger projects will receive a more thorough review than very small projects. The STA should have written procedures for justifying the award of contract, or rejection of the bids, when the low bid appears excessive or rejection is being considered for other reasons.

c. Bid Review Factors

(1) Factors that should be considered in reviewing the bids received for a project include the following:

- (a) Comparison of the bids against the engineer's estimate;
- (b) Number of bids submitted;
- (c) Distribution or range of bids received;
- (d) Identity and geographic location of the bidders;
- (e) Potential for savings if the project is re-advertised;
- (f) Bid prices for the project under review versus bid prices for similar projects in the same letting;

- (g) Urgency of the project;
- (h) Current market conditions/workload;
- (i) Any unbalancing of bids;
- (j) Which unit bid prices differ significantly from the estimate, and from other bids?
- (k) If there is a justification for the difference; and
- (l) Any other factors the contracting agency has determined to be important.

(2) The influence of any one of the above factors may not be too meaningful. However, when considered in combination, the results could be significant. Although the number of bids received is a measure of bidder interest, by itself the number does not indicate the degree of competition. For example, one would not normally expect a firm that is located near a project to be underbid by a firm located a distance from the project and having extensive mobilization and materials transportation costs if both firms are bidding truly competitively. A number of other factors enter into a particular firm's bid such as workload or the size of project, but a bidder's geographic location is a significant factor.

d. *Comparison of Bid Prices* A comparison of project unit bid prices should be made at each letting to determine if the contractors are submitting consistent prices on the different projects they bid. In general, there will be an adequate number of projects in each letting to make a comparison except for the large or very specialized jobs. Although the projects being compared may not be in the same geographic area, the reviewers should be aware of any geographic price differences, which normally remain constant between areas even when the overall market conditions change.

e. *Unbalancing of Unit Bid Prices* The unbalancing of unit bid prices by a contractor is difficult to assess in that it is quite normal for different contractors to place their costs such as overhead or their expected profit for the project in the unit cost of different items. Normally these costs will be in those items, which the individual contractor has determined will not be eliminated or significantly under run. The main concern of the contracting agency should be to assure itself that the bids have not been materially unbalanced in order to take advantage of errors in the plans or specifications. Unbalancing of bids may also occur on those lump-sum items that can be performed in the early stages of the project.

The distinction between a mathematically unbalanced bid and a materially unbalanced bid is often difficult. The State of Wisconsin utilizes a bid analysis procedure that was developed with the assistance of the contracting industry to identify materially unbalanced bids. The State examines significant items that are mathematically unbalanced (as identified by a certain percentage over or under the engineer's

estimated unit price for that item). If it appears that a quantity error may have caused a contractor to unbalance, the State will examine all significant bid items for quantity errors. If quantity errors are found, the State will examine the impact on the bidder ranking if corrected quantities had been used. A change in the ranking is an indicator of a materially unbalanced bid. See Attachment B.

f. *Review Committee* A multi-disciplined review committee should be used to analyze the bids received so that the various perspectives within the contracting agency are represented and are provided with technical and managerial input. This approach can also be used to readily identify the effects of awarding the contract or rejecting the bids. If a review committee is not utilized for analyzing bids, as a minimum, the estimating section should be involved. The estimating section is normally familiar with the project. Any major differences in the unit bid prices and the estimate will be readily identifiable and evaluated. Also, it keeps the estimating section apprised of any trends in the market conditions so the engineer's estimates can be kept current.

g. *General Guidelines* It may be beneficial for a contracting agency to develop general guidelines to be used in determining whether to award the contract or to reject all bids. However, each project should be considered on its own merits, as some will normally have a higher priority to begin construction than others. If guidelines are developed, consideration should be given to the use of a "sliding scale" approach for low bids over the estimate. A low bid 15 percent above the engineer's estimate of \$50,000 should not necessarily be treated the same way as a low bid 15 percent above an engineer's estimate of \$5,000,000. Also, if guidelines are used, it is recommended that the specifics be kept confidential from the general public so as not to influence contractors who are preparing bids.

h. *Submission of Bids* If a significant number of firms take out a set of plans and a bidding proposal but only a small percentage, less than 30 percent, actually submit a bid, an effort should be made to determine the reasons for the lack of interest. If the cause for lack of interest can be identified, appropriate steps should be taken to improve the situation.

6. POST-AWARD REVIEWS

a. *Evaluation Period* A conscientious effort should be made to determine if bid rigging is currently ongoing or has occurred in the recent past. To make this determination, an adequate number of projects awarded over a sufficient time period must be evaluated. A time period of approximately 5 years should be selected for the initial evaluation to determine if any abnormal competitive bid patterns exist.

b. *Review Considerations* The following information should be considered in a post-award review for abnormal bid patterns: (1) number of contract awards to a specific firm; (2) project bid tabulations; (3) firms that submitted a bid and later became a

subcontractor on that project; (4) rotation of firms being the low bidder; (5) a consistent percentage differential between the various firms' bids; (6) a specific percentage of the available work in a geographic area to one firm or to several firms over a period of time; (7) a consistent percentage differential between the low bid and the engineer's estimate; (8) location of the low bidder's plant versus location of the second and third low bidders' plants; (9) variations in unit bid prices submitted by a bidder on different projects in the same letting; (10) type of work involved; (11) number of firms that took out a set of plans and a proposal versus the number actually submitting a bid; and, (12) any other items discovered in the review that may indicate noncompetitive bidding. Re-advertised projects should be checked to determine if the eventual low bidder was also low in the first letting.

c. *Analysis* To consider or to analyze the above information to determine if unusual bid patterns exist. The information for project award must be in a readily accessible form, preferably on a computer. Further, although the analysis can be done manually, the use of a computer to analyze the data and to monitor bidding activity has become very prevalent. While many STAs have their own bid analysis system, the majority of the STAs are using the Bid Analysis and Management System / Decision Support System, (BAMS/DSS), a module within the AASHTO Trns-port® software package. The BAMS is a comprehensive system comprising five modules, which includes the Decision Support System containing the collusion detection capabilities. The use of a computer program is intended only to provide information to indicate whether further investigation is warranted. If for any reason, a person feels that bid rigging or fraud has occurred, they should contact the nearest USDOT/OIG Regional Office <http://www.oig.dot.gov/offices.php>. This may be based on a suspicion or actual evidence of fraud, waste, and abuse in any project funded by FHWA.

d. *In-depth Post-Award Review* The extent to which an in-depth post-award review should be carried out by FHWA or an SHA will depend upon the circumstances surrounding each particular review. If an FHWA field office believes that irregular bid patterns may exist and further investigation is warranted, any evidence should be furnished to the appropriate Department of Transportation (DOT), Office of the Inspector General (OIG) office and the State. Further, most SHA's should provide any evidence of wrongdoing to its State Attorney General's Office, FHWA, and other appropriate officials. The frequency of the in-depth reviews should be adequate to indicate to the contracting agency that illegal activities are not ongoing or have not occurred in the recent past.

7. Removal from the Bidders List (Debarment)

Suspensions and debarments are discretionary administrative actions taken to protect contracting agencies by preventing persons and / or companies from receiving additional contracts and / or subcontracts. At the Federal Government level, a notice of suspension or debarment ensures that the Federal Government does not conduct

business with a person or a company who has an unsatisfactory record of integrity and business ethics. Suspension and debarment actions are administered government wide; consequently, a person excluded by one Federal agency is excluded from doing business with any Federal agency. The FHWA's suspension and debarment policies are in 49 CFR Part 29 and the General Services Administration's Excluded Parties Listing System (<http://epls.arnet.gov/>) is a web based list that is updated daily for individuals and firms that are currently suspended or debarred. Contracting agencies may rely on this list to confirm eligibility prior to awarding any Federally assisted contract or subcontract.

It is desirable that each contracting agency has a written policy addressing what action will be taken in instances of contractor irregularities, such as bid rigging. A written policy serves as a deterrent to the contracting industry by advising them, in general terms, what activities the agency considers to be illegal or irresponsible and how it intends to deal with those involved should any wrongdoing be detected. Further, the policy provides a basis for any action(s) that may be taken against the individual or firm involved in the illegal wrongdoing by those responsible for enforcing the policy.

Many States have their own procedures for suspension, debarment or procedures for limiting future business dealings with non-responsible firms (see: <http://www.fhwa.dot.gov/programadmin/contracts/sdlinks.htm>). .

Attachment A –

REVIEW OF ENGINEER'S ESTIMATE PREPARATION

1. Are any State laws or regulation in effect regarding release or protection of the engineer's estimate?
2. Are any State laws or administrative regulations in effect for determination of whether a contract award is proper, based on estimate overrun, competition, or other factors?
3. Review and attach any copies of any procedures or instructions the State may have pertaining to preparation, revision, checking, and use of the engineer's estimate?
4. Briefly describe the intended process for preparation of estimates. Verify the actual method used in comparison with intended process and note any differences?
5. Does the State have an estimating section? Which other portions of the agency become involved in preparing, checking, or approving the estimate?
6. Briefly describe the personnel resources available for preparing, etc., estimates and note any workload changes vs. personnel available over the past 3 years.
7. What is the primary basis for establishing estimated unit prices?
8. What methods are used to identify and incorporate anticipated changes in cost of labor, equipment, and material?
9. Are upcoming labor negotiations considered in the process?
10. Are material suppliers contacted for anticipated material costs?
11. Are adjustments made for individual project conditions? In what way?
12. What other factors are used to adjust the primary basis to determine the estimated prices for the project?
13. In typical cases, how far in advance of the letting date is the estimate prepared?

14. How often is the estimate revised during the advertising period? Discounting addenda and quantity changes, what are the usual reasons for revising estimated prices?

15. Is every estimate routinely evaluated by anyone other than preparer? If so, when?

16. If possible, determine how often further study and/or revision is believed desirable but not accomplished due to workload restriction.

17. Is any information released publicly, which may indicate the actual or approximate value of the estimate prior to opening bids? Is the estimate released after opening bids?

- a. When?
- b. Is it published and where?
- c. Who receives copies, if published?
- d. In detail or only giving total cost?

18. Is any other information regarding the estimate available to contractor on request?

19. Review the State's experience during the past calendar year for Federal-aid contract for up to 100 randomly selected projects if the contract volume exceeds 100 projects.

- a. Determine the percentage of projects sampled where the low bid fell within ± 10 percent of the estimate, and plot the distribution of low bids above and below the estimate.
- b. Determine the percentage of projects with zero, one, two, three, four, etc., bids. Are there any project size trends noted?
- c. Prepare graphs with percent above or below estimate for each project vs. cumulative percent of number of low bids for three separate groups of projects, single bids, two or three, and four or more bids. (Each group should be arranged in ascending order to facilitate preparing these graphs.) Are any trends noted?

20. Review the Contracting agency's procedure for evaluating bids received prior to recommending award or rejection.

- a. Is there an established policy on, or apparent pattern of, awards or rejections of bids at a set level above the engineer's estimate?
- b. In the case of poor competition or excessive difference between the estimate and the low bid, does the Contracting agency contact the bidders and non-bidders who checked out proposal forms?
- c. Are there any "ground rules" for adjusting estimates after receipt of bids? Is such action taken on its own merits or may it be prompted by pressure to award an apparently excessive bid?

Attachment B

Wisconsin DOT Unbalanced Bid Analysis

(Excerpt from the Wisconsin DOT Construction and Materials Manual, Section 2.1.2.1.1, revised 10/98)

1. A unbalanced bid analysis will be performed under two circumstances:

- If the Department becomes aware of an error in a quantity of an item shown in the bidding documents.

- If an item is found to be both significant to the contract and significantly unbalanced.

2. An individual item will be considered significant to the contract if a bidder has an item included in the proposal where the difference between the total cost of the item and the estimate, expressed as a percent of the estimated total contract cost, is greater than or less than 0.50% for contracts less than \$2,000,000 and greater than or less than 0.25% for contracts \$2,000,000 and larger.

3. An item will be considered significantly unbalanced if the difference between the low bidder's unit price and the estimate, expressed as a percent of the estimate, is greater than +50% or is less than -75%.

4. The Unbalanced Bid Analysis shall consist of the following steps:

A. The estimated unit price for all items identified as being significantly unbalanced will be reviewed for correctness. Corrections will be made as needed and the low bidder's unit price will be reevaluated to determine if the item remains significantly unbalanced (see item #3).

B. Quantities for all items found to be significant to the contract will be checked and verified. Quantities will be determined based upon the bidding documents and the construction methodologies depicted in the plan. These quantities will be used only for the purpose of performing the Unbalanced Bid Analysis.

C. Corrected quantities for items known to be in error (see item #3) plus corrected quantities for all items significant to the contract will then be multiplied times the unit price bid for each contractor and a gross sum for the contract for each bidder will be calculated.

D. A comparison of the calculated gross sum totals will be made. If the calculated gross sum for the contract low bid is found to be higher than the

calculated gross sum of another bidder, the low contract bid proposal shall be determined to be materially unbalanced. If the calculated gross sum of the contract low bid proposal is found to be less than the calculated gross sum of all other bidders, that bid shall be determined to be not materially unbalanced.

E. Step D will be repeated as necessary using the next low contract bid proposal until a contract bid is found to be not materially unbalanced.

5. If the initial contract low bid proposal is found to be not materially unbalanced, the contract will be considered for award at the bid contract amount in accordance to the Standard Specifications. The contract will be based upon the bid amount and the quantities shown in the bidding documents.

6. If the initial low bid contract proposal is found to be materially unbalanced it will be considered irregular and will be rejected as nonresponsive as reasonable doubt exists that the bid does not represent the lowest cost to the Department.

7. If the initial low bid contract proposal is found to be materially unbalanced and rejected, the Department may award to the next low bid contract proposal at the bid contract amount or may elect to reject all bids and relet. Decisions will be made in the public interest and will consider consequences of reletting the project.



U.S. Department
of Transportation

**Federal Highway
Administration**

Memorandum

Subject: **INFORMATION:** Applicability of Prevailing
Wage Rate Requirements to Federal-aid Construction Projects

Date: June 26, 2008

Dwight A. Horne

From: Dwight A. Horne
Director, Office of Program Administration

Reply to
Attn. of: HIPA-30

To: Directors of Field Services
Acting Resource Center Manager
Division Administrators

Over the years, a number of questions have been brought to our attention concerning the prevailing wage rate requirements under 23 U.S.C. 113. Generally, 23 U.S.C. 113 requires all laborers and mechanics employed for construction work on Federal-aid highways shall be paid wages at rates not less than those prevailing wages as determined by the Secretary of Labor under the Davis-Bacon Act. In addressing these questions, this office has issued a number of memorandums, e-mails and letters to communicate the decisions regarding these questions. As a result, the FHWA's guidance on the applicability of 23 U.S.C. 113 is contained in various different sources. The purpose of this memorandum is to consolidate and briefly restate existing guidance and policies concerning the applicability of the prevailing wage rate requirements under 23 U.S.C. 113.

The US Department of Labor's (DOL) regulation in 29 CFR Parts 1, 3 and 5 provides the applicable policy for the implementation of prevailing wage rate requirements on federally funded construction projects. Congress extended these requirements to Federal assistance programs through a series of related acts. For the Federal-aid highway program, the related act is found in 23 U.S.C. 113 - "Prevailing rate of wage." Thus, Section 113 serves as the source statute for applicability determinations in the Federal-aid highway program while the DOL's statutes, regulations and directives provide the appropriate policy for implementing Section 113 prevailing wage rate requirements whenever these requirements apply to a Federal-aid highway project.

Section 113(a) states:

The Secretary shall take such action as may be necessary to insure that all laborers and mechanics employed by contractors or subcontractors on the construction work performed on highway projects on the Federal-aid highways authorized under the highway laws providing for the expenditure of Federal funds upon the Federal-aid systems, shall be paid wages at rates not less than those prevailing on the same type of

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work on similar construction in the immediate locality as determined by the Secretary of Labor in accordance with sections 3141-3144, 3146, and 3147 of title 40.

First, we have determined that the phrase:

- “Construction work performed on highway projects on the Federal-aid highways” means any construction project that takes place in the right-of-way of a Federal-aid highway is subject to 23 U.S.C. 113. This would include work that may not appear to be highway construction (construction of wetlands, landscaping, etc.) but is an otherwise eligible project under Title 23. Thus, any Federal-aid construction project (regardless of Federal-aid funding source) physically located within the right-of-way of a Federal-aid highway is subject to 23 U.S.C. 113 requirements. See [Mr. Anthony R. Kane’s February 13, 1992 memorandum titled: “ISTEA of 1991 – Construction and Maintenance Requirements.”](#)
- The term "Federal aid highway" is defined in 23 U.S.C. 101 as "... a highway eligible for assistance under this chapter other than highways classified as local roads or rural minor collectors." Therefore, 23 U.S.C. 113 requirements are applicable to Federal-aid construction projects on highways functionally classified as arterials and collectors but not applicable to projects located on highways functionally classified as local roads or rural minor collectors. In addition, 23 U.S.C. 113 requirements are not applicable to Federal-aid construction projects that are not located within the right-of-way of a Federal-aid highway. In certain circumstances, 23 U.S.C. 113 requirements apply to a Federal-aid construction project not located on a Federal-aid highway if the project is linked to or dependent upon a Federal-aid highway project. Examples include: a project required by an environmental document for a Federal-aid highway project or a project for the construction of a traffic control center that monitors traffic on one or more Federal-aid highways. In both cases, the project would not exist without the Federal-aid highway project. See [Mr. David R. Geiger’s July 28, 1994 memorandum titled: “Applicability of Davis-Bacon for Transportation Enhancement Projects.”](#)

Second, 23 U.S.C. 113 requirements are applied on a:

- “Contract basis” as such, contracting agencies need to be aware that the use of Federal-aid funding for any portion of a construction contract invokes 23 U.S.C. 113 requirements for all work under the contract, regardless of the amount of Federal-aid participation or the use of nonparticipating items of work. It should be noted that minor construction activities necessary to provide a connection to a Federal-aid highway would not invoke 23 U.S.C. 113 requirements for a project not located on a Federal-aid highway. Examples of minor construction activities include: the placement of advance construction signs, approach paving, curb returns, or drainage modifications on the right-of-way of a Federal-aid highway.

Third, for projects funded with emergency relief funding:

- Contract work for emergency repairs: All contract work for emergency repairs performed by contractors or subcontractors within the right-of-way of a Federal-aid

highway is covered by 23 U.S.C. 113 requirements. The term emergency repair is defined in 23 CFR 668.103 as “Those repairs including temporary traffic operations undertaken during or immediately following the disaster occurrence for the purpose of: (1) Minimizing the extent of the damage, (2) Protecting remaining facilities, or (3) Restoring essential traffic.” While contracting agencies are empowered to begin emergency repairs immediately, they must comply with 23 U.S.C. 113 requirements so that properly documented costs will be eligible for reimbursement once the FHWA Division Administrator makes a finding that the disaster is eligible for emergency relief funding.

- Contract work for debris removal only: 23 U.S.C. 113 requirements do not apply where emergency contract work is only for the removal of debris and related clean up, which is not considered to be a “construction” activity. Since 23 U.S.C. 113 only applies to “construction work,” 23 U.S.C. 113 prevailing minimum wage requirements do not apply to debris removal under the emergency relief program. However, debris removal performed in conjunction with construction, alteration, and repair work (such as highway resurfacing, re-grading, significant earthmoving, bridge repairs, etc.) is covered by 23 U.S.C. 113. See [DOL’s August 25, 2006 letter to Mr. Horne.](#)
- Work by public agency forces: 23 U.S.C. 113 requirements do not apply to State or local government agency employees who perform emergency repairs or construction work on a force account basis because government agencies (such as States or their subdivisions) are not considered contractors or subcontractors. See [29 CFR 5.2 \(h\)](#). However, 23 U.S.C. 113 requirements do apply to contracts let by State or local government agencies using an alternative procurement procedure that has been approved through the force account approval process.

Fourth, for railroad and utility relocation or adjustment projects:

- Work done by railroads or utilities: 23 U.S.C. 113 requirements do not apply to work performed by railroads, utility companies or work performed by a contractor engaged by a railroad or utility company. Payment for relocation work performed by the utilities and railroads is considered to be compensation for a relocation in order to accommodate highway construction. See [Mr. Dowell H. Anders’ May 15, 1985, legal opinion titled: “Utility and Railwork – Wage Rate and EEO Requirements.”](#)
- Work done by highway construction contract: 23 U.S.C. 113 requirements apply when utility or railroad relocation work is not accomplished through its utility or railroad forces but under a highway construction contract that has been let by the contracting agency.

Fifth, for subsurface utility location services:

- Subsurface utility engineering or utility location services are considered exploratory drilling services. These contracts provide the location of utilities for engineering or planning purposes. 23 U.S.C. 113 requirements do not apply. See [DOL's Field Operations Handbook, Section 15d03\(b\)](#).

Sixth, for ferry boats and terminals:

- The provisions of 23 U.S.C. 113 applies to the building, alteration, and repairs of ferry boats and terminals located on or servicing a Federal-aid highway route. Wage rate determinations for ferryboat building, alteration, and repairs are issued only if the location of the contract performance is known when bids are solicited. 23 U.S.C. 113 does not apply if the location of contract performance is unknown at the time of bid solicitation. However, the contract needs to include all other applicable DOL requirements. See [DOL's Field Operations Handbook, Section 15d08](#).

Seventh, for High Priority and other congressionally designated projects:

- These projects are subject to all Federal requirements unless the requirement is specifically waived in legislation. If the project is physically located within the right-of-way of a Federal-aid highway, then 23 U.S.C. 113 requirements apply. For rail line construction projects, if a portion of a rail line construction contract is within the right-of-way of a Federal-aid highway, 23 U.S.C. 113 requirements apply to all contract work. 23 U.S.C. 113 requirements do not apply to rail line contracts that are not located within the right-of-way of a Federal-aid highway.

Eighth, for Safe Routes to School and Nonmotorized Transportation Pilot projects:

- Congress required that States treat these projects as if they were on the Federal-aid system despite their functional classification or location outside the right-of-way of a Federal-aid highway. Therefore, 23 U.S.C. 113 requirements apply to all Safe Routes to School construction projects, even for projects not located within the right-of-way of a Federal-aid highway. See [P.L. 109-59, Section 1404 \(j\)](#).

Ninth, for warranty work:

- 23 U.S.C. 113 applies to warranty or repair work if this work is required in the original construction contract. This is true regardless of whether there is a pay item for the warranty work. If an employee spends more than 20 percent of his/her time in a work week engaged in such activities on the site of the original work, he/she is covered for all time spent on the site. The original contract prevailing wage rates apply regardless of when the warranty work is done. This is consistent with the DOL Wage and Hour Division Opinion Letter dated March 9, 1973, that concluded Davis-Bacon Related Act requirements applied to warranty/repair work for the construction of prefabricated housing units. The DOL determined that such work was covered because it took place at the site of the construction work and involved more than an incidental amount of construction activity.

Finally, it should be noted that other labor requirements of the DOL may apply to contracts even when 23 U.S.C. 113 is not applicable. These requirements include the Fair Labor Standards Act requirements (minimum wage, overtime pay, record keeping and child labor standards) and the

Contract Work Hours and Safety Standards Act (overtime requirements). For guidance on the application of these requirements, please visit the DOL Web site at <http://www.dol.gov/esa/whd/>.

If you have any questions regarding the applicability of DOL requirements to Federal-aid construction projects, please contact Mr. Edwin Okonkwo at 202-366-1558.



U.S. Department
of Transportation

**Federal Highway
Administration**

Memorandum

Subject: **INFORMATION:** Procurement of Federal-aid
Construction Projects

Date: June 26, 2008

Dwight A. Horne

From: Dwight A. Horne
Director, Office of Program Administration

Reply to
Attn. of: HIPA-30

To: Directors of Field Services
Acting Resource Center Manager
Division Administrators

Over the years, a number of questions have been brought to our attention concerning the procurement of Federal-aid construction projects under 23 U.S.C. 112. This statute defines the FHWA requirements for awarding Federal-aid construction contracts and design-build contracts. In addressing these questions, this office has issued a number of memorandums, e-mails and letters to communicate the decisions regarding these questions. As a result, the FHWA's guidance on the procurement of construction contracts is contained in different sources. The purpose of this memorandum is to consolidate and briefly restate existing guidance and policy.

All grants and subgrants from the United States Department of Transportation, including those under the Federal-aid highway program, are subject to 49 CFR Part 18 – Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments (referred to as the Common Rule). Specifically, under 49 CFR 18.4(a), the Common Rule applies to all grants and subgrants to State, local and Tribal governments, except where inconsistent with Federal statutes. While 49 CFR 18.36 specifies the procurement standards to be followed, this provision is inconsistent with 23 U.S.C. 112. Thus, 23 U.S.C. 112 applies to any procurement contract for highway construction or architect/engineering (A/E) services related to a Federal-aid highway project. This is also reflected in 49 CFR 18.36(j) and (t).

In general, Federal-aid highway construction projects must be awarded on the basis of the lowest responsive, responsible bidder (23 U.S.C. 112) unless the State DOT is able to demonstrate that some other method is more cost effective or that an emergency exists. The State DOT's process for advertising, letting, and awarding highway construction contracts must comply with 23 CFR Parts 635 or 636. As a condition of receiving Federal-aid assistance for A/E services in the design or construction management phases of construction projects, State DOTs must comply with the procurement requirements of 23 CFR Part 172.

On November 12, 1996, the FHWA issued a policy memorandum titled: [“Procurement of Transportation Enhancement Projects.”](#) This memorandum clarified that the State DOTs may procure transportation enhancement projects not located within the highway right-of-way using State-approved procedures under the Common Rule. For consistency, this same rationale applies



to all other Federal-aid construction projects that are not within the right-of-way of a public highway. In these situations, the procedures in 49 CFR 18.36(a) apply and a State DOT may use State-approved procurement procedures (or a local public agency may use State-approved local procurement procedures) for these types of projects. This includes:

- Construction projects physically located outside the right-of-way of a public highway. Examples include the restoration of historic railroad stations, shared use paths, recreational trails, landscaping and scenic beautification, railroad mainline improvements, rail yard improvements, etc. However, the procurement of any contract for a non-highway construction project that is linked to, dependent upon, or would not exist except to fulfill a separate requirement of another highway project (i.e. an environmental commitment) must comply with 23 CFR Part 635 or Part 636.
- Operational improvements or service related projects that take place within the right-of-way of a public highway, but the scope of the contract does not meet the definition of “construction” in 23 U.S.C. 101. Examples include operational improvement projects such as service patrols, route diversion and evacuation routing, 911/ 511 telephone systems, computer-aided dispatch systems, highway advisory or other radio systems for communicating with vehicles, etc.

Special procurement considerations:

Force account by a public agency: This procedure may be used when an State DOT can demonstrate to the satisfaction of the Division Administrator that it is more cost effective to allow the work to be completed by force account using the personnel and resources of a public agency (State, local or Tribal). The requirements for a cost effectiveness finding are detailed in 23 CFR 635 Subpart B. The public agency must be able to complete the work using personnel and equipment already on the agency’s rolls. Materials used to complete the work must meet the requirements in 23 CFR 635 Subpart D. Reimbursement is limited to the Federal share of the actual costs to the agency. Note: if the State DOT can demonstrate to the Division Administrator’s satisfaction that the work can most cost effectively be done by a nonprofit organization, the procurement process under any grant or subgrant to a nonprofit organization must fulfill the requirements of 49 CFR Part 19 – Uniform Administrative Requirements for Grants and Agreements with Institutions of Higher Learning, Hospitals, and Other Non-Profit Organizations. See 49 CFR 19.1 and 19.5. The stewardship/oversight agreement between the State DOT and the Division Office must address the review and approval of all public agency force account requests.

Emergency repair work: Emergency repair work may be accomplished by contract, negotiated contractor or public agency force account methods under 23 CFR 668.105(i). The term emergency repair is defined in 23 CFR 668.103 as “Those repairs including temporary traffic operations undertaken during or immediately following the disaster occurrence for the purpose of: (1) Minimizing the extent of the damage, (2) Protecting remaining facilities, or (3) Restoring essential traffic.” The emergency finding must meet the requirements of 23 CFR 635.204. Materials used to complete the work should meet the requirements of 23 CFR 635 Subpart D to the maximum extent possible under the emergency, however, waivers may be considered where appropriate.

Permanent repair and reconstruction work following an emergency: Under 23 CFR 668.105(i), all projects for permanent repair or reconstruction must be procured in accordance with 23 CFR Part 635 or Part 636.

Ferry Boats: Projects for the construction of ferry boats, dock construction or ferry terminals must comply with the procurement requirements of 23 CFR Part 635 or Part 636 if the ferry route is part of a public highway system.

High Priority and other Congressionally-designated projects: Unless specifically exempted by law from the requirements of Title 23, Federal-aid highway construction projects must be procured in accordance with 23 CFR Parts 635 or 636.

Railroad-highway projects: The procurement requirements in 23 CFR 646.216(f) apply to all railroad-highway projects.

Force account by a railroad or utility: Railroad and/or utility work done by the affected railroad or utility as a result of a Federal-aid highway construction project (for example, the improvement of a railroad crossing or relocation of utility lines) has been established as cost effective in 23 CFR 635.205(b). Materials used to complete the work must meet the requirements in 23 CFR Part 635, Subpart D.

Rail-only projects: Construction projects that provide for the construction, relocation, adjustment or alteration of rail facilities that are not associated with a highway construction project may be procured using State-approved procedures in accordance with 49 CFR Part 18. Minor construction activities (such as grade transition, advance construction warning signs, drainage connections, etc.) that are necessary to provide a connection to a Federal-aid highway would not result in a requirement to use highway procurement procedures.

Recreational Trails Program (RTP): RTP projects not located within a public highway right-of-way must use procurement procedures under 49 CFR 18.36. Procurement for an RTP project within a public highway right-of-way must use procedures under 23 CFR Parts 635 and 636, including projects that are administered by an agency other than the State DOT. Where Parts 635 and 636 mention State, State Transportation Department, or STD, this may be interpreted as meaning the State agency administering the RTP.

Safe Routes to School and Nonmotorized Transportation Pilot Projects: Congress required that States treat these projects as if they were on the Federal-aid system despite their functional classification or location. Therefore, these projects must comply with the procurement and contracting requirements of 23 CFR Part 635 or Part 636. See: [P.L. 109-59, Section 1404\(j\)](#).

Projects with Title 23 funds transferred to other Federal agencies: Mr. Park's July 19, 2007, memorandum titled "Fund Transfers to Other Agencies and Among Title 23 Programs" indicates that other Federal Agencies may use their own construction contracting requirements in lieu of those imposed on a State under Title 23. Therefore, other Federal Agencies may use their own procurement requirements instead of those in 23 CFR Part 635 or Part 636.

If you have any questions regarding the applicability of FHWA's procurement requirements for Federal-aid construction projects, please contact Mr. Gerald Yakowenko at 202-366-1562.



Memorandum

U.S. Department
of Transportation

**Federal Highway
Administration**

Subject: **ACTION:** Buy America Interpretation

Date: June 13, 2011

From: King W. Gee
Associate Administrator for Infrastructure

Reply to
Attn. of: HIF-1

To: Michael Davies
Acting Division Administrator
Albany, NY

This is in response to your February 24, 2011 memorandum that requested our concurrence in the position your office has developed regarding the applicability of Buy America provisions to steel casings used in micropile construction. We agree with your position that since the casings are permanently incorporated into the project, the Buy America provisions apply.. See Question and Answer No. 19: http://www.fhwa.dot.gov/construction/contracts/buyam_qa.cfm.

The Buy America requirements of 23 CFR 635.410 apply to all steel or iron materials that are "used" or "permanently incorporated" in a project. Permanent incorporation includes items that are specified in the contract documents (or bid options specified in the contract documents) that must remain in place at the end of the project. It includes items that are impractical to remove due to design, construction staging or other functional requirements. If an item is specified in the contract documents and it is impossible or impractical to remove the item, then Buy America provisions apply.

Other steel or iron items specified in the contract documents that are not required to be permanently incorporated are considered to be temporary and not subject to coverage. This includes an item that is specified in the contract documents for one stage of the project, but for all practical purposes, may be removed during a subsequent phase (or left in place if requested by the contractor and approved by the contracting agency).

Feel free to call our Buy America program coordinator, Edwin Okonkwo (202-366-1559) if you have any questions.





U.S. Department
of Transportation
Federal Highway
Administration

Memorandum

Subject: **INFORMATION**: “Responsible Charge”

Date: August 4, 2011

David A. Nicol

From: David A. Nicol
Director, Office of Program Administration

In Reply Refer To:
HIPA-10

To: Director of Field-Service
Federal Lands Highway Division Engineers
Division Administrators

The issue of “responsible charge” of Federal-aid construction projects has been raised on several occasions; most recently as it relates to Federal-aid projects that are administered by local public agencies. The following attachment provides guidance on the requirements and duties of the person designated to be in “responsible charge”.

If you have any questions about the memorandum and attachment, please contact Mr. Bob Wright as Robert.wright@dot.gov.

Attachment

Defining "Responsible Charge" in the Federal-aid Highway Program

Regulation:

The key regulatory provision, 23 CFR 635.105 – *Supervising Agency*, provides that the State Transportation Agency (STA) is responsible for construction of Federal-aid projects, whether it or a local public agency (LPA) performs the work. The regulation provides that the STA and LPA must provide a full time employee to be in "responsible charge" of the project.

Requirements of Position:

For projects administered by the STA, the regulation requires that the person in "responsible charge" be a full-time employed state engineer. This requirement applies even when consultants are providing construction engineering services.

For locally administered projects, the regulation requires that the person in "responsible charge" be a full time employee of the LPA. The regulation is silent about engineering credentials. Thus, the person in "responsible charge" of LPA administered projects need not be an engineer. This requirement applies even when consultants are providing construction engineering services.

Duties:

Regardless of whether the project is administered by the STA or another agency, the person designated as being in "responsible charge" is expected to be a public employee who is accountable for a project. This person should be expected to be able to perform the following duties and functions:

- Administers inherently governmental project activities, including those dealing with cost, time, adherence to contract requirements, construction quality and scope of Federal-aid projects;
- Maintains familiarity of day to day project operations, including project safety issues;
- Makes or participates in decisions about changed conditions or scope changes that require change orders or supplemental agreements;
- Visits and reviews the project on a frequency that is commensurate with the magnitude and complexity of the project;
- Reviews financial processes, transactions and documentation to ensure that safeguards are in place to minimize fraud, waste, and abuse; and
- Directs project staff, agency or consultant, to carry out project administration and contract oversight, including proper documentation.
- Is aware of the qualifications, assignments and on-the-job performance of the agency and consultant staff at all stages of the project.

The regulations do not restrict an agency's organizational authority over the person designated in "responsible charge," and the regulations do not preclude sharing of these

Attachment

duties and functions among a number of public agency employees. The regulations also do not preclude one employee from having responsible charge of several projects and directing project managers assigned to specific projects.

Affect on Laws Regulating Licensure:

The term “responsible charge” is used here in the context intended by the above regulation. It may or may not correspond to its usage in state laws regulating licensure of professional engineers.

**REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS**

- I. General
- II. Nondiscrimination
- III. Nonsegregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under

this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are

applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar

with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor

will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions

of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. (1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or

will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program. Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-

Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b.(1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly

rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;

(2) the prime contractor remains responsible for the quality of the work of the leased employees;

(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and

(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is

evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.

2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1. Instructions for Certification – First Tier Participants:

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this

covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. Instructions for Certification - Lower Tier Participants:

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which

this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the

department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

**ATTACHMENT A - EMPLOYMENT AND MATERIALS
PREFERENCE FOR APPALACHIAN DEVELOPMENT
HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS
ROAD CONTRACTS**

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.




U.S. Department
of Transportation
**Federal Highway
Administration**

Memorandum

Subject: **ACTION:** Clarification of
Manufactured Products under Buy
America

Date: **DEC 21 2012**

From: Mr. John R. Baxter 
Associate Administrator for
Infrastructure

In Reply Refer To:
HIPA-30

To: Division Administrators
Directors of Field Services

This memo clarifies the Federal Highway Administration's (FHWA) position regarding application of Buy America requirements to manufactured products. Our current Buy America policy is based upon the statutory provisions in the Surface Transportation Assistance Act of 1982, as implemented with a November 25, 1983, final rule.

In the preamble to the [1983 final rule](#) (48 FR 53099), after soliciting and considering public comments, the FHWA found that it was in the public interest to waive application of Buy America to manufactured products other than steel and iron manufactured products. As the Federal-aid Highway Program evolved and technology improved, the FHWA clarified the applicability of the standing waiver for manufactured products in a [December 12, 1997, memo](#). In this 1997 memo, the FHWA clarified that, while Buy America does not apply to manufactured products, Buy America does apply to components of "predominately steel products."

With enactment of the American Recovery and Reinvestment Act (ARRA), the FHWA formed National Review Teams (NRT) (now known as Project Management Improvement Teams) to conduct reviews and make recommendations on how to improve the delivery of ARRA funded projects. One NRT review recommended that a State's Buy America certification be clarified to ensure that all covered steel and iron meets FHWA Buy America requirements. In working to address this finding, questions have arisen regarding the scope of the application of the 1983 public interest waiver for manufactured products. For example, it has been suggested that nuts, bolts, washers, and other miscellaneous steel or iron parts used in common off-the-shelf products such as toilets and the filaments in light bulbs must be Buy America compliant. Given these questions, the FHWA is concerned that such a reading of Buy America is inconsistent with the previous 1983 waiver decision and is not cost-effective to administer. Accordingly, it has become necessary to clarify the applicability of the waiver for manufactured products.

The FHWA continues to support the Buy America waiver for manufactured products in the 1983 final rule, as clarified by the 1997 memo. In particular, the waiver was intended to apply to all manufactured products except for steel and iron manufactured products. For example, the 1983 rule specified that traffic controllers are covered by the waiver since these products have many different components that are difficult to trace. Over time, however, some States have subjected signal heads and other traffic control equipment to Buy America and have sought project specific waivers. In reexamining the extent of the 1983 waiver in light of the NRT finding, we believe that the scope of the waiver was intended to encompass miscellaneous steel or iron components and subcomponents that are commonly available as off-the-shelf products such as faucets, door hardware, and light bulbs.

Thus, in order for a manufactured product to be considered subject to Buy America, the product must be manufactured predominantly of steel or iron. The FHWA deems a product to be manufactured predominantly of steel or iron if the product consists of at least 90% steel or iron content when it is delivered to the job site for installation. For purposes of applying Buy America and determining whether a product is a steel or iron manufactured product, the job site includes the sites where any precast concrete products are manufactured.

Examples of products that are subject to Buy America coverage include, but are not limited to, the following:

- steel or iron products used in pavements, bridges, tunnels or other structures, which include, but are not limited to, the following: fabricated structural steel, reinforcing steel, piling, high strength bolts, anchor bolts, dowel bars, permanently incorporated sheet piling, bridge bearings, cable wire/strand, prestressing / post-tensioning wire, motor/machinery brakes and other equipment for moveable structures;
- guardrail, guardrail posts, end sections, terminals, cable guardrail;
- steel fencing material, fence posts;
- steel or iron pipe, conduit, grates, manhole covers, risers;
- mast arms, poles, standards, trusses, or supporting structural members for signs, luminaires, or traffic control systems; and
- steel or iron components of precast concrete products, such as reinforcing steel, wire mesh and pre-stressing or post-tensioning strands or cables.

The miscellaneous steel or iron components, subcomponents and hardware necessary to encase, assemble and construct the above components (or manufactured products that are not predominantly steel or iron) are not subject to Buy America coverage. Examples include, but are not limited to, cabinets, covers, shelves, clamps, fittings, sleeves, washers, bolts, nuts, screws, tie wire, spacers, chairs, lifting hooks, faucets, door hinges, etc.

If you have any questions, please contact either Mr. Gerald Yakowenko at 202-366-1562 or Mr. Edwin Okonkwo at 202-366-1558.