

## PROJECT DEVELOPMENT

### CHAPTER 5

#### Introduction

This chapter references procedures detailed in the *CDOT Project Development Manual*. The *Project Development Manual* refers to responsibilities of the Resident Engineer. When the Local Agency is administering the design of the project, the Local Agency will typically assume the responsibilities of the Resident Engineer. Questions and clarification of responsibilities should be directed to the CDOT Project Manager.

#### 5-1 Prepare Design Data - CDOT Form 463

The Form 463, which is completed in the CDOT database, is used on all projects to document important design information and provide uniform information during the project development process.

Design data on the Form 463 includes, but is not limited to:

Traffic volumes	Structural road parameters
Geometric standards	Major structures
Project characteristics	Highway classification
Right-of-way issues	Utilities
Railroad crossings	Environmental category
Agency coordination	Construction information
Entities involved	

The Form 463 is filled out cooperatively between the Local Agency and CDOT. See 1.09, "Design Data," of the *CDOT Project Development Manual* for further explanation.

#### 5-2 Prepare Local Agency / CDOT Inter-Governmental Agreement

CDOT will prepare a project agreement (contract) detailing the responsibilities for the completion of the project. The agreement shall be developed in cooperation with the Local Agency and shall cover all phases of project work for which funding is approved. See Chapter 3 of this *Manual* for further explanation.

### 5-3 Conduct Consultant Selection / Execute Agreement

The Local Agency may hire a consultant to design and/or administer the construction of its project. To obtain Federal reimbursement, the Local Agency shall use CDOT's consultant selection process or, with the prior approval of CDOT's Center for Procurement and Contract Services, use its own consultant selection process.

*Title 23 CFR Part 172, Administration of Engineering and Design Related Service Contracts*, states, "When federal-aid highway funds participate in the contract, a Local Agency shall use the same procedures as used by the State to administer contracts..."

The Agreements Unit of the Contracts and Market Analysis Branch can be contacted for a copy of CDOT's *Professional Consultant Contracting Manual: A Guide to CDOT's Policies, Procedures, Rules, Regulations and Guidelines, for Professional Service Contracts with Architects, Industrial Hygienists, Engineers, Landscape Architects, and Land Surveyors*.

Because the regulations and laws are lengthy, the subsequent steps serve as a guide for a Local Agency obtaining professional consultant services. This guidance follows the format of *Title 23 CFR Part 172*.

1. The contracting Local Agency shall document the need for obtaining professional services.
2. Prior to solicitation for consultant services, the contracting Local Agency shall develop a detailed scope of work and a list of evaluation factors and their relative importance. The evaluation factors are those identified in *Colorado Revised Statute 24-30-1403, Professional services - listings - preliminary selections*. Also, a detailed cost estimate shall be prepared for use during negotiations.
3. The contracting agency must advertise for consultant contracts if the basic construction cost of the project is expected to exceed \$1 million or if the fee for engineering or surveying services is expected to exceed \$100,000. The advertisement period must be a minimum of 15 days prior to the selection of the three most qualified firms, and the advertising should be done in one or more daily newspapers of general circulation. If the cost is expected to be less than

\$100,000, advertisement is not necessary. In those instances, contact the CDOT Project Manager for direction.

4. The request for proposals shall include the scope of work, the evaluation factors and their relative importance, the method of payment, and the goal for Underutilized Disadvantaged Business Enterprise (UDBE) participation set by CDOT.
5. The analysis and selection of the consultants are done in accordance with *Colorado Revised Statutes 24-30-1403*. This section of the regulation identifies the criteria to be used in the evaluation of CDOT pre-qualified prime consultants and their team. It also shows which criteria are used to short-list and make a final selection.

The short-list is based on the following evaluation factors:

- qualifications,
- approach to the project,
- ability to furnish professional services,
- anticipated design concepts, and
- alternative methods of approach for furnishing the professional services.

Evaluation factors for final consultant selection include:

- qualifications and abilities of personnel,
- experience on similar projects,
- ability to control costs and meet schedule,
- work location,
- current and projected work load, and
- involvement of UDBE consultants.

Under *Colorado Revised Statute 24-30-1401, Legislative Declaration*, cost shall not be considered a factor in the evaluation of professional consultant services.

6. After a consultant is selected, the Local Agency enters into negotiations with the consultant to obtain a fair and reasonable price for the anticipated work. Pre-

negotiation audit evaluations are prepared for contracts expected to be greater than \$50,000. For audit assistance, contact the CDOT Consultant Audit Unit of the Contracts and Market Analysis Branch.

Federal reimbursement is limited to those allowable under the cost principles in *Title 48 CFR 15, Contracting by Negotiation (subpart 15.404-4 Profit)*. Fixed fees (profits) are determined with consideration given to such items as project size, complexity, duration, qualifications of contractors, and degree of risk involved in the work. Profit is not to exceed 15 percent of the total allowable direct and indirect costs. Costs-plus-percent-of-cost contracts are not permissible.

7. A qualified Local Agency employee shall be responsible and in charge of the project to ensure that the work being done is complete, accurate, and consistent with terms, conditions, and specifications of the contract. At the end of the project, the Local Agency prepares a performance evaluation on the consultant (see CDOT Form 313 in Appendix A) and forwards it to the CDOT Project Manager.
8. Each of the steps listed above is documented in accordance with the provisions of *Title 49 CFR 18.42, Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments*, which provide for records to be kept at least three years from the date that the Local Agency submits its final expenditure report. Records of projects under litigation shall be kept at least three years after the case has been settled.

*Colorado Revised Statutes 24-30-1401 through 24-30-1408, Title 23 CFR Part 172, and CDOT Procedural Directive 400.1 - Obtaining Professional Consultant Services*, provide additional details for complying with the eight steps discussed above.

#### **5-4 Conduct Design Scoping Review Meeting**

The Design Scoping Review (DSR) creates an early, on-site review of a project prior to preliminary design. This enables developing a scope of work that will be consistent with the planning and design characteristics. See 8.09 of the *CDOT Project Development Manual* and Appendix B of this *Manual* for *CDOT Procedural Directive 512.1*.

### **5-5 Conduct Public Involvement**

It is recommended that Local Agencies involve the public throughout the project development.

### **5-6 Conduct Field Inspection Review**

The Field Inspection Review (FIR) is the on-site review of preliminary construction plans that signifies the end of the preliminary design phase. FIR plans are preliminary in nature, but still must contain applicable required items and details of all salient features. The FIR is held to conclude all unresolved issues identified during preliminary design and to establish the specific criteria and direction that are to be used in the final design. See 8.10, "Field Inspection Review," of the *CDOT Project Development Manual* for further explanation.

### **5-7 Conduct Environmental Processes**

The Local Agency must ensure that the environmental consequences of its transportation project have been adequately considered and that required mitigation measures can be completed within the time frame and budget described in the application. An environmental clearance is required before final design, right-of-way acquisition and construction funds are authorized. Contact the CDOT Project Manager to determine the environmental requirements.

### **5-8 Acquire Right-of-Way**

All right-of-way needed in connection with Local Agency projects must be acquired in compliance with Public Law 91-646, the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, commonly called the Uniform Act.

Before Federal funding can be authorized for right-of-way purposes, CDOT must review and approve a set of right-of-way plans which includes legal descriptions and topographic features for all land acquisitions, a relocation plan, if applicable, and cost estimates prepared for the project. All right-of-way shall be purchased prior to advertising for bid.

The Uniform Act applies when Federal dollars are utilized in any phase of the project. The Uniform Act applies even when Federal dollars are not used specifically for property acquisition or relocation activities, but are used elsewhere in the project, such as planning, environmental assessments or construction.

The Uniform Act is divided into three major sections or titles. Title I, General Provisions, covers definitions. Title II, Uniform Relocation Assistance, contains provisions relating to the displacement of persons or businesses by Federal or federally assisted programs or projects. Title III, Uniform Real Property Acquisition Policy, pertains to the acquisition of real property for Federal or federally assisted programs or projects.

CDOT must provide assurance to the FHWA that it can fully comply with the Uniform Act. The Local Agency must certify that it has followed the Uniform Act when acquiring real property. See Appendix B for two example right-of-way certification letters.

The Local Agency may accept, as part of a Federal or federally assisted project, a parcel that a developer has dedicated or proposes to dedicate. Dedication is the process of reserving a parcel of land for a future public use. A dedication is usually made as part of the subdivision or zoning approval process. The Local Agency may accept land dedicated pursuant to the local planning process or at the request of the property owner for land use concessions that are consistent with applicable local and Federal project and environmental regulations.

Real property obtained through normal zoning, or through subdivision procedures requiring dedication of strips of land in the normal exercise of police power, is not considered to be a taking in the constitutional sense and does not call for payment of just compensation or compliance with the Uniform Act. Land acquired in this manner may be incorporated into a federally assisted project without jeopardizing participation in other project costs. However, any dedication undertaken to circumvent Federal requirements is unacceptable.

Property owners whose real property is to be acquired for a project may make a gift or donation of the land, or any part of it, or of any of the compensation paid for it, to the acquiring agency. The owner-donors must be fully informed of the right to receive just compensation for the acquisition of the property if it is desired. The owners must also be fully informed that they are entitled to have an appraisal made of the property along

with an offer of just compensation. The owners may release the Local Agency from either or both of these obligations. This release must be acquired in writing.

The Local Agency shall work closely with the CDOT Project Manager and the CDOT Right-of-Way Manager during the entire acquisition process, both to expedite acquisition and to assure that all Federal and State requirements are met.

## **5-9 Obtain Utility and Railroad Agreements**

### **Utilities**

It is the Local Agency's responsibility to coordinate with all affected utility owners to identify existing facilities, determine where conflicts exist, and negotiate relocation requirements and payment terms.

Pursuant to *Title 23 CFR 635.309(b), Authorization to Advertise*, no project can be advertised until CDOT has provided written certification that all conflicts with the utility companies have been resolved. The Region Utilities Engineer will issue a Utility Clearance for the project.

The Region Utilities Engineer provides guidance to the Local Agency Project Manager in identifying and addressing all utilities affected by the project.

The Local Agency Project Manager shall:

1. Identify, verify, and locate known utilities and conflicts within project limits.
2. Coordinate necessary utility relocations and negotiate the agreements and/or permits.
3. Draft project utility specifications, and ensure that existing utility lines and any relocation requirements are accurately shown and/or reflected in the project plans, specifications and estimates.
4. Submit project Utility Clearance letter to the Region Utilities Engineer.
5. Process utility billings.

## **Railroads**

The Local Agency may encounter railroad involvement in one of two contexts:

1. On projects specifically for the installation of safety devices at highway/rail at-grade crossings, or
2. When the transportation project will encroach upon railroad property and/or impact railroad facilities.

On Local Agency projects with railroad involvement, an agreement between the railroad and the Local Agency is required. An application may need to be submitted to and approved by the Colorado Public Utilities Commission. The CDOT Railroad Program Office in the Traffic and Safety Engineering Branch can furnish guidance and support at the Local Agency's request.

### **5-10 Conduct Final Office Review**

The Final Office Review (FOR) is a final review of construction plans, specifications and cost estimates for completeness and accuracy. The Final Office Review plans are to be final in nature. See 8.12, "Final Office Review," of the *CDOT Project Development Manual* for further information.

### **5-11 Justify Force Account Work by the Local Agency**

Usually, actual construction of a project is performed under a contract awarded to the lowest responsible bidder. However, under limited circumstances, it may be in the public interest for a Local Agency to construct a portion of a project on a force account basis. In this context, the term "force account" means the direct performance of project work by the Local Agency using labor, equipment and materials furnished by it and used under its direct control.

It may be found in the public interest and cost effective for a Local Agency to undertake a construction project by force account when a situation exists in which the rights and responsibilities of the community at large are so affected as to require a special course



of action. Situations that are considered in support of any request for a Finding in the Public Interest (FIPI) include:

1. The Local Agency, through cost comparison, demonstrates that it is more cost-effective to do the work itself rather than bidding all or part of the project.
2. An insufficient number of qualified contractors in the area that could reasonably be expected to submit bids.
3. Special construction conditions indicating that all bids submitted would be unreasonably high.
4. Special situations where time does not allow for completion of the process leading to bid contract award. Considerations might be safety, or special public agency budgeting requirements.

The CDOT Region Program Engineer must approve the FIPI justification before a Local Agency is authorized to perform any work on a project by the force account method. Upon receipt of the FIPI justification, the CDOT Region Program Engineer will prepare the CDOT Form 895 - Region Certification - Force Account and Finding in the Public Interest (see Appendix A).

## **5-12 Justify Proprietary Items**

When the use of a patented or proprietary (trade name) item is essential for a project, a Finding in the Public Interest shall be prepared which documents that no equally suitable alternative exists.

See 8.16, "Proprietary Items," of the *CDOT Project Development Manual* for further information.

## **5-13 Document Design Exceptions - CDOT Form 464**

The Form 464 - Design Exception Variance Request is used to document a project design exception (variance). This form documents important decisions, mitigation and safety information required when minimum design standards, as identified on the CDOT

Form 463 - Design Data cannot be met. See 1.10, "Design Exceptions (Variance)," from the *CDOT Project Development Manual* for information on preparing a variance letter.

#### **5-14 Prepare Plans, Specifications and Construction Cost Estimates**

Plans and specifications of a project describe the location and design features with all the construction items in sufficient detail to facilitate construction. The estimate reflects the anticipated costs in detail to permit an effective review and comparison of bids received.

A complete plans, specifications and estimate package shall include:

1. *CDOT Standard Specifications for Road and Bridge Construction* as supplemented and approved Local Agency specifications.
2. Plans in the form of detailed drawings.
3. Detailed cost estimate of bid and force account items (by both the Local Agency and the Contractor).

For all projects that require the preparation of design or engineering plans, the Local Agency is required to have professional personnel on its staff or under contractual agreement to be in charge of the project, as appropriate, an architect certified by the Colorado Board of Examiners of Architects, an historian, an architectural historian, or a Professional Engineer certified by the State Board of Professional Engineers and Land Surveyors. All projects involved with the rehabilitation or preservation of historic buildings, structures or sites are coordinated with and receive written approval from the State Historic Preservation Officer.

Construction plans are sealed by the Professional Engineer according to Rule VIII, bylaws and rules of procedure of the State Board of Registration for Professional Engineers and Professional Land Surveyors, and *CDOT Procedural Directive 508.01 - Professional Engineer's Stamp*. The Local Agency's project manager is responsible for coordinating all project-related activities with CDOT, including the status of the project plans. CDOT has final approval authority for plans and specifications submitted for advertisement and construction.

The Local Agency completes the project plans and specifications per CDOT requirements during the project development process. CDOT reviews the final set of construction plans and specifications. The CDOT Project Manager submits a CDOT Form 1180 - Standard Certification and Project PS&E Approval to authorize construction funds when the project is ready for advertisement. The Region EEO/Civil Rights Specialist sets the Underutilized Disadvantaged Business Enterprise goals and On-the-Job Trainee requirements for CDOT's Project Manager.

See 8.20, "Plans, Specifications and Estimate Approval," of the *CDOT Project Development Manual* for further information.

### **Bid Package**

A bid package contains a confidential cost estimate that bidding contractors are not allowed to view, a set of plans, project specifications, and other supporting documents. The package is prepared for contractors to submit sealed bids in competition with other contractors to win the right to construct a project.

The Region will approve Local Agency administration of the bid package process after ensuring that the Local Agency's bidding procedures meet Federal regulations. The bid package procedures also require that bid items used for estimating purposes be generated in compliance with CDOT specifications and standard bid items. CDOT will furnish applicable bid item information to the Local Agency for developing project cost estimates. CDOT's review of the final cost estimate prior to completion of the bid package will be at the discretion of the Project Manager.

### **5-15 Ensure Authorization of Funds**

Authority to spend funds for preliminary engineering through final design, right-of-way, utilities, and construction is authorized in phases. CDOT will prepare the necessary paperwork to initiate the funding process concurrently with preparation of the CDOT/Local Agency Agreement. Funds spent by the Local Agency before CDOT authorization are not eligible for reimbursement unless specifically approved by the Local Agency Coordinator.

An eligible Federal-Aid Local Agency construction project must include an end-result product; e.g., a particular portion of a highway. However, this does not preclude the authorization of a project with Federal funds participating in only a portion of the work; e.g., the cost of materials.

Upon CDOT authorization to proceed, the Local Agency is able to charge eligible costs to the project. Billing charges are submitted once a month or less frequently to the CDOT Project Manager during the project development phase and to the CDOT Project Manager or Resident Engineer during project completion/construction. Billing procedures and required documentation will be established during CDOT/Local Agency Agreement negotiations. It will take approximately 45 days for CDOT to review and approve project billings submitted by the Local Agency.