

# Reclamation Manual

## Directives and Standards

<b>Subject:</b>	Construction Cost Estimates and Project Cost Estimates
<b>Purpose:</b>	To set forth the Bureau of Reclamation's cost estimating requirements for new construction on all Reclamation projects seeking Authorization from the Congress and ensures proper application of the cost classification categories. The benefits to Reclamation include improved quality and consistency of cost estimates, the facilitation of corporate oversight for these projects to support successful project accomplishment, improved ability to maintain credibility with water and power users and other customers, and otherwise sustain Reclamation's credibility.
<b>Authority:</b>	Reclamation Project Act of 1902 as amended, and specific authorizing legislation; Federal Acquisition Regulations (FAR) 36.203.
<b>Approving Official:</b>	Director, Technical Resources
<b>Contact:</b>	Director, Technical Service Center, 86-68000

1. **Introduction.** This Directive and Standard (D&S) further defines Reclamation Manual (RM), *Cost Estimating* (FAC P09), with respect to the development of Construction Costs Estimates (CCE) and Project Cost Estimates (PCE). This applies to new construction only, (i.e., those projects seeking authorization from the Congress) and is not germane to general Reclamation programs, e.g., Safety of Dams projects and operation and maintenance projects as these projects do not use CCEs or PCEs as defined in this document. Information regarding estimates which support safety of dams or operation and maintenance (O&M) projects is identified in references provided in Paragraphs 11 and 12, respectively, of RM D&S, *Cost Estimating* (FAC 09-01).
2. **Scope.** Reclamation policy requires the preparation of an estimate of the construction and project costs from the time of the initial preliminary investigation, through feasibility, final design, and construction, until all construction is complete. The estimate must include the entire project, division of the projects, or unit as an entity; and it must include all costs accrued throughout the construction period.
3. **Required Estimates.** Total construction costs are recorded using the CCE and PCE.
  - A. **Construction Cost Estimate.** The CCE consists of the costs of the construction of the physical features of the project (i.e., contract costs), the land and rights, relocation of existing real properties, clearing and restoring lands, service facilities, investigations, engineering (preparation of designs and specifications, construction management, and contract administration), O&M costs while a feature is in Construction Status, and other general expenses. The CCE is first developed in the planning stage of a project and maintained through subsequent stages of the project through completion. The costs included in the CCE at any stage of the project will include a combination of actual expenditures for work completed to date and estimated for all remaining work. A CCE

# Reclamation Manual

## Directives and Standards

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will contain cost details such as listing of work item details required to construct various features. These costs will include both contracts and non-contract (Paragraph 6) expenditure, such as work or materials descriptions, units of measure, and unit pricing, along with cost allowances for unlisted work and contingencies. Allowances for other considerations such as those described in Paragraph 7 must also be included.

- B. Project Cost Estimate.** The PCE is a summary report of the costs found in the CCE and not a separately developed estimate. The PCE includes all the cost items identified within the CCE, but the data does not extend below the plant account (feature name) level. The PCE is used in planning reports, in seeking congressional authorization, and in support of requests for initial construction funding.
- (1) After a feasibility study is authorized, project concepts are refined and the PCE is updated to a feasibility level, which is a prerequisite for project authorization. The PCE may then be submitted to the Congress for project authorization and for construction appropriations. After project authorization, the project is in construction status and the planning status/stage is completed.
  - (2) After construction begins, the PCE will be updated once annually (March/April), in conjunction with updated CCEs, or as required, to support budget and program schedules submitted for the future fiscal years, until the project is completed. The PCE is the basic cost estimating document used in the scheduling process and in controlling the cost of project works until the completion of construction. Refer to Paragraph 4 for additional information regarding the use of the PCE in the budget process.

#### 4. Use of Estimates in the Budget Process.

- A.** Refer to RM D&S, *General Instructions for Use of Estimates in the Budget Process* (BGT 01-02), for how the PCE is used. The entire program system for Reclamation is founded on estimates of the cost of each activity as related to the fiscal year. In planning any program on a cost basis, as is the case in the preparation of Control Schedules,<sup>1</sup> an accurate estimate of the total cost of the program must be prepared. Therefore, the accuracy of these schedules can be no better than the PCE. These estimates form the basis for the amounts included in the Federal budget, the allowances established by the Office of Management and Budget (OMB), the appropriations made by the Congress which pertain to Reclamation and the allotment of funds to every activity. The estimates of total costs used in the control schedules are taken from the CCEs and PCEs. Schedules for construction activities are prepared on the Supporting Schedule [Form PF-2b/RR-01] and are summarized on the Control Schedule

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<sup>1</sup> Control Schedules have historical designations of PF-2 [Control Schedule] and PF-2b [Supporting Schedule]. In the current Program and Budget System (PABS), these schedules have the respective designations of RR-02 and RR-01.

# Reclamation Manual

## Directives and Standards

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[Form PF-2/RR-02]. If obligations are programmed in either the current or budget year, these schedules shall be prepared and maintained under the direction of the operating office head, reviewed by the regional staff, and must be approved by the Regional Director before submission to the Commissioner's Office. Separate schedules shall be prepared for each authorized construction project, when included in the budget presentation, and maintained until completion of all construction activity. These schedules are addressed in RM D&S, *Instructions on Budgeting for Construction – Estimates, Schedules, and Supporting Documents* (BGT 01-04).

- B. The supporting schedule is Reclamation's basic construction document. This schedule is a plan sheet for scheduling and rescheduling specific actions on the project. Thus, it provides historical data, detailed information on work proposed, and funding requirements in future years. This schedule is required by the Commissioner's Office for substantiating data when the program is being justified before OMB and the Congress.
5. **Completing CCEs and PCEs.** CCEs shall be prepared for all construction work from the planning stage through completion of construction, and also for rehabilitation of a project and all major replacements or upgrades after the initial construction period. The CCE for a project or portion of a project consists of a comprehensive breakdown of the total project costs per the requirements of Reclamation's cost classification system. The elements of the cost classification system used for preparation of the CCE are described in detail in the *Cost Estimating Handbook*.
- A. Briefly summarizing the cost classification system, it is an accounting structure based upon proper identification of project construction costs using four categories; these are:
- (1) Property Class
  - (2) Identified Property
  - (3) Construction/Plant Accounts
  - (4) Item
- B. Property classes are types of facilities or assets and are assigned two-digit numbers ranging from 01 through 15.
- C. An identified property is a major physical feature, a distinct and separate physical feature, or a group of closely related physical features within property classes. These are assigned a two-digit identified property number. The numbers are assigned sequentially within the property class without specific assignment guidelines.
- D. Within each identified property, construction/plant accounts are used to accumulate construction costs by asset types, which are identical or similar physically or

# Reclamation Manual

## Directives and Standards

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functionally. Construction/plant accounts are assigned three-digit numbers ranging from 100 to 199.

- E. Sequential line item numbering is required to identify each cost element within a feature.
  - F. A construction cost classification may be established on a project, division, or unit basis. One group of construction cost accounts may be used for an entire project if there are no divisions or units of the project, or if there are project divisions or units, but separate cost classifications are not needed.
  - G. Also included in the *Cost Estimating Handbook* are examples showing the property accounts that are applicable to each property class as well as the property classes to which the distributive costs (service facilities, investigations, engineering, and other costs) are allocated.
  - H. A PCE shall be prepared for all construction work also requiring a CCE. The PCE for a project or portion of a project consists of a summary of the CCE sheets, namely a recapitulation of the total cost by property classes and identified properties.
  - I. The *Cost Estimating Handbook* contains example forms for a CCE and PCE along with details of the types of data to be recorded. Alternative presentations are acceptable providing they contain the required data.
6. **Non-Contract Costs.** It is important that all non-contract costs are properly recorded in the CCE and PCE. Non-contract costs refer to work or services provided in support of the project, some of which can be expensed against a specific plant account, and other work which is of such a broad non-specific nature that it can only be attributed to the project as a whole. These costs generally originate for work or services provided by agency personnel (or contractor personnel used to augment agency resources), or land or right-of-way acquisitions to facilitate project development.
- A. **Examples.** Examples of costs that are not typically charged to specific features or properties (see the *Cost Estimating Handbook*) are:
    - (1) Lands and Rights [100]
    - (2) Relocation of Property by Others [110]
    - (3) Distributive Costs [001]

# Reclamation Manual

## Directives and Standards

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- B. Lands and Rights.** In addition to discretionary information contained in the *Cost Estimating Handbook*, also see RM D&S, *Plant Accounting – General Property, Plant, and Equipment* (FIN 07-20B(2)) for a definitive discussion of cost elements to be recorded in this account. Although this is a plant account, land costs may not be attributable to a specific feature or property.
- C. Relocation of Property by Others.** In addition to discretionary information contained in the *Cost Estimating Handbook*, also see *Plant Accounting – General Property, Plant, and Equipment* (FIN 07-20B(2)) for a definitive discussion of cost elements to be recorded in this account. Although this is a plant account, relocation costs may not be attributable to a specific feature or property.
- D. Distributive Costs.** Distributive costs are expenses that have a broad, non-specific nature and cannot be attributed to any specific project feature. Examples of such costs include but are not limited to facilitating services, investigations, design and specifications, construction management, environmental compliance, archeological considerations, and O&M during construction (if applicable). Following the completion of construction, these costs are distributed to the various features being transferred to plant in service. The cost of the service facilities and the cost of planning (investigations), engineering, and other costs are to be distributed to the appropriate identified properties in property classes 01 through 15 in the same proportion as the associated total field cost. These types of costs are best attributed to one of the following cost centers:
- (1) **Service Facilities.** Service facilities are those items intended primarily for use in the construction of permanent properties. Camps, construction roads and trails, utility systems, transportation equipment, and most costs of temporary plant used during construction are included under this heading. The heading does not include materials and equipment fabricated in shops nor plants producing materials for use in the operations, which items become materials and supplies when charged to permanent work. The estimated costs for construction facilities will be shown on the CCE by identified properties, accounts, and items.
  - (2) **Planning (Investigations)<sup>2</sup>.** This item shall include all appropriate planning (investigation) costs, regardless of nature, that will be required to be charged to the project should the project be authorized for construction and eventually constructed, and shall be defined as follows:

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<sup>2</sup>Planning costs incurred prior to authorization of a project for construction are generally non-reimbursable, pursuant to Public Law 92-149. Any planning costs incurred after a project is authorized for construction are generally allocable to the authorized project purposes, as discussed in the *Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies* (Sections 1.9.1, 2.12.5). Because of the difference in reimbursability, planning costs incurred prior to the project being authorized for construction and planning costs incurred after such authorization are kept in separate accounts.

# Reclamation Manual

## Directives and Standards

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- (a) **Studies.** Included in this category, regardless of the appropriation from which paid, are the collection, assembly, analysis of data, and the preparation and review of reports in connection with project planning, rehabilitation, betterment, or extension; collection, assembly, analysis of data, and the preparation and review of reports in connection with National Environmental Policy Act compliance, meteorology, hydrologic, biologic, cultural, economic, commercial, industrial, agricultural, power and water supply and demand, power marketing and network, and similar studies and investigations; collection, assembly, and submission of planning reports, preparation and review of preliminary designs and cost estimates, and related design activities in connection with project planning (appraisal and feasibility reports). The costs of preparing appraisal-level reports are not typically assigned to a project and therefore are not included in the CCE and PCE unless such reports were relied upon for construction authorization in absence of a feasibility study.
- (b) **Surveys and Design Data.** Included here are the collection, assembly, and submission of survey and design data for the preparation of designs and specifications, and acquisition of right-of-way.
- (3) **Engineering and Other Costs.** Several categories of items in the group are described in the following paragraphs:
  - (a) **Designs and Specifications.** Included in this category are the preparation and review of final designs, construction drawings, specifications, construction cost estimates; procurement activities and similar or related activity, including CCE, percent design, prevalidation of funds estimates, and Independent Government Cost Estimates, in connection with construction, reconstruction, fabrication, rehabilitation, or extension of project works. These expenses occur primarily before contract award but may also include contract modifications work.
  - (b) **Construction Engineering and Management.** Included in this category are engineering administration, management, coordination, and control of construction, reconstruction, rehabilitation, betterment, major repair, or extension of projects and other works. Expenses within this element generally occur after contract award.
    - (i) Management and office engineering includes the construction engineer, field engineer, and the office engineer and their staff on construction operations and contract administration, exclusive of design; and other construction engineering employees, regardless of organizational assignments, not specifically included in survey and inspection and laboratories categories.

# Reclamation Manual

## Directives and Standards

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- (ii) If not included as part of the design and specifications costs, the costs for employees of offsite (area, regional, and Denver) offices engaged in construction administration must be accounted for here.
  - (iii) Construction survey and inspection includes surveyors and inspectors engaged in layout and inspection, quality reports, field tests, etc., inspection of materials, equipment, construction methods, safety practices, etc.
  - (iv) Laboratories include employees engaged in concrete, soils, and other laboratory technology.
  - (v) Program management includes salaries and expenses of the program manager and assistants.
  - (vi) Construction safety engineering includes salaries and expenses of safety engineers and assistants.
- (c) **Other Costs.** Included in this category are the general expenses incurred after appropriation of funds for construction, not readily identified within studies, surveys, designs and specifications, or construction management, including general office salaries, general office supplies, general office expenses (e.g., rent and utility services), general transportation expenses, security, environmental oversight, mitigation/cultural resources services, legal services, etc.; O&M during construction (if applicable) shall be included here.
7. **Other Considerations.** The following conditions will be considered by the regional director or delegate to ensure appropriate and complete costs are included in the CCE and PCE. Note, the CCE and PCE are still subject to the same authorized ceiling.
- A. **Procurement Considerations.** The regional director or delegate shall determine as soon as practicable the procurement strategy(s) that will be used for procuring associated project features. If this strategy includes non-competitive procurements or limits the competition, the regional director or delegate will consider if additional costs will be realized and therefore included in the CCE and PCE. These additional costs may be either contract or non-contract costs or both.
  - B. **Legislative Considerations.** The regional director or delegate shall determine as soon as practicable if specific legislative requirements will impact the project or any associated project features. If it is determined that additional costs will be realized, the regional director or delegate shall ensure these are included in the CCE and PCE. These additional costs may be either contract or non-contract costs. However, the CCE and PCE are still subject to the same authorized ceiling.