

## **Section 5 - Capital Project Cost, Schedule, and Risk Reporting**

- I. Introduction - Project cost, schedule, and other risk factors must be carefully considered while delivering CIP projects. Without a careful understanding of these factors, poor decisions related to project value can result. A thoughtful process is required to manage each factor from project inception through project closeout. HRSD has adopted the Association for the Advancement of Cost Engineering (AACE) construction cost estimate classification philosophy for the various stages of study and plan development, with a few modifications to meet the needs of HRSD. HRSD expects that each FIRM will provide the effort necessary to provide cost information to the level of accuracy defined below. The following classifications are to be used at these described milestones for reporting to HRSD the Opinion of Probable Construction Costs (OPCC) along with the upper and lower range of the class estimate, unless otherwise approved by the responsible HRSD Project Manager.

- Class 10: Future Need/Order of Magnitude Risk
- Class 5: Up to 2% project definition (Initial Budget Development stage) with expected accuracy range of -20% to +100% above calculated cost.
- Class 4: Project definition 1 to 15% (Study or PER stage) with an expected accuracy range of -15% to +50% above calculated cost.
- Class 3: Project definition 10 to 40% (Preliminary Design stage) with expected accuracy range of -10% to +30% above calculated cost.
- Class 2: Project definition 30 to 75% (Pre-Final Design stage) with expected accuracy range of -5% to +20% above calculated cost.
- Class 1: Project definition 65 to 100% (Bid Advertisement or Preconstruction stage) with expected accuracy range of -3% to +15% above calculated cost.

A letter from the FIRM, signed by the FIRM's principal in charge, shall be included with all OPCCs and shall document conformance with all of the requirements herein.

Construction cost estimates will carefully consider:

- The project scope, complexity, and risks
- Input from the local contracting community
- Input from significant suppliers/vendors
- Local market conditions
- Similar, recent project costs, including a review of HRSD's construction cost database

Construction cost estimates will include the following specific items (at a minimum):

- Materials
- Labor
- General conditions
- Owner-furnished items

- Bonds/Insurance
- Profit
- Contingencies
- Market adjustment factors

All OPCCs with a total value of >\$50M shall also include a secondary estimate from an independent team not directly involved in the project. Prior to the use of the independent team, the FIRM shall review, for approval, the qualifications of this team, the timing of their involvement during the project lifecycle, and their scope of work with the HRSD Project Manager.

This Section identifies tracking total project costs, OPCC, schedule, and risks to cost/schedule against the CIP baseline during each project's life. HRSD desires to learn what is happening on individual projects and, if possible, have an opportunity to make changes to compress the budget or schedule at earlier stages. Cost estimates should include design, construction, land acquisition, and all other project-related costs.

II. FIRM's Responsibilities - The FIRM shall provide the following reports to HRSD's Project Manager as indicated below for each project.

- A. An example **Project Budget and Schedule Estimate, and OPCC classification report** is included as Attachment A. This table is to be modified and updated so that all information throughout the project's life will be contained in a single document. The document will be in a format approved by the HRSD Project Manager and will accompany the monthly payment reimbursement request unless otherwise approved by the HRSD Project Manager.
- B. An example **Project Risk Table** is included as Attachment B. The document will be in a format approved by the HRSD Project Manager and will accompany the monthly payment reimbursement request unless otherwise approved by the HRSD Project Manager. HRSD expects FIRM to submit the risk management framework for the project being planned, designed, or constructed to the HRSD Project Manager at the beginning of the project and to continue updating it during the project life cycle. The risk management framework, including a clear description of consequence types, likelihood ranges, risk tolerance, and risk treatment approach, is expected as a submittal throughout the project life cycle.
- C. A **template schedule primarily used for internal stakeholder coordination** is included in Attachment C for PER, Design, Preconstruction, and Construction phases, showing example key involvement milestones and dates for HRSD personnel (other than the HRSD Project Manager). Examples of HRSD personnel include Real Estate Manager(s) for property matters; Engineering Compliance Manager for review of preconstruction assessment and damage mitigation plan;

Electrical and Instrumentation staff involved with submittal reviews during PER/Design and various field verifications during construction and start-ups; and Operations staff for maintenance of plant/piping/pumping operations and verifications and activities associated with construction Substantial Completion and Final Completion milestones.

Each prepared and updated project phase schedule will include dates that require HRSD personnel involvement, such that HRSD can plan when various staff will need to be available.

The appropriate project stage schedule table for each CIP project is to be created, updated, and to accompany the monthly payment reimbursement request. At a minimum, the dates from the most recently published CIP (<https://www.hrsd.com/cip>) will be incorporated by the FIRM into the schedule, so that the entire expected duration of the project can be captured. As the project progresses from PER through Construction, additional or more accurate dates for each phase shall be included by the FIRM. The project schedule will be in Excel format.

- D. An **Excel template for estimating total Project Budget** is included in Attachment D. This template is to be used and submitted at each project phase milestone, either as a stand-alone table or included in a Study, PER, or similar report as directed by the HRSD Project Manager. The FIRM shall provide an updated budget form to the HRSD Project Manager for each active CIP project no later than the first week of January of each calendar year to assist HRSD in the annual CIP update cycle.

III. Attachments:

- A. Project Budget and Schedule Estimate Report and OPCC Classification
- B. Project Risk Table
- C. Schedule Data Template
- D. Project Budget Estimating Template

**End of Section**