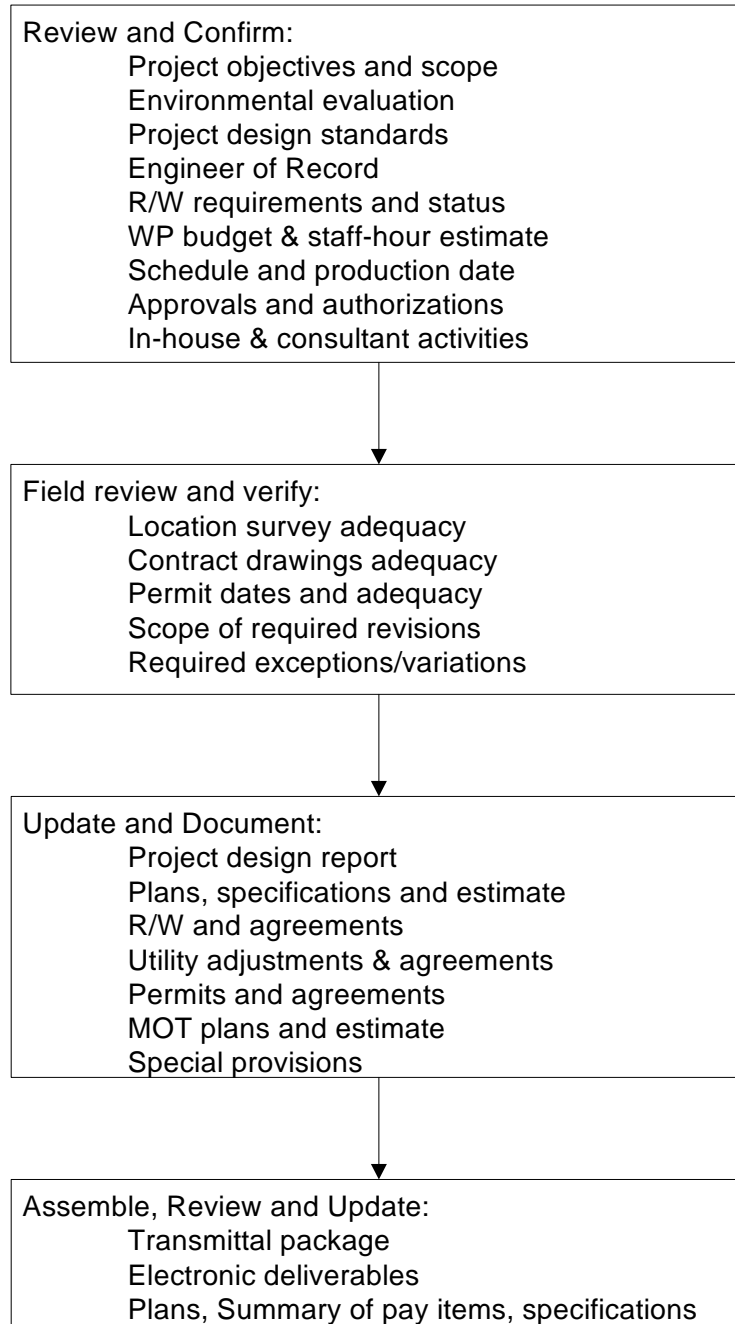


## Chapter 15

### Update Engineering Design Process

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### Exhibit 15-A Major Activities - Update Engineering Design Process



## Chapter 15

### Update Engineering Design Process

#### 15.1 General

The update engineering design process begins when a final contract plans, specification and estimates (PS&E) package has been on the shelf for any significant period (approximately nine months). The update process depends on the type of project, the adequacy and appropriateness of the original design controls and standards, and the original scope and objectives. The extent of the update process should be determined based on both engineering and management input.

#### 15.2 Design Update Review and Decision Process

An engineering review of the PS&E and proposed contract documents must be made to determine the activities required to update the package and get it ready for letting.

1. The original project objectives, scope and standards must be reviewed and compared with current corridor conditions, as well as growth rate and patterns, to determine if the project design is still valid.
2. Original environmental evaluations and commitments must be weighed against current requirements.
3. Permit date and terms must be weighed against current requirements.
4. R/W certifications and agreements must be reviewed and the status of documents confirmed.
5. Contract plans must be reviewed for current requirements, including standard indexes, specifications, pay items and design criteria.
6. Agreements with outside entities such as Utility/Agency Owners (UAOs), maintaining agencies and local agencies must be reviewed.
7. Design Exceptions and Variations must be resubmitted with updated documentation based on current data and conditions.

If the decision is that engineering updates are required, the scope, staff-hour estimate, schedule, cost estimate, and other activities described in **Chapter 13** of this volume should be followed to the extent necessary to define the scope and schedule for the update process.

## **15.3 Updating Engineering Design and Documents**

The actual engineering design activities necessary to update the plans package will vary from project to project. They must be fully described in the professional services contract, if one is to be used. If done in-house, a fully defined scope of work must be developed to determine resources and schedule needed for the update.

All reports, calculations, assumptions, and engineering decisions that support the changes to plans, specifications, or other documents must be signed and sealed by the Engineer updating the engineering plans, specifications and documents. All changes to the plans must be approved by the responsible engineer in charge of the work and receive the concurrence of the District Design Engineer, Structures Design Engineer, or Consultant Project Management Engineer, as appropriate for the type of change. Updated documentation of all approvals and concurrences shall be in the project file.

## **15.4 Revised Contract Plans Package**

In addition to the required engineering changes, which may be necessary, the contract transmittal package must be reviewed and updated to current status.

1. All component plans sets are made current and sealed.
2. Specifications and special provisions are made current.
3. The CADD electronic files are revised.
4. The computation book and pay item summaries are made current.
5. The contract file is made current.