



## Utility Process during Project Development

### I. Scoping

- A. Research existing utility facilities by contacting the [utility locator service](#) and determine which utilities (type and general location) are in the project area. No marking of utility facilities are needed at this time. (P&P/UE) [Internal only]
- B. Complete the list of contacts for all utility interests including the person(s) who can represent each company regarding location, design accommodation, relocation and liability issues associated with their facility. (PM/UE)
- C. Identify visible or reported evidence of existing utilities and location during the Scoping Trip. (LD/PM) The following outlines include questions/action items that are included in the Scoping Report:
  1. Forest Highway Projects: [Forest Highway Scoping Outline.doc](#)
  2. National Park Projects: [National Park Scoping Outline.doc](#)
  3. Fish and Wildlife Projects: [Fish and Wildlife Scoping Outline.doc](#)
- D. Develop [Project Agreement language](#) that addresses utility issues (PM):
  1. Identify Roles and Responsibilities.
  2. Identify requirements for compliance with State and Federal regulations for utility relocation and cost liability issues.
  3. Communicate the requirement for completion of the [Right of Way and Utility Certification](#), and any need for a utility relocation plan.
  4. Identify potential need for Utility Reimbursable Agreements.
- E. Determine the anticipated [Quality Level](#) the project will require. Review and complete the [Utility Data Quality Certification Matrix](#). Attach the Utility Matrix to the Scoping Report as an Appendix. Provide the Preliminary Quality Level Recommendation to the Project Manager. (LD)
- F. Deliverables
  1. Documentation of research with brief description of type and general location of utilities.
  2. Contact list for each utility showing name, address, phone, email address, and area of responsibility.
  3. Applicable language included in the Scoping Report.
  4. Applicable language included in the Project Agreement.
  5. Completed [Utility Data Quality Certification Matrix](#). (Appendix to the Scoping Report) and Preliminary Quality Level Recommendation.



## II. 0-30% Design

- A. [Designate, locate, and map](#) (relative to CFLHD's mapping datum) all physical utilities, including underground, surface and aerial utilities, within the project area. (Survey & Mapping)
- B. Certify utilities at an appropriate [Quality Level](#) according to CFL [Utility Data Quality Certification](#) requirements. Include surface, subsurface, and aerial facilities in the Certification. (Survey Manager)
- C. Research existing utilities to determine existing legal rights, potential presence of physical facilities and liability of cost to relocate the facilities. (UE & Utility Company or County)
- D. Initiate early coordination with Client Agency, County and Utility interests to begin identification of [potential conflicts](#) and development of Utility Resolution Plan. Provide all parties with copies of utility research. [Invite](#) parties to a Utility Meeting. Develop [agenda](#). Hold and document Utility Meeting. (LD/PM)
- E. Modify design to accommodate utilities, as much as practical, to avoid or reduce utility impacts and relocation. Develop [drawings](#) identifying potential utility/design conflict areas. Note observations of utilities during field reviews. (LD)
- F. Revisit the [Utility Data Quality Certification Matrix](#) considering any modifications made to the design. Submit, if required, a recommendation to the PM for additional field investigation of utilities that would certify the presence and position of aerial, surface, and underground utilities at a higher [Quality Level](#). (LD)
- G. Deliverables:
  1. Microstation files containing utility mapping.
  2. [Utility Data Quality Certification](#).
  3. Documentation of claims of existing legal rights and cost liability.
  4. Minutes from [Utility Meeting](#).
  5. Drawings showing potential utility/design conflicts (30% design).
  6. Recommendation for additional work to certify utilities at a higher [Quality Level](#).

## III. 30-70% Design

- A. Based upon the findings from the 30% Design stage, additional utility related work may be required, primarily increasing field investigation of existing facilities to determine elevations, clarifying the extent of utility conflicts that may require resolution. If necessary, perform additional field investigation to constitute a higher [Quality Level](#) certification, according to the CFL [Utility Data Quality Certification](#). (PM)



- B. Based on 50% design and field review, develop drawings identifying utility/design conflict areas. Reassess utility requirements based upon changes in project scope or the utility facility. Update conflict drawings. (LD)
- C. Coordinate with all cooperators and each utility company to initiate action to resolve design and utility issues, associated right of way requirements and resolve liability issues. (PM)
- D. Develop a Draft [Utility Resolution Plan](#). (LD & PM)
- E. Meet with the Utility Companies to discuss and modify the Utility Resolution Plan. (LD & PM)
- F. Following the 70% design and field review, refine and finalize the [Utility Resolution Plan](#) noting any betterments that enhance current facilities, undergrounding of existing aerial facilities, or spare conduits and ducts, which may make them eligible for Federal cost participation. Consider a combined relocation effort whereby FHWA would accept material as a substitute portion of the “cost sharing”. Obtain all necessary signatures. (LD & PM)
- G. Deliverables:
  - 1. Updated [Utility Data Quality Certification](#) of utilities at appropriate [Quality Level](#) based on additional data collected.
  - 2. Drawings showing utility/design conflicts.
  - 3. Coordination and documentation as required to identify and resolve utility related issues.
  - 4. Draft [Utility Resolution Plan](#)
  - 5. Meeting minutes documenting discussions and modification to the Utility Resolution Plan.
  - 6. Final, signed [Utility Resolution Plan](#).

#### IV. 70-100% Design

- A. Develop construction drawings addressing each utility issue, the expected treatment, relocation requirements or installation that is to be constructed directly under the CFLHD contract. Include the drawings in the PS&E contract package. Note whether utility resolutions are “to be completed by others”. Include tabulated quantities showing quantities of materials related to utility resolutions included in the contract. Include utility related pay items in the Engineers Estimate. (LD)
- B. Develop [Special Contract Requirements](#) (SCR’s) to include all construction related work and coordination required for the project. (LD)
  - 1. List all utilities involved and contact information.



2. Identify notification period required by each interest. Schedule 30-90 days minimum between notification and actual construction.
  3. Note when FHWA would provide pay items for materials and labor for installation during construction.
  4. Attach the Utility Resolution Plan as an Appendix to the SCR's.
  5. Include any pre-written specifications required by individual utility or other agency only upon review and approval by CFL, client agency, and all cooperators as an Appendix to the SCR's.
  6. Require contractor to have utility company inspect FHWA installed facility during construction and test the operation of facility after placement, before FHWA will accept the project.
- C. [Utility Reimbursable Agreements](#). Develop and execute agreements, as needed, for inclusion in the Utility Resolution Plan. All parties agree to the utility resolution plan. (PM) [Execution of agreements is internal process only.]
- D. [Utility Resolution Plan](#). Identify conflicts included in the Utility Resolution Plan that will be resolved prior to advertisement/construction, or identified in the SCR's as pay items in the PS&E package, or identified in the SCR's as to be completed by others during construction, requiring coordination of the construction contractor. (LD) Validate and verify the schedule and constructability of any third party relocations are completed or will be completed prior to construction. (PM)
- E. Perform Constructability Review of all proposed utility relocations. Ensure that proposed relocations meet the requirements of the Utility Company, are located appropriately for the construction contract, and conform to the Utility Resolution Plan.
- F. Certification. Certify utilities according to (PM):
- (a) [Utility Data Quality Certification](#).
  - (b) [Right of Way and Utility Certification](#).
- G. Deliverables.
1. Construction drawings and tabulated quantities addressing each utility treatment, relocation or installation to be constructed under the CFL contract and noting all utility resolutions "to be completed by others".
  2. Utility related SCR's for the project.
  3. Copy of [Utility Resolution Plan](#) included in reports available for bidders and in the PE Notebook.
  4. Copies of Utility Reimbursable Agreements in Appendix to the SCR's.
  5. Document Constructability Review. Provide approval letters, as appropriate.
  6. Copies of all Certifications in PE Notebooks and project files.
    - (a) [Utility Data Quality Certification](#).
    - (b) [Right of Way and Utility Certification](#).



## V. Construction

- A. Upon contract award, issue an official “[notice to relocate](#)” to each utility interest, giving a sufficient notification period prior to construction as determined in the Utility Reimbursable Agreements. (PM)
- B. Include copies of all pertinent Utility related correspondence in the PE Notebook. (LD)
- C. Invite each utility interest to attend the Preconstruction meeting. (PE)
- D. Discuss Utility Reimbursable Agreements, Certifications and utility related construction items during pre-con meeting. (PE)
- E. Complete any commitments included in the contract according to Utility Resolution Plan. (PE)
- F. Maintain constant coordination with the Utility interests and the Cooperators. (PE)
- G. Coordinate any required inspection or testing of contract related installations. (PE)
- H. Deliverables
  - 1. As-Built Notations according to Subsection 104.03 of the SCR’s.
  - 2. Completion of all commitments in the Utility Agreement.
  - 3. Inspection Reports and Test Results as required by the Utility Agreements.



## Utility Process Glossary

***Cooperator:*** A general term used to describe any of the Federal Land Management Agencies that Central Federal Lands works with under cooperative agreements to survey, design and construct roads within the jurisdiction of those Federal Land Management Agencies. Such agencies include the USDA Forest Service, National Park Service, US Fish and Wildlife Service, Bureau of Indian Affairs, and the Military Surface deployment and Distribution Command.

***Designate, locate, and map:***

***Designate:*** detect the presence of a subsurface utility and mark approximate horizontal position on the ground surface.

***Locate:*** expose and record the precise horizontal and vertical position of the subsurface utility (potholing).

***Map:*** delineate all utilities on the project mapping (relative to CFLHD's mapping datum).

***Potential utility conflict:*** Any construction activity, placement of structure, or disturbance of the ground in the proximity of an existing utility facility or interest, not just those activities within the construction limits of the project. This can include any of the following:

1. Excavation or changing the grade of the roadway, intersecting roads, or surrounding area that affects vertical clearance to aerial facilities, changes the amount of cover on buried facilities or requires relocation of surface facilities.
2. Vertical separation requirements of different facilities.
3. Affecting the flow of water in pipelines, storm drains or irrigation systems, especially during critical use periods.
4. Blasting, or equipment operations, that generate vibrations.
5. Slope construction that encroaches near adjacent poles or facilities that may affect stability.
6. Impacts to private facilities such as wells, septic tanks, leach fields, power, communications, satellite, cable, etc.
7. Changing the access to existing facilities, easements or permits.
8. Encroachment onto the rights established by existing easements or permits.
9. Affects of service interruptions or outages.

***Quality Levels:*** Ascending Quality Levels are based on the results of the research for previous levels:

1. Quality Level "D" - Records search only of potentially impacted utility interests.
2. Quality Level "C" - Compile records and surveyed visible evidence of subsurface and surface facilities.
3. Quality Level "B" - Designate underground utilities, field survey all facilities and compile all data. Depict in Design file according to CFLHD symbology.
4. Quality Level "A" - Determine horizontal and vertical position of utility facilities at selected locations (potholing).



*Right of Way and Utility Certification:* 23CFR 635.309(b) requires that, prior to FHWA approval for advertisement of the project, all utility relocation work will either be completed prior to construction, or that arrangements have been made to complete and coordinate utility adjustments during construction. See the attached exhibit for the CFLHD Right of Way and Utility Certification document to be executed by the Project Manager. See also the [Right of Way and Utility Certification](#) form.

*Utility Data Quality Certification:* CFLHD requires the research, field location (designation) mapping and depiction of utilities to be certified. This certification meets or exceeds to the industry standard defined by ASCE Standard 38-03, “Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data”. This standard establishes a thorough and accurate portrayal of utilities in the project area. The construction contractor can recognize the reliability of utility data and can reduce his utility related costs accordingly. See also the [Utility Data Quality Certification Matrix](#).

*Utility Reimbursable Agreement:* A reimbursable agreement with a governmental agency to relocate utilities in conflict with the project. If private utilities require relocation, exercise a reimbursable agreement with a local government who will have an agreement with the private utility for resolution. Contact the CFL Agreement Specialist for additional information.

*Utility Locator Service:* Aka: “Call Before You Dig”. The service that connects callers with local One Call Centers. The One Call Centers notify the appropriate local utilities, who then send crews to the requested site to mark the approximate location of underground lines for free. The nationwide number is 811.

*Utility Resolution Plan:* A written plan detailing each utility, potential conflicts, and proposed permanent and temporary resolutions. Resolutions include whether resolution is to be handled in design, pre-construction, or during construction.

**Key:**

LD	Lead Designer	UE	Utility Engineer
PM	Project Manager	A/E	A/E Engineering Firm

**References:**

- Federal Lands Highway “Project Development and Design Manual (PDDM) **\*\*DRAFT\*\***” [Chapter 12](#) - RIGHT OF WAY AND UTILITIES
- ASCE Standard 38-02, “Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data”
- APWA “[Recommended Marking Guidelines for Underground Utilities](#)”
- CFLHD custom [Microstation and Geopak resource files](#) including custom Line Style and Cell Libraries for use in depicting utility facilities.