

Road Map Item #: 5.6

Product Name: **UTILITY MANAGEMENT PLAN**

PMP Appendix: APPENDIX S

Submittal Date: May 1, 2013

**ABSTRACT:** This deliverable describes the management functions and serves as a guide for implementing the utility requirements of the CRC Program. The product, among other things, provides a description and background of the program; defines the roles of CRC Utility Team staff; defines the utility mapping and conflict analysis process; and defines the tasks necessary to advance the process, as well as the reports and tracking systems necessary to monitor the progress of the utility schedule across the Program.

# UTILITY MANAGEMENT PLAN

Draft Report

May 2013

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# ACRONYMS

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ASCE	American Society of Civil Engineers
BIA	Bridge Influence Area
CAD	Computer-Aided Design
COP	City of Portland
COV	City of Vancouver
CRC	Columbia River Crossing
C-TRAN	Clark County Public Transit Benefit Area Authority
EM	Electromagnetic
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GPR	Ground Penetrating Radar
I-5	Interstate 5
ODOT	Oregon Department of Transportation
OAR	Oregon Administrative Rules
PS&E	Plans, Specifications, and Estimates
QL	Quality Level
RCW	Revised Code of Washington
ROW	Right of Way
SUE	Subsurface Utility Engineering
TriMet	Tri-County Metropolitan Transportation District
UMP	Utility Management Plan
WSDOT	Washington State Department of Transportation

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# Columbia River Crossing Program

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## Purpose

The Utility Management Plan (UMP) describes the management functions for the Columbia River Crossing (CRC) Program. The CRC Program is a bridge, transit, and highway construction program, linking the Portland-Vancouver metropolitan area across the Columbia River. The CRC Utility Team's approach will follow established best practices and all applicable Federal, State, and Local requirements including current versions of:

WSDOT Utilities Manual M22-87.02 March 2010

<http://www.wsdot.wa.gov/publications/manuals/fulltext/M22-87/Utilities.pdf>

ODOT Highway / Utility Guide

[http://www.oregon.gov/ODOT/HWY/ROW/highway\\_utility\\_guide.pdf](http://www.oregon.gov/ODOT/HWY/ROW/highway_utility_guide.pdf)

City of Vancouver Utilities Design & Construction Manual

<http://vancouver.ca/engsvcs/streets/pdf/UtilitiesDesignConstructionManual.pdf>

City of Portland Utility Design and Permitting

<http://www.portlandonline.com/bes/index.cfm?c=43271&a=360710>

<http://www.portlandonline.com/auditor/index.cfm?c=31912&a=40996>

The UMP serves as a guide for implementing the utility requirements of the CRC Program. The intent of the UMP is to:

- Provide a description of the program and background.
- Define the roles of CRC Utility Team staff and their coordination with other staff and consultants, including, but not limited to preliminary engineering, conflict analysis, accommodation documents and relocation.
- Define utility mapping and conflict analysis process.
- Define tasks necessary to advance through final design.
- Describe the reports and tracking systems to monitor the progress of the utility schedule.

The overall goal of the UMP is to assist the CRC Utility Team, as well as other program personnel, in a common effort to identify the utility process for the program.

The UMP is presented in several sections, including Introduction, Organizational Structure, Schedule, Cost Estimate, and Relocation.



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# 1. Introduction

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## 1.1 Overview

This document describes the Utility Management Plan (UMP) for the Columbia River Crossing (CRC) Program. The UMP will detail the process to be followed in the research, communication, permitting or franchising, and relocating of utilities. The UMP references resources and expertise used to effectively manage utilities.

The UMP includes a level of detail associated with a program in the Engineering Phase.

Managing a multi-billion dollar, multimodal, bi-state transportation program spanning nearly a decade demands ongoing flexibility in responding to organizational needs, legal/policy matters, differing state and local approaches, regulations, federal highway and transit oversight perspectives, shifting politics, rules, and regulations. The CRC Program exhibit for Oregon and Washington can be seen at the end of the document.

## 1.2 Program Description

As the only continuous north-south Interstate on the West Coast connecting the Canadian and Mexican borders, Interstate 5 (I-5) is vital to the local, regional, and national economies. At the Columbia River, I-5 provides a critical economic connection to two major ports, deep-water shipping, up-river barging, two transcontinental rail lines, and much of the region's industrial land. Truck-hauled freight movement onto, off of, and over the I-5 Columbia River crossing is critical for these industrial centers, for regional employment and to the regional and national economies. The I-5 Crossing provides the primary transportation link between Vancouver and Portland, and the only direct connection between the downtown areas of these cities.

The purpose of the CRC Program is to improve I-5 corridor mobility by addressing present and future travel demand needs in the CRC Bridge Influence Area (BIA). The BIA extends from approximately Columbia Boulevard in the south to SR 500 in the north. The CRC Program is intended to achieve the following objectives: a) improve travel safety and traffic operations on the I-5 crossing's bridges and associated interchanges; b) improve connectivity, reliability, travel times, and operations of public transportation modal alternatives in the BIA; c) improve highway freight mobility and address interstate travel and commerce needs in the BIA; and d) improve the I-5 river crossing's structural integrity (seismic stability). For more on these objectives please reference the Project Management Plan (PMP).

The CRC Program will significantly improve safety and congestion in the five-mile segment of I-5 between SR 500 in Vancouver and Victory Boulevard in North Portland. CRC Program will replace the Interstate Bridge, improve five miles of I-5, extend light rail to downtown Vancouver and improve bicycle and pedestrian facilities. These CRC Program solutions address the problems identified in the project area: too many crashes, growing congestion, limited public transit options, freight mobility, narrow bicycle and pedestrian pathways and earthquake vulnerability.

For a more detailed description of the CRC Program see the Project Management Plan (PMP) section 1.2.

### **1.3 Utility Description**

The CRC Program is a transportation project jointly owned by the Oregon Department of Transportation (ODOT) and the Washington State Department of Transportation (WSDOT). The Transit portion of the project is sponsored by Tri-County Metropolitan Transportation District (TriMet) and Clark County Public Transportation Benefit Area (C-TRAN). The Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) are the federal lead agencies for the CRC Program.

This necessitates coordination of utilities with Federal, State and Local agencies along with 17 utility companies located within the program limits. These include but are not limited to Water, Sewer, Storm, Gas, Power, and Communication utilities.

Utilities being impacted by the program can be under a range of different agreement types along State, City or Private Property. These include but are not limited to Permit, Franchise and Easements.

In general, all utilities within state right of way (ROW) will fall under a permit or franchise. Utilities on WSDOT ROW fall under permits or franchises while utilities on ODOT ROW fall under permit only. State issued franchises and permits are types of utility accommodation documents used for recording utility installation details authorized within the operating highway ROW. Generally a state issued franchise is for utilities installed across, along, or within the operating highway ROW or its facilities. A state issued permit is generally issued for utilities within state ROW to define a utility installation that crosses the operating highway ROW normal to centerline or at skew angle no greater than 45 degrees offset from normal and is longitudinal to the ROW and is no greater than 300 feet in length as measured along the highway centerline. Utility franchises and permits are used to define utility ownership, type, size, location, construction methods, maintenance frequency and duration, and other information considered necessary. Neither permits nor franchises give utilities property rights to ODOT or WSDOT ROW.

Utilities on City of Vancouver (COV) ROW are a little unique in that most have not been issued an accommodation document. There are a few utilities on COV ROW that do fall under franchise. Undocumented utilities within COV ROW follow a similar process to permitted or franchised utilities and must relocate upon COV request. COV is currently drafting documentation outlining COV's authority over utilities.

Utilities on City of Portland (COP) ROW are mostly under franchise. There are several areas within the project that have potential for utilities under easement; these areas include the North Portland Harbor and Hayden Island. Whereas a franchise or permit does not give a utility property rights an easement would. A utility in place with a property right may be able to receive reimbursement for any relocation costs due to the project.

A preliminary list for each public agency permits, franchises, and easements gathered to date is shown under Appendix A.

## 1.4 General Description of Process

To minimize the risk of utility conflicts with contract work, all existing utilities—active, abandoned, and unknown—are identified so that the locations of these individual utilities are recorded with appropriate assurance and reliability.

To minimize utility risks the CRC Utility Team has been proactively coordinating with utilities for several years. Since 2009 the utility team has had periodic meetings with each utility to provide updates on the program status and possible conflicts between the program and utilities.

To further minimize utility risks, in January of 2010 the CRC Program commenced with subsurface utility engineering (SUE) by hiring a SUE consultant. The SUE process combines civil engineering, surveying, and geophysics. It utilizes several technologies, including vacuum excavation and surface geophysics. SUE helps identify and improve the quality of information about all existing utilities within the project.

SUE benefits both highway agencies and the impacted utilities in the following ways:

- Unnecessary utility relocations are avoided. Accurate utility information is available to the highway engineers early enough in the development of a project to design around many potential conflicts. This significantly:
  - Reduces costly relocations normally necessitated by highway construction projects.
  - Reduces delays to the program caused by waiting for utility work to be completed so highway construction can begin.
- Unexpected conflicts with utilities are eliminated. The exact location of virtually all utilities can be determined and accurately shown on the construction plans. As a result:
  - Delays caused by redesign when construction cannot follow the original design due to utility conflicts are reduced.
  - Construction delays caused by cutting, damaging, or discovering unidentified utility lines are reduced.
  - Contractor claims for delays resulting from unexpected encounters with utilities are reduced.
- Safety is enhanced. When excavation or grading work can be shifted away from existing utilities, there is less possibility of damage to a utility that might result in personal injury, property damage, and releases of product into the environment.

### 1.4.1 SUE Standards and Definitions

The SUE effort will be following the Construction Institute and the American Society of Civil Engineers' (ASCE) *Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data* published and distributed in 2003 in performing their work. The ASCE standard

makes it clear that SUE is a process, not a technology. It defines SUE as a branch of engineering practice that involves managing certain risks associated with:

- Utility mapping at appropriate levels,
- Utility coordination,
- Utility relocation design and coordination,
- Utility condition assessment,
- Communication of utility data to concerned parties,
- Utility relocation cost estimates,
- Implementation of utility accommodation policies, and
- Utility design.

These activities, combined with traditional records research and site surveys, and utilizing new technologies such as surface geophysical methods and non-destructive vacuum excavation, provide “quality levels” of information.

#### **1.4.2 SUE Quality Levels**

Quality levels may be thought of as degrees of risk, or how much information is really needed to adequately design and construct a highway project. Highway plans typically contain disclaimers as to the accuracy of the utility information. The use of quality levels allows project owners to decide what quality level of information they want to apply as risk management and to certify on project plans that a certain level of accuracy and comprehensiveness has been provided.

There are four recognized quality levels of underground utility information ranging from Quality Level (QL) D (the lowest level) to Quality Level A (the highest level).

The highest level of accuracy and comprehensiveness is generally not needed at every point along a utility's path, only where conflicts with highway design features are most likely to occur. Hence, lesser levels of information may be appropriate at points where fewer conflicts or no conflicts are expected.

Each of the four quality levels is described as follows:

- Quality Level D. QL-D is the most basic level of information for utility locations. It comes solely from existing utility records or verbal recollections, both typically unreliable sources. It may provide an overall "feel" for the congestion of utilities, but is often highly limited in terms of comprehensiveness and accuracy. QL-D is useful primarily for project planning and route selection activities.
- Quality Level C. QL-C is probably the most commonly used level of information. It involves surveying visible utility facilities (e.g., manholes, valve boxes, etc.) and correlating this information with existing utility records (QL-D information). When

using this information, it is not unusual to find that many underground utilities have been either omitted or erroneously plotted. Its usefulness, therefore, is primarily on rural projects where utilities are not prevalent, or are not too expensive to repair or relocate.

- Quality Level B. QL-B involves the application of appropriate surface geophysical methods to determine the existence and horizontal position of virtually all utilities within the project limits. This activity is called "designating". The information obtained in this manner is surveyed to project control. It addresses problems caused by inaccurate utility records, abandoned or unrecorded facilities, and lost references. The proper selection and application of surface geophysical techniques for achieving QL-B data is critical. Information provided by QL-B can enable the accomplishment of preliminary engineering goals. Decisions regarding location of storm drainage systems, footers, foundations and other design features can be made to successfully avoid conflicts with existing utilities. Slight adjustments in design can produce substantial cost savings by eliminating utility relocations.
- Quality Level A. QL-A, also known as "locating", is the highest level of accuracy presently available and involves the full use of the subsurface utility engineering services. It provides information for the precise plan and profile mapping of underground utilities through the nondestructive exposure of underground utilities, and also provides the type, size, condition, material and other characteristics of underground features.

By following this process the Utility Team will minimize utility issues that could arise during the construction of the CRC Program.

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## 2. Organizational Structure

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### 2.1 Utility Staff

The CRC Utility Team is mostly comprised of WSDOT assigned staff and selected consultants. Staff with direct responsibilities for the UMP includes the Specialty Services Director, the Program Utility Manager, and the Program Utility Design Engineer. See Appendix D for position descriptions. Many of the specific tasks involved in utilities may be carried out by contracted forces under the direction of the Specialty Services Director and the Utility Manager. In some cases specialized services or augmentation of existing staff functions may be required.

The CRC Utility Staff is responsible for organizing and managing the utility program; soliciting, evaluating, hiring, and managing the consultants; monitoring and directing progress on the schedule and budget; coordinating with utilities, coordinating with Federal, State, and Local agency stakeholders, coordinating with CRC Program staff, and manages all documentation related to utility relocations for which the program is responsible. The Utility Staff will direct and manage the activities of consultants; monitor their progress; review invoices for payments; and coordinate activities among the various disciplines.

### 2.2 Consultant Support

The CRC Utility Team coordinates with Federal, State and Local agencies, along with 17 utility owners located within the CRC Program limits. To assist, the CRC Program brought on a SUE consultant who was selected from the WSDOT on-call consultant list.

For project consistency the SUE consultant will perform the SUE work in both Oregon and Washington.

### 2.3 Program Coordination

Early and continuous communication between affected utilities and the CRC Program helps avoid miscommunication and minimize the potential for delays. Effective coordination requires both cooperation and effective communication.

Successful implementation of this UMP is dependent upon the coordination between the CRC Utility Team, Federal, State, Local agencies, and utility owners along with other simultaneous activities of the program as a whole. Coordination with local agencies includes, but is not limited to, City of Portland, City of Vancouver, ODOT, WSDOT and utility owners. In addition, the CRC Utility Team meets with the Project Management Oversight Contractor on a monthly or other regular basis.

The CRC Utility Team will continue to work with the CRC Program team through the design and construction phases. The CRC Utility Team will regularly coordinate activities with the design and program teams when determining utility conflicts and mitigation or relocation. CRC



Program teams meet on a regular basis to discuss the program and its progress. The CRC Utility Team attends and will continue to attend these program coordination meetings.

Program coordination by the CRC Utility Team includes:

- Regular coordination meetings with utility owners.
- Regular coordination meetings with Federal, State and Local agencies.
- Review of City of Vancouver and City of Portland utility permits within the program limits for approval or recommended design criteria.
- Activity, schedule and budget coordination with the CRC Program staff through progress meetings, status reports, and other support meetings.

## **2.4 Design Control**

### **2.4.1 Design Coordination and Milestones**

Early coordination in the program development process facilitates appropriate and timely utility conflict resolution. Regardless of the utility conflict, solutions should be identified and goals established as early as possible for conflict resolutions. Initial utility relocations plans were prepared as part of the 25% plans and were coordinated with the various utility companies.

Coordination responsibilities for utility relocations vary within the CRC Utility Team and during each phase of program development and construction. Important design milestones may differ by the construction method selected for each contract of the CRC Program. Additional detail on the CRC program construction methods can be found in the Project Delivery and Procurement Plan (PDPP). Design-Bid-Build (DBB) contracts will likely require more coordination by the CRC Utility Team than for Design-Build (DB) and General Construction/Construction Manager (GC/CM) contracts where the contractor will take on some of the coordination responsibility. The milestones below are typical for utility coordination of a DBB contract and generally include the following:

- Initial Utility Coordination
  - Program Plan Notification
    - Determine which Utility Owners have facilities located within the limits of the program.
    - Utility Owners as-built information and data is requested.
  - Geometric Review (30%)
    - Invite Utility Owners to a project overview meeting. The purpose of the meeting will be to identify Utility Owners impacted by the project and explain the project scope, expectations and schedule. For use at the meeting, the Utility Owners will be provided copies of the 30% Project Plan prior to the meeting, depicting existing subsurface utility data.

- Participants will seek to identify environmental issues, real estate acquisitions, erosion control concerns, Control Zone Guidelines compliance and other issues related to the project.
- Utility Owners will verify the locations of their respective Utility Facilities shown on the 30% Project Plan and will express any concerns or suggestions they may have regarding utility relocations.
- Utility Identification: Subsurface Utility Engineering (SUE)
  - Continue project design after the 30% Project Plan.
  - Start SUE effort. Existing utility are identified to Quality Level B, C and D.
  - As project design is developed, areas of utility conflict and potential utility relocation are more accurately defined.
  - Identify utility conflicts above and below ground for each Utility Owner.
  - Review the 30% Project Plans, showing utility conflict areas prior to transmittal of the Utility Relocation Notice to affected Utility Owners.
  - Compile a list of approvals required by governmental agencies and the expected time schedule for permit applications that may affect or be affected by utility relocations.
- Term Sheets
  - Term Sheets were developed with Utility Owners to record agreement elements and decisions. Term Sheet details will include but are not limited to, agreement purpose, key terms, scope, financial implications, and approval requirements.
- Utility Relocation Coordination
  - Conflict Analysis
    - Identify conflicts between project design elements and utilities. Develop independent conflict matrix for each Utility Owner. Identify the need to conduct vacuum excavations for potential utility conflicts.
    - Vacuum excavate utilities at discrete test-hole location to collect Quality Level A data.
    - Conduct conflict analysis workshops with Utility Owners and CRC Program staff to identify utility conflict resolutions by analyzing conflicts, identifying alternatives and constraints, mitigating conflicts and value engineering.
    - Identify planned betterments where appropriate.

- Develop project specific utility relocation unit rates for estimating relocation design, materials, and construction costs.
- Develop utility conflict report detailing conflicts, challenges, constraints and resolution recommendations.
- Utility Relocation Notice
  - Review the Utility Facilities conflict areas.
  - Send a utility relocation notice to each Utility Owner, along with a Project Plan which identifies utility locations, conflicts, a listing and application schedule for governmental approvals for the project, project milestone dates, and an approximate date for a utility relocation meeting.
  - If necessary, assist in the development and negotiation of Utility Preliminary Engineering Agreements.
- Utility Relocation Planning
  - Continue to work with Utility Owners to address utility relocation issues relating to the project, including development of a coordinated Utility Relocation Plan addressing all affected utilities. The coordinated relocation plan will include a conceptual utility relocation schedule.
  - Utility Owners will work cooperatively to resolve joint trench and joint pole occupancy relocation issues.
  - Where appropriate, execute Utility Preliminary Engineering Agreements with the Utility Owners.
  - Submit to the Utility Owners requests for utility service connections.
  - If the CRC Program and Utility Owners mutually agree to revise the project design to accommodate utility relocations, program staff will revise the 60% Project Plan. If appropriate, the Utility Owner will compensate CRC Program for preliminary engineering costs necessary for revising the design to accommodate the Utility Owner's desired relocation option. Upon completion of the Utility Relocation Planning effort, the Utility Owner will be notified that the 60% Project Plan is complete and provide the Utility Owner with a copy of the plan.
- Preliminary Engineering Agreements
  - These agreements define the circumstances and payment for preliminary engineering of relocated utilities.
- General Plans Review (60%)
  - Utility Relocation Meeting

- Invite Utility Owners to the utility relocation meeting. The goal of the meeting should be development of a Utility Relocation Plan, a related schedule, utility relocation responsibilities and other deliverables and responsibilities.
  - A 60% Project Plan, which identifies the existing Utility Facilities and how those facilities will be affected by the highway project, will be provided to Utility Owners prior to the meeting. The 60% Project Plan will include information necessary to enable Utility Owners to design and layout the removal and relocation of their existing Utility Facilities, as well as the placement of relocated or additional facilities within the project limits.
  - At the meeting, Utility Owners will discuss utility relocation requirements and consider adding relocation to the project contract.
  - At the meeting CRC Program will identify time lines for project right of way negotiations and the completion of the project PS&E. Participants will discuss the impact of the proposed time lines on the relocation of utilities affected by the 60% Project Plan.
  - Participants will discuss utility issues relating to the project and the schedule for development of the Utility Relocation Plan.
  - Participants will discuss the joint trench and joint pole occupation and responsibilities, both in the Utilities' current locations and their relocated positions.
  - Utility Owners will, consistent with the expected permit application time schedule for the Project, provide a general description of utility impacts, alternatives, and the scope of work of necessary utility relocations for consideration by the CRC Program prior to submittal of the Project Plan environmental documentation and permit applications to permitting agencies.
  - Utility Owners will notify the CRC Program once it determines if the information provided in the 60% Project Plan is sufficient to begin a relocation design.
    - Following notification that the CRC Program has completed their 60% Project Plan design, if revisions or changes occur to the Project Plan provided to the Utility Owner that affects a Utility Relocation Plan, the Utility Owner will be promptly notified. The Utility Owner shall modify its Utility Relocation Plan as necessary to adjust to the changes.
- Utility Relocation Plan Development
- Each Utility Owner will develop a Utility Relocation Plan for the project based upon its own information and information supplied by the CRC

Program. The Utility Relocation Plan shall include applications for utility permits and/or utility franchises.

- The Utility Relocation Plan shall identify project construction elements that must be completed before utility relocation can begin and a construction window(s) that will allow time for utility relocation construction.
- Each Utility Owner will submit its Utility Relocation Plan for approval.
- Utility Relocation Plan Submittal and Approval
  - Confirm that the Utility Relocation Plan is compatible with permit requirements, the Project Plan provided to the Utility Owner at the completion of the Utility Relocation Planning effort, the project schedule and the utility permit or franchise applications.
  - Distribute copies of the Utility Relocation Plan to the governing agency's construction and/or specialty offices for review.
  - Incorporate Utility Relocation Plan requirements in the specifications, plans and schedule for the project construction contract as necessary.
  - Execute, if required, Utility Relocation Construction Agreements with the Utility Owners.
  - Working with the governing agency's design and specialty group offices, will execute, if required, Utility Service Agreements with the Utility Owners.
  - Coordinate the review of the Utility Relocation Plan, requesting that the Utility Owner provide additional information and revise the plan as necessary to obtain approval. Notify the Utility Owners when the Utility Relocation Plan has been approved. Utility permits or franchises will be issued for utility relocation work following confirmation that all permits and environmental approvals have been obtained.
- Utility Agreement Preparation and Execution
  - Prepare and execute Utility Relocation Construction Agreements and Utility Service Agreements with Utility Owners once utilities have completed their Utility Relocation Plans and they are approved.
- Preliminary Contract Review (90%)
  - Construction Planning Milestone
    - Review the construction schedule in relation to expected utility relocation work to ensure relocation work will not negatively affect project delivery
  - Letter of Understanding

- Prepare a Letter of Understanding describing the scope and schedule for the minor adjustment of existing utilities and transmit the letter to the Utility Owner.
- Utility Agreement Execution
  - All efforts should be made to conclude and execute any outstanding utility agreements prior to Award.
- Utility Relocation
  - Utilities with approved Utility Relocation Plans may be relocating utility facilities to approved locations, while other utility relocations may be pending.
- Plans, Specifications, and Estimates (PS&E)
  - Final Contract Review
    - Any remaining issues with utilities will be identified and either resolved or included in the bid package for the project as information for the contractor.
- Advertisement and Award
  - Pre-Advertisement
    - Utility Owners will proceed to complete the elements identified in the Utility Relocation Plan that can be accomplished prior to project construction.
    - Monitor the progress of utility relocation construction. The CRC Program will modify, if necessary, the letter of understanding describing the scope and schedule for the utility relocation work and transmit the modified letter of understanding to the Utility Owner. The Utility Owner shall sign and return the modified letter.
    - The project will be advertised for bid and if necessary, a pre-bid meeting will be held with prospective bidders to discuss Utility Relocation Plans and scheduled utility windows.
  - Ad and Award
    - Following the Award of the contract the Contractor must provide a project construction schedule. The CRC Program will provide the Utility Owners with the planned project construction schedule and current Project Plan information for utility relocation construction.
    - The CRC Program will analyze the construction schedule in relation to the utility relocation work to be performed by the Utility Owner or its agent.

Prepare a letter of understanding describing the scope and schedule for the utility relocation work and transmit the letter to the Utility Owner. The Utility Owner shall sign and return the letter agreeing to the construction schedule.

Each design milestone provides an opportunity for more defined and specific coordination with existing utilities that could affect project delivery schedules.

## **2.5 Construction Control**

### **2.5.1 Construction and Coordination Milestones**

Relocation of utilities will be required to construct the CRC Program as designed. Some of the utility relocations may be performed in advance of construction in support of the Program Schedule. A continued coordination effort as the program moves into construction will be needed to ensure utility relocation work is complete prior to construction or is scheduled in a manner that construction schedules will not be impacted. Early utility relocations may be needed to reduce construction conflicts with utilities.

Coordination responsibilities for utility relocations vary within the CRC Utility Team and during each phase of program development and construction. Important milestones may differ by the construction method selected for each contract of the CRC Program. Additional detail on the CRC program construction methods can be found in the PDPP. DBB contracts will likely require more coordination by the CRC Utility Team than for DB and GC/CM contracts where the contractor will take on some of the coordination responsibility. The milestones below are typical for utility coordination of a DBB contract and generally include the following:

- Relocation and Construction
  - Pre-construction or Pre-relocation Meeting
    - Request Utility Owner attendance at the pre-construction or pre-relocation meeting for the project. Utility Owners will attend the project pre-construction or pre-relocation meeting and any other project meetings where issues affecting Utility Owners are to be discussed.
    - Send copies of meeting minutes to the Utility Owners.
    - Insure inclusion of utility relocation construction windows within the project contractor's construction schedule.
    - In the event of unforeseen conditions requiring changes to either the project scope of work or the schedule of work, the contracting agency and the Utility Owners will make every effort to coordinate said changes in a manner that minimizes impacts to the project.
    - For those elements of the Utility Relocation Plan dependent on Contractor work the contracting agency, Contractor and Utility owner will develop a utility relocation schedule, consistent with the letter of understanding and

contract provisions, which includes the utility relocation work windows, notices to proceed and notification requirements.

- Excusable delays encountered by the Contractor or the Utility Owner related to utility relocation work to be performed by the Utility Owner or it's agent shall be documented in writing by the party encountering delay and sent to either the contracting agency or the Utility Owner.
- Utility Relocation
  - Utility Owner relocations should already be completed or in progress but any remaining relocation work shall promptly proceed as described in the Utility Relocation Plan.
- Construction Progress Meetings
  - Contractor will conduct Construction Progress Meetings with Utility Owners and contracting agency on a regular basis throughout the project construction phase to monitor progress and address conflicts that may arise.
- Field Conflict Resolution Process
  - Upon determining a field conflict which will affect construction, timing of work or require additional facility relocations, the contracting agency shall be notified immediately and a field meeting with all affected parties will be scheduled as soon as possible.
  - Attendants should have sufficient authority to make reasonable decisions regarding changes or modifications to project plans. This meeting should consist of fact finding, seeking prompt and reasonable alternatives and reaching agreements on the course of resolution. Findings/resolutions should be documented and recorded them within the project file.
- Post-Construction Meeting
  - Schedule a post-construction meeting to critique the project from inception to completion. This meeting will allow items to be pinpointed that made the project successful and those areas where adjustments to increase the efficiency of the project development procedure are needed.

The construction milestones can change depending on delivery method, location, property rights, and mode of transportation being constructed. The UMP provides a basic process that will be followed for the majority of work.



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## 3. Schedule

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### 3.1 Designating, Conflict Analysis and Relocation Timeline

A draft utility designating and conflict analysis schedule has been developed which includes the following components: utility designating, computer-aided design (CAD) Development, utility coordination, conflict analysis, utility locating potholing, submittal of existing plan sheets, submittal of existing utility report, submittal of existing utility database (see schedule in Appendix C). The schedule will be further refined and developed as the CRC Program progresses.

The initial utility designating for the program was completed on November 4, 2010. The utility designating work includes efforts and processes to achieve the highest quality levels (see Section 1.4.2 for quality level description) practical without vacuum excavation methods and generally targets a QL-B designation which provides horizontal accuracies sufficient for most preliminary engineering efforts. The data set generally can result in a mixture of QL-D and C for installations that are not readily detectable with standard electromagnetic (EM) or ground penetrating radar (GPR) equipment, QL-B for standard EM detectable infrastructure, and QL-A for discrete points where infrastructure is exposed or accessible from the surface.

Upon completion of the utility designating, the CRC Utility Team began utility conflict analysis, which includes, vacuum excavated test-holes and conflict analysis workshops. Vacuum excavated test-holes are done at discrete points on a conflicted utility to provide additional data on utility, like depth. Conflict analysis workshops involve individual or multiple utilities discussing identified utility conflicts, constraints and acceptable resolutions. They also assist in determining other information like property rights, relocation cost and schedule. Upon completion, a Utility Conflict Report will be generated to include a summary for each utility conflict and its challenges, constraints and resolution.

The draft utility relocation schedule is currently under development and will be further refined as part of the conflict analysis. Through the conflict analysis phase, utilities that must be relocated will be confirmed. The CRC Utility Team will continue to work with the various utilities to ensure they provide reasonable utility relocation schedules. The draft utility relocation schedule is shown in Appendix B.

### 3.2 Difficulties and Potential Delays

The primary goal of any utility conflict is to resolve it by mitigating or relocating the utility so it doesn't create a delay. However, this is often not possible when utility resolution is dependent upon the acquisition of ROW, the construction of a highway element such as a utility conduit on a bridge, major earthwork, or environmental permitting, or even how the program will be procured.

Delay of execution of any utility agreements could cause also delays. To mitigate this issue, term sheets were developed. Term sheets are a basic outline of responsibilities, and will be used to record the CRC Programs negotiations before the formal agreement is written. Term sheets allow the CRC Program to demonstrate program readiness. There are 36 term sheets. Of the 36 term sheets 20 were signed by both parties, 8 were signed by one party and 8 were unsigned. Term sheets were considered complete in November 2012. The CRC Utility Team developed an outline for utility term sheets that allowed a more streamlined process (See Appendix E.)

Utility relocations needed prior to construction with timelines requiring many years to complete have the potential to also cause delay. To mitigate the issue the CRC Program has been meeting regularly with utilities stating long relocation times. The use of conflict analysis workshops, term sheets, and ultimately agreements will help reduce potential causes for delay.

### **3.3 Reporting Progress**

Utility work tasks have been added to the program schedule and are updated monthly. Utility conflicts and relocations will be tracked in the utility conflict matrix and database. Necessary utility agreements have been added to the program schedule. The utility schedule has been shared with the various utility companies.

### **3.4 Critical Path**

Utility Coordination and Conflict Resolution is on the critical path. Utility coordination and conflict resolution is on schedule to be complete in June 2013 and will aid in the completion of the relocation schedule, cost estimate and agreements.

## 4. Cost Estimate

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### 4.1 Estimate Background and Basis

The current utility cost relocation estimate for the CRC Program is being developed and will be finalized upon completion of the conflict analysis. Currently the program only has a cost estimate for public utilities that have been determined a program cost. The cost estimate has been broken up into highway impacts and transit impact (see cost estimate in Appendix F). Through the conflict analysis phase, utilities that must be relocated will be confirmed. Through the conflict analysis phase, utilities that must be relocated will be confirmed. As part of the utility term sheets, the utilities property rights were detailed and provide information needed to determine who pays for relocation. The CRC Utility Team will continue to monitor the utility needs and update the cost estimate, as the program is refined.

### 4.2 Cost and Budget Management

#### 4.2.1 Cost Estimating Process

All projects benefit from a thoughtful and deliberate process in developing project cost estimates. The process presented below describes the way the CRC Program develops its project cost estimates. It is applied to all levels of project delivery, starting with the planning level estimate and ending with the project design and plan, specification, and estimate (PS&E) level. Each level of estimate may require different estimating inputs, methods, techniques and tools.

The task of estimating, by its very nature, requires the application of prudent judgment to the completion of the task. As design definition advances, design engineers and estimators are better able to determine project work items and their associated quantities and unit prices.

A short description of each step in the cost estimating process is presented below.

#### **Determine Estimate Basis**

This activity focuses on obtaining project information, including all previously developed project scope and schedule details and data, from which a project cost estimate can be prepared. The level of scope detail varies depending on the project phase, project type, and project complexity, but would include the design matrix and criteria, all assumptions and pertinent scope details. The estimate basis should be clearly documented and forms the beginning of the estimate file that should be prepared for each estimate. Each of the following steps will add information to this file, with the end result being a complete traceable history for each estimate.

#### **Prepare Base Estimate**

This activity covers the development of estimated costs for all components of a project, excluding future escalation. These components may be estimated using different techniques depending on the level of scope definition and the size and complexity of the project. The number and detail of components estimated may vary depending on the project development phase. For example, in the scoping phase the cost estimate covers preliminary engineering,

ROW, and construction. As the design progresses and more details are known, pieces of the estimate become more detailed.

Key inputs to this activity include project scope details, historical databases and other cost databases, knowledge of market conditions, and use of inflation rates.

Typically historical bid-based methodologies are used for items of work for which historical data is available. Cost-based estimating methodologies are used for those items with little or no bid history, or for major items of work that are project “cost drivers”.

### **Review Base Estimate**

This activity is necessary to ensure that (1) assumptions and basis are appropriate for the project, (2) the base cost estimate is an accurate reflection of the project’s scope of work; (3) scope, schedule and cost items are calculated properly and required components are not missing or double counted; and (4) historical data, the cost based estimate data, or other data that was used reasonably reflects project scope and site conditions. Internal specialty groups and/or Subject Matter Experts (SMEs) must participate in reviewing the Base Estimate.

### **Determine Risk and Set Contingency**

This activity is part of developing a risk management plan for a project (see Risk and Contingency Management Plan), and is an integral component of project management planning. In the context of cost estimating, the cost impact of project risks (favorable or unfavorable) must be included to derive a total project cost.

If necessary, internal and/or external specialists are involved in a workshop format to validate the Base Estimate, provide input on specific issues such as construction staging, and elicit risks for modeling purposes. Formal risk assessment typically occurs in workshops such as Cost Risk Assessment (CRA) and Cost Estimate Validation Process (CEVP) workshops. Formal or informal risk assessment techniques are a valuable and valid tool and should be applied to all estimates.

### **Determine Estimate Communication Approach**

Cost estimate data is communicated to both internal and external constituencies. The communication approach determines what estimate information should be communicated, who should receive this information, how the information should be communicated, and when the information should be communicated. Cost estimate information should be included when the communication plan is developed as part of the project management process. Often the words are as important as the numbers. The Basis of Estimate document can be used effectively as a communication tool to convey key information about the project to others.

### **Conduct Independent Review and Obtain Management Endorsement**

Estimates are key products of the project management process and are fundamental documents upon which key management decisions are based. Given their importance, all estimates should receive an independent review and then be reconciled and revised as needed to respond to independent reviewer comments. Once independent review comments have been satisfactorily incorporated, estimates should be presented to management staff for approval.

Management approval of estimates developed for initial budgeting or baseline definition is a defined step in the project management process. Revised estimates, typically developed if project requirements change, or as design is developed, should also be reviewed by management staff, revised as necessary to reflect management comments, and then approved. Each revised estimates shall then be incorporated into project cost baselines through the established project change management process.

Estimates prepared at the various design levels are used to track changes in the estimated cost to complete the project in relation to the current budget. Each time the estimate is updated the Cost Estimate Process is followed. The current project cost budget and schedule is compared to the new estimate. Clear documentation of each update in relation to previous estimates is included in the estimation files.

#### **4.2.2 Cost Control and Tracking**

The CRC Project Controls Group is in the process of identifying and ultimately selecting a program cost and budget management software that will best serve the needs of the program for the duration of its design, construction and full implementation.

This program will be used to manage program budget and cost.

Estimates will be updated regularly as project elements are refined and will be updated prior to bidding. It is assumed that these updates should have little impact on the overall program budget since sufficient contingency must be set aside and managed to match the level of design at any stage of the project.

Project budgets will be established for the overall program as well as the package level. Change will be managed through the configuration management process (See Project Management Plan and Procedures Manual).

Consultant and contractor invoicing costs must conform to the applicable state and federal regulations.

Review/Payment describes in detail the review, approval and signature process of consultant and contractor invoices for work completed.

Project Controls provides information to WSDOT Program Management detailing payments and amounts of all dispersed funds as directed. This process allows reconciliation of requests for payment with actual disbursement of funds. Detailed records of work performed are kept, and cost trends and overall contract progress are reviewed with the task and contract managers.

The tracking of cost estimating, by its very nature, requires the application of prudent judgment to the completion of the task.

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## 5. Relocation

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### 5.1 Policy

Any relocations that may be required will be conducted in compliance with federal law, the Oregon and Washington statutes and TriMet, WSDOT's and/or ODOT's Relocation Policies.

### 5.2 Identification

The CRC Utility Team has established an ongoing communication with utility owners that has allowed the project to start an early discussion regarding potential impacts and relocations. As the design progresses the CRC Utility Team will further identify utilities in conflict through the utility conflict analysis workshops. These workshops allow utilities to provide input on conflicts and potential resolutions. Term sheets have been developed for each utility outlining agreement type, purpose, key terms, scope, financial implications, and approval requirements.

The Utility Team is developing a matrix for each construction package that details each utilities responsibility for design, construction and cost that will be further developed as the conflict analysis process progresses. A Draft Utility Matrix is shown under Appendix G.

### 5.3 Relocation Compensation

Ultimately, the taxpayer/ratepayer pays the cost for necessary utility relocations. It is for this reason that utility relocations and the design expenses incurred to avoid utility relocations should be a shared cost, depending on the circumstances surrounding the utility conflict.

Impacted utilities generally fall into one of the following four categories: a) Utility occupation within State or City ROW by permit or franchise, b) Utilities located within State or City ROW by easement, c) Utilities Located Outside State or City ROW, or d) City utilities on City streets. These categories dictate who will be required to pay for work associated with any relocations or design cost recovery efforts.

Utilities within State or City property that are under permit or franchise and do not hold property rights will be required to relocate at their cost. Utilities under easement or other accommodation documents that gives the utility property rights may receive payment for all or a portion of their relocation work.

### 5.4 Utility Accommodation Documents

Utility accommodation documents define utility ownership, type, size, location, construction methods, maintenance frequency and duration, and other information considered necessary.

Utilities that must be relocated will be responsible for obtaining the necessary accommodation documents (i.e. permit, franchise, and/or easement) with the governing agency or private property owner prior to performing work.



## **5.5 Notification to Utility Owners**

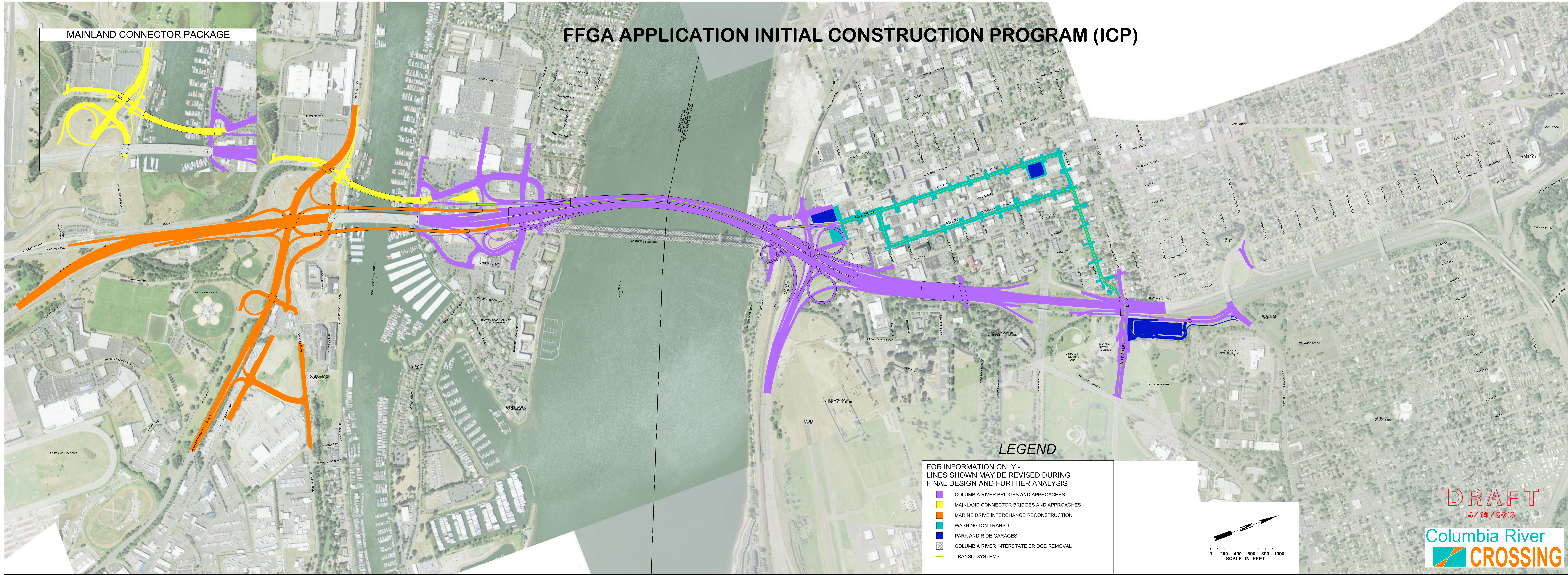
Affected utility owners will be contacted during the Engineering phase of the CRC Program. Utility owners will be formally notified of any conflicts and required relocations according to the applicable State law (OAR Chapter 734, Section 55; RCW 47.44.060).

# **Exhibit: CRC Program**

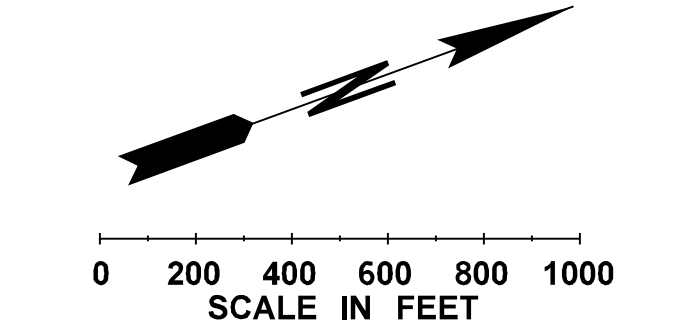


MAINLAND CONNECTOR PACKAGE

# FFGA APPLICATION INITIAL CONSTRUCTION PROGRAM (ICP)



- FOR INFORMATION ONLY - LINES SHOWN MAY BE REVISED DURING FINAL DESIGN AND FURTHER ANALYSIS
- COLUMBIA RIVER BRIDGES AND APPROACHES
  - MAINLAND CONNECTOR BRIDGES AND APPROACHES
  - MARINE DRIVE INTERCHANGE RECONSTRUCTION
  - WASHINGTON TRANSIT
  - PARK AND RIDE GARAGES
  - COLUMBIA RIVER INTERSTATE BRIDGE REMOVAL
  - TRANSIT SYSTEMS



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4/18/2013





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# Appendix

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## **Appendix A. Utility Documentation Table**

**WSDOT Agreements**

Utility	Utility Type	Size and Kind	Agreement Type			Agreement ID Number	Location	Agreement Timeframe		
			Permit	Franchise	Easement			Duration	Active Date	Expiration Date
Clark County IT	Communication	3-1.25" interducts, 1 w/ 12 fiber, 2 vacant	x			U1271	Crossing I-5 on Evergreen Bridge	N/A	February 26, 2002	N/A
Clark PUD	Power	All Buried and electric facilities		x		40234	I-5	25 years	October 15, 2008	October 15, 2033
Clark PUD	Power	buried 12.5KV cable in a 4"PVC conduit	x			8868	7 <sup>th</sup> to 8 <sup>th</sup> along I-5 SB	N/A	August 17, 1983	N/A
Clark PUD	Power	aerial 36-fiber comm. cable	x			11013	Crosses I-5 at 12th Street between Mill Plain and Evergreen	N/A	September 28, 1994	N/A
Clark PUD	Power	Aerial fiber comm. cable	x			U1315	Crosses I-5 along Columbia Way near I-5 Bridge	N/A	November 13, 2002	N/A
Comcast (Columbia Cable of WA)	Communication	2" duct w/96 fiber cable		x		40118	Crosses I-5 Bridge to WA	25 years	January 26, 1994	January 26, 2019
Comcast (Columbia Cable of WA)	Communication	1.25" MOD CATV aerial crossing w/102 fibers	x			11072	Crosses I-5 at 12th Street between Mill Plain and Evergreen	N/A	January 18, 1995	N/A
Comcast (Cox Cable)	Communication	two 0.75" O.D. aerial T.V. cable	x			8828	Crosses I-5 at 12th Street between Mill Plain and Evergreen	N/A	May 23, 1938	N/A
Comcast (Cox Cable)	Communication	two 0.75" O.D. aerial T.V. cable	x			8842	Crosses within the 29th Street structure	N/A	May 23, 1983	N/A
Comcast (Cox Cable)	Communication	0.50" aerial and buried TV cable	x			9278	Follows along Mill Plain off ramp from I-5 NB	N/A	November 30, 1985	N/A
Comcast (TCI)	Communication	240-fiber cable		x		Amendment to 40118	Crosses I-5 Bridge to WA	20 years	June 10, 1998	January 26, 2019
Comcast (TCI)	Communication	1.25" MOD conduit to aerial 0.25" steel strand		x		Amendment to 40118	Aerial crossings at 33rd Street	5 years	December 28, 1998	December 28, 2003
Comcast (TCI)	Communication	CATV duct system	x			11466	Crossing I-5 at McLoughlin	N/A	December 17, 1996	N/A
COV	Communication	buried 25-pair comm. Cable for traffic signal	x			9749	Crosses I-5 and ramps at Mill Plain	N/A	August 23, 1988	N/A
COV	Communication	48 fiber cable & 25 pair comm cable	x			U1196	Crosses I-5 and ramps at Mill Plain	N/A	February 26, 2001	N/A
COV	Communication	conduit on bridge for fiber cable	x			U1444	Crosses I-5 at Fourth Plain	N/A	February 3, 2005	N/A
COV	Sewer	All Existing		x		40058	I-5	25 years	June 17, 1988	June 17, 2013
COV	Storm	All Existing		x		40061	I-5	25 years	June 2, 1988	June 2, 2013
COV	Water	All Existing		x		40025	I-5	25 years	February 2, 1987	February 2, 2012
Integra (Electric Lightwave, Inc.)	Communication	Aerial 48 fiber optic		x		40151	Crosses I-5 at Columbia Way & 33rd Street	25 years	April 24, 1997	April 24, 2022
NW Natural	Gas	All Existing		x		40006	I-5	25 years	September 26, 1985	September 26, 2010
Century Link (Qwest) (Pacific NW Bell)	Communication	All Existing		x		6644	I-5	25 years	April 16, 1984	April 16, 2009
Sawtooth Technologies, LLC.	Communication	Aerial fiber optic cable	x			U1474	SR500	N/A	October 20, 2005	N/A
Verizon (GTE)	Communication	Aerial fiber optic crossing		x		40161	Crosses I-5 at 29th Street	25 years	June 6, 1998	June 6, 2023



**ODOT Agreements**

Utility	Utility Type	Size and Kind	Agreement Type			Agreement ID Number	Location	Agreement Timeframe		
			Permit	Franchise	Easement			Duration	Active Date	Expiration Date
Comcast (Columbia Cable of WA)	Communications	2" Conduit w/96 Fiber Cable	x			2BM35356	I-5 Bridge Crossing	N/A	February 16, 1994	N/A
Comcast (Paragon Cable)	Communications	4" Conduit w/.750 Coax & Fiber Optic Cable	x			2BM36073	East side of NB I-5 along the north side of Marine Drive.	N/A	April 12, 1999	N/A
Comcast (Roger's Cable Systems)	Communications	4" Conduit	x			27148	NPH I-5 Bridge Crossing	N/A	February 4, 1987	N/A
Comcast (TCI)	Communications	Fiber Optic	x			2BM35797	I-5 Bridge Crossing	N/A	July 21, 1997	N/A
COP Bureau of Fire	Fire Alarm Cable	1 1/2" Conduit	x			16216	NPH I-5 Bridge Crossing	N/A	October 11, 1973	N/A
COP Bureau of Comm. & Networking	Communications	3" PVC Conduit w/fiber optic	x			2BM36656	Crossing I-5 Bridge at the Columbia Slough south of Victory Blvd.	N/A	September 16, 2002	N/A
COP Dept. of Public Works	Sewer	16" Steel pressure sewer	x			16407	Crossing I-5 Bridge over the Columbia Slough south of Victory	N/A	February 11, 1975	N/A
COP Dept. of Public Works	Sewer	6" DIP pressure sewer	x			18599	Victory Blvd	N/A	April 8, 1977	N/A
COP Dept. of Public Works	Sewer	10" PVC	x			2BM35178	Jantzen Avenue & Jantzen Drive	N/A	July 17, 1992	N/A
COP Dept. of Public Works	Sewer	20" & 30" Pressure Mains	x			2BM35638	Crosses I-5 south of Marine Drive from Delta Park to Expo Road.	N/A	March 27, 1996	N/A
COP Dept. of Public Works	Sewer	8" welded steel pressure sewer	x			12240	Hayden Island possibly Jantzen Drive	N/A	February 2, 1968	N/A
COP Bureau of Water Works	Water	24" Steel Casing with 16" water line	x			15306	Crosses I-5 south of Marine Drive from Delta Park to Expo Road.	N/A	August 21, 1972	N/A
COP Bureau of Water Works	Water	16" DI water line	x			15572	Denver-Union-Swift Interchange	N/A	December 29, 1972	N/A
COP Bureau of Water Works	Water	16" DI water line	x			30693	East side of NB I-5 along the north side of Marine Drive.	N/A	May 24, 1990	N/A
COP Bureau of Water Works	Water	12" DI water line	x			30861	Center Ave. from Hayden Island Drive to Jantzen Ave & Drive	N/A	July 3, 1990	N/A
COP Bureau of Water Works	Water	8" DI	x			2BM36005	Marine Drive east connection to Anchor Way	N/A	October 16, 1998	N/A
COP Bureau of Water Works	Water	6" DI fire hydrant relocation	x			2BM37071	Hayden Island DR & Mall DR on Center Avenue	N/A	July 13, 2005	N/A
COP Bureau of Water Works (Hayden Island, Inc.)	Water	6" Steel	x			11761	Hayden Island Drive under I-5	N/A	May 31, 1967	N/A
COP Bureau of Water Works (Hayden Island, Inc.)	Water	12"	x			13509	Jantzen Drive under NPH Bridge	N/A	January 22, 1970	N/A
Integra (All Phase Communications)	Communications	4" Galvanized Pipe w/244 Fiber Optic	x			2BM35831	NPH I-5 Bridge Crossing	N/A	September 26, 1997	N/A
Integra (All Phase Communications)	Communications	2" PVC Ducts	x			2BM35800	East side of NB I-5 on Hayden Island from NPH to the I-5 Bridge.	N/A	July 25, 1997	N/A
Integra (All Phase Communications)	Communications	2" PVC Conduit, schedule 40	x			2BM35801	SB I-5 Bridge Crossing	N/A	July 25, 1997	N/A
Integra (Electric Lightwave, Inc.)	Communications	Aerial Fiber Optic cable.	x			2BM36010	East side of NB I-5 along the north side of Marine Drive.	N/A	October 22, 1998	N/A
NW Natural	Gas	6" & 4" Metal	x			4767	Between NPH and Public Service Building.	25 years	December 30, 1958	December 30, 1983
NW Natural	Gas	6" and smaller	x			14228	Hayden Island from NPH Bridge down Center Avenue	N/A	March 4, 1971	N/A
NW Natural	Gas	6-5/8" Steel	x			4767	Columbia Slough Bridge Crossing	N/A	May 1, 1972	N/A
NW Natural	Gas	2" Steel	x			19017	Hayden Island Drive to the SB I-5 Bridge proposed crossing	N/A	September 22, 1977	N/A
NW Natural	Gas	8" Steel	x			2BM35007	East side of NB I-5 along the north side of Marine Drive.	N/A	September 10, 1990	N/A
NW Natural	Gas	2" Poly	x			2BM35739	Marine Drive west of I-5 on south side of NPH	N/A	January 30, 1997	N/A
NW Natural Portland Gas & Coke	Gas	6-5/8" Metal	x			4352	Between Pacific Hwy Junction and SP&S Undercrossing	25 years	April 8, 1957	April 8, 1982
PGE	Power	3" Styrene Duct. #2 15-kv direct burial cable	x			11973	Jantzen Drive under NPH Bridge	N/A	August 30, 1967	N/A
PGE	Power	3-750 MCM C.B. cable	x			13681	Hayden Island Drive to the I-5 Bridge	N/A	April 29, 1970	N/A
PGE	Power	750 Mainline, 4" conduit, 6" conduit	x			2BM36242	Hayden Island Drive east of I-5	N/A	March 14, 2000	N/A
PGE	Power	751 Mainline Backbone 2/0	x			2BM36236	Hayden Island Drive under I-5	N/A	March 8, 2000	N/A
Qwest	Communications	2" Conduit	x			2BM36829	Hayden Island Drive & Jantzen Street on Center Street	N/A	October 14, 2003	N/A
Qwest	Communications	ANMW-35	x			2BM37005	Hayden Island Drive and Center Avenue	N/A	March 10, 2005	N/A
Century Link (Qwest) (Pacific NW Bell)	Communications	telephone	x			6142	East side of NB I-5 along the north side of Marine Drive/Union AVE.	N/A	August 8, 1962	N/A
Century Link (Qwest) (Pacific NW Bell)	Communications	2" Cable 600 x	x			5225	Crosses I-5 in line w/ Tomahawk DR and then up Center AVE to Hayden Island DR.	25 years	October 19, 1962	October 19, 1987
Century Link (Qwest) (Pacific NW Bell)	Communications	2" conduit	x			12259	Jantzen Beach Interchange	N/A	September 16, 1971	N/A
Century Link (Qwest) (Pacific NW Bell)	Communications	Construct Parking	x			17675	Jantzen Beach Interchange east of I-5.	N/A	January 6, 1976	N/A
Century Link (Qwest) (Pacific NW Bell)	Communications	telephone cable .5"	x			20738	Tomahawk DR to I-5 NB off ramp.	N/A	July 3, 1979	N/A
Century Link (Qwest) (Pacific NW Bell)	Communications	15 PC 4" B	x			25437	NPH I-5 Bridge Crossing	N/A	January 9, 1985	N/A
Century Link (Qwest) (Pacific NW Bell)	Communications	phone cable and 3" conduit	x			4734	NPH I-5 Bridge Crossing	N/A	November 10, 1955	N/A
Time Warner (GST)	Communications	3 - 100 mm PVC (4"PVC)	x			2BM35873	Pier 99 Street to Marine Drive west of I-5.	N/A	December 18, 1997	N/A

### COP Agreements

Utility	Utility Type	Agreement Type			Agreement ID Number	Location	Agreement Timeframe		
		Permit	Franchise	Easement			Duration	Active Date	Expiration Date
CenturyLink (Qwest)	Communications		x			Covers all utilities in COP R/W	6 years		December 31, 2011
Time Warner (GST)	Communications		x						December 31, 2011
Northwest Natural	Gas		x				20 years		March 24, 2029
PGE	Power		x						December 31, 2011
PP&L	Power		x				20 years		April 7, 2027
Verizon Wireless	Communications			x		ROW Agrmt			June 30, 2014
AT&T	Communications		x						December 31, 2011
Integra	Communications		x						December 31, 2011
Comcast	Communications		x				10 years	January 1, 2012	December 31, 2021

### COV Agreements

Utility	Utility Type	Agreement Type			Agreement ID Number	Location	Agreement Timeframe		
		Permit	Franchise	Easement			Duration	Active Date	Expiration Date
Comcast (TCL of Southern WA)	Communications		x			all existing	5 year	1997	December 31, 2012
NW Natural	Gas		x		922627	all existing	30 years	December 19, 1977	December 19, 2007

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## **Appendix B. Draft Relocation Schedule**

Activity ID	Activity Name	Start	Finish	Original Duration	2008				2009				2010				2011				2012				2013				2014				2015				2016				2017				2018				2019				2020				2021				2022
					Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
<b>CRC UTILITIES ICP</b>																																																													
<b>INITIAL CONSTRUCTION PACKAGES (ICP)</b>																																																													
<b>RIVER CROSSING RC DB</b>																																																													
<b>City of Vancouver</b>																																																													
1000	Project Design Notification	6-2-08 A	8-29-08 A	63d																																																									
1037	Utility Locating	3-31-10 A	12-3-10 A	173d																																																									
1038	SUE	1-3-11 A	3-1-13	595d																																																									
1039	Utility Relocation Notice	12-17-12	12-21-12	5d																																																									
1040	Utility Relocation Planning	12-24-12	10-4-13	200d																																																									
1041	Utility Relocation Meeting	10-7-13	10-18-13	10d																																																									
1042	Utility Agreement Preparation and Execution	10-21-13	4-22-14	129d																																																									
1043	Ad & Award		12-2-14	0d																																																									
1045	Pre-Relocation Meeting	12-2-14	12-8-14	5d																																																									
1044	Utility Relocation	12-9-14	7-12-17	661d																																																									
1057	Post Construction Meeting		1-14-21	0d																																																									
<b>City of Portland</b>																																																													
1130	Project Design Notification	6-2-08 A	8-29-08 A	63d																																																									
1137	Utility Locating	3-31-10 A	12-3-10 A	173d																																																									
1088	SUE	1-3-11 A	3-1-13	595d																																																									
1089	Utility Relocation Notice	12-17-12	12-21-12	5d																																																									
1140	Utility Relocation Planning	12-24-12	10-4-13	200d																																																									
1091	Utility Relocation Meeting	10-7-13	10-18-13	10d																																																									
1092	Utility Agreement Preparation and Execution	10-21-13	4-22-14	129d																																																									
1093	Ad & Award		12-2-14	0d																																																									
1095	Pre-Relocation Meeting	12-2-14	12-8-14	5d																																																									
1094	Utility Relocation	12-9-14	11-15-17	750d																																																									
1147	Post Construction Meeting		1-14-21	0d																																																									
<b>Century Link</b>																																																													
1150	Project Design Notification	6-2-08 A	8-29-08 A	63d																																																									
1157	Utility Locating	3-31-10 A	12-3-10 A	173d																																																									
1098	SUE	1-3-11 A	3-1-13	595d																																																									
1099	Utility Relocation Notice	12-17-12	12-21-12	5d																																																									
1160	Utility Relocation Planning	12-24-12	10-4-13	200d																																																									
1101	Utility Relocation Meeting	10-7-13	10-18-13	10d																																																									
1102	Utility Agreement Preparation and Execution	10-21-13	4-22-14	129d																																																									
1103	Ad & Award		12-2-14	0d																																																									
1105	Pre-Relocation Meeting	12-2-14	12-8-14	5d																																																									
1104	Utility Relocation	12-9-14	12-8-16	511d																																																									
1167	Post Construction Meeting		1-14-21	0d																																																									
<b>NW Natural</b>																																																													
1170	Project Design Notification	6-2-08 A	8-29-08 A	63d																																																									
1177	Utility Locating	3-31-10 A	12-3-10 A	173d																																																									
1108	SUE	1-3-11 A	3-1-13	595d																																																									
1109	Utility Relocation Notice	12-17-12	12-21-12	5d																																																									
1180	Utility Relocation Planning	12-24-12	6-25-13	129d																																																									
1111	Utility Relocation Meeting	6-26-13	7-10-13	10d																																																									
1112	Utility Agreement Preparation and Execution	7-11-13	1-13-14	129d																																																									
1114	Utility Relocation	7-18-14	7-19-16	511d																																																									
1113	Ad & Award		12-2-14	0d																																																									
1115	Pre-Relocation Meeting	12-2-14	12-8-14	5d																																																									
1187	Post Construction Meeting		1-14-21	0d																																																									
<b>Comcast</b>																																																													
1190	Project Design Notification	6-2-08 A	8-29-08 A	63d																																																									
1197	Utility Locating	3-31-10 A	12-3-10 A	173d																																																									
1118	SUE	1-3-11 A	3-1-13	595d																																																									
1119	Utility Relocation Notice	12-17-12	12-21-12	5d																																																									
1200	Utility Relocation Planning	12-24-12	6-25-13	129d																																																									
1121	Utility Relocation Meeting	6-26-13	7-10-13	10d																																																									
1122	Utility Agreement Preparation and Execution	7-11-13	1-13-14	129d																																																									
1124	Utility Relocation	7-18-14	7-19-16	511d																																																									
1123	Ad & Award		12-2-14	0d																																																									
1125	Pre-Relocation Meeting	12-2-14	12-8-14	5d																																																									
1207	Post Construction Meeting		1-14-21	0d																																																									
<b>Integra</b>																																																													

- Remaining Work
- Remaining Hammock
- Critical
- Milestone
- Actual Work

**COLUMBIA RIVER CROSSING**  
**INITIAL CONSTRUCTION PACKAGE (ICP)**  
**UTILITY RELOCATION SCHEDULE**

Data Date: 8-8-12  
Print Date/Time: 8-30-12 13:41  
Page 1 of 14











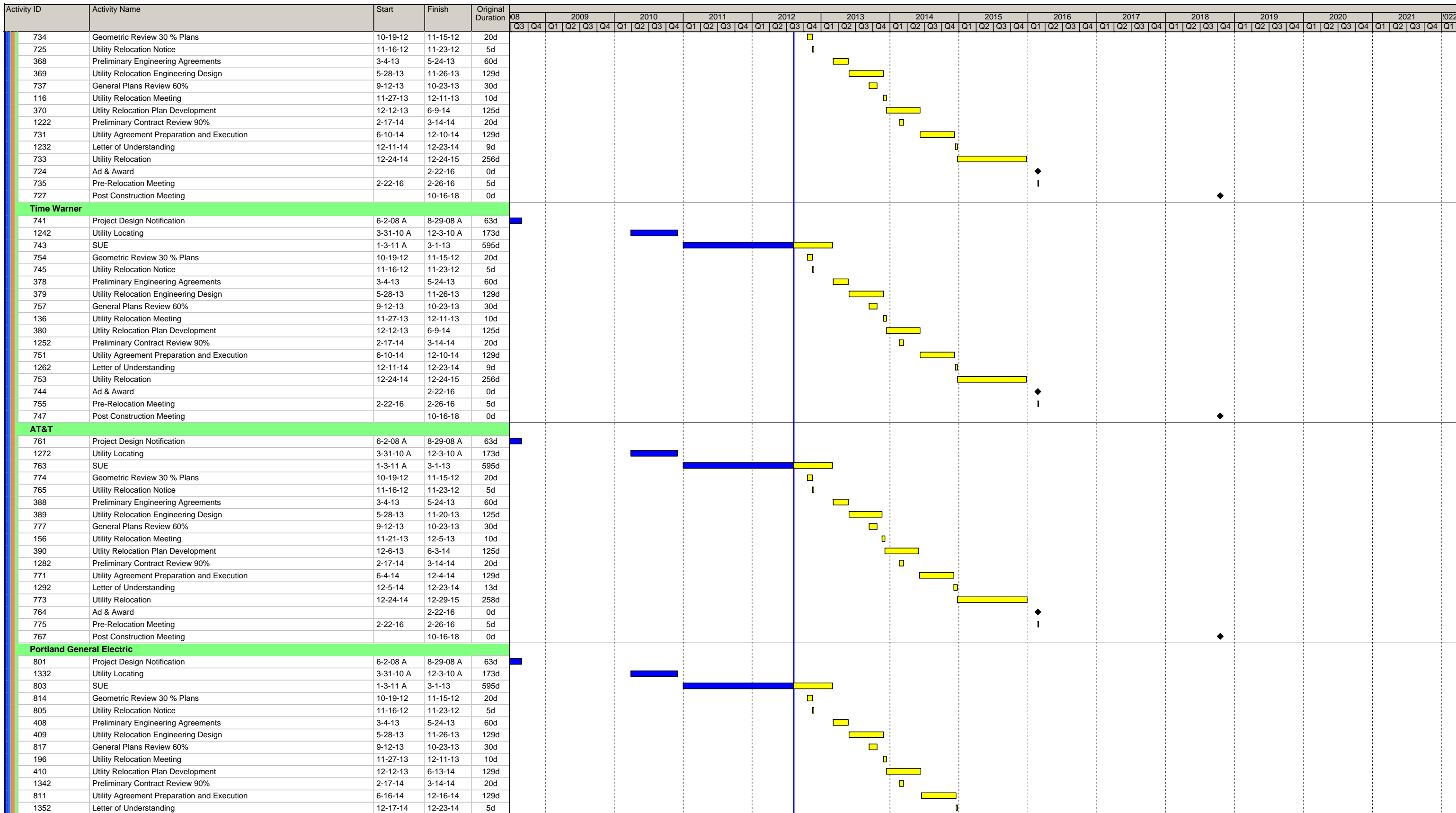












- Remaining Work
- Remaining Hammock
- Critical
- Milestone
- Actual Work

## COLUMBIA RIVER CROSSING

### INITIAL CONSTRUCTION PACKAGE (ICP)

### UTILITY RELOCATION SCHEDULE





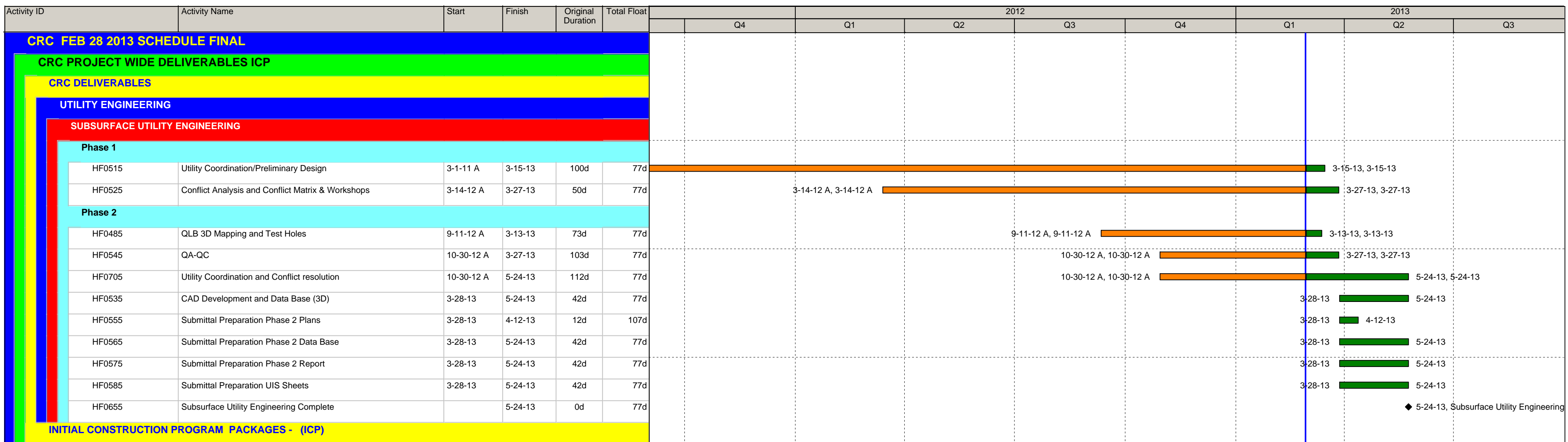






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## **Appendix C. Project Schedule for Utilities**



RBLD CRC-FEB 2013

**CRC PROJECT SCHEDULE FEBRUARY 2013 UPDATE: UTILITIES**

RUN DATE: 4-18-13  
 PAGE: 1 of 1  
 CRC FEB 28 2013 SCHEDULE FINAL

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## **Appendix D. Position Descriptions**

## **Job Description**

**Title:** Program Utility Design Engineer

**Department:** WSDOT

**Summary Description:**

Oversee daily utility activities in the office and on the project site. Coordinate meetings with project staff and utility owners. Provide monthly schedule updates. Review scope, invoice, and progress reports. Perform related duties as required.

**Essential Functions:**

1. Conduct/coordinate meetings with other departments, agencies, project staff and utility owners. Discuss potential project impacts and solutions.
2. Prepare and/or coordinate utility relocation plan and schedule. Participate in utility conflict analysis to determine needed utility relocations. Assists in preparation of documentation for relocations as needed.
3. Provide research and review of utility facilities, property rights, engineering drawings, and other materials as necessary.
4. Review consultant scope, invoices, progress reports and deliverables.
5. In the absence of Program Utility Manager, may perform other duties as required.

## **Job Description**

**Title:** Program Utility Manager

**Department:** WSDOT

**Summary Description:**

Manage utilities for the project. Perform related duties as required.

1. Assist with coordination with other departments, agencies, project staff and utility owners.
2. Provide guidance and direction to CRC Utility Team. Provide updates to the Specialty Services Director.
3. Review consultant scope, invoices, progress reports and deliverables.



# **Job Description**

**Title:** Specialty Services Director

**Department:** WSDOT

**Summary Description:**

Manage utilities for the project. Perform related duties as required.

1. Provide guidance and direction to CRC Utility Team.
2. Reports to CRC Program Director(s).

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## **Appendix E. Term Sheet Outline**

## CRC LOCAL AGREEMENTS TERM SHEET

The CRC Term Sheet, which was developed in conjunction with HQ Contracts and the Attorney General's Office, is intended to be a tool for project offices to use during the early development phase of an agreement by providing a place to record agreement elements and decisions as they are made. It is meant to be a synopsis of these elements and decisions, and is not intended to contain a verbatim version of what will be included in the formal agreement, nor will it include the legal language of the agreement.

<b>Other Party:</b>		<b>Status:</b>	
<b>Agreement Type:</b>	Permit/Franchise		
<b>Agreement Title:</b>	Utility		
<b>Agreement Project Title:</b>	Columbia River Crossing (CRC) Project		
<b>Agreement Duration:</b>	In effect until completion of project	<b>Consideration (if applicable):</b>	

### Agreement Project Manager/Contact:

<b>&lt;Agency:&gt;</b>		<b>Phone/email:</b>	
<b>&lt;Agency:&gt;</b>		<b>Phone/email:</b>	
<b>&lt;Agency:&gt;</b>		<b>Phone/email:</b>	
<b>&lt;Agency:&gt;</b>		<b>Phone/email:</b>	

**Note: Term Sheets will be completed between each agency. A single utility could have up to 4 term sheets with each of the following agencies: City of Vancouver, City of Portland, WSDOT and ODOT.**

<b>Agreement Schedule Dates:</b>	
<b>Complete Draft Tern Sheet:</b>	00/00/00
<b>Term Sheet Finalization:</b>	00/00/00
<b>Completed Draft Agreement:</b>	00/00/00
<b>Agreement Finalization:</b>	00/00/00

<b>Purpose of Agreement:</b>			
<ul style="list-style-type: none"> <li>• What type of existing agreement is in place <ul style="list-style-type: none"> <li>○ Franchise, Permit, Easement</li> </ul> </li> <li>• What are the Responsibilities between (AGENCY) and (UTILITY) within that agreement</li> <li>• At what locations is there a conflict between (UTILITY) and the design of the CRC project</li> <li>• What is the conflict outcome <ul style="list-style-type: none"> <li>○ Relocation - provide detail on the location where they will relocate.</li> <li>○ Abandon – Detail how</li> <li>○ Protect in place – Detail how</li> </ul> </li> <li>• Determine Standards that must be met in design or construction. <ul style="list-style-type: none"> <li>○ Highway or Transit</li> </ul> </li> <li>• Determine Cost and Schedule of work.</li> <li>• Determine any new agreements that will need to be in place.</li> </ul>			
<b>Key Terms of Agreement:</b>			
All Parties agree: <ul style="list-style-type: none"> <li>• Existing agreements</li> <li>• Responsibility of parties</li> <li>• Utility type and size (if applicable)</li> <li>• Utility conflicts and relocations</li> <li>• Standards Agreed Upon</li> <li>• Relocation schedule.</li> <li>• New agreements</li> </ul>			
<b>Scope of Work (if applicable):</b>			
<ul style="list-style-type: none"> <li>• Detail utility conflict analysis process.</li> <li>• Detail Permit/Franchise process.</li> </ul>			
<b>Financial Implications/Budget Impacts/Source of Funding/Payment:</b>			
<ul style="list-style-type: none"> <li>• How the work is to be paid for?</li> <li>• What are the financial obligations of the parties?</li> </ul>			
<b>Approval Requirements/Signature Authority:</b>			
The following will have approval requirements and signature authority: <ul style="list-style-type: none"> <li>• ODOT or WSDOT</li> <li>• City of Portland or City of Vancouver Legal Representative</li> <li>• Utility Legal Representatives</li> </ul>			
<b>Summary Completed By:</b>		<b>Date:</b>	

The undersigned expressly acknowledge and agree that this Term Sheet is not a legally binding contract that establishes their respective responsibilities to each other for the activities described in this Term Sheet, but rather a written statement to the Federal Transit Administration that outlines the intended scope of future formal contracts and which FTA may rely on in the evaluation of project funding readiness.

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***Utility Owner***

---

**Date**

---

***Public Agency***

---

**Date**

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## **Appendix F. Utility Cost Estimate**



The current utility cost relocation estimate for the CRC Program is being developed and will be finalized upon completion of the conflict analysis. Currently the program only has a cost estimate for public utilities that have been determined a program cost. The cost estimate will be broken up into highway impacts and transit impacts, and will include a breakdown of the relocation description, quantities, and estimated unit costs and extensions.

This cost estimate information will be made available at a later date.

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## **Appendix G. Draft Utility Matrix**

Utility Relocation/Protection Matrix														
Contract Package	Location	Utility Owner	Type of Utility	Transit or Highway	Risks	Utility Accomodation Documents	Agreement Type Needed	Responsible Party		Schedule Durations			Cost /Sharing Responsibility	
								Design	Construction	Design	Lead Time	Construction	Design	Construction
River Crossing	CRB	COV	Water	Highway		WSDOT Franchise 40025 / Expired Feb. 2, 2012	IGA	COV				30 mo.		\$144,000.00
River Crossing	14	COV	Water	Highway		WSDOT Franchise 40025 / Expired Feb. 2, 2012	IGA	COV				30 mo.		\$115,500.00
River Crossing	CRB	COV	Sewer	Highway		WSDOT Franchise 40025 / Expired Feb. 2, 2012	IGA	COV				30 mo.		\$91,000.00
River Crossing	14	COV	Sewer	Highway		WSDOT Franchise 40025 / Expired Feb. 2, 2012	IGA	COV				30 mo.		\$415,000.00
River Crossing	CRB	COV	Storm	Highway		WSDOT Franchise 40025 / Expired Feb. 2, 2012	IGA	CRC	CRC			72 mo.		
River Crossing	14	COV	Storm	Highway		WSDOT Franchise 40025 / Expired Feb. 2, 2012	IGA	CRC	CRC			72 mo.		\$1,200,000.00
River Crossing	CRB	COP	Water	Highway		ODOT Permit 11761, 13509, 30861, 2BM37071	IGA	COP				35 mo.		\$126,000.00
River Crossing	HI	COP	Water	Highway		ODOT Permit 11761, 13509, 30861, 2BM37071	IGA	COP				35 mo.		\$567,000.00
River Crossing	CRB	COP	Sewer	Highway		ODOT Permit 12240, 2BM35178	IGA	COP				35 mo.		
River Crossing	HI	COP	Sewer	Highway		ODOT Permit 12240, 2BM35178	IGA	COP				35 mo.		\$147,000.00
River Crossing	CRB	COP	Storm	Highway		N/A	IGA	CRC	CRC			72 mo.		
River Crossing	HI	COP	Storm	Highway		N/A	IGA	CRC	CRC			72 mo.		
River Crossing	14	CenturyLink	Telecom	Highway		No Agreement with COV	Utility Relocation Notice	CL				6 mo.		
River Crossing	HI	CenturyLink	Telecom	Highway		COP Franchise / Expired Dec. 31, 2011	Property rights to be determined	CL				24 mo.		
River Crossing	CRB	NW Natural	Gas	Highway		ODOT Permit 14228, 4767, 19017, 2BM35007, 2BM35739 WSDOT Franchise 40006 / Expired Sept 26, 2010	Utility Relocation Notice	NWN				24 mo.		
River Crossing	14	NW Natural	Gas	Highway		COV Franchise 922627 / Expired Dec. 19, 2007	Utility Relocation Notice	NWN				18 mo.		
River Crossing	HI	NW Natural	Gas	Highway		COP Franchise / Active until March 24, 2029 Potential for easements	Property rights to be determined	NWN				24 mo.		
River Crossing	CRB	Comcast	Cable	Highway		ODOT Permit 27148, 2BM35356, 2BM36073, 2BM35797 WSDOT Franchise 40118 / Active until Jan. 26, 2019	Utility Relocation Notice	Comcast				18 mo.		
River Crossing	14	Comcast	Cable	Highway		COV Franchise / Active until Dec. 31, 2012	Utility Relocation Notice	Comcast				12 mo.		
River Crossing	HI	Comcast	Cable	Highway		COP Franchise / Active until Dec. 31, 2021	Property rights to be determined	Comcast				24 mo.		

River Crossing	CRB	Integra	Telecom	Highway		ODOT Permit 2BM35831, 2BM36800, 2BM35801, 2BM36010 WSDOT Franchise 40151 / Active until April 24, 2022	Utility Relocation Notice	Integra					18 mo.		
River Crossing	14	Integra	Telecom	Highway		No Agreement with COV	Utility Relocation Notice	Integra					18 mo.		
River Crossing	HI	Integra	Telecom	Highway		COP Franchise / Expired Dec. 31, 2011	Property rights to be determined	Integra					12 mo		
River Crossing	CRB	Time Warner	Telecom	Highway		ODOT Permit 2BM35873 WSDOT - None	Utility Relocation Notice	TW					18 mo.		
River Crossing	14	Time Warner	Telecom	Highway		Letter of Understanding with COV	Utility Relocation Notice	TW					18 mo.		
River Crossing	HI	Time Warner	Telecom	Highway		COP Franchise / Expired Dec. 31, 2011	Property rights to be determined	TW					24 mo.		
River Crossing	CRB	AT&T	Telecom	Highway		ODOT - None WSDOT - None	Utility Relocation Notice	ATT					18 mo.		
River Crossing	14	AT&T	Telecom	Highway		No Agreement with COV	Utility Relocation Notice	ATT					18 mo.		
River Crossing	HI	AT&T	Telecom	Highway		COP Franchise / Expired Dec. 31, 2011	Property rights to be determined	ATT					24 mo.		
River Crossing	14	CPU	Power	Highway		WSDOT Franchise 40234 / Active until Oct. 15, 2033 No Agreement with COV	Utility Relocation Notice	CPU					18 mo.		
River Crossing	HI	PGE	Power	Highway		COP Franchise / Expired Dec. 31, 2011 Potential for easements	Property rights to be determined	PGE					24 mo.		
River Crossing	HI	Verizon Wireless	Telecom	Highway		ROW Agrmt / Active until Dec. 31, 2014	Property rights to be determined	VW					24 mo.		
River Crossing	CRB	WSDOT	Storm	Highway		N/A	N/A	CRC	CRC				33 mo.		
River Crossing	14	WSDOT	Storm	Highway		N/A	N/A	CRC	CRC				72 mo.		
River Crossing	HI	ODOT	Storm	Highway		N/A	N/A	CRC	CRC				72 mo.		

Utility Relocation/Protection Matrix														
Contract Package	Location	Utility Owner	Type of Utility	Transit or Highway	Risks	Utility Accomodation Documents	Agreement Type Needed	Responsible Party		Schedule Durations			Cost /Sharing Responsibility	
								Design	Construction	Design	Lead Time	Construction	Design	Construction
TWA	WA	COV	Water	Transit		N/A	IGA	COV				36 mo.		\$1,531,450.00
TWA	WA	COV	Sewer	Transit		N/A	IGA	COV				36 mo.		\$156,000.00
TWA	WA	COV	Storm	Transit		N/A	IGA	CRC	CRC			42 mo.		\$419,000.00
TOR	OR	COP	Water	Transit		N/A	IGA	COP				24 mo.		\$331,000.00
TOR	OR	COP	Sewer	Transit		N/A	IGA	COP				24 mo.		
TOR	OR	COP	Storm	Transit		N/A	IGA	CRC	CRC			36 mo.		
TWA	WA	CenturyLink	Telecom	Transit		No Agreement with COV	Utility Relocation Notice	CL				48 mo.		
TOR	OR	CenturyLink	Telecom	Transit		COP Franchise / Expired Dec. 31, 2011	Property rights to be determined	CL				6 mo.		
TWA	WA	NW Natural	Gas	Transit		COV Franchise 922627 / Expired Dec. 19, 2007	Utility Relocation Notice	NWN				24 mo.		
TOR	OR	NW Natural	Gas	Transit		COP Franchise / Active until March 24, 2029 Potential for Easements	Property rights to be determined	NWN				6 mo.		
TWA	WA	Comcast	Cable	Transit		COV Franchise / Active until Dec. 31, 2012	Utility Relocation Notice	Comcast				18 mo.		
TOR	OR	Comcast	Cable	Transit		COP Franchise / Active until Dec. 31, 2021	Property rights to be determined	Comcast				12 mo.		
TWA	WA	Integra	Telecom	Transit		No Agreement with COV	Utility Relocation Notice	Integra				12 mo.		
TWA	WA	Time Warner	Telecom	Transit		Letter of Understanding with COV	Utility Relocation Notice	TW				12 mo.		
TOR	OR	Time Warner	Telecom	Transit		COP Franchise / Expired Dec. 31, 2011	Property rights to be determined	TW				6 mo.		
TWA	WA	AT&T	Telecom	Transit		No Agreement with COV	Utility Relocation Notice	ATT				6 mo.		
TOR	OR	AT&T	Telecom	Transit		COP Franchise / Expired Dec. 31, 2011	Property rights to be determined	ATT				6 mo.		
TWA	WA	CPU	Power	Transit		No Agreement with COV Potential for easements	Utility Relocation Notice	CPU				30 mo.		
TOR	OR	PGE	Power	Transit		COP Franchise / Expired Dec. 31, 2011 Potential for easement	Property rights to be determined	PGE				12 mo.		
TWA	WA	WSDOT	Storm	Transit		N/A	N/A	CRC	CRC			42 mo.		
TOR	OR	ODOT	Storm	Transit		N/A	N/A	CRC	CRC			36 mo.		

**Utility Relocation/Protection Matrix**

Contract Package	Location	Utility Owner	Type of Utility	Transit or Highway	Risks	Utility Accomodation Documents	Agreement Type Needed	Responsible Party		Schedule Durations			Cost /Sharing Responsibility	
								Design	Construction	Design	Lead Time	Construction	Design	Construction
Mainland Connector	MD	COP	Water	Highway		ODOT Permit 15360, 30693, 2BM36005	IGA	COP				24 mo.		
Mainland Connector	HI	COP	Water	Highway		ODOT Permit 15360, 30693, 2BM36005	IGA	COP				24 mo.		
Mainland Connector	MD	COP	Sewer	Highway		ODOT Permit 16407, 2BM35638	IGA	COP				24 mo.		
Mainland Connector	HI	COP	Sewer	Highway		ODOT Permit 16407, 2BM35638	IGA	COP				24 mo.		
Mainland Connector	MD	COP	Storm	Highway		N/A	IGA	CRC	CRC			24 mo.		
Mainland Connector	HI	COP	Storm	Highway		N/A	IGA	CRC	CRC			24 mo.		
Mainland Connector	MD	CenturyLink	Telecom	Highway		ODOT Permit 6142, 25437, 4734 COP Franchise / Expired Dec. 31, 2011	Utility Relocation Notice	CL				24 mo.		
Mainland Connector	NPH	CenturyLink	Telecom	Highway		Easement - Army Corps Permit - PNB #83241025	Preliminary Engineering Agreement	CL				24 mo.		
Mainland Connector	HI	CenturyLink	Telecom	Highway		ODOT Permit 5225, 12259, 17675, 20738 COP Franchise / Expired Dec. 31, 2011	Property rights to be determined	CL				24 mo.		
Mainland Connector	MD	NW Natural	Gas	Highway		ODOT Permit 14228, 4767, 19017, 2BM35007, 2BM35739	Utility Relocation Notice	NWN				18 mo.		
Mainland Connector	HI	NW Natural	Gas	Highway		COP Franchise / Active until March 24, 2029 Potential for easements	Property rights to be determined	NWN				18 mo.		
Mainland Connector	MD	Comcast	Cable	Highway		ODOT Permit 27148, 16216, 2BM36656, 2BM36073	Utility Relocation Notice	Comcast				6 mo.		
Mainland Connector	HI	Comcast	Cable	Highway		COP Franchise / Active until Dec. 31, 2021	Property rights to be determined	Comcast				6 mo.		
Mainland Connector	MD	Integra	Telecom	Highway		ODOT Permit 2BM36010, 2BM35831	Utility Relocation Notice	Integra				6 mo.		
Mainland Connector	HI	Integra	Telecom	Highway		COP Franchise / Expired Dec. 31, 2011	Property rights to be determined	Integra				6 mo.		
Mainland Connector	MD	Time Warner	Telecom	Highway		ODOT Permit 2BM35873	Utility Relocation Notice	TW				12 mo.		
Mainland Connector	HI	Time Warner	Telecom	Highway		COP Franchise / Expired Dec. 31, 2011	Property rights to be determined	TW				12 mo.		
Mainland Connector	MD	AT&T	Telecom	Highway		None	Utility Relocation Notice	ATT				12 mo.		
Mainland Connector	HI	AT&T	Telecom	Highway		COP Franchise / Expired Dec. 31, 2011	Property rights to be determined	ATT				12 mo.		
Mainland Connector	MD	PGE	Power	Highway		None	Utility Relocation Notice	PGE				24 mo.		
Mainland Connector	NPH	PGE	Power	Highway		Easement	Preliminary Engineering Agreement	PGE	CRC			24 mo.		
Mainland Connector	HI	PGE	Power	Highway		COP Franchise / Expired Dec. 31, 2011 Potential for easement	Property rights to be determined	PGE				24 mo.		
Mainland Connector	MD	ODOT	Storm	Highway		N/A	N/A	CRC	CRC			24 mo.		
Mainland Connector	HI	ODOT	Storm	Highway		N/A	N/A	CRC	CRC			24 mo.		

Utility Relocation/Protection Matrix														
Contract Package	Location	Utility Owner	Type of Utility	Highway or Transit	Risks	Utility Accomodation Documents	Agreement Type Needed	Responsible Party		Schedule Durations			Cost /Sharing Responsibility	
								Design	Construction	Design	Lead Time	Construction	Design	Construction
Marine Drive	MD	COP	Water	Highway		ODOT Permit 15360, 30693, 2BM36005	IGA	COP				54 mo.		
Marine Drive	MD	COP	Sewer	Highway		ODOT Permit 16407, 18599, 2BM35638	IGA	COP				54 mo.		
Marine Drive	MD	COP	Storm	Highway		None	IGA	CRC	CRC			54 mo.		
Marine Drive	MD	CenturyLink	Telecom	Highway		ODOT Permit 6142, 25437, 4734 COP Franchise / Expired Dec. 31, 2011	Utility Relocation Notice	CL				24 mo.		
Marine Drive	MD	NW Natural	Gas	Highway		ODOT Permit 14228, 4767, 19017, 2BM35007, 2BM35739 COP Franchise / Active until March 24, 2029	Utility Relocation Notice	NWN				18 mo.		
Marine Drive	MD	Comcast	Cable	Highway		ODOT Permit 27148, 16216, 2BM36656, 2BM36073 COP Franchise / Active until Dec. 31, 2021	Utility Relocation Notice	Comcast				12 mo.		
Marine Drive	MD	Integra	Telecom	Highway		ODOT Permit 2BM36010, 2BM35831 COP Franchise / Expired Dec. 31, 2012	Utility Relocation Notice	Integra				12 mo.		
Marine Drive	MD	Time Warner	Telecom	Highway		ODOT Permit 2BM35873 COP Franchise / Expired Dec. 31, 2012	Utility Relocation Notice	TW				12 mo.		
Marine Drive	MD	AT&T	Telecom	Highway		ODOT - None COP Franchise / Expired Dec. 31, 2011	Utility Relocation Notice	ATT				12 mo.		
Marine Drive	MD	PGE	Power	Highway		ODOT - None COP Franchise / Expired Dec. 31, 2011	Utility Relocation Notice	PGE				18 mo.		
Marine Drive	MD	PP&L	Power	Highway		ODOT - None COP Franchise / Active until April 7, 2027	Utility Relocation Notice	VW				18 mo.		
Marine Drive	MD	ODOT	Storm	Highway		N/A	N/A	CRC	CRC			54 mo.		



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