Columbia River CROSSING

Road Map Item #: 5.1

Product Name: **CONSTRUCTION MANAGEMENT AND ADMINISTRATION PLAN**

PMP Appendix: APPENDIX D

Submittal Date: May 1, 2013

ABSTRACT: This deliverable is intended to satisfy current Item 5.1 of the FFGA Road Map, now called the Construction Management and Administration Plan (CMAP). Two former items (5.1 Construction Management Plan and the former 5.6 Contract Administration Plan) have been consolidated into this single product. In addition, it contains a Claims Avoidance section.

CONSTRUCTION MANAGEMENT AND ADMINISTRATION PLAN

Draft Report

May 2013

Columbia River CROSSING

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ACRONYMS

A&E	Architectural and Engineering
BVS	Best Value Selection
CEVP	Cost Estimate Validation Process
CFR	Code of Federal Regulations
COA	Condition of Award
CRB	Columbia River Bridge
CRC	Columbia River Crossing
C-TRAN	Clark County Public Transit Benefit Area Authority
CUF	Commercially Useful Function
DB	Design-Build
DBB	Design-Bid-Build
DBE	Disadvantaged Business Enterprise
DEIS	Draft Environmental Impact Statement
DFI	Design-Furnish-Install
DMWBE	Disadvantaged Minority and Women's Business Enterprise
EEO	Equal Employment Opportunity
FAI	First Article Inspection
FEIS	Final Environmental Impact Statement
FFGA	Full Funding Grant Agreement
FTA	Federal Transit Administration
FHWA	Federal Highway Administration
GC/CM	General Contractor/Construction Manager
GMP	Guaranteed Maximum Price
LONP	Letter of No Prejudice
LPA	Locally Preferred Alternative
LRT	Light Rail Transit

LRV	Light Rail Vehicle
MACC	Maximum Allowable Construction Cost
MWBE	Minority and Women's Business Enterprise
OAR	Oregon Administrative Rules
ODOT	Oregon Department of Transportation
OMWBE	Office of Minority and Women's Business Enterprises
ORS	Oregon Revised Statutes
OTIA	Oregon Transportation Investment Act
PCGA	Project Construction Grant Agreement
PDPP	Project Delivery and Procurement Plan
PE	Preliminary Engineering
QBS	Qualification Based Selection
QC	Quality Control
QCP	Quality Control Plan
QMP	Quality Management Plan
RCW	Revised Code of Washington
RFP	Request for Proposals
RFQ	Request for Qualifications
ROD	Record of Decision
SR	State Route
TriMet	Tri-County Metropolitan Transportation District
TOD	Transit-Oriented Development
UCO	Unilateral Change Order
WAC	Washington Administrative Code
WSDOT	Washington State Department of Transportation

1. Construction

Additional information on staffing related to the construction phase can be found in the Technical Capacity and Capability Plan (TCCP), which is Appendix A to the PMP. Each agency within the CRC program has a different title for the Engineer's representative who directly supervises the engineering and administration of a Contract. WSDOT uses the title Project Engineer, ODOT uses the title Project Manager, and TriMet uses the title Resident Engineer. For the sake of uniformity WSDOT, ODOT and TriMet have chosen to use the title Project Engineer for the CRC program.

1.1 Construction Management Services

The construction management function for the program is designed to maximize safety, quality and cost efficiency of all construction activities. Construction management practices will conform to all federal and state regulations, including quality assurance, quantity control, materials testing, structural and architectural inspection, and compliance with county, state, and federal requirements covering contract procedures and fair employment. Contracts will comply with all regulations, such as "Buy America" provisions applicable according to the funding source for each package.

Construction of the program will be implemented through individual construction contracts administered by WSDOT, ODOT, or TriMet, as appropriate. The CRC Delivery Team will be responsible for overall coordination for program implementation but with extensive coordination with WSDOT, ODOT, and TriMet.

The CRC's Project Delivery team is composed of agency staff assigned to the program and augmented by consultants, as necessary. WSDOT, ODOT, TriMet, and C-TRAN staff assigned to the CRC program provides overall management and serves in most construction management positions. Consultants provide unique expertise or supplemental resources that are not available from agencies.

A Project Engineer will be assigned to each construction contract. One Project Engineer may be assigned to multiple contracts, depending upon the complexity and resources available to them. The Project Engineer is responsible for enforcement of the contract specifications and provisions and the completion of all work according to the plans. The Project Engineer supervises the work of personnel assigned to the project and ensures that they perform their work in accordance with the plans and specifications, and all applicable polices. The Project Engineer is responsible for keeping complete and accurate records necessary for complete documentation of the project.

As described previously, WSDOT, ODOT, and TriMet are each expected to administer contracts. In cooperation with WSDOT, ODOT, and TriMet, the CRC program team will develop special contract provisions necessary to address any conditions, specifications, timing, and coordination issues not normally included in an agency's typical contract documents. Information will be

coordinated and reported through the CRC program, although each agency will follow its procedures and policies.

Staffing information for each contract will be developed and included in the TCCP. The Columbia River Bridges and Approaches (RC) Contract, described in Section 3 of the Project Delivery and Procurement Plan (PDPP), is the first package anticipated to be let. When construction funds become available the staffing plan will be finalized. The RC Contract is expected to be a Design-Build (DB) contract, Owner staffing may be lower than for a typical Design-Bid-Build (DBB) project and will consist of inspectors, design reviewers and construction support/administration staff. It is anticipated to use existing CRC staff as much as possible to keep the continuity of historical knowledge of the project, in addition to augmenting with agency and consultant staff.

1.2 Construction Materials Testing Program

Contract specifications will include standards for materials and corresponding tests to ensure compliance with contract requirements. Qualified personnel will accomplish materials testing during construction in accordance with approved testing practices and procedures, as outlined in the contracting agency's manuals referenced in Table 1-1. Note for all tables: If a manual version is listed, for the purpose of this document, the newest version will be used as applicable.

The construction contractor will have primary responsibility for testing of materials according to WSDOT, ODOT or TriMet specifications. WSDOT performs testing for projects undertaken using DBB procurement. ODOT and TriMet testing will be based on the Contractor's quality control testing for DBB procurement. Under DB procurement, the construction contractor is to prepare and submit a Quality Management Plan (QMP) that includes a testing plan, containing a list of tests that references each specification section required by the contract. In developing its own QMP, the Design-Builder is encouraged to follow the organization and format of the Design-Build Quality Management Plan Outline referenced in Table 1-1 on WSDOT administered DB contracts. It is anticipated that the construction contractor will obtain the services of an independent materials testing laboratory to actually perform the materials quality control tests. Laboratory qualifications shall also be submitted as part of the QMP. The construction contractor will submit the results of quality control tests to the engineer. The engineer's office will review and maintain test reports and direct any actions to be taken for nonconforming items.

CRC's agency staff (WSDOT, ODOT, and TriMet) is responsible for verification testing and inspection of prefabricated materials on construction contracts, and also material procurement contracts by their respective agency. They will perform quality assurance confidence tests to verify that the construction contractor's quality control testing is satisfactory. The engineer, the inspector, or the quality assurance/quality control manager will coordinate quality assurance confidence testing by CRC's agency staff.

Additional information can be found in Chapter 15 of the PMP.

Table 1-1. Construction Materials Testing Reference Manuals

Topic	Manual	Location
Construction Material Testing	WSDOT Standard Specifications M 41-10, 2012	Section 1-06 & Division 9
	WSDOT Construction Manual M 41-01.12, Jan. 2012	Chapter 9
	WSDOT Design-Build Quality Management Plan Outline	Entirety
	ODOT Construction Manual, June 2012	Chapter 12B
	ODOT Manual of Field Test Procedures, 2010	Entirety
	TriMet Resident Engineers Manual, Rev 1.3, Jan. 2011	Section G

1.3 Construction Inspection

The construction contractor will be responsible for the quality of all work performed by its own employees, as well as by any manufacturers, subcontractors, or suppliers, to meet contract requirements and as detailed in its approved QMP. The construction contractor will develop and submit to the engineer for approval a Quality Control Plan (QCP) that addresses all testing requirements, including the type of tests, frequency of tests, minimum qualifications of those performing the tests, and required quality documentation.

The engineer and inspectors will be deployed to ensure that construction quality control (QC) procedures are in place and effective, ensuring that quality standards are acceptable. The engineer and inspector activities will include:

- Verifying the construction contractor's material certifications and samples.
- Inspecting materials and equipment delivered to the job site(s).
- Performing inspections of specialty equipment and fabricated construction materials.
- Participating in First Article Inspections (FAIs), or witness and hold point activities, as delineated in the contract specifications and established in the construction contractor's approved QMP.
- Inspecting construction and installation work in progress.
- Documenting the results of inspections and tests, and specifically noting any failed tests, retesting, or re-certification required.
- Monitoring construction operations and field-testing of construction material.
- Reviewing the construction contractor's QC documentation.

Additional information can be found in Chapter 15 of the PMP.

1.4 Inspection of Manufactured Items

The CRC program will likely include procurement of certain manufactured items under the Design-Furnish-Install (DFI) delivery mode. Examples include procurement of light rail

vehicles, ticket vending machines, and track. The inspection and quality control process will rely heavily on the process established and documented in the manufacturer's quality control plan, which will be a requirement of the contract. Specifications and requirements will be prescribed in the contract documents prepared by the contracting agency in cooperation with the CRC program team. Additional information can be found in Section 3 of the PDPP.

If procurement of the light rail vehicles is done under the option for the PMLR light rail vehicle contract, existing procedures contained within that contract will be used.

The TriMet Systems Director or TriMet Quality Assurance Manager will assign an on-site inspector to the vehicle manufacturing facility to ensure ongoing compliance with the manufacturer's QMP. The TriMet Quality Assurance Manager will also perform audits and surveillances of the manufacturer's facilities on an as-needed basis.

1.5 Construction Management

Management procedures are based on those already in use at WSDOT, ODOT, and TriMet, and new or revised procedures will be developed, as needed. Procedures in place will ensure compatibility and effective management control. For information regarding management control of schedule, budget, change management and record management see Chapter 3 of the CRC Project Management Plan (PMP). For the CRC program, the contracting agency administering a contract package will follow its construction management procedures and policies found within the manuals referenced in Table 1-2.

Prior to the start of each construction contract within the CRC program a Construction Management Plan will be developed to identify the project team mission, roles and responsibilities, goals/strategies for success, project schedule and budget. Each Construction Management Plan will be reviewed and endorsed by Project Team Members, Specialty Groups and Senior Management.

1.5.1 Organization

Each contracting agency for the CRC program will have its own organizational structure. In general a State/(Agency) Construction Manager will oversee all construction contracts for an agency and will delegate authority down to Regional Construction Managers and then to the Project Engineers. For additional information on each agency's organization see the manuals referenced in Table 1-2.

1.5.2 Federal, State and Local Agencies

The design and construction of transportation improvements often incorporates locations and features that fall within the jurisdiction of other agencies. The CRC program will cooperate with all agencies as partners in the completion of each project, recognizing and complying with each agency's legal requirements. The Project Engineer shall cooperate with local authorities to help ensure that the contractor complies with local laws, ordinances, and regulations.

1.5.3 Relating to the Public

The CRC Program will provide Project information to the local media, local agencies and stakeholders so that local residents are made aware of the Project scope, schedule, and impacts to traffic. The Project Engineer should record significant events, happenings, or communications in the General Daily Progress Report or Project diary.

The Project Engineer must assure that the Contractor or others notify the affected emergency services of any closures that may affect the emergency services. For normal Contract activities, the Contractor must allow emergency vehicles to access or pass through the work area without delay.

See also the Communications Plan, which is Appendix O to the PMP.

1.5.4 Safety

The Contractor is responsible for providing a safety program that provides a safe workplace for its workers, other workers on the Project, Agency employees, Agency representatives, and the public. That program must fulfill the requirements of the Contract as well as all applicable laws and regulations concerning safety, health, and sanitation standards. The Contractor may also be held responsible for the safety program and practices of each of its Subcontractors.

See also the Project Safety and Security Plan (including Construction) and the Safety and Security Management Plan that are both appendices to the PMP.

1.5.5 Archaeological and Historical Objects

If provisions for archaeological and historical salvage have not been made in the contract and it appears that significant historic or prehistoric objects or ruins have been or are about to be encountered, the Project Engineer should immediately take steps to preserve and protect the objects or ruins. The Project Engineer should immediately notify the contracting agency’s regional construction manager and/or regional environmental manager.

See also the CRC Inadvertent Discovery Plan.

Table 1-2. Construction Management Reference Manuals

Topic	Manual	Location
Organization	WSDOT Construction Manual M 41-01.12, Jan. 2012	Section 1-1.3
	ODOT Construction Manual, June 2012	Chapter 1
	TriMet Resident Engineer's Manual, Rev 1.3, Jan. 2011	Section B
Federal, State and Local Agencies	WSDOT Construction Manual M 41-01.12, Jan. 2012	Section 1-1.6C
	ODOT Construction Manual, June 2012	Chapter 4
	TriMet General Provisions, Aug. 2011	Section 00702
Relating to the Public	WSDOT Construction Manual M 41-01.12, Jan. 2012	Section 1-1.7
	WSDOT Standard Specifications M 41-10, 2012	Section 1-07
	ODOT Construction Manual, June 2012	Chapter 4
	TriMet Resident Engineer's Manual, Rev 1.3, Jan. 2011	Section E
	TriMet General Provisions, Aug. 2011	Section 00700
Safety	WSDOT Construction Manual M 41-01.12, Jan. 2012	Section 1-1.8
	WSDOT Safety Procedures and Guidelines M75-01.24, Mar. 2013	Entirety
	ODOT Construction Manual, June 2012	Chapter 17
	TriMet Resident Engineer's Manual, Rev 1.3, Jan. 2011	Section H
	TriMet Capital Projects Construction Safety Program, June 2010	Entirety
Archaeological and Historical Objects	WSDOT Construction Manual M 41-01.12, Jan. 2012	Section 1-1.9
	WSDOT Standard Specifications M 41-10, 2012	Section 1-07.16(4)A
	ODOT Construction Manual, June 2012	Chapter 32
	TriMet Resident Engineer's Manual, Rev 1.3, Jan. 2011	Section J.3
	TriMet General Provisions, Aug. 2011	Section 00713

1.6 Construction Contract Administration

As described previously, the CRC program is comprised of multiple construction contract packages to be administered by WSDOT, ODOT, and/or TriMet. A description of the construction contracts for the CRC Initial Construction Program (ICP) can be found in Section 3 of the PDPP. For the CRC program, the agency administering a contract package will follow the procedures and policies found within its manuals as referenced in Table 1-3. The intent of each agency's manuals is to identify desired results, establish standardized requirements and provide uniformity in the administration and construction of contracts. The CRC program staff responsible for work on construction contracts will be familiar with the guidance and instructions included in these manuals. Special contract provisions necessary to address any conditions, specification, timing and coordination issues not normally included in an agency's typical contract documents will be developed by the CRC program.

1.6.1 Project Procurement

The CRC Team is finalizing its procurement strategy for each highway and transit project package. The selected procurement strategy for each project package will be the most suitable in

combination with the delivery method assigned to that package, meets the project schedule and budget, satisfies applicable federal and state procurement requirements, and results in the best value to the Program. The range of project delivery methods includes: Design-Bid-Build (DBB); General Contractor/Construction Manager (GC/CM); Design-Build (DB) and Design-Furnish-Install (DFI).

Additional details can be found in the Project Management Plan chapter 8 and in the Project Delivery and Procurement Plan.

1.6.2 Project Engineer's Relationship and Responsibilities

A Project Engineer will be appointed to act as the authorized representative of the contracting agency for each contracted project. The Project Engineer is responsible for the enforcement of the contract specifications and provisions and the completion of all work according to the plans. The Project Engineer is the Agency's designated representative for project interactions with the public, other government agencies, utilities, and others. Other responsibilities of the Project Engineer will include, but not limited to, coordinating work with other contracts, coordination with railroads, enforcement of safety, and environmental considerations and compliance.

1.6.3 Construction Traffic Control

The primary function of construction traffic control is to move vehicles and pedestrians safely through or around work zones while protecting on-site workers and accommodating the contractor's construction operations. It is important to ensure that the Contractor has an approved traffic control plan in place and implemented providing all necessary signs and devices so that the traveling public is aware of all deviations from normal traffic conditions. The Contract is required to conduct all operations with the least possible obstruction and inconvenience to the public and to provide adequate safeguards, safety devices, protective equipment, and any other needed actions to protect the life, health, safety, and property of the public. The responsibility to comply with these requirements is the Contractor's. It is the Project Engineer's responsibility to ensure that the Contractor complies.

1.6.4 Application of Contract Provisions, Plans, and Specifications

The complete Contract includes these parts: the Contract Form, Bidder's completed Proposal Form, Contract Plans, Contract Provisions, Standard Specifications, Standard Plans, Addenda, various certifications and affidavits, supplemental agreements, change orders, and subsurface boring logs. These parts complement each other in describing a complete Work. Any requirement in one part binds as if stated in all parts. The Contractor shall provide any Work or materials clearly implied in the Contract even if the Contract does not mention it specifically.

Contract information will be tracked by the contracting agency's designated system. Items to be tracked include working days, change orders, reports, forms, and submittals. Other items covered by the Contract Provisions, plans and specifications include, but are not limited to, force account, differing site conditions, termination of contract, subletting portions of the contract, protested work, and emergency work.

1.6.5 Contract Time

The contract duration specified for completing the contract is stated in the contract provisions. The Project Engineer (Project Manager) should discuss Contract Time, completion dates, and adjustment of Contract Time at the Pre-Construction Meeting. The Contractor will be notified by the contracting agency at the commencement or execution of the contract and at several completion milestones. Each contracting agency's contract time tracking, completion milestones, damages and delays procedures are different and can be found in the manuals shown in Table 1-3.

1.6.6 Enforcement of Wage Rate Requirements

The payment of predetermined minimum wages on Federal-aid contracts is derived from the Davis-Bacon Act of 1931 and is prescribed by 23 USC 113. The payment of predetermined minimum wages on State funded contracts is partly modeled after the federal Davis-Bacon Act. Both Acts are intended to protect the employees of contractors who are performing public works construction from substandard earnings and to preserve local wage standards.

It is the responsibility of the Project Engineer to both monitor and enforce these contract provisions to the degree necessary to ensure full compliance. On occasion, USDOL may be notified of non-compliance issues. In order to comply with these requirements, the Contractor must submit certified payrolls, review and submit subcontractor payrolls for compliance, post wage rate posters, allow interviews of employees during working hours by the contracting agency's personnel, the Federal Highway Administration, and the U.S. Department of Labor.

1.6.7 EEO, D/M/WBE, and Training

Differences between State and Federal laws require a variety of guiding requirements. As a result individual contracts may have different guiding requirements depending on what laws were in place at the time the contract was executed and how the project is funded. The manual for each contracting agency's process and procedure is shown in Table 1-3.

See also the Project Delivery and Procurement Plan for additional information on DBE. Presently, a bi-state multi-agency committee is working on this topic.

1.6.8 Control of Work

The Project Engineer is given considerable authority to enforce the provisions of the contract. Accordingly, considerable care and professional judgment must be exercised by the Project Engineer in order to avoid exceeding the authority as delegated and to avoid decisions or actions that may be contrary to the Agency's policy.

Prior to the start of work, the Project Engineer should ensure, by inspection, that the Contractor's plant, equipment, and tools comply with the specifications. The Contractor's supervisory personnel must be experienced, and able to properly execute the work at hand. Sufficient inspection will be conducted in order to determine that the work performed or the materials utilized to construct the project comply with the requirements included in the contract plans and specifications.

Table 1-3. Construction Contract Administration Reference Manuals

Topic	Manual	Location
Proposal and Award of Contract	WSDOT Construction Manual M 41-01.12, Jan. 2012	Section 1-2.1
	WSDOT Standard Specifications M 41-10, 2012	Section 1-02 & 1-03
	WSDOT Advertisement and Award Manual M 27-02, April 2004	Entirety
	ODOT Construction Manual, June 2012	Chapter 8
	Oregon Standard Specifications for Construction, 2008	Section 00120 & 00130
	TriMet General Provisions, Aug. 2011	Section 00300
Project Engineer's Relationship and Responsibilities	WSDOT Construction Manual M 41-01.12, Jan. 2012	Section 1-2.2
	ODOT Construction Manual, June 2012	Chapter 3, 4 & 9
	TriMet Resident Engineer's Manual, Rev 1.3, Jan. 2011	Section C
	TriMet General Provisions, Aug. 2011	Section 00500
Construction Traffic Control	MUTCD, Jan. 2009	Entirety
	MUTCD - Washington State Modifications, Jan. 2010	Entirety
	WSDOT Construction Manual M 41-01.12, Jan. 2012	Section 1-2.3
	WSDOT Standard Specifications M 41-10, 2012	Section 1-10
	ODOT Construction Manual, June 2012	Section 11-5
	Oregon Standard Specifications for Construction, 2008	Section 00225
	TriMet General Provisions, Aug. 2011	Section 00714
Application of Contract Provisions, Plans, and Specifications	WSDOT Construction Manual M 41-01.12, Jan. 2012	Section 1-2.4
	WSDOT Standard Specifications M 41-10, 2012	Section 1-04
	ODOT Construction Manual, June 2012	Chapter 3, 5, 15, 27 & 35
	Oregon Standard Specifications for Construction, 2008	Section 00140
	TriMet General Provisions, Aug. 2011	Section 00200
Contract Time	WSDOT Construction Manual M 41-01.12, Jan. 2012	Section 1-2.5
	WSDOT Standard Specifications M 41-10, 2012	Section 1-08.5
	ODOT Construction Manual, June 2012	Chapter 13
	Oregon Standard Specifications for Construction, 2008	Section 00180.50
	TriMet General Provisions, Aug. 2011	Section 00800
Enforcement of Wage Rate Requirements	WSDOT Construction Manual M 41-01.12, Jan. 2012	Section 1-2.6
	WSDOT Standard Specifications M 41-10, 2012	Section 1-07.9
	ODOT Construction Manual, June 2012	Chapter 19
	TriMet Resident Engineer's Manual, Rev 1.3, Jan. 2011	Section F.10
	TriMet General Provisions, Aug. 2011	Appendix A
	TriMet Labor Compliance Manual, April 2010	Entirety
EEO, D/M/WBE, and Training	WSDOT Construction Manual M 41-01.12, Jan. 2012	Section 1-2.7
	ODOT Construction Manual, June 2012	Chapter 18
	TriMet Resident Engineer's Manual, Rev 1.3, Jan. 2011	Section F.10
	TriMet General Provisions, Aug. 2011	Appendix A
	TriMet DBE Program	Entirety

Topic	Manual	Location
Control of Work	WSDOT Construction Manual M 41-01.12, Jan. 2012	Section 1-2.8
	WSDOT Standard Specifications M 41-10, 2012	Section 1-05
	ODOT Construction Manual, June 2012	Chapter 9
	Oregon Standard Specifications for Construction, 2008	Section 00150
	TriMet Resident Engineer's Manual, Rev 1.3, Jan. 2011	Section C & J
	TriMet General Provisions, Aug. 2011	Section 00500

1.7 Coordination with Third Parties

The CRC program affects or is affected by multiple third party organizations including but not limited to, utilities, railroad, airports, river users, parks, historic reserve, media, private businesses, public facilities, cities, counties and other public agencies.

The Contractor of each construction contract of the CRC program will be advised about the relationships with third parties and the expectation they hold regarding the actions of both the CRC program and the Contractor.

On Design-Bid-Build contracts, a pre-construction site meeting will be held with the various third parties to establish a spirit of cooperation and to coordinate activities and schedules. All attendees should be encouraged to contact each other directly for daily planning and coordination. For Design-Build contracts, the contractor has primary responsibility for utility contracts and coordination and is encouraged to hold a similar meeting.

Coordination with Third Parties will be in accordance with the approved process as outlined in contracting agency's policies and procedures. Table 1-4 shows in which manual each agency's policy can be found.

Table 1-4. Coordination with Third Parties Reference Manuals

Topic	Manual	Location
Coordination with Third Parties	WSDOT Standard Specifications M 41-10, 2012	Section 1-07.17
	WSDOT Construction Manual M 41-01.12, Jan. 2012	Section 1-02.1C & 1-02.2E
	Oregon Standard Specifications for Construction, 2008	Section 00150.50
	ODOT Construction Manual, June 2012	Chapter 4 & 24
	TriMet General Provisions, Aug. 2011	Section 00507 & 00508

1.8 Site Logistics

During the environmental process, it was determined that off-site staging or casting/fabrication areas would likely be needed. The Sundial site and Port of Vancouver Aloca/Evergreen West site have been identified in the FEIS as potential large fabrication yards. One or more of these sites could be temporarily acquired or leased for the construction of the ICP. A site may be obtained by the state department of transportation or a contractor.

The Contractor may identify staging sites other than those identified by WSDOT or ODOT. If this option were chosen, the Contractor would likely be responsible for all necessary improvements to the site. The Contractor shall seek and obtain permission from the state department of transportation or project owner prior to acquisition of that site and its active use. Before permission is given, an environmental evaluation would be necessary.

The five sites identified in the FEIS are:

- Port of Vancouver Parcel 1A
- Red Lion at the Quay Hotel site in Vancouver
- Vacant Thunderbird Hotel site on Hayden Island
- Port of Vancouver Alcoa/Evergreen West site
- Sundial site located between Fairview and Troutdale

Additional information on these sites can be found in Section 3.3.4 of the FEIS.

1.9 Processing Shop Drawing, Working Drawings and Requests for Information

All shop drawings, working drawings and supplemental details submitted by the Contractor should be checked, in detail, for conformance to all contract requirements before forwarding to the contracts administrating agency's appropriate approving authorities. Any conflicts with the contract plans that have been detected or revisions that may be desired by the administrating agency should be noted on one copy of the drawings being forwarded for approval. If Change Orders to cover any deviation from the contract plans have been issued, or are being processed, those changes should also be noted. Processing shop drawings will be in accordance contracting agency's approved process and procedures shown in Table 1-5.

The Request for Information (RFI) is a means by which an individual or Contractor can obtain clarification of contract documents from the Contracting Agency. Depending on the response, a change order may be initiated. Otherwise, the RFI will be considered to be a clarification, with no basis for increased time or cost. The Contracting Agency will maintain a report of RFIs showing control number, originating organization, a brief description of the issue, received date and response date. The specific software for each contract has not been designated at this time, but the above data mentioned will be tracked.

Table 1-5. Processing Shop Drawings and Working Drawings Reference Manuals

Topic	Manual	Location
Processing Shop Drawing and Working Drawings	WSDOT Standard Specifications M 41-10, 2012	Section 1-05.3
	WSDOT Construction Manual M 41-01.12, Jan. 2012	Section 1-2.4H
	Oregon Standard Specifications for Construction, 2008	Section 00500
	ODOT Construction Manual, June 2012	Chapter 16
	TriMet Resident Engineer's Manual, Rev 1.3, Jan. 2011	Section L
	TriMet General Provisions, Aug. 2011	Section 00509

1.10 Claims Avoidance

1.10.1 Owner / Contractor (Consultant) Relationship

Consistent with the provisions of the "Grant Management Requirements" FTA Circular 5010.1D and FTA Circular 4220.1F "Third Party Contracting Guidance," CRC's goals for developing relationships with its contractors/consultants (hereafter referred to in this section as "contractors") are:

- Complete project work on time, within budget, and in accordance with the provisions of the applicable contract documents;
- Reduce cost growth over the life of the contract;
- Eliminate or substantially reduce claims or litigation;
- Reduce administrative paperwork and staff time spent in preparation for litigation, an extensive time commitment for which there is little value added.

1.10.2 Claims Avoidance Guidelines

Actions that CRC design managers and project engineers can take to avoid contractor claims include:

- Provide contractors with a set of contract documents with minimal errors, omissions and ambiguities. Provide opportunities for design reviews throughout the design process.
- Provide clear definition and coordination of the interface points between contractors, with work boundaries and time windows logically described and communicated.
- Encourage clear and frequent communication at all staff and management levels.
- Prompt escalation of issues that have reached an impasse.
- Set an example by having a cooperative attitude with the contractor.
- Grant justifiable contract modifications/change orders and time extensions in a timely manner.
- Offer to solve problems and provide information and approvals in a timely manner.
- Monitor timely turnaround on progress payment requests.
- Notify the contractor immediately of any non-conforming work elements.
- Bring in CRC end users early and frequently to view progress so if any changes are needed, they are identified early and not during the punch list or turnover.
- Conduct constructability reviews during design.

- Work with Associated General Contractor industry teams.
- As a learning tool, use WSDOT's Lessons Learned database. The database is a tool to support the sharing knowledge of what works and what to avoid in managing construction projects.
- Use WSDOT contract dispute resolution tools such as the Dispute Review Board.
- Use Unilateral Change Orders (UCO) to reduce areas of risk where prudent.

Table 1-6 lists activities that can be done to reduce and avoid claims in design and construction. Most claims avoidance techniques are common sense. CRC can avoid most claims by identifying and resolving issues quickly.

Table 1-6. Claims Avoidance / Claims Reduction Activities

Activity	Engineering	Construction
Utilize the Construction Manual to develop contract language.	XX	
Routinely review the WSDOT Lessons Learned database to gain knowledge from the expertise & wisdom of other project managers.	XX	XX
Utilize Unilateral Change Orders (UCO) as a risk reduction technique.		XX
When faced with a contractor claim:		
If project agrees on entitlement but not compensation. A UCO will be written for the amount of compensation justified by the project. **If the project believes there is entitlement with part of the claim, a UCO will be written to cover the portion of the claim justified with entitlement.**	XX (DB Only)	XX
Engage in Design Reviews, with both internal and external parties.	XX	
Engage in Constructability Reviews, with both internal and external parties.	XX	
Engage in Plans review / Plans-in-hand	XX	
Engage in Associated General Contractors Team meetings	XX	

1.10.3 Claims Management Guidelines

Consistent with the provisions of the FFGA, when a dispute between a contractor and owner results in a claim, the claim must be resolved by the owner pursuant to several considerations:

- FTA has a vested interest in the settlement of disputes, defaults, or breaches involving any federally assisted contracts.
- FTA retains a right to a share of any proceeds recovered through a contract claim, in proportion to the Federal share committed to the project. (If the contract contains a liquidated damages provision, any liquidated damages recovered must be credited to the project unless FTA permits other uses of the funds involved.).
- CRC staff will notify FTA of any current litigation or major disputed claim relating to any contract through the quarterly meeting reports.

- CRC staff will secure FTA concurrence in proposed claim settlements before using Federal funds when insufficient funds remain in the approved grant to cover the settlement or where a special Federal interest is declared because of Program Management concerns, possible mismanagement, impropriety, waste or fraud. WSDOT's Legal Counsel shall be responsible for providing notice to FTA and supplying all required documentation of claims.

1.10.4 Dispute Resolution Process

CRC complies with FTA guidelines regarding "self-certification" from FTA in accordance with FTA Circular 4220.1F. CRC construction contract specifications outline how claims and disputes will be administered. Dispute resolution process will follow the contracting agency's procedures and policies found in Table 1-7.

Table 1-7. Dispute Resolution Process Reference Manuals

Topic	Manual	Location
Dispute Resolution Process	WSDOT Standard Specifications M 41-10, 2012	Section 1-09.11 through 1-09.13
	Oregon Standard Specifications for Construction, 2008	Section 00199
	TriMet Resident Engineer's Manual, Rev 1.3, Jan. 2011	Section Q
Disputes	WSDOT Standard Specifications M 41-10, 2013	Section 1-04.5
	Oregon Standard Specifications for Construction, 2009	Section 00199
	TriMet Resident Engineer's Manual, Rev 1.3, Jan. 2012	Section Q
	TriMet General Provisions, Aug. 2011	Section 00511

1.10.5 Disputes

During the course of a Contract, differences of opinion may arise over decisions and plan interpretations that benefits one party at the expense of the other. It is the policy of CRC to pursue resolution of these differences at the earliest possible time and to fully recognize all of the contractual rights of the Contractor during the resolution process.

Disagreements, disputes and protests are the responsibility of the Project Engineer until a formal claim is filed. Prior to taking any issue to a Dispute Review Board, WSDOT and ODOT must contact their State Construction Office and TriMet must contact the General Manager for concurrence. The Project Engineer may employ a variety of techniques and procedures to resolution of these issues. With the high potential for cost impact it is strongly recommended that all disagreements be identified and tracked.

When a protest occurs during a contract, the contractor shall pursue resolution through the Project Engineer as outlined in the contracting agency's specifications referenced in Table 1-7. Each agency's specification contains specific requirements which, if not followed, may result in a denial of the Contractor's protest. The Project Engineer should monitor whether the Contractor is meeting these requirements. If all of the requirements have been met, the Project Engineer shall evaluate the merits of the protest and take whatever appropriate action is needed to resolve the issues. If it appears that the contractor has failed to meet any of the requirements set forth, the

Project Engineer should advise the State Construction Office or General Manager and request guidance. Pending such guidance, the Project Engineer may continue to discuss the protest with the contractor with the qualification that no final evaluation of the protest will be made until permission is received from the State Construction Office or General Manager.

If the negotiations using the procedures referenced in Table 1-7 fail to provide satisfactory resolution of protests, then the Contractor shall provide the Project Engineer with written notification that the Contractor will continue to pursue the dispute in accordance with the contracting agency's procedure and policies. The written notification shall be provided after receipt of the Engineer's written determination that the Contractor's protest is invalid. The Contractor's written notices of dispute shall indicate whether the Contractor prefers to resolve the dispute through the use of a Disputes Review Board or to submit a formal claim to the Contracting Agency.

If a Disputes Review Board (Board) is requested by the Contractor, the Contracting Agency will notify the Contractor in writing whether the use of a Board is agreed upon. If both parties to the dispute agree, the dispute will be referred to a Board. If the parties do not mutually agree to a Board then none shall be used, and the contractor shall submit a formal claim directly to the Contracting Agency.

In spite of any protest or dispute, the Contractor shall proceed promptly with the works as the Project Engineer orders.

To assist in the resolution of disputes arising out of CRC work, the Contractor will provide for the establishment of a Board. The Board is created when negotiations using the claim resolution procedures fail to provide a satisfactory resolution and the Contracting Agency and the Contractor mutually agree to use a Board as part of the disputes resolution process prior to the Contractor filing a formal claim.

The Board will consider disputes referred to it and furnish recommendations to CRC and the contractor to assist in the resolution of the differences between them. The purpose of the Board response to such issues is to provide nonbinding findings and recommendations designed to expose the disputing parties to an independent view of the dispute.

The Board members will be especially knowledgeable in the type of construction involved in CRC and shall discharge their responsibilities impartially and independently considering the facts and conditions related to the matters under consideration and the provisions of the contract.

Dispute resolution shall be managed in accordance with the procedures and timelines described in the contracting agencies specifications referenced in Table 1-7, unless otherwise superseded by Special Provision for a specific contract.

Pending resolution of a dispute during CRC's review(s), the Contractor will be required to proceed as directed by the project engineer as defined in the Contract. The contractor's actions pursuant to orders by the Project Engineer will not prejudice its disputed claims.

1.10.6 Claims

A claim is a Contractor's written request for additional compensation or time related to a contract issue that has not been resolved to the Contractor's satisfaction. A claim ceases to be a claim if, at any time, both parties agree to the initiation of a change order to resolve the issue. If the dispute is not resolved, it may become a claim. When claims arise, Contractors will be required to submit claims in accordance with the terms of the Contract. The claim must state the basis for the claim and the Contractor's best estimate of additional compensation or time in connection with the claim. The Contractor must promptly update its estimates of additional compensation or time when additional facts become known.

Upon receipt of a claim the Project Engineer, with the assistance of legal and program design and construction staff, shall perform price, technical, and legal analysis as appropriate. The price analysis shall be a comparison of prices for similar items, in like quantities, purchased in the open market. The technical analysis shall verify that the technical solutions are acceptable and that the rates applied (e.g., overhead, labor and material rates) are proper. A legal analysis will determine the validity of the claim in the context of the provisions of the Contract and legal interpretations.

After the completion of the Project Engineer's analysis, a recommendation shall be prepared for the respective Project Director, who will decide how to respond to the claim. The Project Engineer will respond to the Contractor by approving the claim, denying the claim, or requesting additional information. All reasonable efforts will be made to resolve the claim within 90 days after receipt of the requested information. Additional time may be used by mutual agreement of the parties.

Before settlement of a claim, CRC shall follow these three steps, at a minimum:

1. Adequately document all pertinent facts, events, negotiations, applicable law, and legal issues surrounding the matter;
2. Undertake an issue-specific audit to substantiate damages asserted in the claim if damages appear excessive and if the audit itself is cost effective; and
3. Assure that its documentation provides sufficient information to serve as the basis for FTA review.

1.11 Changes

Contract change orders are changes to a legal document (the contract) and are themselves legal documents. Once a change order is executed it becomes part of the contract, and cannot be un-executed. The only way to make further modification to a contract is to process another change order.

Section 3.6 of the CRC Project Management Plan outlines the Change Management process. Sections 3.6.3-B through 3.6.3-I of the CRC Project Procedures Manual provides the CRC programs change order procedure, objective, definition, reference documents, work process and checklists for each contracting agency.

Each Project Engineer is also responsible for ensuring that changes are approved and executed by those authorized to execute a change order up to their respective limit of execution authority as described in the applicable change order procedure.

1.12 Construction Completion/Close-out

Contract completion and close-out is a critical element in the life of a construction project. As the end of each contract approaches, there is the potential for diminished control and attention to detail. The Contractor may often transfer key people to other projects and leave insufficient forces to supervise the contract close-out. As the workload diminishes, it must be expected that the number of people on the project will be reduced. What is essential is that there be a clearly defined close-out plan and procedures in place that allow the remaining staff to close out the project efficiently and effectively.

The purpose of this section is to establish processes for close-out of construction contracts. Close-out procedures will differ for different types of contracts, contracting methods and Contracting Agency. The Contracting Agency administering a contract package will follow its process and procedures for construction close-out. For the CRC program, the contracting agency administering a contract package will follow its procedures and policies found within the manuals referenced in Table 1-8 regarding construction completion/close-out.

1.12.1 WSDOT Administered Contracts

WSDOT Contracts have three milestone completion dates that are:

- Substantial Completion Date is the day the Engineer determines the Contracting Agency has full and unrestricted use and benefit of the facilities, both from the operational and safety standpoint. Only minor incidental work remains. It is the date Contract Time charges stop.
- Physical Completion Date is the day all of the work is physically completed on the project. All documentation required does not necessarily need to be furnished by the Contractor at this date.
- Completion Date is the day all work specified in the Contract is completed and all the obligations of the Contractor under the Contract are fulfilled by the Contractor.

Following physical completion the final estimates should be prepared. The final estimate will produce several reports that should be carefully checked for accuracy of items, quantities posted, and costs accumulated. The estimate and final estimate voucher certification must be sent to the contractor for signature. Once the Contractor has signed the final contract voucher certification is sent to the state construction engineer for signature and final acceptance of the contract itself.

1.12.2 ODOT Administered Contracts

ODOT Contracts have two milestone completion dates that are:

- Second Notification is the date on which the Agency determines that all On-Site Work, including change orders and extra work, has been satisfactorily completed. It is the date Contract Time charges stop.

- Third Notification is the date on which all work under the contract, including cleanup, equipment and material removal, and submittal of all documentation is complete.

When the Construction Section receives the recommendation of acceptance from the Area Manager, and has completed or received all other needed documentation, it will make final payment and notify the Contractor of the Project acceptance.

1.12.3 TriMet Administered Contracts

TriMet Contracts have three milestone completion dates that are:

- Substantial Completion Date is the date that the Work, or a designated portion thereof, is completed to the point that TriMet and any owning agency certifies that the Work or the designated portion can be used for the purpose for which it was intended. It may or may not be the date that Contract Time charges stop.

- Final Completion Date is the date of fulfillment of all of the Contractor's Construction Work obligations under the Contract, including completion of all Punch List items. TriMet will issue written notice of Final Acceptance, thus commencing the associated warranty period(s). All documentation required does not necessarily need to be furnished by the Contractor at this date.

- Contract Closeout Date is the day all work specified in the Contract is completed and all the obligations of the Contractor under the Contract are fulfilled.

Upon TriMet's issuance of a Certificate of Contract Closeout of the Work, the Contractor may submit an invoice for final payment, including retainage.

Table 1-8. Construction Completion/Close-out Reference Manuals

Agency	Topic	Manual	Location
WSDOT	**Construction Completion**	WSDOT Standard Specifications M 41-10, 2012	Section 1-01 & 1-05.12
	Substantial Completion	WSDOT Construction Manual M 41-01.12, Jan. 2012	Section 1-2.5E
	Physical Completion	WSDOT Construction Manual M 41-01.12, Jan. 2012	Section 1-2.5F
	Completion	WSDOT Construction Manual M 41-01.12, Jan. 2012	Section 1-2.5H
	Final Estimate	WSDOT Construction Manual M 41-01.12, Jan. 2012	Section 1-3.1
ODOT	**Construction Completion**	Oregon Standard Specifications for Construction, 2008	Section 00180 & 00195
	Second Notification	ODOT Construction Manual, June 2012	Section 13-3
	Third Notification	ODOT Construction Manual, June 2012	Section 13-4
	Acceptance of Project	ODOT Construction Manual, June 2012	Chapter 36
TriMet	**Substantial Completion**	TriMet Resident Engineer's Manual, Rev 1.3, Jan. 2011	Section S
		TriMet General Provisions, Aug. 2011	Section 00100 & 00512
	Final Completion	TriMet Resident Engineer's Manual, Rev 1.3, Jan. 2011	Section S
		TriMet General Provisions, Aug. 2011	Section 00100 & 00911
	Contract Closeout	TriMet Resident Engineer's Manual, Rev 1.3, Jan. 2011	Section S
		TriMet General Provisions, Aug. 2011	Section 00100 & 00911