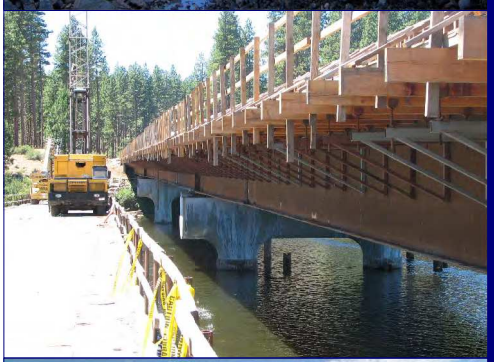
Oregon Department of Transportation

Region 4 Tech Center Quality Control Plan

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Oregon Department
of Transportation
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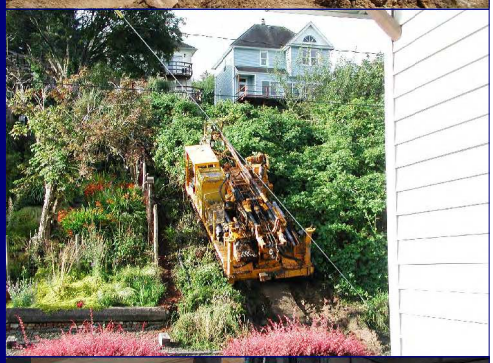


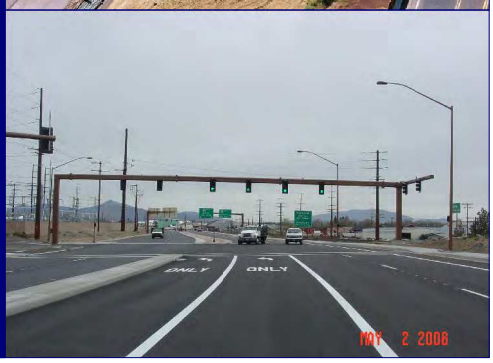

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SECTION 1. INTRODUCTION

1.1 Purpose

The purpose of this document is to clearly define a Quality Control Plan that will ensure the products produced by the Region 4 Tech Center are of high quality, cost effective, and meet the expectations of its customers. It is a commitment by Region 4 staff to follow this plan in the development of all in-house developed STIP projects and to evaluate the effectiveness of it on a regular basis and make changes as required.

1.2 Format

This document is divided into 4 sections corresponding to key project development milestones: Draft STIP (Section 2), Design Acceptance (Section 3), Plans/PS&E (Section 4), and Construction (Section 5). Each of these milestones is described at the beginning of the section. Plans/PS&E is further divided into Preliminary Contract Plan Review, Advance Contract Plan Review, Final Contract Plan Review and PS&E submittal.

Each section lists the "Products and Services" necessary to complete that milestone and the QC process used by each technical discipline. Each product will be clearly defined and state who is responsible to produce it, accompanied by a description of each technical discipline's quality control process.

1.3 Definitions

Quality: the features and characteristics of a product which bear on an ability (degree of excellence) to satisfy stated or implied needs.

Quality Control (QC): Refers to processes, activities, tools, and oversight techniques required to ensure that quality requirements have been fulfilled. The goal of quality control is to identify process steps that best predict outcomes. Also putting adequate controls further upstream and on-line in the process can produce a better return in terms of eliminating rework, scrap, re-inspection, and delays.

Quality Control Plan: Is a comprehensive, well-defined and documented set of processes, activities, tools, and oversight techniques used by team members as guidance in controlling the quality of products and services, such as:

Clear directions and decision-making guidance, including how to document assumptions, recommendations, and decisions

Involvement of those with expertise and experience

Strategic review processes for technical soundness, accuracy, and completeness

*The goal of the Region 4 Technical Center is to address these definitions with each key technical product and service we provide.

Quality Management: Is all activities of the overall management function that determine quality policy, objectives, and responsibilities, and implement them by means such as quality planning, quality assurance, quality control, and quality improvement within the system.

Quality Assurance (QA): Refers to the certainty that products and services meet the requirements for quality. The objective of quality assurance is the continual improvement of the total delivery process to enhance quality, productivity, and customer satisfaction. Essentially, quality assurance describes the process of enforcing quality control standards. When quality assurance is well-implemented, progressive improvement in terms of both reducing errors and omissions and increasing product usability and performance should be noted. Quality assurance should function as a "voice" for the customer, a reminder that the work product is intended for use by a customer.

Draft STIP: A key milestone requiring the project scope, schedule and budget information be provided to programming staff in order for projects to be considered for programming in the STIP.

Design Acceptance: This milestone is a critical point of decision-making that establishes the geometric boundaries of the project footprint, and allows for the concurrent right-of-way (ROW), permitting, and construction contract document activities to move forward. Design Acceptance also provides for environmental and land use requirements, and subsequently how they affect permitting and the development of construction contract documents. It occurs at the end of the initial design phase and requires that all project disciplines have reviewed the design for balance of context with standards and policies. The time leading up to this milestone is also the primary opportunity for both technical and non-technical stakeholders (internal and external) to review and weigh in on design elements according to their specific interests.

PS&E: A scheduled milestone event wherein all elements of a project are complete for ODOT to advertise for competitive low bid process through ODOT Procurement Office – Construction Contracting. This includes, but is not limited to, the plan set, Special Provisions, a construction schedule, and the final PS&E estimate and confirmation that needed permitting and funding is in place.

Quality Control Plan

Section 2: STIP	**Section 3:** Design Acceptance	**Section 4:** Plans PS&E Start	**Section 5:** Construction

SECTION 2. DRAFT STIP

This milestone is outlined in PD-02 as the point where scope, schedule and budget information is provided to programming staff in order for projects to be considered for programming in the STIP.

2.1 Scoping Report

The Scoping Report is filled out by the Scoping Team Leader (or designated team member) using the Region Scoping Oversight Team's standard scoping template and the Region's Program & Planning Unit's Planning Narrative. This report documents the assumptions and input from the various scoping team members who are selected for each project to represent various ODOT technical disciplines needed for the development of the project. Each technical discipline participant will provide their assumptions, applicable design criteria, scope recommendations and preferred delivery method to the Scoping Team Leader. Region 4 is currently using a region-wide scoping committee to develop a new process to scope projects and a new format for the scoping report.

Review: The Scoping Team Leader sends out the draft Scoping Report to each scoping team member for review and confirmation or holds a specific team meeting to review, confirm and edit. Then the Scoping Report is submitted to the Region 4 Project Delivery Management Team for review and recommendation to the Region 4 Management Team.

2.2 Scoping Construction Estimate

Each participating technical discipline provides a cost estimate based upon the recommended scope and using the Estimating web site. This includes but is not limited to: roadway, construction, bridge, hydraulics, environmental, traffic, geotech. The Roadway Designer is responsible for assembling the various cost estimates and entering the information into the Trans*port Estimator software using the "Trns*port Estimator Data Entry Guidelines" document (see Appendix A).

Review: Each Technical Center Unit provides a peer, team lead or manager to review their respective cost estimates prior to submitting to the Roadway Designer.

2.3 Preliminary Survey & Right-of-Way Estimate

The participating Right-of-Way representative and the survey representative provide estimates based upon the recommended scope and input from the Region Access Management Engineer and project prospectus. Historical data representing average file costs for administrative costs associated with property acquisitions are included as well as estimated current values for land, improvements, damages and relocation costs.

Review: The Right-of-Way Manager or Senior Agent reviews the estimate prior to submittal to the Scoping Team Leader.

2.4 Utility Estimate

The Region Utility Specialist (RUS) provides a utility cost estimate based upon the recommended scope and input from the various scoping team members.

Review: Either the Roadway Unit Manager or another RUS provides review of the estimate prior to submittal to the Scoping Team Leader.

2.5 Preliminary Engineering (PE) Estimate

A PE estimate is prepared by each applicable discipline participant both for in-house and out-source projects. This estimate is based upon each discipline's data base that contains historic preliminary engineering costs per type of project (preservation, modernization, bridge, etc.).

Review: Either the Unit Manager or Team Lead reviews the PE estimate for their respective disciplines prior to submittal to the Scoping Team Leader.

2.6 Project Schedule

The Scoping Team Leader (or designated scoping team member) prepares the PE and construction schedule using the Scheduling System Users Guide and approved Microsoft Office Project schedule templates and base the schedule upon input from the various participating scoping members.

Review: The Scoping Team Leader provides the project schedule to each participating scoping team member for review and confirmation. They also provide the construction schedule to the participating construction representative (or designated experts) for review.

2.7 Project Prospectus

The Project Leader develops and produces the part 1 & 2 of each project prospectus using the Project Delivery Work Planning (PDWP) program and User Guide with input from the Project Team members. The Region Environmental Coordinator (REC) develops and produces the part 3 of each project prospectus using PDWP following established criteria (see Appendix G) with input from environmental specialists as needed. Included in this product is the recommended classification of project (Class 1, 2 & 3). Right-of-Way information is provided to the Project Leader showing the approx. size of total area estimated to be acquired as well as estimated number of parcels and descriptions of any improvements in the acquisition area. The project prospectus is a tool for conveying information about a project to various organizations within and without ODOT (See Appendix H).

Review: The non-participating REC and applicable resource and discipline specialists will provide review after submittal (See Appendix H). Any comments provided are addressed during the project development process. Also Federal Highway Administration (FHWA) reviews the recommended project classification and provides concurrence once the required amount of environmental work and documentation has been completed and submitted.

2.8 Draft STIP Access Management PD03 Milestone

Draft STIP Access Management deliverables (including AM Scoping Report) are developed and written by the designated Scoping Project Team member per Operational Notice PD-03 and the ODOT Access Management Manual (which reference applicable statutes and rules including OAR 734-051), and other criteria and training provided by the Technical Services Access Management section. Tech Center staff likely to be involved in developing this documentation can include the Region Access Management Engineer (RAME), Traffic engineering staff, Right-of-Way staff and Roadway staff.

Review: The RAME provides documentation review, with support as needed from the Traffic Operations Manager. Technical review input may also be provided by District, Area and Planning staff prior to submittal. The Region Manager, Area Manager and Tech Center Managers are accountable for Access Management Deliverables. Documentation is required when these deliverables cannot be completed for this milestone and their risk to the project scope, schedule and budget along with exception letters describing why a deliverable (i.e. AMP, AMPI and IAMP) is not being completed as per OAR 734-051.

2.9 Design Criteria Document

The Scoping Team Leader (or designated team member) is responsible for ensuring that the scoping team fills out the Design Criteria Document (DCD) at initial scoping using the template available on the ODOT Technical Services, Project Delivery Unit Website, and by the link in the Project Delivery Work Planning system (PDWP) (See Appendix A). This document captures input from the various scoping team members who are selected for each project to represent various ODOT technical disciplines needed for the development of the project. Each technical discipline participant will provide their applicable assumptions, issues and design criteria to the DCD, and will continue to fill out/revise the document as more detailed information becomes available.

Review: The Scoping Team Leader sends out the draft DCD to each scoping team member for their input and review. The DCD is reviewed by either a Tech Center Unit Manager or Team Lead for their respective disciplines before submittal to the Scoping Team Leader.

Quality Control Plan

Section 2: STIP	**Section 3:** Design Acceptance	**Section 4:** Plans PS&E Start	**Section 5:** Construction

SECTION 3. DESIGN ACCEPTANCE

The Design Acceptance milestone is outlined in PD-02 and defined on page 7, as being the milestone where the project's final footprint is established which has taken into account all design variables, impacts and mitigations. It also confirms the purpose and need, scope, schedule, and budget for the project as described in the prospectus. This milestone signifies that the project is ready to begin Right-of-Way and the project team can move into the next phase in developing contract documents. As per PD-02, if there are any changes requested to the footprint, it will require a formal Project Development Change Request. The Area office will manage this process in accordance with the Region 4 Design Acceptance Milestone Process document (Appendix I).

For any of the deliverables in this section where applicable, work is performed in accordance with ODOT's policy on document stamping for registered engineers, land surveyors, geologists, and landscape architects..

3.1 Approved Design Exceptions (Roadway Unit)

Exceptions to design standards should be discussed at project scoping, project team meetings and during reconnaissance studies. When enough data is available agreement on which standards to request exceptions should be reached at these meetings. The Roadway Designer (or designated team member) prepares the design exception requests (and stamp the requests if registered) using the approved design exception form in accordance with chapter 13 of the 2003 Highway Design Manual (HDM) and the Project Leader submits the requests to the Area Manager and Region Roadway Manager for recommendation for submittal to the State Roadway Engineer.

Review: The Region Roadway Manager reviews the draft design exception requests prior to submitting to the Project Leader. The Roadway Manager stamps these requests if the Roadway Designer is not licensed.

3.2 Project Narrative (Roadway Unit)

The Roadway Designer produces the roadway design portion of the project narrative (See Appendix E) and compiles the additional sections and appendices from the other technical providers into a complete narrative that will accompany the Design Acceptance plan set. The purpose of the narrative is to describe items and/or issues that have an impact on the project footprint or needed environmental submittals to the regulators.

Review: The Roadway Manager or Senior Designer reviews the narrative prior to distribution with the Design Acceptance plan set.

3.3 Interchange Layout Sheet (Roadway Unit)

The Roadway Designer develops the interchange or major intersection designs and prepares the Interchange Layout Sheet in accordance with the Interchange Design web site (See Appendix A), 2003 ODOT Highway Design Manual (HDM), AASHTO "A Policy On Geometric Design Of Highways And Streets – 2001", AASHTO "A Policy on Design Standards – Interstate System – 1991", FHWA Policy Statement on Additional Interchanges to the Intestate system and the "Oregon Highway Plan – 1999". FHWA requires submittal for review and comment on any projects on the National Highway System (NHS).

Review: The Roadway Manager, Senior Roadway Designer or other Region Preliminary/Roadway Designer reviews the Interchange Layout Sheet prior to submittal to FHWA.

3.4 Design Acceptance Plans (DAP) (Roadway Unit)

The Roadway Designer develops the roadway design portion of the DAP in conformance with the 2003 ODOT Highway Design Manual (HDM), AASHTO's "A Policy On Geometric Design Of Highways And Streets – 2001", ODOT's Memos to Designers, the "Instructions For Developing Design Acceptance Plans (DAP)" document (See Appendix D) and using ODOT's approved engineering software (Bentley Systems Microstation and InRoads). The Roadway Designer coordinates design activities with other technical providers to assure the roadway design is complete for this milestone. The Roadway Designer also compiles sheets from other technical providers and distributes the DAP for review, including external stakeholders as appropriate. After the DAP has been sent out for review and comments have been received, the Roadway Designer makes all revisions necessary to the roadway portion, compiles any revised sheets from other technical providers and provides the revised DAP to the Project Leader.

Review: The Roadway Manager or Senior Designer reviews plans prior to distribution. After the DAP has been sent out for review and comments have been incorporated, and the comments from the Design Acceptance Workshop have been addressed, the Roadway Manager again reviews the plans and provides concurrence prior to submittal to the Area Manager and Tech Center Manager.

3.5 DAP Cost Estimate (Roadway Unit)

The Roadway Designer is responsible for developing the quantities and cost estimate for roadway work using as a guide the Estimating web site (See Appendix A). After receiving cost estimates from other technical providers (such as construction, bridge, traffic, environmental, geotech) the Roadway Designer compiles the total cost estimate using the Trns*port Estimator software (see Appendix A).

Review: The Roadway Manager, Senior Roadway Designer or other Region Roadway Designer reviews the cost estimate prior to distribution with the Approved Design plan set.

3.6 Hydraulics Report (Roadway Unit)

The Hydraulics Engineer is responsible for providing hydraulic recommendations, the hydraulic portion of the project narrative and preparing the Hydraulics Report in accordance with the ODOT Hydraulics Manual for submittal to the Project Leader.

Review: The Roadway Manager or other Region Hydraulics Engineer reviews the draft report prior to submittal to the Project Leader.

3.7 Environmental Baseline Report (Geo/Bridge/Environmental Unit)

Environmental Baseline Reports are prepared only for certain projects that are categorical exclusions. After the project's Area of Potential Effect (APE) has been determined, the Environmental Baseline Report (EBR) is developed and written by the participating Region Environmental Coordinator (REC) (or designated environmental specialist) following the ODOT EBR Guidelines, baseline mapping tools, and other criteria (e.g., Appendix G) and training provided by the Technical Services Geo/Environmental unit. EBR's are mainly provided when a potential project is likely to have at least one of the following attributes: 1) needs for environmental permits or clearances, 2) needs for Right-of-Way, 3) creates significant ground disturbance, 4) entails and/or could have impacts to multiple environmental resources, 5) needs involvement of multiple land use and natural resource agencies. An EBR is not required for Environmental Class 1 & 3 projects. For these projects the Environmental Impact Statement and Environmental Assessment take the place of the EBR.

Review: The non-participating REC and applicable environmental specialists provide review prior to submittal.

3.8 Concept Wetland Mitigation Plans (Geo/Bridge/Environmental Unit)

The Region Wetland Specialist identifies and delineates the boundaries of wetlands within the Area of Potential Effect (APE). With the design engineer, the wetland specialist assesses avoidance and/or minimization measures, and if applicable, determines wetland impacts. If wetland impacts are determined to be unavoidable, the wetland specialist identifies a mitigation site and develops a conceptual mitigation plan based on conceptual mitigation goals, and designs. Manuals, procedures, standards, policies, statutes used by those charged with developing and delivering products are listed in Appendix G.

Review: Review is performed the Region Environmental Coordinator (REC) and by a peer in another region.

3.9 Reconnaissance Report (RR) (Region 4 Tech Center)

Reconnaissance Reports (RR) guidance is in the ODOT Draft Environmental Procedures Manual, and is being revised and should appear in the new Volume 1 to be updated in late-2005. RRs are intended to identify and characterize known environmental issues within the Area of Potential Effect (APE) for Class 1 and 3 projects. RRs document known existing environmental conditions that may be impacted by a project, and focus on developing information that will serve as the basis for the "Affected Environment" section of an EA or DEIS.

The RR is done early in the environmental process – normally as soon as the APE has been identified. The RR is based primarily on information from databases, interviews, and other resources that are readily available. Based on feedback from designers on the Project Development Team (PDT), a key element of the RR is to provide a map showing the environmental resources to try to avoid (e.g. sensitive noise areas, historic buildings, wetlands).

The EPM or consultant, in collaboration with the environmental technical specialists, is responsible for determining what disciplines should be addressed in the RR for a specific project. The individual discipline specialists then produce the appropriate RR sections as needed. The EPM or consultant either assembles and prepares the RR, which becomes an internal document that is used as a tool for developing screening criteria.

Review: For RR's completed in-house, the EPM enlists an EPM from another Region to review their RR for accuracy, clarity, and appropriate APE. For consultant documents, review of products is performed per the consultant's quality control plan and the EPM reviews consultant deliverables for quality assurance, on time delivery, and cost.

3.10 Environmental Assessments (EA) and Environmental Impact Statements (EIS) in General (Region 4 Tech Center)

For In-House projects, EA's and EIS's are typically developed by consultants, and managed by a Work Order Project Manager (WPM), who is typically a Region staff member designated as the Environment Project Manager (EPM) throughout the remainder of this document. The EPM is typically the Region's NEPA Specialist, but for specific projects can also be one of other Region positions such a Region Environmental Coordinator (REC).

Review: For any EPM prepared documents within the EA or EIS process, review is performed by a peer in another region and the Region Environmental Coordinator (REC). For consultant prepared EA or EIS documents, review of products is performed per the consultant's quality control plan, and the EPM reviews consultant deliverables for quality assurance, on time delivery, and cost. Consultant prepared EA and EIS documents should also undergo a review by the ODOT REC and appropriate ODOT environmental resource specialists.

3.11 Notice of Intent (NOI) for Environmental Impact Statement (EIS) (Region 4 Tech Center)

The Environmental Project Manager (EPM) or consultant prepares an NOI to prepare an EIS for all Environmental Class 1 projects (those requiring an EIS), and ensures that it is published in the Federal Register.

Review: FHWA reviews all NOIs before they are submitted to the Federal Register. For consultant documents, review of products is performed per the consultant's quality control plan and the EPM reviews consultant deliverables for quality assurance, on time delivery, and cost.

3.12 Discipline Reports for Draft Environmental Impact Statements (DEIS) and Environmental Assessments (EA) (Region 4 Tech Center)

This work is typically done by a consultant with an Environmental Project Manager (EPM) managing the process. These reports provide all the information needed to complete the EA or DEIS. Manuals, procedures, standards, policies, statutes used by those charged with developing and delivering products are listed in Appendix G.

Review: Review is performed per the consultant's Quality Control process. The EPM reviews all consultant technical reports supporting the NEPA process for quality assurance (accurate description of alternatives, scope of work, appropriate assumptions, and project logistics), also facilitating any quality assurance reviews by appropriate ODOT specialists.

3.13 NEPA Section 4(f) & Section 6(f) Documentation (Region 4 Tech Center)

The Environmental Project Manager (EPM) or consultant evaluates reasonable and prudent alternatives to use of 4(f) property. If Land and Water Conservation Fund resources are being converted, the EPM or consultant develops 6(f) documentation and produces the required replacement resources. Manuals, procedures, standards, policies, statutes used by those charged with developing and delivering products are listed in Appendix G.

Review: For EPM documents, review is performed by a peer in another region. For consultant documents, review of products is performed per the consultant's quality control plan, and the EPM reviews consultant deliverables for quality assurance, on time delivery, and cost.

3.14 Environmental Assessment (EA)/Draft Environmental Impact Statement (DEIS) (Region 4 Tech Center)

The Environmental Project Manager (EPM) or consultant produces the draft EA or DEIS, and coordinates the production and distribution of the EA/DEIS. Manuals, procedures, standards,

policies, and statutes used by those charged with developing and delivering products are listed in Appendix G.

Review: For EPM prepared documents, review is performed by a peer in another region. For consultant documents, review of products is performed per the consultant's quality control plan and the EPM reviews consultant deliverables for quality assurance, on time delivery, and cost.

3.15 NEPA - Notice of Availability (NOA) Document (Region 4 Tech Center)

The EPM or consultant writes the NOA and coordinates issuance. The NOA must be placed in the legal section of at least 1 local newspaper the day (or as soon after as possible) the EA/DEIS is available for public review. The NOA starts the clock for the 30-day public comment period assuming the document is actually available for review the day the NOA is issued. Manuals, procedures, standards, policies, statutes used by those charged with developing and delivering products are listed in Appendix G.

Review: For EPM documents, review is performed by a peer in another region. For consultant documents, review of products is performed per the consultant's quality control plan and the EPM reviews consultant deliverables for quality assurance, on time delivery, and cost. The NOA is also reviewed by the Project Leader, and the consultant preparing the EA/DEIS, to ensure that descriptions and public hearing logistics are accurate.

3.16 NEPA - Responses to Public and Agency Comments (Region 4 Tech Center)

The Environmental Project Manager (EPM) or consultant facilitates the development of responses for all comments made during the formal public comment period for Class 1 and 3 projects, and conducts final review of all responses to comments to ensure consistency, readability, accuracy, and appropriate cross-referencing. The EPM or consultant will also "batch" responses into discipline areas as appropriate. Typical discipline areas are as follows: air, archeological and historical resources, hazardous materials, wildlife, plants, noise, socioeconomics, environmental justice, section 4(f) and section 6(f), endangered species, land use, Right-of-Way, access management, wetlands, traffic, and water resources. Manuals, procedures, standards, policies, statutes used by those charged with developing and delivering products are listed in Appendix G.

Review: Responses are reviewed by the Project Development Team (PDT), cooperating agencies, and FHWA prior to finalizing.

3.17 NEPA - Recommendation Document (Region 4 Tech Center)

The Environmental project Manager (EPM) or consultant facilitates the decision-making process through which a preferred alternative is identified and development of responses for all

comments made during the formal public comment period for Class 1 and 3 projects. Responses should be reviewed by the Project Development Team (PDT), cooperating agencies, FHWA, and, in certain cases, the Department of Justice (DOJ) prior to finalizing. The EPM or consultant then writes the Recommendation Document, which includes the preferred alternative, other alternatives considered, and responses to all comments. Manuals, procedures, standards, policies, statutes used by those charged with developing and delivering products are listed in Appendix G.

Review: The Recommendation Document is internal, but should be reviewed by the Study Committee prior to finalizing. Members of the Study Committee typically include PDT members, affected jurisdictional agencies, regulatory agencies, FHWA, and DOJ.

3.18 Revised Environmental Assessment (REA) or Final Environmental Impact Statement (FEIS) (Region 4 Tech Center)

The Environmental Project Manager (EPM) or consultant produces the draft REA or FEIS. The EPM or consultant facilitates the Study Committee process, which is needed for an REA/FEIS. The Study Committee typically includes the Project Development Team (PDT) members, FHWA, Department of Justice (DOJ), and all cooperating Federal, State, and local agencies. The EPM or consultant also coordinates the production and distribution of the REA/FEIS. Manuals, procedures, standards, policies, statutes used by those charged with developing and delivering products are listed in Appendix G.

Review: For EPM documents, review is performed by a peer in another region. For consultant documents, review of products is performed per the consultant's quality control plan and the EPM reviews consultant deliverables for quality assurance, on time delivery, and cost.

3.19 Finding of No Significant Impact (FONSI) (Region 4 Tech Center)

The Environmental Project Manager (EPM) or consultant writes the FONSI for inclusion in the draft REA and revises per Study Committee and FHWA comments. The Study Committee typically includes the Project Development Team (PDT) members, FHWA, Department of Justice (DOJ), and all cooperating Federal, State, and local agencies. Manuals, procedures, standards, policies, statutes used by those charged with developing and delivering products are listed in Appendix G.

Review: For EPM documents, review is performed by a peer in another region. For consultant documents, review of products is performed per the consultant's quality control plan and the EPM reviews consultant deliverables for quality assurance, on time delivery, and cost.

3.20 Record of Decision (ROD) (Region 4 Tech Center)

The Environmental Project Manager (EPM) or consultant writes the ROD and revises per Study Committee and FHWA comments. The Study Committee typically includes the Project Development Team (PDT) members, FHWA, Department of Justice (DOJ), and all cooperating Federal, State, and local agencies. Manuals, procedures, standards, policies, statutes used by those charged with developing and delivering products are listed in Appendix G.

Review: For consultant documents, review of products is performed per the consultant's quality control plan, and the EPM reviews consultant deliverables for quality assurance, on time delivery, and cost. Review is conducted by FHWA and the Study Committee.

3.21 Type, Size & Location (TS&L) Plans (Geo/Bridge/Environmental Unit)

Work is performed in accordance with ODOT's policy on document stamping for registered engineers. Manuals, procedures, standards, policies, statutes used by those charged with developing and delivering products are listed in Appendix G. In Region 4, the Geotechnical Designer/Structure Design Resource Coordinator will be responsible for employing one of two strategies to provide the following TS&L products:

- Preferred Alternative
- Plan and Elevation drawing.
- Estimate of structure construction cost.
- TS&L Narrative.
- Construction Schedule.

Strategy 1: The Geotechnical Designer/Structure Design Resource Coordinator coordinating with the Technical Center Manager and the Geo/Bridge Environmental Manager and utilizing a "Resource Sharing Agreement" will contact a Bridge Unit Manager from another ODOT section or region to obtain design and Professional of Record resources.

Review: Review and checking of TS&L products will be performed as per the resource provider's quality control plan.

Strategy 2: In the event that design resources are not available using strategy 1, the Geotechnical Designer/Structure Design Resource Coordinator will: 1) contact the ODOT Procurement Office to provide consultant structure design/Professional of Record services, 2) prepare a Work Order Contract (WOC), and 3) serve as Work Order Project Manager (WOPM) for the work order to provide the TS&L products listed above.

Review: Review of TS & L products is performed as per the consulting firm's quality control plan and the WOPM reviews the consultant's deliverables for quality, on time delivery, and cost.

3.22 Preliminary Geotechnical Report (Geo/Bridge/Environmental Unit)

Co-authored by the Geotechnical Designer and the Project/Engineering Geologist, this report describes the project, the preliminary geologic model, and provides slope geometry recommendations to the project team. Manuals, procedures, standards, policies, statutes used by those charged with developing and delivering products are listed in Appendix G.

Review: Prior to submittal to the Project Leader, this report receives peer review, review by the Region 4 Geology Team Leader, or review by the Region 4 Geo/Bridge/Environmental Manager. Since the Region 4 Geotechnical Designer/Structure Design Resource Coordinator is a stand alone position, geotechnical recommendations and designs receive peer review by staff from another region.

3.23 Material Source/Disposal Site identification (Geo/Bridge/Environmental Unit)

The Project/Engineering Geologist provides to the project team the location, property description, and available mapping for the proposed source of construction materials and/or disposal site for excess excavation materials; so materials cost and haul can be estimated, and so the proposed site(s) can be surveyed and receive necessary environmental evaluation and clearance. Manuals, procedures, standards, policies, statutes used by those charged with developing and delivering products are listed in Appendix G.

Review: Prior to submittal to the Project Leader, this product receives peer review, review by the Region 4 Geology Team Leader, or review by the Region 4 Geo/Bridge/Environmental Manager.

3.24 Hazmat Corridor Study Report (Geo/Bridge/Environmental Unit)

The Region Hazmat Coordinator is responsible for producing and delivering this product to the project team. This report identifies properties within the project corridor which have used or store hazardous materials either currently or in the past and properties which have recorded hazmat releases. This product also identifies the potential presence of hazardous substances or petroleum products at a specific property to satisfy one of the requirements to qualify for the innocent landowner defense to Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). It includes a historic records review of the property, interviews with current and former owners and employees, and a written report. Manuals, procedures, standards, policies, statutes used by those charged with developing and delivering products are listed in Appendix G.

Review: Prior to submittal to the project team leader, review is by a peer in another region or by the Region 4 Geo/Bridge/Environmental Manager.

3.25 Traffic Analysis/Design Review (Traffic Unit)

Description/Responsibility: The traffic unit provides a broad review of the traffic operational issues related to the proposed design. Additionally, they review the design to ensure that items for the Access Management Strategy or Plan are incorporated into the proposed design. Traffic control devices are generally not designed at this stage. They review the design to ensure that there is adequate Right-of-Way for traffic control devices.

A traffic analyst does research and calculations to determine what time and lane restrictions are necessary to do the work to determine impact on stage construction. They use ODOT's Traffic Manual, the Highway Capacity Manual, ODOT's Corridor Delay Threshold, and Synchro.

Review: The project design is reviewed by the traffic control designer, and Traffic's representative to the access management sub-team. There may be further review by the Traffic Operations Coordinator, the Region Access Management Engineer or maintenance staff. Final sign-off on Design Acceptance is made by the Region Traffic Manager after input from staff.

3.26 DAP Access Management PD03 Milestone

DAP Access Management deliverables (including draft deviations) are developed and written by the designated Project Team member per Operational Notice PD-03 and the ODOT Access Management Manual (which reference applicable statutes and rules including OAR 734-051), and other criteria and training provided by the Technical Services Access Management section. Tech Center staff likely to be involved in developing this documentation could include the Region Access Management Engineer (RAME), Traffic engineering staff, Right-of-Way staff and Roadway staff.

Review: The RAME provides documentation review, with support as needed from the Traffic Operations Manager. Technical review input may also be provided by District, Area and Planning staff prior to submittal. The Region Manager, Area Manager and Tech Center Managers are accountable for Access Management Deliverables. The Official Project Access List (OPAL) is required to be approved by the RAME and the Tech Center Manager. All Closure or Modification letters to be sent to the property owners are to be reviewed by the Statewide Access Management Program Office prior to mailing to the landowners. The delivery date of the closure or modification letters should be coordinated with the Sr. Right of Way agent and Right of Way Manager to insure that all Division 51 studies or appraisals are completed for follow up with the property owner. In some cases OTC approval is required for a Facility Plan that is the outcome of an AMP, AMPI or an IAMP.

3.27 Survey Scope of Work and Roadway Submittal

The Survey Scope of Work is developed after the initial Project Development Team (PDT) Meeting and before any survey field work is started. The Survey Representative to the Project Team gathers project specific input from the individual disciplines at this point, assembles a complete scope of work regarding the anticipated project footprint, Right-of-Way concerns, level

of detail, etc. and submits it to the Project Team for review. Upon approval, this document guides the field crew's survey scope of work.

The survey section produces a Survey submittal to the Roadway designer upon completion of the initial survey effort and prior to Roadway design work. This submittal consists of the design base map, an InRoads surface and an InRoads alignment of existing project highways and roads. These are produced by the Survey Party Chief, the Survey analyst or other staff. Guidelines include the Geometronics Survey Manual (in development), the CAD Standards Manual, Various Oregon Revised Statutes, and numerous procedural and mathematical checks. Survey data will be based on the Oregon State Plane Coordinate System of 1983, converted to a Local Datum Plane, and NAVD 1988 where ever practical.

Review: The final products are reviewed by the Surveyor of Record.

3.28 Right-of-Way Base Map

Prior to the Design Acceptance Milestone and continuing through to the Right-of-Way Descriptions Layout Meeting, the Survey/Descriptions Section produces the Right-of-Way Base Map. The format is based on the Right-of-Way Engineering Manual. This map becomes the basis for the Right-of-Way drawing.

Review: Review is ongoing through the Right-of-Way description writing process, typically led or conducted by the Region Surveyor and the Right of Way Engineer.

3.29 Project Schedule

The Project Leader (or designated project team member) revises/develops the PE and construction schedule based upon input from the various participating project team members. If appropriate, the Project Leader reports the lock-in date for a project to the STIP Coordinator at this milestone. The Region is currently developing a process for developing construction schedules for every in-house project with the goal of including the construction in the MICROSOFT OFFICE PROJECT, project schedule.

Review: The Project Leader provides the project schedule to each participating project team member for review and confirmation. They also provide the construction schedule to the participating construction representative (or designated expert) for review.

3.30 Design Criteria Document

All technical providers are responsible for incorporating changes, additional input and any new assumptions/issues resulting from documented Project Change Requests (PCR). The Project Leader provides the revised DCD with the Design Acceptance Checklist and DAP to the Tech Center Unit Managers.

Review: All technical providers and PDT members review and provide input to the DCD. Either Tech Center Unit Managers or Team Leads review the revised DCD prior to submittal to the Project Leader.

3.31 Design Acceptance Workshop (DAW)

The DAW is scheduled by the Project Leader following the Region 4 Design Acceptance Milestone Process (Appendix I). All technical providers are responsible for incorporating changes and addressing comments resulting from the internal/external stakeholder review. The Project Leader provides the revised DAP including the Design Acceptance Checklist to the DAW attendees. An additional DAW may be scheduled by the Project Leader depending on the outcome of the first DAW.

Review: All technical providers and PDT members review, comment and provide concurrence of the design acceptance package.

3.32 Design Acceptance Checklist

The Design Acceptance Checklist is prepared by the Project Leader following the Region 4 Design Acceptance Milestone Process (Appendix I). All technical providers are responsible for developing and producing the products outlined in the Region 4 QC plan and reporting on the completeness of those deliverables to the Project Leader. They provide their concurrence on the checklist normally at the DAW. The Project Leader provides the final DAP including the Design Acceptance Checklist to the Tech Center Unit Managers.

Review: The Tech Center Unit Managers review, comment and provide concurrence of the design acceptance package; and provide their signature on the Design Acceptance Checklist.

3.33 Design Acceptance Certification Memo

The Design Acceptance Certification memo is prepared by the Project Leader following the Region 4 Design Acceptance Milestone Process (Appendix H). The Project Leader provides the Area Manager and Tech Center Manager the final DAP including the Design Acceptance Checklist and the Design Acceptance Certification memo.

Review: The Area Manager and Tech Center Manager review comment and provide approval of the design acceptance package; and provide their signature on Design Acceptance Certification memo.

Quality Control Plan

Section 2: STIP	**Section 3:** Design Acceptance	**Section 4:** Plans PS&E Start	**Section 5:** Construction

SECTION 4. PLANS / PS&E START

This milestone is outlined in the PD-02 as the point of decision-making providing certainty of completeness of a project for bid advertisement. The Preliminary and Advanced plan review phases provide opportunities for cross-discipline and external organization review. A final set of contract documents (plans, Specifications and estimate) is required for all bid advertisement processes. The Region 4 Tech Center and Area Office will manage this process in accordance with the Region 4 PS&E Milestone document (Appendix J).

For any of the deliverables in this section where applicable, work is performed in accordance with ODOT's policy on document stamping for registered engineers, land surveyors, geologists, and landscape architects.

4.1 Preliminary Plans

4.1.1 Preliminary Plans set (Roadway Unit)

The Roadway Designer revises/develops the roadway design and coordinates design activities with other technical providers to assure the roadway portion of the Preliminary plan set is 70% complete for this milestone. In addition, the Roadway Designer will develop and prepare the erosion control design (in conformance with the ODOT Erosion Control Manual), and depending on the complexity of the project the traffic control (in conformance with the ODOT Traffic Control Plans Design Manual) and striping plans (in conformance with the ODOT Striping Design Guidelines) as well. The Roadway Designer also compiles sheets from other Technical Providers and distributes the plans for review. Roadway Designer to coordinate with Traffic Unit to ensure plan consistency with Access Management Deliverables as outlined in PD03.

Review: The Roadway Manager or Senior Designer reviews plans prior to distribution using as guidance the "Review Criteria for Roadway Contract Plans" document (Appendix B).

4.1.2 Hydraulic Preliminary Plans set (Roadway Unit)

The Hydraulics Engineer develops the hydraulic design in conformance with the ODOT Hydraulic Manual and applicable Federal Highway Administration Hydraulic Manuals. The Hydraulic Engineer coordinates with other Technical Providers to assure the hydraulic portion of the Preliminary plan set is 70% complete for this milestone.

Review: On a case by case basis (based upon complexity of drainage design) the Roadway Manager reviews plans prior to distribution.

4.1.3 Preliminary Bid Summary/Cost Estimate (Roadway Unit)

The Roadway Designer is responsible for editing the Design Acceptance cost estimate for roadway work and compiles the total bid summary and cost estimate using the Trns*port Estimator software and bid item historical data located in Estimating web site (See Appendix A).

Review: The Roadway Manager, Senior Roadway Designer or other Region Roadway Designer reviews the cost estimate prior to distribution with the Preliminary plan set.

4.1.4 Biological Assessment (BA) (Geo/Bridge/Environmental Unit)

For projects that impact environmental resources, the Region Biologist is responsible for preparing biological documents, including BA's, for submittal to regulatory agencies. The BA describes potential impacts to environmental resources and associated mitigation and monitoring measures for unavoidable impacts to plants and wildlife. Mitigation and monitoring measures are expressed as terms and conditions of the BA which are then incorporated into the Biological Opinion (BO) by the regulatory agencies. Manuals, procedures, standards, policies, statutes used by those charged with developing and delivering products are listed in Appendix G.

Review: The Region Environmental Coordinator (REC) and a Region Biologist in another region reviews the draft BA; the project manager/leader and construction project manager are required to review and sign off on the final document before submittal to the regulatory agencies.

4.1.5 Biological Evaluation (Geo/Bridge/Environmental Unit)

For projects on U. S. Forest Service Lands a Biological Evaluation is required. The Region Biologist is responsible for preparing this document. Manuals, procedures, standards, policies, statutes used by those charged with developing and delivering products are listed in Appendix G.

Review: The REC and regional biologist in another region review the final document.

4.1.6 No Affect Memo for Biology (Geo/Bridge/Environmental Unit)

The Region Biologist is responsible for preparing no effect documentation for projects that have no impact on environmental resources. Manuals, procedures, standards, policies, statutes used by those charged with developing and delivering products are listed in Appendix G.

Review: The Region Environmental Coordinator (REC) and regional biologist in another region reviews the final document.

4.1.7 Section 404/DSL Fill/Removal Joint Permit Application (Geo/Bridge/Environmental Unit)

The Region Permit Specialist is responsible for preparing the Oregon Department of State Lands (DSL) and 404 permit application for submittal to the regulatory agencies. Manuals, procedures, standards, policies, statutes used by those charged with developing and delivering products are listed in Appendix G.

Review: Review is performed by the Region Environmental Coordinator (REC).

4.1.8 Water Resources Reports (Geo/Bridge/Environmental Unit)

The Region Water Resource Specialist prepares the following reports for submittal to the Project Team, Project Designers, and regulatory agencies:

- Water Resource Baseline Report.
- Water Resources Impact Assessment.

Manuals, procedures, standards, policies, statutes used by those charged with developing and delivering products are listed in Appendix G.

Review: The Region Water Resources Specialist is a stand alone position in Region 4. Review of the Water Resources Baseline Report will be performed by the Region Environmental Coordinator assigned to the project. Review of the Water Resource Impact Assessment will be provided by a technical peer in another region or by the Geo-Environmental Water Resource Program Coordinator.

4.1.9 Programmatic Agreement (PA) Memo for Historic Resources (Geo/Bridge/Environmental Unit)

Region 4 does not have a Historical Resource Specialist; therefore, one of the following strategies is employed to produce the PA memo for historic resources:

Strategy 1: The Region Environmental Coordinator (REC), working with the Technical Center Manager and the Geo/Bridge/Environmental Manager, contacts Headquarters Geo-Environmental to obtain Historical Resource Specialist resources to produce the PA memo.

Review: Review is performed as per Headquarters Geo-Environmental's quality control plan.

Strategy 2: In the event that Headquarters Geo-Environmental cannot provide Historical Resource Specialist resources, Headquarters Geo-Environmental provides assistance to the REC to contact the ODOT Procurement Office for an Agreement to Agree to provide Historical Resource Specialist services, prepare a Work Order Contract (WOC), and serve as the Work Order Project Manager (WPM).

4.1.10 Section 106 of the National Historic Preservation Act DOE/FOE Documentation (Geo/Bridge/Environmental Unit)

Region 4 does not have a Historical Resource Specialist; therefore, one of the following strategies is employed to produce the Section 106 document:

Strategy 1: The Region Environmental Coordinator (REC), working with the Technical Center Manager and the Geo/Bridge/Environmental Manager, contacts Headquarters Geo-Environmental to obtain Historical Resource Specialist resources to produce the Section 106 documentation.

Review: Review is performed as per Headquarters Geo-Environmental's quality control plan.

Strategy 2: In the event that Headquarters Geo-Environmental cannot provide Historical Resource Specialist resources, Headquarters Geo-Environmental provides assistance to the REC to contact the ODOT Procurement Office for an Agreement to Agree to provide Historical Resource Specialist services, prepare a Work Order Contract (WOC), and serve as the Work Order Project Manager (WPM).

Review: Review of products is performed per the consulting firm's quality control plan and the WPM reviews consultant's deliverables for quality assurance, on time delivery, and cost

4.1.11 Preliminary Wetland Mitigation Plans (Geo/Bridge/Environmental Unit)

The Region Wetland Specialist prepares and delivers to the project team detailed preliminary wetland mitigation plans and special provisions. Manuals, procedures, standards, policies, statutes used by those charged with developing and delivering products are listed in Appendix G.

Review: Prior to submittal to the project team, review is performed by the REC and a peer in another region.

4.1.12 Storm Water Management Plan (Geo/Bridge/Environmental Unit)

The Region Water Resource Specialist working with the project designer and hydraulics engineer prepares the Storm Water Management Plan for submittal to regulatory agencies. Manuals, procedures, standards, policies, statutes used by those charged with developing and delivering products are listed in Appendix G.

Review: The Region Water Resources Specialist is a stand alone position in Region 4. Review of the Storm Water Management Plan will be provided by a technical peer in another region or by the Geo-Environmental Water Resource Program Coordinator.

4.1.13 Preliminary structure plans, estimate, bridge special provisions, bridge construction time estimate, and construction assistance estimate (Geo/Bridge/Environmental Unit)

Work is performed in accordance with ODOT's policy on document stamping for registered engineers. Manuals, procedures, standards, policies, statutes used by those charged with developing and delivering products are listed in Appendix G. In Region 4, the Geotechnical Designer/Structure Design Resource Coordinator will be responsible for employing one of two strategies to provide the following products:

- 85% complete plans
- Estimate of construction cost.
- Draft structure special provisions.
- Draft construction schedule.

Strategy 1: The Geotechnical Designer/Structure Design Resource Coordinator coordinating with the Technical Center Manager and the Geo/Bridge Environmental Manager and utilizing a "Resource Sharing Agreement" will contact a Bridge Unit Manager from another ODOT section or region to obtain design and Professional of Record resources.

Review: Review and checking of products will be performed as per the resource provider's quality control plan.

Strategy 2: In the event that design resources are not available using strategy 1, the Geotechnical Designer/Structure Design Resource Coordinator will: 1) contact the ODOT Procurement Office to provide consultant structure design/Professional of Record services, 2) prepare a Work Order Contract (WOC), and 3) serve as Work Order Project Manager (WOPM) for the work order to provide the products listed above.

Review: Review of products is performed as per the consulting firm's quality control plan and the WOPM reviews the consultant's deliverables for quality, on time delivery, and cost.

4.1.14 Preliminary Material Source/Disposal Site Plans and Special Provisions (Geo/Bridge/Environmental Unit)

The Project/Engineering Geologist provides to the project team detailed material source/disposal site operational plan drawings and special provisions. By this milestone the Project/Engineering Geologist has also made application for any necessary federal, state, or local authorizations or permits, using these products as supporting documentation. Manuals, procedures, standards, policies, statutes used by those charged with developing and delivering products are listed in Appendix G.

Review: Prior to submittal to the Project Leader, these products receive peer review, review by the Region 4 Geology Team Leader, or review by the Region 4 Geo/Bridge/Environmental Manager.

4.1.15 Hazmat Level 2 Site Assessment Report (Geo/Bridge/Environmental Unit)

The Region Hazmat Coordinator is responsible for producing and delivering this product to the project team. This report documents the results of subsurface sampling to confirm and delineate contaminated subsurface media and provides remediation recommendations. Manuals, procedures, standards, policies, statutes used by those charged with developing and delivering products are listed in Appendix G.

Review: Prior to submittal to the project team leader, review is by a peer in another region or by the Region 4 Geo/Bridge/Environmental Manager.

4.1.16 Hazardous Materials Addendum Report (Geo/Bridge/Environmental Unit)

The Region Hazmat Coordinator is responsible for producing and delivering this product to the project team. In support of the Right-of-Way acquisition process, this report summarizes the results of additional subsurface investigation at individual properties to delineate contaminated subsurface media and provides remediation recommendations. Manuals, procedures, standards, policies, statutes used by those charged with developing and delivering products are listed in Appendix G.

Review: Prior to submittal to the project team leader, review is by a peer in another region, or by the Region 4 Geo/Bridge/Environmental Manager.

4.1.17 Preliminary Hazmat plan sheets (Geo/Bridge/Environmental Unit)

The Region Hazmat Coordinator is responsible for producing and delivering this product to the project team. Manuals, procedures, standards, policies, statutes used by those charged with developing and delivering products are listed in Appendix G.

Review: Prior to submittal to the project team leader, review is by a peer in another region or by the Region 4 Geo/Bridge/Environmental Manager.

4.1.18 Traffic Design/Plans (Traffic Unit)

The Traffic Designer develops/revises the traffic design (signing, signals and illumination) coordinates design activities with other Technical Providers to assure the traffic portion of the Preliminary plan set is 70% complete for this milestone. The Designer uses as guidance Traffic Manual, Traffic Signal Design Manual, Sign Design Manual, Lighting Policy Guide Lines, Traffic Lighting Design Guide and federal guidelines. The Designer also uses the following software: Guidesign, AGI Illumination software, Microstation. The traffic designer coordinates signal warrants and other approvals in their unit to meet milestones.

The Traffic Control Plans Designer develops/revises the traffic control plans design and coordinates design activities with other Technical Providers to assure the traffic portion of the Preliminary plan set is 70% complete for this milestone. The designer uses as guidance the MUTCD, and the Traffic Control Plans Design Manual. The Designer also uses the following software: Guidesign, and Microstation.

Review: The Traffic Manager or Operations Manager may review plans prior to distribution using as guidance the Traffic Manual, Traffic Signal Design Manual, Sign Design Manual, Lighting Policy Guide Lines, Traffic Lighting Design Guide and federal guidelines. Review prior to the inclusion in preliminary plans is not necessary. Input may also be solicited from the Traffic Operations Maintenance staff and the Traffic Engineering and Operations staff. Input from the appropriate Project Manager's office will be solicited for the traffic control plans.

4.1.19 Right-of-Way Layout Meeting

A Right-of-Way Layout map review is held to review the identified acquisition areas prior to descriptions being written. Project Team members are requested to attend and review and approve the Right of Way foot print as providing the needed property for construction, maintenance and delivery of other project deliverables in concurrence with PD-02.

Review: Review is provided by the Region Surveyor and Right of Way Sr. Agent.

4.1.20 Right-of-Way Descriptions and Drawing

The Right-of-Way Description writer takes the Approved Design footprint and any other concerns developed during the Right-of-Way Layout Meeting and develops a Right-of-Way drawing and determines the needed Right of Way and produces the legal descriptions. The format is based on specifications in the Right-of-Way Engineering Manual.

Review: The Region Surveyor reviews the product for form, content and legal concerns. The descriptions are further reviewed for form and content by Right-of-Way documents staff in Salem.

4.1.21 Right-of-Way Authorization

The Senior Right-of-Way Agent prepares a programming estimate based on the final descriptions for the project. This estimate follows guidelines shown in Right-of-Way Manual, Chapter 3 (Right-of-Way Project Management). The estimate is forwarded to the Programming Coordinator who provides notice of Authorization from either State or FHWA (depending upon project funding). Right-of-Way Acquisition process begins after Design Acceptance and Authorization is received. If the project has Federal funding for right of way, the environmental documentation and permitting needs to be complete before authorization.

Review: The Right-of-Way Manager reviews the estimate on a case by case basis.

4.1.22 Preliminary Construction Schedule

Selected Construction Office staff or designated Project Team member revises/develops the Construction Schedule as needed and coordinate construction schedule activities with other Technical Providers to assure the construction schedule is complete for this milestone.

Review: The Project Team and/or construction representative reviews the Construction Schedule to ensure it includes all major construction activities and accounts for activities that would affect the schedule.

4.2 Advance Plans

4.2.1 Preliminary Plan Comment Responses (Roadway Unit)

The Roadway Designer is responsible to document how comments from the Preliminary Plan review pertaining to Roadway were addressed and transmitted to the Project Leader.

Review: The Roadway Manager reviews the responses to the Preliminary plans review with the Roadway Designer prior to submittal to the Project Leader.

4.2.2 Advance Plan set (Roadway Unit)

The Roadway Designer revises/develops the roadway and erosion control design, and if applicable the traffic control and striping design, and coordinates design activities with other technical providers to assure the roadway portion of the Advance plan set is 90 to 95% complete for this milestone. The Roadway Designer also delivers the roadway advance plan sheets to the Specifications Writer, who compiles all plan sheets and distributes the Advance Plan set for review.

Review: The Roadway Manager or Senior Designer reviews plans prior to distribution using as guidance the "Review Criteria for Roadway Contract Plans" document (Appendix B). If applicable the Region Traffic Manager reviews the striping plans prior to distribution using as guidance the Striping Design Guidelines and the Manual on Uniform Traffic Control Devices (MUTCD).

4.2.3 Hydraulic Advance Plan set (Roadway Unit)

The Hydraulic Engineer revises/develops the hydraulic design and coordinate with other technical providers to assure the hydraulic portion of the Advance plan set is 90 to 95% complete for this milestone. The Hydraulic Engineer also delivers the hydraulic advance plan sheets to the Specifications Writer.

Review: The Roadway Manager or other Region Hydraulic Engineer reviews plans during the Advance Plans review period.

4.2.4 Advance Bid Summary/Cost Estimate (Roadway Unit)

The Roadway Designer is responsible for editing the Preliminary plan cost estimate for roadway work and transmitting bid items and cost estimate to Specifications Writer. The Specifications Writer enters all bid items and quantities data into Trns*port.

Review: The Roadway Manager, Senior Roadway Designer or other Region Roadway Designer reviews the bid item summary and cost estimate as part of the Advance Plan review.

4.2.5 Advance Special Provisions (Roadway Unit)

The Specifications Writer develops and compiles the Advance Special Provisions (from technical providers such as Bridge, Traffic, Environmental, Pavement Design, Geology, etc.) and coordinates Specifications activities with other technical providers and the Construction Office to ensure the special provisions address all construction requirements.

Review: The Roadway Manager will review Special Provisions to determine if the Advance Plan set is 90 to 95% complete and ready for distribution.

4.2.6 Formal Utility Conflict Notification (Roadway Unit)

The Region Utility Specialist (RUS) works with Roadway Designer to determine utility conflicts, identifies which conflicts are reimbursable or non-reimbursable, provide copies of project plans to each known utility, and sends formal notification letters to each utility that is in conflict.

Review: The RUS works with the technical providers and the Construction Office to ensure all possible utility conflicts are identified prior to distributing the notifications.

4.2.7 Mitigation Plans (Geo/Bridge/Environmental Unit)

The Region Wetland Specialist delivers to the project team detailed final wetland mitigation plans and special provisions. Manuals, procedures, standards, policies, statutes used by those charged with developing and delivering products are listed in Appendix F.

Review: Prior to submittal to the project team, review is performed by the REC and by a peer in another region.

4.2.8 Advance structure plans (Geo/Bridge/Environmental Unit)

Work is performed in accordance with ODOT's policy on document stamping for registered engineers. Manuals, procedures, standards, policies, statutes used by those charged with developing and delivering products are listed in Appendix G. In Region 4, the Geotechnical Designer/Structure Design Resource Coordinator will be responsible for employing one of two strategies to provide the following products:

- 95% complete plans.
- Checked draft Engineer's estimate.
- Revised construction schedule.

Strategy 1: The Geotechnical Designer/Structure Design Resource Coordinator coordinating with the Technical Center Manager and the Geo/Bridge Environmental Manager and utilizing a "Resource Sharing Agreement" will contact a Bridge Unit Manager from another ODOT section or region to obtain design and Professional of Record resources.

Review: Review and checking of products will be performed as per the resource provider's quality control plan.

Strategy 2: In the event that design resources are not available using strategy 1, the Geotechnical Designer/Structure Design Resource Coordinator will: 1) contact the ODOT Procurement Office to provide consultant structure design/Professional of Record services, 2) prepare a Work Order Contract (WOC), and 3) serve as Work Order Project Manager (WOPM) for the work order to provide the products listed above.

Review: Review of products is performed as per the consulting firm's quality control plan and the WOPM reviews the consultant's deliverables for quality, on time delivery, and cost.

4.2.9 Final Geotechnical Report (Geo/Bridge/Environmental Unit)

Co-authored by the Geotechnical Designer and the Project/Engineering Geologist, this report documents engineering geology and geotechnical engineering findings, defines the geologic model for the project area, provides design recommendations, and identifies special provisions. The report may include a narrative, vicinity map, geologic maps and cross sections, subsurface boring logs, laboratory test data sheets, sample and project photographs, geotechnical design calculations and design drawings. Manuals, procedures, standards, policies, statutes used by those charged with developing and delivering products are listed in Appendix G.

Review: Prior to submittal to the Project Leader, this report receives peer review, review by the Region 4 Geology Team Leader, or review by the Region 4 Geo/Bridge/Environmental Manager. Since the Region 4 Geotechnical Designer/Structure Design Resource Coordinator is a stand alone position, geotechnical recommendations and designs receive peer review by staff from another region.

4.2.10 Final Material Source/Disposal Site Plans Permits and Special Provisions (Geo/Bridge/Environmental Unit)

The Project/Engineering Geologist provides to the project team detailed material source/disposal site operational plan drawings, special provisions and all necessary approved federal, state, or local permits or authorizations, and agreements. Manuals, procedures, standards, policies, statutes used by those charged with developing and delivering products are listed in Appendix G.

Review: Prior to submittal to the Project Leader, these products receive peer review, review by the Region 4 Geology Team Leader, or review by the Region 4 Geo/Bridge/Environmental Manager.

4.2.11 Advance Hazmat Plans, Estimate, and Special Provisions (Geo/Bridge/Environmental Unit)

The Region Hazmat Coordinator is responsible for producing and delivering these products to the project team. Manuals, procedures, standards, policies, statutes used by those charged with developing and delivering products are listed in Appendix G.

Review: Prior to submittal to the project team leader, review is by a peer in another region or by the Region 4 Geo/Bridge/Environmental Manager

4.2.12 Advance Plan Bid Item Review (Geo/Bridge/Environmental)

At Advance Plan review the HazMat Coordinator, Geotechnical Designer/Structure Design Resource Coordinator, Geology Team Leader, Project Geologist assigned to the project, and REC assigned to the project will check the bid item list to ensure that the bid items required for those work items corresponding to their disciplines are listed, accurate, and have specifications to describe them.

4.2.13 Advanced Traffic Design/Plans (Traffic Unit)

The Traffic Designer completes the traffic design (signing, signals and illumination) and coordinates design activities with other Technical Providers to assure the traffic portion of the Final plan set is 90% complete. The traffic designer coordinates signal warrants and other approvals in there unit to meet milestones. The traffic Designer also delivers the traffic mylar plan sheets, specifications and estimate to the Specification Writer. (Note: traffic signal plans shall have the State Traffic Engineer Signature or designate signature on the plans.)

The Traffic Control Plans Designer completes the traffic control plans design and coordinates design activities with other Technical Providers to assure the traffic portion of the Final plan set is 100% complete. The Traffic Control Plans Designer also delivers the traffic controls plan mylar plan sheets, specifications and estimate to the Specification Writer. The traffic control plans designer will solicit input from construction and the roadway designer during development. It is assumed that these groups provide review and comment.

Review: The Traffic Manager or Traffic Operations Manager reviews plans prior to distribution using as guidance the Traffic Manual, Traffic Signal Design Manual, Sign Design Manual, Lighting Policy Guide Lines, Traffic Lighting Design Guide and federal guidelines. The Region Traffic Operations Coordinator also reviews signal plans. Input may also be solicited from the Traffic Operations Maintenance staff. On complex or unique projects review may also be solicited from peers in other regions or headquarters staff. Signing plans on Interstate Freeways shall be sent to the State Traffic Engineer for review, comment and approval.

Access Management: RAME to ensure project plans are consistent with final access management deliverables, per PD03.

4.2.14 Advance Construction Schedule

Selected Construction Office staff or designated Project Team member revises/develops the Construction Schedule as needed and coordinates construction schedule activities with other Technical Providers to assure the construction schedule is complete for this milestone.

Review: The Project Team or construction representative reviews the Construction Schedule to ensure it includes all major construction activities and accounts for activities that would affect the schedule.

4.3 Final Plans

4.3.1 Advance Plan Comment Responses (Roadway Unit)

The Roadway Designer is responsible to document how comments from the Advance Plan review pertaining to Roadway design were addressed. The Specifications Writer is responsible to document how comments pertaining to the Special Provisions were addressed and transmits to the Project Leader.

Review: The Roadway Manager reviews the responses to the Advance plans review with the Roadway Designer and Specifications Writer prior to submittal to the Project Leader.

4.3.2 Final Plan set (Roadway Unit)

The Roadway Designer finalizes the roadway and erosion control design, and if applicable the traffic control and striping design, and coordinates design activities with other technical providers to assure the roadway portion of the Final plan set is complete for this milestone. The Roadway Designer and Specifications Writer follow the final review process as described in the "Procedure for Final Review of Roadway Contract Plans" document (see Appendix C). After review the Roadway Designer stamps the roadway portion of the contract plans if registered. The Specifications Writer assembles the Final Plan set and Specifications.

Review: The Roadway Manager or Senior Designer reviews plans prior to printing mylars using as guidance the "Review Criteria for Roadway Contract Plans" document (Appendix B). Roadway Manager stamps the roadway portion of the contract plans if the Designer is not registered. If applicable the Traffic Manager reviews the striping plans prior to printing mylars using as guidance the Striping Design Guidelines and the Manual on Uniform Traffic Control Devices (MUTCD). Traffic Manager stamps the striping plans if the Designer is not registered.

4.3.3 Final Hydraulic Plan set (Roadway Unit)

The Hydraulic Engineer finalizes the hydraulic design and coordinates with other technical providers to assure the hydraulic portion of the Final plan set is complete for this milestone. The Hydraulic Engineer will stamp the hydraulic portion of the contract plans.

Review: The Roadway Manager or other Region Hydraulic Engineer reviews plans prior to printing mylars.

4.3.4 Final Bid Summary/Cost Estimate (Roadway Unit)

The Roadway Designer is responsible for revising the Advance plan cost estimate for roadway work and transmitting final bid items and quantities to the Specifications Writer. The Designer follows the process described in the "Guidelines for Checking Final Quantities" Memos to Designers document (See Appendix A). The Specifications Writer makes the final edits to the Trns*port bid item summary and cost estimate.

Review: Another Roadway Designer not associated with the project and/or Construction Office staff reviews the cost estimate as part of the Final plan review.

4.3.5 Final Special Provisions (Roadway Unit)

The Specifications Writer finalizes and compiles the Final Special Provisions and coordinates Specifications activities with other technical providers and the Construction Office to ensure the special provisions address all construction requirements. All specification sections that were changed/revised from the original boilerplate language will need to be stamped by the responsible Professional of Record.

Review: The Roadway Manager reviews Special Provisions to determine if the Final Plan set is complete and ready for submittal to the Office of Pre-Letting. The Roadway Manager stamps the Special Provisions if the Specifications Writer is not registered.

4.3.6 Final Project Narrative (Roadway Unit)

The Roadway Designer edits the Design Acceptance narrative to reflect all additions/changes/deletions made and include this document in the Construction Handoff package.

Review: The Roadway Manager or Senior Designer reviews the narrative prior to distribution to the Construction Office.

4.3.7 Statement of Technical Quality (Roadway Unit)

The Roadway Designer distributes the Roadway Statement of Technical Quality sheet (see Appendix L) with the final plans paper copies to the Roadway Manager, Drafter (reviewer), Designer (reviewer) or Construction staff, Lead Designer (Optional) and Specifications Writer for their signatures.

Review: The reviewers sign off on the sheet after their reviews are complete and the Roadway Manager's signature signifies that the Roadway Quality Control plan was followed.

4.3.8 Statement of Technical Quality Review for Outsourced Projects (Roadway Unit)

Per the Outsourced Program Agreement and the Local Program Service Agreement the CPM or Local Agency Liaison will distribute the final plans, specifications and cost estimate to the

Roadway Manager (RM), who in turn distribute the package to his/her respective reviewers. This is a fatal flaw level review for completeness and technical sufficiency for the roadway, hydraulic and specifications portion of the contract plans.

Review: The reviewers sign off on the sheet after their reviews are complete and the Roadway Manager's signature signifies that the quality review is complete. The RM provides the signed STQR sheet (see Appendix M) to the Tech Center Manager prior to the TCM signing the Final PS&E Submittal Checklist.

4.3.9 Utility Reimbursement Package (Roadway Unit)

The RUS collects utility relocation plans and time requirements from each conflicting utility, the relocation cost estimates and proof of easement/service agreement/property deed from each conflicting utility. The RUS provides approval of the utility relocation plans and relocation time requirements and submits the utility reimbursement package to the Railroad/Utility Engineer.

Review: The RUS reviews the relocation plans with the technical providers and the Construction Office prior to approval and submittal to the Railroad/Utility Engineer.

4.3.10 Final Structure Plan Set/Bid Summary/Cost Estimate (Geo/Bridge/Environmental Unit)

Work is performed in accordance with ODOT's policy on document stamping for registered engineers. Manuals, procedures, standards, policies, statutes used by those charged with developing and delivering products are listed in Appendix G. In Region 4, the Geotechnical Designer/Structure Design Resource Coordinator will be responsible for employing one of two strategies to provide the following products:

- Final structure plans.
- Checked final Engineer's estimate.
- Updated special provisions.
- Final construction schedule.
- Calculation book for structure design.

Strategy 1: The Geotechnical Designer/Structure Design Resource Coordinator coordinating with the Technical Center Manager and the Geo/Bridge Environmental Manager and utilizing a "Resource Sharing Agreement" will contact a Bridge Unit Manager from another ODOT section or region to obtain design and Professional of Record resources.

Review: Review and checking of products will be performed as per the resource provider's quality control plan.

Strategy 2: In the event that design resources are not available using strategy 1, the Geotechnical Designer/Structure Design Resource Coordinator will: 1) contact the ODOT Procurement Office to provide consultant structure design/Professional of Record services, 2) prepare a Work Order Contract (WOC), and 3) serve as Work Order Project Manager (WOPM) for the work order to provide the products listed above.

Review: Review of products is performed as per the consulting firm's quality control plan and the WOPM reviews the consultant's deliverables for quality, on time delivery, and cost.

4.3.11 Material Source/Disposal Site Narrative Package (Geo/Bridge/Environmental Unit)

The Project/Engineering Geologist is responsible for providing this product to the Project Manager responsible for administering the project during construction who, in turn, is responsible for duplicating and providing copies of this product to inquiring bidders. This package includes a narrative describing current and past operations in the source/disposal site, any long term development strategies, any special operating considerations, references to any subsurface investigations, material qualification test results, copies of any necessary federal, state, or local approved permits, authorizations, and agreements, along with copies of operational plan drawings and special provisions. Manuals, procedures, standards, policies, statutes used by those charged with developing and delivering products are listed in Appendix G.

Review: Prior to submittal to the Project Leader, these products receive peer review, review by the Region 4 Geology Team Leader, or review by the Region 4 Geo/Bridge/Environmental Manager.

4.3.12 Final Hazmat Plans, Estimate, and Special Provisions (Geo/Bridge/Environmental Unit)

The Region Hazmat Coordinator is responsible for producing and delivering these products to the project team. Manuals, procedures, standards, policies, statutes used by those charged with developing and delivering products are listed in Appendix G.

Review: Prior to submittal to the project team leader, review is by a peer in another region as needed, or by the Region 4 Geo/Bridge/Environmental Manager.

4.3.13 Final Plan Bid Item Review (Geo/Bridge/Environmental)

At Final Plan review the HazMat Coordinator, Geotechnical Designer/Structure Design Resource Coordinator, Geology Team Leader, Project Geologist assigned to the project, and REC assigned to the project will check the bid item list to ensure that the bid items required for those work items corresponding to their disciplines are listed, accurate, and have specifications to describe them.

4.3.14 Final Traffic Design/Plans (Traffic Unit)

The Traffic Designer completes the traffic design (signing, signals and illumination) and coordinates design activities with other Technical Providers to assure the traffic portion of the Final plan set is 100% complete. The traffic designer coordinates signal warrants and other approvals in their unit to meet milestones. The traffic Designer also delivers the traffic mylar

plan sheets, Specifications and estimate to the Specifications Writer. (Note: traffic signal plans shall have the State Traffic Engineer Signature or designate signature on the signal plans)

Review: The Traffic Manager or Traffic Operations Manager reviews plans prior to distribution using as guidance the Traffic Manual, Traffic Signal Design Manual, Sign Design Manual, Lighting Policy Guide Lines, Traffic Lighting Design Guide and federal guidelines. The Region Traffic Operations Coordinator also reviews signal plans. Input may also be solicited from the Traffic Operations Maintenance staff. On complex or unique projects review may also be solicited from peers in other regions or headquarters staff. Signing plans on Interstate Freeways shall be sent to the State Traffic Engineer for review and approval.

4.3.15 Survey Control Data Sheet

The Survey Section staff produces a Survey Control Data Sheet for inclusion in the Contract Plans. Format is not yet formalized, but at a minimum must contain a not to scale schematic of the project showing relative location of survey control points, together with a list of said points, horizontal and vertical positions and a description of said points.

Review: Review is provided by the Surveyor of Record or Region Surveyor.

4.3.16 Statement of Technical Quality (Geo/Bridge/Environmental Unit)

The Geo/Bridge/Environmental Manager distributes to unit technical providers the “Statement of Technical Quality (STQ) for Geo/Bridge/Environmental” for their signatures along with the names and titles of the reviewers of their products.

Review: Prior to submitting the completed STQ to the Region Tech Center Manager, the Geo/Bridge/Environmental Manager reviews with each unit technical provider the products provided, level of quality, and risks evaluated which is then communicated to the Tech Center Manager in writing via the STQ.

4.3.17 Statement of Technical Quality Review for Outsource Projects (Geo/Bridge/Environmental Unit)

Per the Outsourced Program Agreement and the Local Program Service Agreement the CPM or Local Agency Liaison will distribute the final plans, specifications and cost estimate to the Geo/Bridge/Environmental Manager (GBEM), who in turn distribute the package to his/her respective reviewers. This is a fatal flaw level review for completeness and technical sufficiency for the roadway, hydraulic and specifications portion of the contract plans.

Review: The reviewers sign off on the sheet after their reviews are complete and the Geo/Bridge/Environmental Manager’s signature signifies that the quality review is complete. The GBEM provides the signed STQR sheet (see Appendix O) to the Tech Center Manager prior to the TCM signing the Final PS&E Submittal Checklist.

4.3.18 Final Construction Schedule

Selected Construction Office staff or designated Project Team member prepares the Final Construction Schedule and coordinates construction schedule activities with other technical providers to assure the construction schedule is complete for this milestone. This document is provided to the Specifications Writer for inclusion in the PS&E submittal package.

Review: The Project Manager and/or Region Scheduler reviews the Final Construction Schedule prior to delivery to the Specifications Writer.

4.4 PS&E

4.4.1 Stamped/Signed Plan set (Mylars)

All technical providers are responsible to provide an Engineer-of-Record (if applicable) to PE certify and sign all their respective plan sheets. The Specifications Writer assembles the stamped and signed mylars for submittal to the Office of Pre-Letting.

Review: All technical providers have followed their appropriate quality control plan prior to stamping and signing their respective plans sheets.

4.4.2 Stamped/Signed Special Provisions

All technical providers are responsible to provide an Engineer-of-Record (if applicable) to PE certify and sign all their respective special provisions that were changed or revised. The Specifications Writer assembles the Special Provisions for submittal to the Office of Pre-Letting.

Review: All technical providers have followed their appropriate quality control plan prior to stamping and signing, if necessary, their respective Special Provisions.

4.4.3 Right-of-Way Reports

If the removal of structures is required and the demolition and removal cannot be accomplished before bid letting, the Right-of-Way office provides information describing the structures (square footage, composition, exact locations, etc.) to be included in the Special provisions. If there is sufficient time, the Right-of-Way office will obtain and provide any reports indicating the presence of hazardous materials contained in the structures to be demolished. Additionally, right of way provides construction obligations made during settlement negotiations with property owners.

Review: The review process is per State and Federal requirements, followed by all Right-of-Way agents from ODOT staff and consultants.

4.4.4 Trns*port Bid Summary/Cost Estimate

The Specifications Writer is responsible to enter the final bid items and quantities into Trns*port and submitting with the PS&E package to the Office of Pre-Letting.

Review: The Roadway Manager reviews PS&E package prior to submittal.

4.4.5 Construction Schedule

The Project Leader is responsible for providing the final construction schedule to the Specifications Writer for inclusion in the PS&E submittal to the Office of Pre-Letting.

Review: The Project Leader reviews the final construction schedule with all technical providers and the Construction Office prior to delivery to the Specifications Writer.

4.4.6 Right-of-Way Certification

The Right of Way Supervisor prepares a Right of Way Certification form for the project as a part of the PS&E submittal. The purpose of the Right of Way Certification is: 1) To identify and affirm that no additional right of way acquisitions and/or relocation assistance is required to obtain legal possession of the real property needed for construction of the project; 2) to provide assurance that ODOT has the acquisition of additional right of way and relocation assistance for displaced persons and/or businesses has been completed in compliance with the federal requirements of the Uniform Relocation Assistance and Real Property Acquisition Polices Act, current federal regulations and Oregon State law; 3) to insure that clearance of the acquired right of way is so coordinated with the physical construction that no unnecessary delays or costs for physical construction will occur; and 4) to identify the existence and status of any hazardous waste issues within the right of way.

Review: Right-of-Way Certification is the end result of a very clearly defined legal process to protect property owners civil and property rights per State and Federal requirements, followed by ODOT staff and consultant Right-of-Way agents.

4.4.7 Quality Control Certification

The Tech Center Manager is responsible to prepare and sign a Quality Control Certification letter, based on the Statements of Technical Quality sheets or other documentation (see Sections 4.3.7 & 4.3.14), review input from each of the Tech Center unit mangers as needed, and any other input the Tech Center Manager has gathered regarding the extent to which this Quality Control Plan was followed and the level of technical quality of the PS&E package (see Appendix O with format/guidance). Right of Way certification is necessary on all projects, even if there was no additional right of way acquired for the project. The Right of Way Manager will require that the final construction plans be reviewed by a right of way team member, and the Project Leader is to deliver a memo stating there is no right of way needed for the project. This memo will be attached to the certification.

If all the acquisitions and relocations for the project are not complete and region decides to let the project anyway, the following requests must occur:

A request for holdouts must be made by the project leader or area manager and a public interest statement prepared and signed by the Technical Center Manager stating why it is in the best interests of the public for the project to be let rather than delay the letting until all acquisitions are complete.

The Right of Way Manager must be able to determine a firm target date for possession of all acquisitions before the certification can be signed, or the project can move forward with holdouts.

If the Right of Way Manager cannot sign the certification for reasons stated in Appendix B of Chapter 3 of the Right of Way Manual, and region wishes to move forward with the letting and construction, the Project Leader can request a PD-02 exception from the Highway Division Deputy Director.

4.4.8 Final PS&E Submittal Checklist

The Project Leader is responsible for working with the Project Development Team (PDT) to fill out the Final PS&E Submittal Checklist document, and obtaining the required Region Tech Center and Area Managers' signatures. This document is provided to the Specifications Writer for inclusion in the PS&E submittal to the Office of Pre-Letting.

Review: The Project Leader reviews this document with the PDT to ensure the PS&E package is complete and ready for submittal, and reviews with the Area Manager and Tech Center Manager prior to their signatures.

4.4.9 Final PS&E Submittal Checklist (Outsourced/Local Agency)

The CPM/Local Agency Liaison is responsible for working with the Project Development Team (PDT), consultant and local agency to fill out the Final PS&E Submittal Checklist document. They obtain the required Region Tech Center and Area Managers' signatures and submit this document with the PS&E package to the Office of Pre-Letting.

Review: The CPM/LAL reviews this document with the PDT, consultant and local agency to ensure the PS&E package is complete and ready for submittal, and reviews with the Area Manager and Tech Center Manager prior to their signatures.

4.4.10 Final Contract Plans/PS&E Access Management PD03 Milestone

DAP Access Management deliverables (including the Access Management Checklist) are developed and written by the designated Project Team member per Operational Notice PD-03 and the ODOT Access Management Manual (which reference applicable statutes and rules including OAR 734-051), and other criteria and training provided by the Technical Services Access Management section. District staff likely to be involved in developing this documentation can include the Permit Specialist, District Engineer or the Assistant DM.

Planning staff likely to be involved in developing Local TSP or Comp Plan Amendments or the OTC Decision package can include Planners.

Review: The Region Planning Manager and District Manager are accountable for this milestone Access Management Deliverables. All CHAMPS records shall be reviewed by the Assistant DM, DM or qualified Region Traffic Staff. The Planning Manager shall oversee the Plan Amendments or OTC Package.

Quality Control Plan

Section 2: STIP	**Section 3:** Design Acceptance	**Section 4:** Plans PS&E Start	**Section 5:** Construction

SECTION 5. CONSTRUCTION

This Construction milestone includes the required deliverables that are to be transmitted to Construction Office from PS&E submittal to contactor's notice to proceed.

For any of the deliverables in this section where applicable, work is performed in accordance with ODOT's policy on document stamping for registered engineers, land surveyors, geologists, and landscape architects.

5.1 Construction Handoff Package (Roadway Unit)

The Project Leader is responsible to set up a meeting prior to the Final Plans milestone with the Technical Providers and the Construction Office. This meeting determines the actual deliverables required, responsibilities and time requirements for those deliverables that are to be transmitted to the Construction Office (see Appendix F). The Roadway Designer is responsible for providing the roadway portion of the Construction Handoff Package, as well as compiling and delivering the construction package.

Review: The Roadway Designer reviews all computer files, grades and reports with the appropriate Construction staff. All technical providers are required to review their deliverables for completeness prior to transmitting to the Construction Office.

5.2 PE Certified Addenda (Roadway Unit)

The Specifications Writer is responsible to prepare addenda letters for submission to the Office of Pre-Letting (See Appendix J). All technical providers must follow the same quality control plan used in the Final Plans/PS&E contract documents and provide PE certified and signed mylars and special provisions when revised.

Review: All technical providers must coordinate their revision activities with the Construction Office to ensure the addenda address all construction requirements. The Office of Pre-Letting reviews all addenda prior to distribution and addenda on FHWA full-oversight Federal Aid projects require FHWA pre-approval.

5.3 Review of structural working drawings and shop drawings (Geo/Bridge/Environmental Unit)

Work is performed in accordance with ODOT's policy on document stamping for registered engineers. Manuals, procedures, standards, policies, statutes used by those charged with developing and delivering products are listed in (see Appendix G). In Region 4, the Geotechnical Designer/Structure Design Resource Coordinator will be responsible for employing one of two strategies to provide the following products and services:

- Attend and participate in Pre-Construction Meeting.
- Review shop drawing submittals and work plans.
- Provide clarification and interpretation of structure related construction contract documents and respond to Agency inquiries made during construction.
- Resolve conflicts in the plans.
- Provide recommendations/solutions to resolve construction problems.
- Review As-Built drawings.
- Determine the structural capacity of new bridges (load rating).

Strategy 1: The Geotechnical Designer/Structure Design Resource Coordinator coordinating with the Technical Center Manager and the Geo/Bridge Environmental Manager and utilizing a "Resource Sharing Agreement" will contact a Bridge Unit Manager from another ODOT section or region to obtain design and Professional of Record resources.

Review: Review and checking of products will be performed as per the resource provider's quality control plan.

Strategy 2: In the event that design resources are not available using strategy 1, the Geotechnical Designer/Structure Design Resource Coordinator will: 1) contact the ODOT Procurement Office to provide consultant structure design/Professional of Record services, 2) prepare a Work Order Contract (WOC), and 3) serve as Work Order Project Manager (WOPM) for the work order to provide the products listed above.

Review: Review of products is performed as per the consulting firm's quality control plan and the WOPM reviews the consultant's deliverables for quality, on time delivery, and cost.

5.4 Traffic Design/Plans (Traffic Unit)

The Traffic Designer is responsible for providing construction support and shop drawing review for traffic signal poles, blue and green sheets, sign shop drawings, sign steel support shop drawings and illumination submittals.

The Traffic Control Plans Designer is responsible for reviewing changes proposed by the contractor and providing construction support.

5.5 Horizontal Control, Recovery and Retracement Map

The Agency is required by Statute to file a Horizontal Control, Recovery and Retracement Map with the applicable County Surveyor anytime a project acquires new Right-of-Way and in the process destroys monuments of record. This map should be filed prior to the contract let.

The Survey Analyst or other staff produces such map as necessary, using the ODOT filing map standards for Horizontal Control, Recovery and Retracement Maps, and applicable Oregon Revised Standards.

Review: Review and stamp is by the Surveyor of Record.

5.6 Right-of-Way Obligations (E3300's)

Right of Way obligations are an agreement between ODOT and a property owner. The obligations are part a just compensation settlement, which must be completed to give ODOT the ability to take legal possession and to use the property. Copies of all Right-of-Way Obligations forms for each file on the project (which are completed as a part of the Final Report or R/C forms) are provided to the Construction Office either from the region Right of Way office or the Right of Way headquarters office in Salem. These forms are provided even when there are no obligations shown between the property owner and the State. When project construction is completed the Construction Office signs each form showing completion of any obligations. The forms are then provided back to the Right-of-Way Office for field verification and signoff by Right-of-Way personnel. Completed forms are returned to the Construction office for retention with other project records.

Review: The review process is per State and Federal requirements, followed by all Right-of-Way agents from ODOT staff and consultants.

Appendix A

Roadway Engineering Resources

Roadway Engineering Resources

Specifications (www.oregon.gov/ODOT/HWY/SPECS/index.shtml)

Standard Specifications www.oregon.gov/ODOT/HWY/SPECS/2002_std_specs.shtml
Special Provisions
www.oregon.gov/ODOT/HWY/SPECS/special_provisions.shtml
Special Provisions Updates www.oregon.gov/ODOT/HWY/SPECS/updates.shtml
Supplemental Specifications
www.oregon.gov/ODOT/HWY/SPECS/supplemental_specifications.shtml
Bid Item List www.oregon.gov/ODOT/HWY/SPECS/bid_item_list.shtml
Manuals, Guides, Forms & Publications
www.oregon.gov/ODOT/HWY/SPECS/manuals_forms_etc.shtml

Estimating (www.oregon.gov/ODOT/HWY/ESTIMATING/index.shtml)

Ave. Bid Items Prices
www.oregon.gov/ODOT/HWY/ESTIMATING/bid_item_prices.shtml
Trns.port Estimator
www.oregon.gov/ODOT/HWY/ESTIMATING/estimator.shtm
Manuals, Guides, Forms & Publications
www.oregon.gov/ODOT/HWY/ESTIMATING/manuals_forms_etc.shtml

Roadway (www.oregon.gov/ODOT/HWY/ENGSERVICES/index.shtml)

Standard Drawings
www.oregon.gov/ODOT/HWY/ENGSERVICES/standard_drawings_home.shtml
Detail Drawings
www.oregon.gov/ODOT/HWY/ENGSERVICES/standard_details.shtml
Contract Plans Development Guide
www.oregon.gov/ODOT/HWY/ENGSERVICES/contact_plans_dev_guide_home.shtml
2003 Highway Design Metric/English Manual
www.oregon.gov/ODOT/HWY/ENGSERVICES/hwy_manuals.shtml
Memos To Designers
www.oregon.gov/ODOT/HWY/ENGSERVICES/memos.shtml
Interchange Layout Sheets
www.oregon.gov/ODOT/HWY/ENGSERVICES/interchange_design.shtml
Technical Bulletins
www.oregon.gov/ODOT/HWY/ENGSERVICES/tech_bulletin.shtml
Design Exceptions
www.oregon.gov/ODOT/HWY/ENGSERVICES/design_exceptions.shtml
Reports and Forms
www.oregon.gov/ODOT/HWY/ENGSERVICES/forms_home.shtml
Project Plans “V” Number Request
www.oregon.gov/ODOT/HWY/ENGSERVICES/forms_home.shtml

Hydraulics (www.oregon.gov/ODOT/HWY/GEOENVIRONMENTAL/hydraulics.shtml)

Hydraulic Manuals
www.oregon.gov/ODOT/HWY/GEOENVIRONMENTAL/hydraulics.shtml#Hydraulics_Manual_Parts_1___2

Erosion Control (www.oregon.gov/ODOT/HWY/GEOENVIRONMENTAL/)

Erosion Control Manual
www.oregon.gov/ODOT/HWY/GEOENVIRONMENTAL/natural_resources_unit.shtml#Erosion_Control

Other Resources:

Contractor Plans www.oregon.gov/ODOT/CS/OPO/contractor_plans/

Traffic Engineering Publications
www.oregon.gov/ODOT/HWY/TRAFFIC-ROADWAY/publications.shtml
Oregon Administrative Rules (OAR) www.sos.state.or.us/banners/rules.htm

Oregon Revised Statutes (ORS) www.leg.state.or.us/ors/
Oregon Highway Plan www.oregon.gov/ODOT/TD/TP/orhwyplan.shtml
Oregon Transportation Plan
www.oregon.gov/ODOT/TD/TP/ortransplanupdate.shtml
Federal Highway Administration Publications
www.fhwa.dot.gov/pubstats.html

Appendix B

Review Criteria for Roadway Contract Plans

Review Criteria for Roadway Contract Plans

The following review criteria show the minimum items that need to be considered during a general plan review process for the Roadway Engineering unit. This document provides guidance for reviewers and helps ensure consistency in the review process. It also supports the completion of the "Statement of Technical Quality for Roadway Design" during this final review process.

The purpose of the review criteria is to make sure the plan package flows, makes sense, maintains a consistent quality, follows normal ODOT procedures, and in general, that the project can be built from the plans. The reviewer should be looking for inconsistencies, missing items, blatant errors, etc. The list is as follows:

Check typical sections for the following (using the pavement design and plan sheets):

- Check if the title sheet and plan sheets stationing limits match, ensure the typical and stack(s) match adjacent typicals and stack(s) and there are no gaps or overlaps.
- Check if the plan sheets and bridge drawings stationing for structures match, ensure that the "Bridge Details Checked" line is on the appropriate typical section sheet.
- Check the first typical section sheet to see if the "R/W Map No." line is present and completed.
- Determine if lane, shoulder, median, bike lane and sidewalk widths are standard and match the plans sheets.
- Check if the taper sections are labeled correctly and taper rates adequate.
- Check if pavement cross-slopes (normal crown, superelevated or "as directed") and profile grade point are shown correctly.
- Ensure that the fill and cut slopes are shown (including ditch slopes).
- Determine if the depth of sub-base, base and wearing course match the pavement design.
- Make sure the widths and stations for pavement removal (grinding) make sense and are constructible.
- Ensure that street connections and ramps are adequately shown.
- Check that the curb type, height and placement are correct and match the plan sheets.
- If barrier and/or guardrail are in the typicals ensure that it is shown accurately and adequately and match the plan sheets.

Check the Detail sheets for the following:

- Detail sheet numbers are referenced in the construction notes.
- Evaluate each detail for constructability.
- Determine if enough detail is shown and if additional details are needed.
- Check if the detail is appropriately used for the design.
- Check if there is an Engineer's stamp on the sheets.

Review the construction plan and profile sheets for the following:

- Determine if the sheet design and layout is adequate, is the sheet too hard to read, is there not enough shown, is the scale appropriate, etc.
- Check to see if all note numbers shown in the plan sheets have construction notes, and that all notes are referenced when required. Ensure that all construction work has a construction note and check if the note covers the work being done or intended.
- Check if the correct standard drawings are being used and are listed in the Title sheet.
- Check if horizontal alignment information (stationing, bearings, curve data, spirals, etc.) is shown adequately and meets the appropriate design standard.
- Check to see if the earthwork brackets are shown and make sense (agree with cut and fill lines shown in the typicals and sliver fill details).

- Check to ensure that the project and paving limits are shown.
- Ensure that all accesses are shown and labeled correctly.
- Determine if appropriate clear zone for the applicable design standard was provided (are steep slopes and other obstacles adequately protected, is the appropriate traffic control devices being used and placed correctly, are adequate horizontal and vertical clearances provided).
- Determine if profile(s) are shown and adequate, that it includes earthwork brackets, matches the surfacing depth shown in the typicals, includes drainage facilities (that match the plan sheets) and provides vertical alignment information.
- Check the drainage design to determine if pipe sizes, culvert and storm sewer pipe, inlet, manhole and outlet locations are shown adequately. Check to see if the drainage features shown in the plan sheets match the profiles and construction notes. Determine if the drainage design is adequate (are the inlet types and locations appropriate, do the plan sheets, profiles and construction notes adequately describe the design, are there constructability issues, use the designer's drainage calculations if necessary).
- Check the Pipe Data sheet to ensure that it is adequately and accurately filled out (are the correct sheet and construction note numbers listed, does the information in the date sheet match the plan and profiles sheets and construction notes, is the PH number listed where appropriate, is the design height of cover listed and does it correspond with the chosen pipe material, etc.).

Review the cost estimate and bid item summary as follows:

- Check designer's cost estimate calculations (if available) for missing items, blatant errors, appropriate assumptions. Determine if the calculations adequately cover and agree with the work shown in the typcials, detail and plan sheets.
- Check to see if the quantities shown in the construction notes match the bid item list.
- Check to ensure that all work items shown in the plans are listed in the bid item list (during Advance and Final review phases ensure that all bid items have specifications to cover them).
- Perform a rough surfacing calculation based upon the typical sections to determine if surfacing bid item quantities are adequate.

Appendix C

Procedures for Final Review of Roadway Contract Plans

Procedure for Final Review of Roadway Contract Plans
(For Roadway Designed Projects)

The following activities show the general process of what needs to happen during the final review process for the Roadway Engineering unit. The form "Statement of Technical Quality for Roadway Design" (see attached) needs to be completed during this process. Due to the fact that several of the reviewers may be in separate and distant offices, the reviews can occur concurrently and multiple forms can be used, just so long as all the appropriate signatures are obtained. The Roadway Designer needs to then make sure that the multiple copies of the form are compiled before handing the final paper prints off to the Roadway Manager. This process is normally scheduled to take place within one week, however, for large projects more time should be allowed.

The purpose of this review is to make sure the final package flows, makes sense, maintains a consistent quality, follows normal ODOT procedures, and in general, that the project can be built from the plans. The reviewer should be looking for inconsistencies, missing items, blatant errors, etc...

1. Final paper prints of the Roadway plans and title sheet are printed. The latest set of specifications and Bid Summary/Cost Estimate are obtained.

2. The latest paper prints of Bridge, Traffic, Traffic Control, Erosion Control, Roadside Development, etc… are also obtained.

3. The Roadway Designer provides copies of appropriate sheets (Roadway sheets that include the "Bridge Details Checked" line on the left edge of the sheet) to Bridge for their review.

4. The Roadway Designer fills in appropriate project information on the "Statement of Technical Quality for Roadway Design" form and starts the final review process. The Roadway Designer reviews the plans first, labeling any changes that are in progress. The latest set of the specifications and the bid summary should be included in the package for reference. The package is then sent to the following reviewers, in no particular order:

    a. A Drafter, not associated with the project, reviews the plans.

    b. A Specifications Writer, not associated with the project, reviews the special provisions and bid item summary.

    c. A Hydraulics Engineer, not associated with the project, reviews the plans if applicable.

    d. An additional Roadway Designer reviews the plans, if time allows.

    e. The quantities need to be checked by an additional designer, a construction employee, or other appropriate person. A thorough check would be best handled at advance plans. This check could then act as a final review of any of the quantities that were adjusted after advance plans.

    f. The Region Roadway Manager reviews the plans.

    g. After the review process is complete, the Roadway Designer, Hydraulic Engineer and Specifications Writer reviews the comments with the Region Roadway

Manager (and others, as appropriate), obtains his signature on the “Statement of Technical Quality For Roadway Design” form and makes final corrections/changes to the plans, special provisions and bid summary.

5. The Roadway Designer has the drafter plot the final, mylar copies of the roadway plans.

6. The Roadway Designer then makes sure the Engineer of Record(s) for the Roadway plans signs the mylar copies.

7. The Roadway Designer obtains signatures from Bridge for any sheets that contain the line “Bridge Details Checked”. If the remote designer can not obtain the signature then they should arrange with the specification writer to obtain the signature.

8. The Roadway Designer submits the signed and PE certified mylars to the Specifications Writer.

9. The Specifications Writer obtains the “Final PS&E Submittal Checklist” from the Project Leader

10. The Specifications Writer assembles and submits the full set of signed mylar plans, the “Final PS&E Submittal Checklist”, the Special Provisions, Special Provision Certification Letter, Trns*port Estimate, Project Construction Schedule, R/W Certification, CE Minimums, Signed PD-02 Exception Letter (when applicable), and the “Project Risk Assessment Summary” to the Office of Pre-Letting. The package needs to arrive by the AMS PS&E date, which will be at least 21 days prior to advertisement.

Appendix D

Instructions for developing design Acceptance Plans (DAP)

INSTRUCTIONS FOR DEVELOPING DESIGN ACCEPTANCE PLANS (DAP)

It is the responsibility of the Area Manager and Tech Center Manager to ensure that all related technical information is complete and clear before approving the DAP. All Technical Provider(s) and Project Development Team (PDT) members that provide technical information for the DAP must concur that the design footprint as shown by the right of way delineation on the DAP is adequate to accommodate their design elements and the information shown on the DAP is correct. The Consultant Project Manager (CPM)/Project Leader (PL) will distribute the DAP for review by the external/internal stakeholders. The resulting changes/comments from the review are incorporated by Technical Provider(s) and the CPM/PL will schedule a Design Acceptance Workshop (DAW). Concurrence by the Technical Provider(s) and PDT members is documented on the Design Acceptance Checklist, unless a follow-up DAW is necessary. Once those changes are made and the Technical Provider(s) and PDT members have all concurred, the final DAP are sent by the CPM/PL to the Region Tech Center Unit Managers for their concurrence and signature on the Design Acceptance Checklist.

Before the DAP and Design Acceptance Checklist are sent to the Area Manager and Tech Center Manager for their review and approval by signing the Design Acceptance memo, the CPM/PL, Technical Provider(s) and PDT members need to be all in concurrence that the design footprint will not change and the DAP provide sufficient information to proceed with environmental submittals to the regulators. All projects will require DAP including those that don't require right of way.

To provide consistency and assist staff in meeting the intent of the DAP, a list of major elements is provided. This list of items should always be considered when preparing DAP. Some elements may not be included depending on the type, complexity and purpose of the project.

MAJOR ELEMENTS FOR DESIGN ACCEPTANCE PLANS (DAP)

GENERAL REQUIREMENTS

1. DAP will require a title sheet, typical section sheet showing the surfacing design, detail sheets showing adequate information for environmental submittal to regulators and construction plan sheets including on site detours or stage construction information. Profile sheets and construction notes would normally not be included unless there is needed environmental related information to be submitted to regulators.
2. All sheets will indicate whether dimensions are in meters (m) or English units.
3. All sheets will be marked as "Design Acceptance" or as "Final Design Acceptance" Both are considered record copy and shall reside with the project leader until the project is awarded at which time the copies can be disposed.
4. All sheets will have the standard project information block showing the project name, highway name and county

PLANS SHEET

1. Title Sheet
   a) Standard ODOT title sheet with index of sheets shown, location of project and project limits
   b) Marked as “Design Acceptance” or “Final Design Acceptance”

2. Typical Section Sheet
   a) Standard ODOT format showing cross section elements and surfacing design
   b) Marked as “Design Acceptance” or “Final Design Acceptance”

3. Detail Sheets
   (a) Show all details necessary to be submitted with the environmental documents including the Biological Assessment. Information could include for example water diversion during culvert replacement, normal high water elevations, standard drawing details, or other simple details that expedite permitting approval.

4. Construction Sheets
   a) Show a North arrow
   b) Correct standard drafting symbology
   c) Label the Township, Range and all section lines
   d) Show mainline and connecting roadway alignments with stationing including intersecting stations
   e) Show complete curve data for all alignments including all alignment control points and bearings
   f) Label centerlines including construction, on site detour and right of way
   g) Label all median, travel lane, speed change lane and shoulder widths
   h) Label all radii at street and public road connections including any nonstandard radii at private approaches.
   i) Dimension all bus pullouts including lengths and tapers
   j) Show slope (catch) lines using proper symbology
   k) Show right of way and access control lines that comply with the project Access Management Plan*
   l) Show all temporary and permanent easements related to drainage, illumination, signage, slopes, utilities or staging*
   m) Show background topography
   n) Show restricted areas including those related to environmental, right of way or other
   o) Show construction items such as drainage facilities and signals if they impact the footprint
   p) Construction notes are not necessary unless needed to provide clarity for environmental or right of way purposes

   * On projects that will not be acquiring new right of way it is not necessary to provide access control, temporary and permanent easement lines.

Appendix E

Design Acceptance Narrative Template

Oregon

Department of Transportation
Region 4 Technical Center
Roadway Engineering
Interoffice Memo

DATE: Date

TO: Team Leader

File Code:

FROM: Designer
Designer's Phone Number

SUBJECT: **Design Acceptance Narrative - Project Name**

Location and description
Where is it and what is it.

Incomplete or Missing Sheets
Are any sheets going to be added later? Is any information missing?

Current Cost Estimate
What is the latest PE, R/W and construction costs? Is there any unusual bid items?

Utilities
Are there any utility issues? Are utilities to be adjusted? If so, at what stage will it happen?

Traffic Control
How is traffic to be staged (TCP, TMP) Does this highway have significant freight/mobility issues? Are there unique staging considerations? Will traffic be routed over a detour?

Drainage
What is the proposed drainage concept? Is water quality an issue? If so, what features will be incorporated? Were alternate materials considered? If not, why not?

Surfacing
What is the proposed surfacing design? Any unusual surfacing items? Do surfacing quantities include patching or leveling? If so, what depth and quantity is that portion?

Design Standards
What are the applicable design standards? What is the proposed typical section? Is there any unique design elements?

Design Exceptions
What are the proposed design exceptions? What is the level of risk in not meeting standards?

Project Recommendations

Were any recommendations altered? If so, for what reasons?

Safety Features

Were any special safety features incorporated? If so, what are they?

Details

Discuss any special details and why they are shown.

Scope Changes

Discuss any major changes from what was scoped.

Background, Constraints, and Major Changes.

Discuss any other items which would benefit the reviewers in understanding any part of the plan, especially if major changes have occurred during design. Include R/W, Environmental, Hazmat, etc.

Appendix F

PE to CE Transition Check List

PE to CE TRANSITION CHECKLIST

Deliverable	Responsible for Compiling	Provided To	When Required
Contact list of Project Team Members including Consultants	Project Leader	Construction PM or APM	PS&E
Steering Team and Stakeholder Team Members (if any)	Project Leader	Construction PM or APM	PS&E
Engineer of Record for each discipline	Project Leader	Construction PM or APM	PS&E
Prospectus - Part 1, 2 & 3	Project Leader	Construction PM or APM	PS&E
Communication Plan	Project Leader	Construction PM or APM	Date established from PE/CE Construction Handoff meeting
Access Management Plan / Strategy	Project Leader	Construction PM or APM	PS&E
Final Geotechnical Report	Project Leader	Construction PM or APM	before Advertise
Material Source/Disposal Site Narrative	Project Geologist	Construction PM or APM	before Advertise
Final Hydraulics Report	Project Leader	Construction PM or APM	before Advertise
Asbestos Reports or other Reports Required by Spec's	Project Leader	Construction PM or APM	before Advertise
Hazmat Report Level 1 or 2	Hazmat Coordinator	Construction PM or APM	Date established from PE/CE Construction Handoff meeting
Permits - Environmental, Land Use, Night Work, etc	Project Leader	Construction PM or APM	before Advertise
Environmental Commitments	REC	Construction PM or APM	PS&E
Water Quality Report	REC	Construction PM or APM	Date established from PE/CE Construction Handoff meeting
Intergovernmental Agreement	Project Leader	Construction PM or APM	PS&E
Construction Schedule	Project Leader	Construction PM or APM	PS&E
Final Pavement Design	Project Leader	Construction PM or APM	PS&E
Approved Exception / Concurrence Letters	Project Leader	Construction PM or APM	PS&E
R/W Certification	Project Leader	Construction PM or APM	PS&E
Preliminary Plan Review Comments/Changes (Including Quantities)	Project Leader	Designers	Prior to advanced
Advanced Plan Review Comments/Changes (Including Quantities)	Project Leader	Specification writer	Prior to Final plans
Constructability Review Results	Project Leader	all appropriate personnel	Prior to Final plans
PDT Decisions	Project Leader	Construction PM or APM	Date established from PE/CE Construction Handoff meeting
Project Photos/Video	Project Leader	Construction PM or APM	Date established from PE/CE Construction Handoff meeting
Design Narrative	Roadway Designer	Construction Coordinator	Date established from PE/CE Construction Handoff meeting
Alignment Reports	Roadway Designer	Construction Coordinator	Date established from PE/CE Construction Handoff meeting
Grade Reports	Roadway Designer	Construction Coordinator	Date established from PE/CE Construction Handoff meeting
Pipe Locations, profile and x,y,z	Roadway Designer/Hydraulics Engineer	Construction Coordinator	Date established from PE/CE Construction Handoff meeting

PE to CE TRANSITION CHECKLIST

Deliverable	Responsible for Compiling	Provided To	When Required
Quantities and Quantity Calculations	Roadway Designer	Construction Coordinator	Date established from PE/CE Construction Handoff meeting
Cross-sections (r/w annotated by advanced plans)	Roadway Designer	Construction Coordinator	Date established from PE/CE Construction Handoff meeting
CADD files: xxxxxe.dgn, xxxxxcon.dgn,xxxxxfd.dgn, xxxxxrw.dgn, etc.	Roadway Designer	Construction Coordinator	Date established from PE/CE Construction Handoff meeting
CADD files: survey and r/w maps	Roadway Designer	Construction Coordinator	Date established from PE/CE Construction Handoff meeting
CADD files: DTM, TML, RWL, ALG	Roadway Designer	Construction Coordinator	Date established from PE/CE Construction Handoff meeting
Original Ground Confidence Report	Surveyor	Construction Coordinator	Date established from PE/CE Construction Handoff meeting
Environmental Documentation (hist, archy, BA, BO, Wetlands, EA, etc.)	Environmental Coordinator	Construction PM or APM	PS&E
R/W Obligations	R/W Resource	Construction PM or APM	PS&E
Utility Agreements, work performed, status of completion, Schedule of Work	Utility Coordinator	Construction PM or APM	Date established from PE/CE Construction Handoff meeting
Utility Conflict Map	Utility Coordinator	Construction PM or APM	Date established from PE/CE Construction Handoff meeting
Addendums / Revision Letters	Specification Writer	PM 1st then to Salem	before bid opening
THIS ASSUMES THAT ALL OF THE INFORMATION HAS BEEN ALREADY INCORPERATED/CHECKED INTO THE PLANS AND SPECIFICATIONS PRIOR			

Appendix G

Region 4 Geo/Bridge/Environmental Manuals, Procedures, Standards, Policies, and Statutes

Region 4 Geo/Bridge/Environmental
Manuals, Procedures, Standards, Policies, Statutes

Geology/Geotech	Structural Design	Environmental
Oregon laws governing professional licensing of engineers and geologists (ORS 672)	AASHTO Design Guide Specification for Bridge Temporary Works, 1995	1969 National Environmental Policy Act (NEPA)
Laws, rules, and regulations of the Oregon Mined Land Act	AASHTO Guide Specification for Distribution of Loads for Highway Bridges, 1994	Council on Environmental Quality (CEQ) regulations
Oregon Water Resources Department laws, rules and regulations	AASHTO Guide Specification for Horizontally Curved Highway Bridges	Federal Aid Highway Program Manual
FHWA Soils and Foundation Workshop Manual	AASHTO Guide Specification for Strength Evaluation of Existing Steel and Concrete Bridges, 1989	Clean Water Act, and specifically section 404
ODOT Soils and Rock Classification Manual	AASHTO Guide Specification for Design and Construction of Segmental Concrete Bridges, 1989 with Interims to 1995	Safe Drinking Water Act
AASHTO Manual on Foundation Investigations	AASHTO Guide Specification for Seismic Isolation Design, 1991	Endangered Species Act
FHWA Rock Slope Manual	AASHTO Guide Specification for Thermal Effects on Concrete Bridge Superstructures, 1989	1987 Corps of Engineers Wetlands Delineation Manual
ODOT Construction Manual, sampling, and testing frequency requirements	AASHTO Guide Specification for Fatigue Design of Steel Bridges, 1990	Regional Supplements to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) and Western Mountains, Valleys and Coast Region
ODOT Standard Specifications	AASHTO Guide Specification for Alternate Load Factor Design Procedures for Steel Beam Bridges using Braced Compact Sections, 1991	The Highway Design Manual
ODOT Design Manual	AASHTO LRFD Bridge Design Specifications, 2nd Edition 1998 (including all interim updates)	Oregon Action Plan for Transportation Planning
Specific local, State and Federal mining laws	AASHTO Manual for Condition Evaluation of Bridges, 1994	Oregon Plan for Salmon and Watersheds
FHWA Geotextile Engineering Manual	AASHTO Manual for the Maintenance Inspection of Bridges, 1983	Department scheduling reports
FHWA Blasting Manual		Financial Services accounting reports.
ODOT Rock fall Hazard Rating System		Oregon Standard Specifications for Construction.
D.O.G.A.M.I. Best Management Practices for Reclaiming Surface Mines in WA and OR.		ODOT Operational Notices
Geo/Environmental Section Manuals, Procedures, & Practices Website		ODOT Policies
Federal and State Laws governing the hiring of Architectural and Engineering Consultants.		ODOT Environmental Baseline Report Guidelines
Bridge Section Design Manuals,		ODOT Draft Environmental Procedures Manual
		Codes of Federal Regulations:
		Title 23 Highways
		Title 33 Navigation and Navigable Waters

Geology/Geotech	Structural Design	Environmental
Oregon Hydraulics Manual ODOT Operational Notices ODOT Policies ODOT Endangered Species Act Section 7: Consultation Programmatic Biological Opinion and Magnuson-Stevens Fishery Management and Conservation Act, Essential Fish Habitat Consultation (Statewide drilling, surveying, and hydraulic engineering activities). Code of Federal Regulations (CFR 49) ODOT Safety Manual, Oregon Safety Code Oregon Department of Water Resources Monitoring Well regulations FHWA interim Guidance-Hazardous Waste Sites Affecting Highway Project Development American Petroleum Institute (API) Recommended Practices 2015 and 1604 Uniform Fire Code 79 FHWQ Technical Advisory T6640.8A EPA *Soil Screening Guidance: Technical Background Document* EPA Region 9 Preliminary Remediation Goals (PRGs) Federal Environmental Regulations related to the following laws: • 29 CFR 1910.120 (HAZWOPER) • 29 CFR 1926 • 40 CFR 280 and 281 • National Environmental Policy Act • Comprehensive Environmental Response, Compensation, and	AASHTO Manual on Subsurface Investigations AASHTO Movable Bridge Inspection, Evaluation and Maintenance Manual, 1998 AASHTO/FHWA Movable Bridge Specification (latest version) AASHTO Standard Specifications for Highway Bridges, 17th Edition 2002 ANSI/AASHTO/AWS D1.1 Welding Code, most recent edition ANSI/EIS "Recommended Practice For Tunnel Lighting" (RP-22-96) Design Data for Construction Survey Staking - Implementation Paper for Bridge Section, dated 2/2/2000 (or most recent instructions) FHWA Bridge Inspector's Reference Manual, 2002 Manual for Railway Engineering of the American Railway Engineering and Maintenance-of-Way Association (AREMA, formerly AREA) as modified by the individual requirements of each railroad company ODFW Fish Passage Guidelines ODOT Bridge Cost Data Manual, 2002 ODOT Bridge Design and Drafting Manual Bridge Data System Users Guide Foundation Design Practices and Procedures ODOT Research Report SPR 361 "Assessment & Mitigation of Liquefaction Hazards to Bridge Embankments in Oregon	Title 36 Parks, Forests, and Public Property Title 40 Protection of Environment Numerous Federal Register Rules & Regulations pertaining to the above titles. Army Corps of Engineers Regulations for Filling in Waters of the U.S. **State Regulations**: Oregon Removal/Fill Statutes, including Estuarine Mitigation Law and Administrative Rules LCDC Goals and Administrative Rules. Surface Mining & Reclamation Regulations. Oregon Administrative Rule 340, Div. 41

Geology/Geotech	Structural Design	Environmental
Liability Act • Resource Conservation and Recovery Act • Clean Air Act **State Regulations:** • DEQ Underground Storage Tank Rules and Regulations ORS 465.200-.900, OAR Chapter 340, Divisions 122, 150, 163, and 177 • DEQ Cleanup Program Rules and Regulations ORS 465.200-.900, OAR Chapter 340, Division 122 • DEQ Guidance Document *Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites* • Asbestos Requirements: OAR Chapter 340 Division 248 • Universal Wastes (HIDs and ballasts): OAR Chapter 340 Division 113	ODOT Bridge Log ODOT Standard Bridge Drawings ODOT Standard Specifications ODOT Bridge Element Coding Guide, 2005 ODOT Bridge Inspection Manual ODOT Bridge Inspection Pocket Coding Guide, 2005 ODOT Bridge Office Practices Manual, 2003 ODOT Bridge Section Load Rating Procedures, Tier 1, 2004 as amended by ODOT Load Rating Technical Memos, ODOT LRFR Load Rating Manual, Tier 2, 2005** ODOT Retaining Structures Manual, March 1998 (or most recent version) ODOT Special Provision Boilerplates ODOT Specification Manual **ODOT "A User's Guide to PS&E Delivery** ODOT Operational Notices ODOT Policies	

Appendix H

Region 4 Project Prospectus Distribution Process

Region 4 Project Prospectus Distribution Process (07/17/09)

Step	Responsible	Process
1	R4 Project Team Leader	Project Team Leader (PTL) prepares Parts 1 & 2 of Project Prospectus in PDWP; PTL enters name & date prepared on prospectus; exports Parts 1 & 2 to file in PDWP & saves as a Word document – this step documents what the Prospectus contains at the time sent to STIP Coordinator for Review. Once the PTL exports the Parts 1 & 2 to Word, he/she emails the Word documents (Parts 1& 2) and Vicinity Map to Region STIP Coordinator for STIP & Financial Review. If current estimates exceed STIP amounts, a project change order must be processed prior to preparing the Project Prospectus. Changes made after this step also require going through the Project Change Request process.
2	Region STIP Coordinator	Reviews Project Prospectus for consistency with STIP & PCS; STIP Coordinator emails PTL with any needed changes or notice of concurrence.
3	Project Team Leader	Revises Project Prospectus if needed, prints paper copy, signs and dates the Part 1 & mails paper copy of Part 1 and unsigned Part 2 to Region Environmental Coordinator (REC).
4	R4 Region Environmental Coordinator #1	Prepares Part 3; sends to 2nd REC for review & concurrence of environmental classification & completed Part 3.
5	R4 Region Environmental Coordinator #2	Reviews Part 3 and provides any comments back to REC #1.
6	R4 Region Environmental Coordinator #1	Finalizes Part 3, prints & signs Part 3, gives complete Project Prospectus package (Parts 1, 2, 3 & Vicinity Map) to Area Manager.
7	R4 Area Manager	Area Manager reviews & approves Project Prospectus package, signs & dates Part 2; returns entire package to REC.
8	R4 Region Environmental Coordinator #1	Copies signed Prospectus Package & distributes original to FHWA Environmental Section for information purposes, and sends copies to Distribution List. If a Programmatic Categorical Exclusion Part 3 is prepared, the Region Geo/Bridge/Environmental Manager signs the Part 3, and copies are sent by the REC to FHWA for information.
9	Resources Specialists	Reviews Part 3 and provides comments in PDWP. Comments are addressed during Project Development.
10	STIP Coordinator	Once STIP Coordinator receives signed Project Prospectus package Parts 1, 2, and 3, she/he prepares Programming Request for EA & sends to HFO.
11	HFO	Approve federal funding & assigns EA(s). Notifies Region STIP Coordinator.
12	Region STIP Coordinator	Sends new EA to PTL, REC & office staff.
13	PTL	Proceed with Project Development.
14	R4 Region Environmental Coordinator	Completes Interim FHWA Required Documentation to Complete the Environmental Process for Class 2 Projects, signs and dates, has Region Geo/Bridge/Environmental Manager sign and date, and submits to FHWA Environmental Manager.

Appendix I

Region 4 Design Acceptance Milestone Process

Region 4 Design Acceptance Milestone Process (rev 07/23/09)

Step	Responsible	Process
1	PL/PM/LAL (i.e., assigned to lead/manage the project)	PL/PM/LAL should communicate early on in project development (e.g., chartering) with the Area Manager and Tech Center Manager to review the remaining steps of this process and plan/determine how it will apply to the specific project, including any changes/exceptions/streamlining/etc.; and to determine who will be responsible for drafting the Certification Memo, and to plan the process for review and signature(s).
2	Project Leader (PL) or Consult Proj Mgr (CPM)	PL/PM/LAL working through a Project Development Team (PDT) confirms the scope of the project and determines the area of potential effect (APE). The PL/PM/LAL manages or facilitates with the PDT the development of the project and the establishment of the geometric boundaries of the project footprint. The PL/PM/LAL develops with the PDT a list of deliverables necessary for the Design Acceptance milestone. This list can include but is not limited to: Environmental documentation, Material Source/Disposal site recommendations, Geotech Report, Bridge TS&L, Traffic Analysis, Pavement Design, Hydraulics Report, Roadside Development Preliminary Concept, Value Engineering Studies, Access Management Documentation, Construction Staging/Traffic Mitigation Plan, Roadside Development Concept, Design Acceptance Plans and Design Narrative, Design Exceptions, Draft Estimate, Draft Construction Schedule. PL/PM/LAL facilitates assignment of other deliverables such as Communication Plans, Freight Mobility Checklist, Intergovernmental Agreements, and Land Use adoptions.
3	PL/PM/LAL	PL/PM/LAL facilitates management of the scope, schedule and budget through the project team process. The PL/PM/LAL documents changes using the Project Change Request form as needed anytime after the project is programmed.
4	Technical Providers	Technical Providers develop deliverables outlined in step 1, following their Quality Control Plan.
5	PL/PM/LAL	Once the geometric boundary of the project footprint is established and technical deliverables are completed, the PL/PM/LAL gains concurrence on the project design, scope, schedule, and budget from external and internal stakeholders such as: Local Agencies, Operations & Maintenance, Construction, Planning, Engineering Geology, Geotech Engineering, Hazmat, Hydraulics, Traffic, Bike/Ped, Right-of-Way, Survey, Environmental, Bridge, Pavements, Roadway, Utilities, and Access Management.
6	Technical Provider (Roadway/Bridge/other)	The Roadway Designer/Consultant assembles the Design Narrative including all pertinent sections such as Right of Way, Bridge, Traffic, Utilities, Drainage, Traffic Control/Staging, Environmental, Geology, etc. and all applicable appendices. Technical Provider(s) completes Design Exception Requests, Plans, Schedules, and Estimates following their Quality Control Plan, to support project design and environmental decisions.

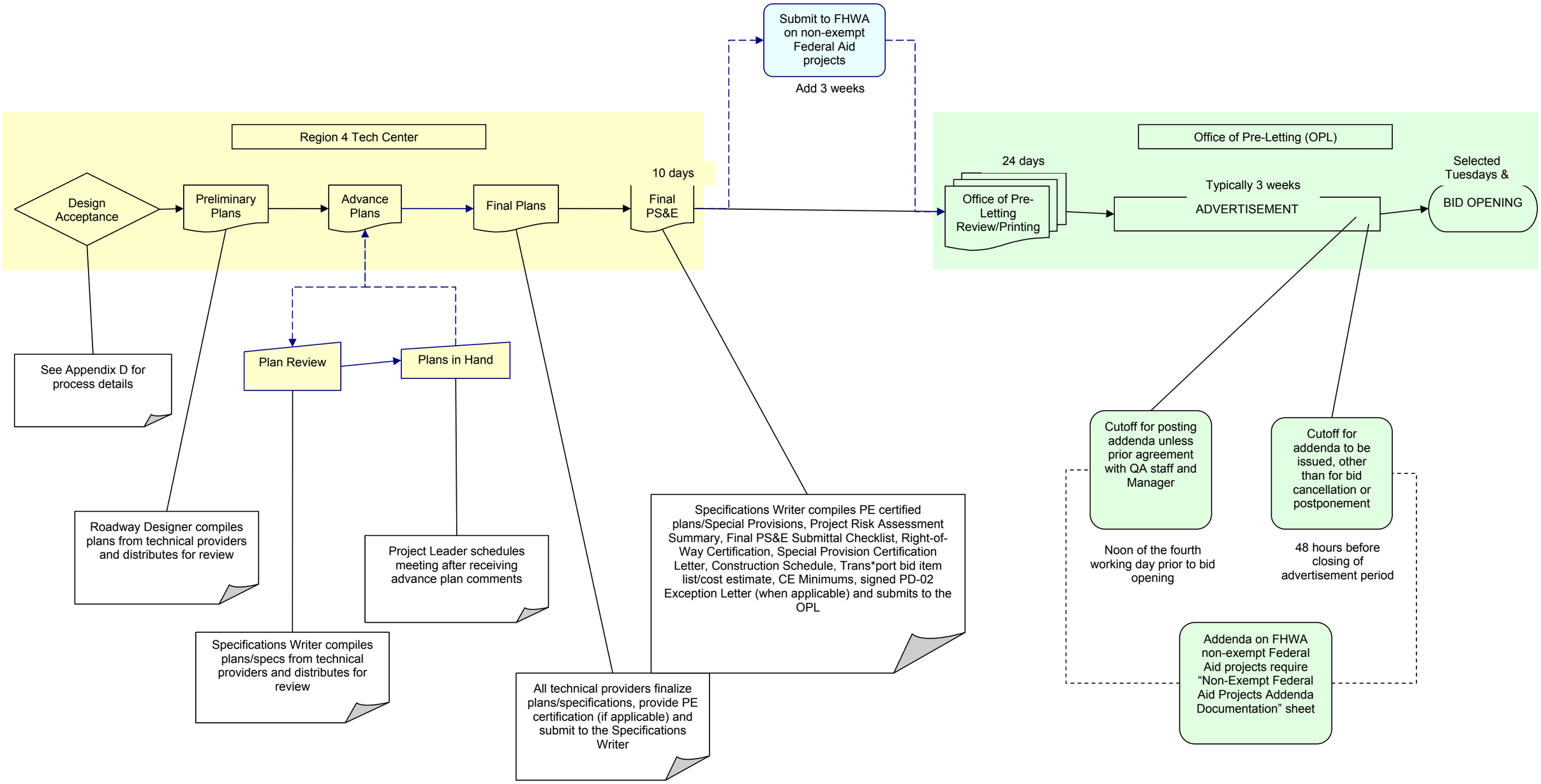
Region 4 Design Acceptance Milestone Process (rev 07/23/09)

Step	Responsible	Process
7	Technical Provider (Environmental)	Technical Provider completes Environmental Documentation, following their Quality Control Plan, so that the project is ready for development of all permit applications.
8	PL/PM/LAL	PL/PM/LAL checks on completeness of all deliverables that reflect the Design Acceptance milestone and assembles the Design Acceptance Package (DAP) including: Design Acceptance Checklist, Access Management and Environmental documentation, Design Narrative, Design Exception Requests, Plans, Estimate, and Schedule; with cover memo detailing review period.
9	Project Stakeholders	Provide review, comments and/or suggestions on the DAP to the PL/PM/LAL.
10	PL/PM/LAL	PL/PM/LAL distributes changes/comments from DAP review to the Technical Provider(s) to address and incorporate. The PL/PM/LAL then schedules a Design Acceptance Workshop (DAW) so the Project Stakeholders can review the revised Design Acceptance Package (DAP). If necessary, a follow-up DAW will be scheduled by the PL/PM/LAL. Once the appropriate Technical Provider(s) and PDT members concur that the DAP meets their needs they will provide concurrence by initializing on the Design Acceptance checklist for their respective areas of expertise or discipline.
11	PL/PM/LAL	Technical Provider(s) will incorporate changes/comments, if any, from the DAW and the PL/PM/LAL assembles the Final DAP which includes the Design Acceptance checklist with Technical Provider and PDT member concurrence. The PL/PM/LAL distributes the final DAP to each of the Region Tech Center Unit Managers for their concurrence.
12	Region Tech Center Unit Managers & Other Managers Defined on Checklist	Reviews and comments on the Final DAP. When satisfied, provides concurrence by signing off on the Design Acceptance checklist for their respective disciplines.
13	Tech Center Manager	Reviews and comments on the Final DAP and Design Acceptance checklist. When satisfied, provides approval by signing off on the Design Acceptance Certification memo.
14	Area Manager	Reviews and comments on the Final DAP and Design Acceptance checklist. When satisfied, provides approval by signing off on the Design Acceptance Certification memo
15	PL/PM/LAL	PL/PM/LAL distributes the final Design Acceptance package to all PDT members and other interested stakeholders, and continues project development with R/W, permits, and contract documents.

Appendix J

Region 4 PS&E Milestone Process

Region 4 PS&E Milestone Process



Appendix K

Quality Control Check-Org Chart QC Plan 2009

Qualtiy Control Checks

Tech Center Manager

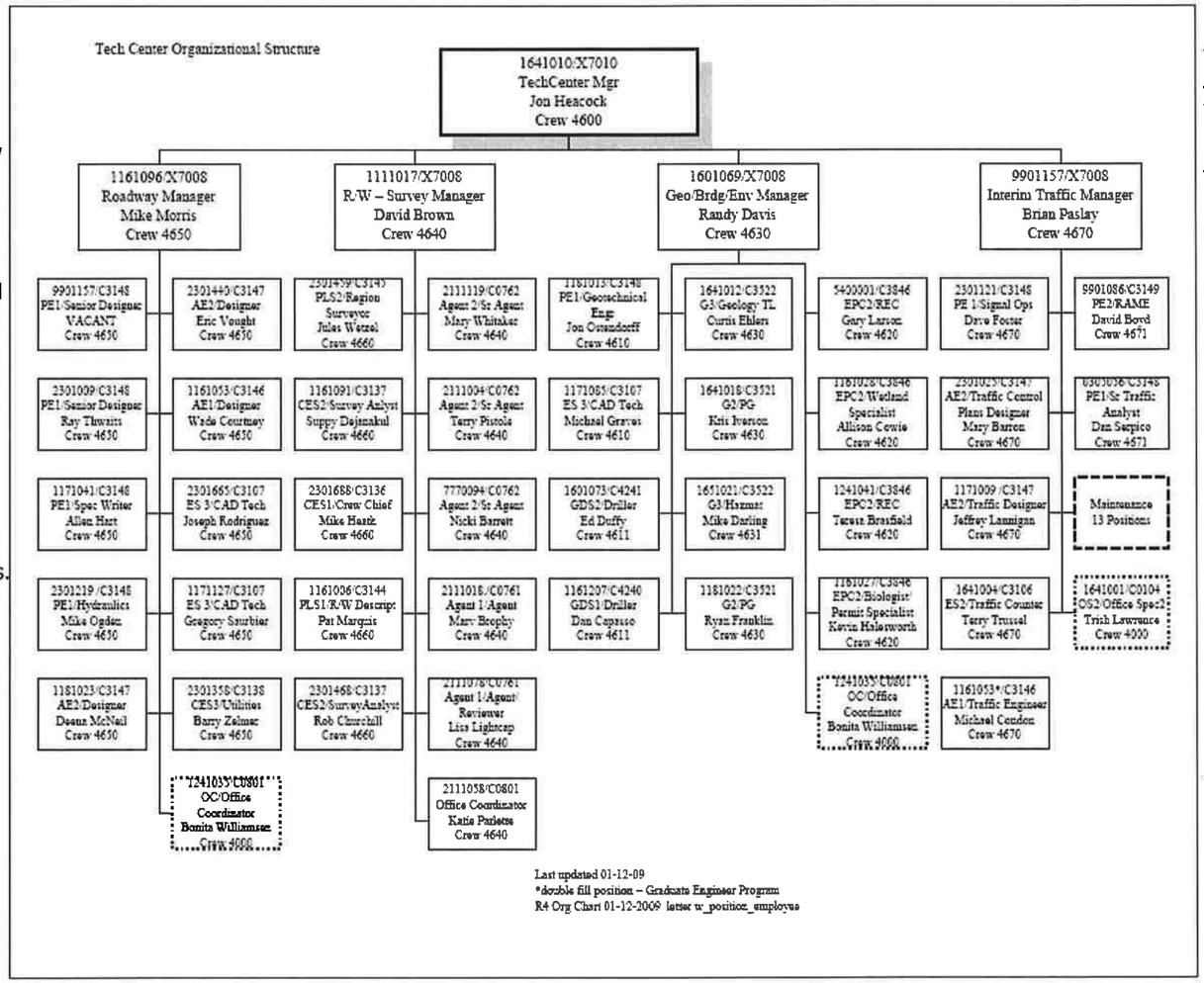
☐ Provides certification to the Office of Pre-letting on how well the Tech Center met the Quality Control Plan.

Discipline Managers

☐ Provide assurance to Tech Center Manager on how well discipline met their Quality Control Plan.
☐ Provide PE certification and/or Management review of discipline products.

Staff and Team

☐ Provide internal peer review.
☐ Arrange external (other Region or Consultant) review when necessary.
☐ Adhere to applicable standards, policies and procedures.



Communication Plan

Tech Center Manager

☐ Bring statewide technical issues to Technical Services Section Managers for resolution.
☐ Bring resourcing and project delay issues to the Region Management (R4Team) for resolution.
☐ Resolve resourcing issues with other Tech Center Managers.
☐ Work with the Office of Project Delivery to resolve project development issues.
☐ Participate on Technical Leadership Team.

Discipline Managers

☐ Resolve technical issues elevated from project teams.
☐ Participate on "Statewide Discipline Teams" to develop, establish and implement discipline, standards, policies and procedures.
☐ Consult with other Region 4 Tech Center unit Managers.
☐ Develop and maintain relationships/agreements with other Region Discipline Mangers.

Staff and Team

☐ Scope, schedule and budget communicated through Project Team.
☐ Participate in decision-making processes on Project Teams and crews.
☐ Participate on Discipline Technical Committees.
☐ Review comments are communicated and resolved.

Appendix L

Statement of Technical Quality for Roadway Design

STATEMENT OF TECHNICAL QUALITY FOR ROADWAY DESIGN

Official Name of Project
Key #
Region 4 Roadway Unit
(Today's Date)

COMPLETION OF INTERNAL TECHNICAL REVIEW

The Unit has completed the Design for the Project listed above. Notice is hereby given that an independent technical review has been conducted that is appropriate to the level of risk and complexity inherent in the project, as defined in the Quality Control Plan. The independent technical review verifies that the products that pertain to this STQ were accurate and in compliance with established policies, standards, principles, and procedures. This included review of assumptions, exceptions, evaluated alternatives and constructability, and whether the products support the project as described in the Project Prospectus and developed by the Project Team.

Name of Person who did the work	***Name of Person who reviewed the work***
Roadway Designer _____ Your Name Date	**Peer Review** _____ Reviewer's Name Date
Roadway Designer _____ Your Name Date	**Quantity Check** _____ Reviewer's Name Date
Hydraulics Designer _____ Your Name Date	**Peer Review - Hydraulics** _____ Reviewer's Name Date
Drafter _____ Your Name Date	**Peer Review - Drafting** _____ Reviewer's Name Date
Specification Writer _____ Your Name Date	**Peer Review - Specifications** _____ Reviewer's Name Date
	Region 4 Roadway Unit Manager _____ Michael L. Morris, PE.PLS Date

Appendix M

Statement of Technical Quality Review for Roadway Design on Outsourced Projects

Appendix N

Statement of Technical Quality for Geo/Bridge/Enviro

STATEMENT OF TECHNICAL QUALITY FOR GEO/BRIDGE/ENVIRONMENTAL

Official Name of Project
Key #
Region 4 Geo/Bridge/Environmental Unit
(Today's Date)

COMPLETION OF INTERNAL TECHNICAL REVIEW

The Unit has completed the Design for the Project listed above. Notice is hereby given that an independent technical review has been conducted that is appropriate to the level of risk and complexity inherent in the project, as defined in the Quality Control Plan. The independent technical review verified that the plans, specifications, and estimates that pertain to this unit, were accurate and in compliance with established policies, standards, principles, and procedures. This included review of assumptions, exceptions, evaluated alternatives, constructability, and whether the product meets the customer's requirements as described in the Project Prospectus.

Signature of Person who did the work	***Name of Person who reviewed the work***
Geotechnical Engineer _____ Your Name Date	_____ Reviewer's Name and Title Date
Project/Engineering Geologist _____ Your Name Date	_____ Reviewer's Name and Title Date
Hazmat Coordinator _____ Your Name Date	_____ Reviewer's Name and Title Date
Region Environmental Project Mgr _____ Your Name Date	_____ Reviewer's Name and Title Date
Region Environmental Coordinator _____ Your Name Date	_____ Reviewer's Name and Title Date
Region Biologist/Permit Specialist _____ Your Name Date	_____ Reviewer's Name and Title Date
Region Wetland Specialist _____ Your Name Date	_____ Reviewer's Name and Title Date
	Region 4 Geo/Bridge/Env. Unit Manager _____ Randall K. Davis, CEG Date

Appendix O

Statement of Technical Quality Review for Geo/Bridge/Enviro on Outsourced Project

STATEMENT OF TECHNICAL QUALITY REVIEW
REGION 4 TECHNICAL CENTER - GEO/BRIDGE/ENVIRONMENTAL SECTION

Project:
Key #:
Date:

COMPLETION OF INTERNAL COMPLETENESS REVIEW OF OUTSOURCED PROJECT

The Unit has completed the internal (fatal flaw level) completeness review for the Project listed above. Notice is hereby given that an independent technical review has been conducted that is appropriate to the level of risk and complexity inherent in the project, as defined in the Local Program Service/Outsourced Program Agreements. This included review of exceptions and constructability.

Signature of Person who reviewed the work	
Geotechnical Engineer	
_____	
Reviewer's Name	Date
Project/Engineering Geologist	
_____	
Reviewer's Name	Date
Hazmat Coordinator	
_____	
Reviewer's Name	Date
Region Environmental Coordinator	
_____	
Reviewer's Name	Date
Region Biologist/Permit Specialist	
_____	
Reviewer's Name	Date
Region Wetland Specialist	
_____	
Reviewer's Name	Date
Region 4 Geo/Bridge/Env. Unit Manager	
_____	
Randall K. Davis, CEG	Date

Appendix P

Statement of Technical Quality for Traffic and TP&DT Design

STATEMENT OF TECHNICAL QUALITY FOR TRAFFIC/TP&DT DESIGN

Official Name of Project
Key #
Region 4 Traffic Unit
(Today's Date)

COMPLETION OF INTERNAL TECHNICAL REVIEW

The Unit has completed the Traffic and TP&DT Design for the Project listed above. Notice is hereby given that an independent technical review has been conducted that is appropriate to the level of risk and complexity inherent in the project, as defined in the Quality Control Plan. The independent technical review verifies that the products that pertain to this STQ were accurate and in compliance with established policies, standards, principles, and procedures. This included review of assumptions, exceptions, evaluated alternatives and constructability, and whether the products support the project as described in the Project Prospectus and developed by the Project Team.

Signature of Person who reviewed the work	
Peer Review – Signal Design Plans & Specifications	
_____	
Reviewer's Name	Date
Peer Review – Sign Design Plans & Specifications	
_____	
Reviewer's Name	Date
Peer Review – TP&DT Plans	
_____	
Reviewer's Name	Date
Peer Review – TP&DT Specifications	
_____	
Reviewer's Name	Date
Region 4 Traffic Unit Manager	
_____	
Brian Paslay, PE	Date

Appendix Q

Statement of Technical Quality Review for Traffic and TPDT on Outsourced Projects

STATEMENT OF TECHNICAL QUALITY REVIEW
REGION 4 TECHNICAL CENTER –TRAFFIC SECTION

Project:
Key #:
Date:

COMPLETION OF INTERNAL COMPLETENESS REVIEW OF OUTSOURCED PROJECT

The Unit has completed internal (fatal flaw level) completeness review for the Project listed above. Notice is hereby given that an independent technical review has been conducted that is appropriate to the level of risk and complexity inherent in the project, as defined in the Local Program Service/Outsourced Program Agreements. This included review of exceptions and constructability.

Signature of Person who reviewed the work	
Peer Review – Signal Design _____ Reviewer's Name	Date
Peer Review – Sign Design _____ Reviewer's Name	Date
Peer Review – TP&DT _____ Reviewer's Name	Date
Peer Review - Specifications _____ Reviewer's Name	Date
Region 4 Traffic Unit Manager _____ Joel McCarroll, PE	Date

Appendix R

Statement of Quality Control Certification for Region 4 Tech Center

QUALITY CONTROL CERTIFICATION FOR REGION 4 TECH CENTER

Official Name of Project

Key # XXXXX

(Today's Date)

COMPLETION OF INTERNAL TECHNICAL REVIEW

Technical services have been completed for the Project listed above. Quality Control (as defined in the Region 4 Tech Center Quality Control Plan) has been conducted which is appropriate to the level of risk and complexity inherent in the project. Technical reviews, as a part of the Quality Control for this project, verify that the products are appropriately accurate and in compliance with established policies, standards, principles, and procedures for ODOT projects. Appropriate assumptions, exceptions, evaluated alternatives, constructability analysis, final technical decisions, and resulting products support the approved project scope.

Region 4 Tech Center Manager

_____

Jon Heacock, PE Date