ODOT
PROJECT DELIVERY GUIDE

PHASE 2: PROJECT DEVELOPMENT

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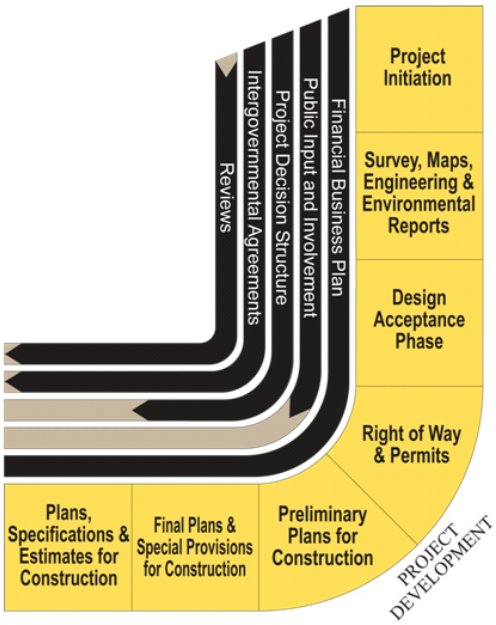
PHASE TWO: PROJECT DEVELOPMENT

Project development begins with the assignment of a project in the approved STIP. The project development phase ends when the project is ready to be let for bidding.



This stage can take as little as one to two years for simple projects (e.g. pavement overlay) or last as much as eight or more years for more complex projects (e.g. a modernization project requiring an Environmental Impact Statement).

Project Development starts after a specific project has been identified and assigned to a project leader, project manager, or regional local agency liaison. It includes the milestones shown in the figure below and described in the following pages.

NOTE: Complete information on all the activities, and information on scheduling a project, can be found in the Resource Management System Users Guide, at: http://www.oregon.gov/ODOT/HWY/PDU/resources_management_system.shtml

PROJECT INITIATION

This component is the beginning of Project Development in which the region assigns the project to either a project leader (PL) for in-source projects or to a project manager (PM) for out-sourced projects. The project team is assembled, assignments are made, consultant contracts are in progress or in place, and the project development work plan is established.

Project Initiation Tasks	
1	Request for/approval of Preliminary Engineering Expenditure Account
2	Project team is formed
3	Review and confirm project scope (includes scoping trip)
4	Roadway conceptual design
5	Negotiate and execute consultant contract(s)
6	Intergovernmental agreements (IGAs)
7	Public involvement plan
8	Create SharePoint
9	Project team Work Plan
10	Preliminary survey and base mapping
11	Hazardous materials corridor study
12	Environmental baseline report (EBR) - all disciplines
13	Initial work zone traffic issues identification
14	Pavement design
15	Traffic counts and preliminary traffic analysis
16	Project initiation phase complete
17	Project team kick-off meeting
18	Project team work plan
19	Project team resource roster
20	Refined Public Involvement plan

Click here to jump to Project Initiation milestone tasks.

For additional general information on project initiation of a project see:
http://www.oregon.gov/ODOT/HWY/PDU/resources_management_system.shtml
For more information about project lifecyle Emerging Small Business (ESB) and Disadvantaged Business Enterprise (DBE) considerations, visit Oregon.gov/ODOT/CS/Civil Rights.

DESIGN ACCEPTANCE MILESTONE

The Design Acceptance milestone is a critical decision point that establishes the geometric boundaries of the project footprint and allows for the construction contract document activities to move forward. Design acceptance also considers environmental and land use requirements and 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 comment on design elements from their perspective. Design Acceptance Phase activities and deliverables include:

Design Acceptance Milestone Tasks	
1	Update Public Involvement Plan
2	Mobility Strategy and Draft Traffic Management Plan
3	Roadway Design
4	Access Management
5	Environmental Studies
6	Traffic Design
7	Structure Design
8	Geo/Hydro Design and Studies
9	Survey
10	Utility Impact Report
11	Draft Railroad Maps / Railroad Orders
12	Value Engineering Study
13	Construction Cost Estimate
14	Construction Schedule
15	Construction Staging Areas
16	Small Contracting Opportunities
17	Design Acceptance Approval

Note: The activities and products in this table are for Phase 2 projects (Class 2 Environmental Category)

Click here to jump to Design Acceptance milestone tasks.

For information about project lifecycle Title VI and Environmental Justice considerations, visit the Title VI Plan at Oregon.gov/ODOT/CS/Civil Rights.

DEVELOPING ADVANCED PLANS

The next steps in the Project Development Phase include acquiring right of way, coordinating permits and clearances, reviewing preliminary plans and developing them into advanced plans.

Right of Way Acquisition

When obtaining right of way permits, the project team ensures that:
Potential right of way needs are identified
Right of way issues are resolved through the following:
Property and easement acquisition
Occupant relocation
Owner compensation
Required local and statewide permits are applied for and obtained

Right of Way activities and products include:

Right of Way Acquisition Tasks	
1	Right of Way Map and Descriptions
2	Proposed Right of Way Staking
3	Right of Way Acquisition
4	Railroad Maps
5	Railroad Right of Way Purchase and Agreements
6	Right of Way Certification

NOTE: Property and permit acquisition can sometimes continue up to bid opening. General information can be found at: *http://www.oregon.gov/ODOT/HWY/ROW/*

For more information about project lifecyle Disadvantaged Business Enterprise (DBE) considerations, visit Oregon.gov/ODOT/CS/Civil Rights.

Permits and Clearances

Below is a list of possible permits and clearances that may need to be obtained:

Permits and Clearances Tasks	
1	Intergovernmental Agreements (IGAs)
2	Oregon Transportation Commission Decision/Approval Action
3	Threatened and Endangered Species Act (ESA) Clearance
4	State ESA Plant and Wildlife Species Assessment
5	Stormwater Management Plan
6	404/Division of State Lands Wetlands Accord – Fill/Removal Permit http://www.oregon.gov/ODOT/HWY/GEOENVIRONMENTAL/docs/permit.pdf
7	Section 4(f) Documentation
8	Archaeology Clearance/Recovery
9	Archaeology Finding of Fact (FOE)
10	Historic (Section 106) Finding of Effect (FOE)
11	Historic (Section 106) 4(f) Documentation
12	Section 6(f) conversion request
13	Coast Guard Permit
14	DOGAMI (Material Source) Permit
15	Local Permits
16	Land Use Actions
17	Transportation System Plan (TSP) Amendments
18	Railroad Orders
19	Approach Permits for Driveways and Road Connections http://www.oregon.gov/ODOT/HWY/ACCESSMGT/
20	ODOT Rail Division Orders http://www.oregon.gov/ODOT/RAIL/

Reviewing Preliminary Plans for Construction

The main purpose of this step is an additional technical and construction review between Design Acceptance and Advanced Plans. This is not a required milestone from PD-02; it is optional.

For this component, the project team coordinates the drafting of preliminary plans that help to build the bid documents for the project. Preliminary Plans for the Approved Design are approximately 70% complete at this point in the project development.

Preliminary plans and calculations reflect:

- Bridge and roadway design
- Drainage
- Erosion
- Traffic control elements

Preliminary Plans for Construction activities and products includes:

Preliminary Plans for Construction Tasks	
1	Update Public Involvement Plan
2	Noise Mitigation Final Design
3	Access Modification and Closure Letters
4	Utility Test-Hole Excavation
5	Preliminary Plans
6	Revise Construction Cost Estimate
7	Revise Construction Schedule
8	Combine Preliminary Special Provisions
9	Preliminary Plan Review and Completion

Advance Plans and Special Provisions

This is a key interim step of the contract document phase, and requires all project disciplines to review draft contract documents for completeness and accuracy. It is the primary opportunity for technical staff to provide quality control review of the project plans, specifications, and estimate as a package.

Advance Plans, which include the revisions resulting from the Preliminary Plan review, are in accordance with the approved project schedule. They are accompanied by the project's special provisions. The project team completes the PS&E checklist as a status point to evaluate how the project is progressing towards PS&E.

Advance Plans and Special Provisions for Construction activities and products include:

Advance Plans and Special Provisions for Construction Tasks	
1	Update Public Involvement Plan
2	Review and Approve Utility Relocation Plans
3	Advanced Plans
4	Insurance Risk Assessment
5	Revise Construction Cost Estimate
6	Revise Construction Schedule
7	Compile Advance Special Provisions
8	Draft PS&E Submittal Checklist
9	Advance Plan Review and Completion

Documents Required for Plans, Specifications and Estimates (PS&E) Submittal
Draft Construction Schedule
Plans-In-Hand Meeting
Draft PS&E Submittal Checklist
Insurance Risk Assessment

Click here to jump to Advanced Plans milestone and tasks.

For more information about project lifecyle Emerging Small Business (ESB) and Disadvantaged Business Enterprise (DBE) considerations, visit Oregon.gov/ODOT/CS/Civil Rights.

FINAL PLANS

This step occurs in follow-up to the Plans-In-Hand meeting review and comment on the advances plans and specifications. It is the last opportunity for contract documents to be reviewed by technical staff for quality control and document completeness, before the project is ready to move forward for FHWA review (when needed) and PS&E submittal. In some smaller projects, teams may not issue the Final Plans for additional review. This step is recommended, when the schedule allows, to review the package in its entirety with the corrections from the Advanced Plans phase.

Activities and Products-Final Plan activities and products include:

Final Plan Tasks	
1	Update Public Involvement Plan
2	Access Management
3	Final Plans; Special Provisions and Cost Estimate
4	Final Construction Cost Estimate
5	Final Construction Schedule

6	Compile Final Special Provisions
7	Revise PS&E Submittal Checklist
8	Final Plan Review and Completion
9	Final Documents Required for PS&E Submittal
10	Updated Construction Schedule
11	Revised PS&E Submittal Checklist

Click here to jump to Final Plans milestone and tasks.
For more information about project lifecyle Emerging Small Business (ESB) and Disadvantaged Business Enterprise (DBE) considerations, visit Oregon.gov/ODOT/CS/Civil Rights.

PS&E SUBMITTAL

This point of decision-making provides certainty of the completeness of a project for bid advertisement through Commission Services. Decision-making with any desired interim milestone between Design Acceptance and PS&E Submittal (e.g., Preliminary, Advanced, Final Plans) is addressed through individual quality Control Plans and Project Development Change Requests as needed.

PS&E Submittal activities and products include:

PS&E Submittal Tasks	
1	Managing the Exception Letter
2	PS&E Submittal Deliverables

PS&E Documents
Construction Schedule
Project Completeness Memo/Checklist (signed by accountable manager/authority)
Quality Control Certification from technical resource provider(s)

Click here to jump to PS&E Submittal milestone and tasks.
For more information about project lifecyle Emerging Small Business (ESB) and Disadvantaged Business Enterprise (DBE) considerations, visit Oregon.gov/ODOT/CS/Civil Rights.

PROJECT DEVELOPMENT CLOSEOUT

The major focus of the project development closeout is administrative closure and logistics.

Project Development Closeout Tasks	
1	Project Transition
2	Project Archives

3	Lessons Learned

Click here to jump to Project Closeout milestone and tasks.

For information about project lifecycle Title VI and Environmental Justice considerations, visit the Title VI Plan at Oregon.gov/ODOT/CS/Civil Rights.

LIFECYCLE MILESTONE 2: PROJECT INITIATION

TASK 1 – EXPENDITURE ACCOUNT (EA)

A PE EA is needed prior to the start of any PE work on a project. If not done already, the PL should request the PE EA. Once a project is adopted in the STIP, HPO and the region STIP Coordinator assign the EA. The PL needs to contact HPO or their region STIP Coordinator to get the EA number. No PE work can begin until an account is prepared.

Once this step is complete the project is officially ready to start and the PL should begin establishing the project team. (This equates to Activity ID 008) *

* Note: Activity IDs are the unique task identifiers used for our project schedules in MS Project Server. For more information and details go to: Activity Descriptions.

TASK 2 – PROJECT TEAM

A major task in project initiation is establishing the project team and conducting the first team meeting (often known as the project team kick off meeting). The purpose of the initial project team meeting is to review the proposed scope, schedule, and budget of the project; introduce team members to one another; review the project prospectus; and request project work plans from each resource unit. Any and all pertinent disciplines should be represented—including maintenance staff—to discover and resolve issues early in the process, which will save both time and money.

In some instances, especially on a large, complex project where the project team will be working together for a long time, it would be helpful to have a teambuilding session to discuss how the project team will operate (e.g. the decision-making process, authorities, team agreements, etc.) before starting work on the project development process.

On all projects, forming sub-teams (with project team members as sub-team leaders) to work on important project development tasks, can help to provide team members with more opportunity for meaningful involvement in the project, and ensure that tasks move forward in between project team meetings. This can

also reduce the day-to-day leadership workload of the PL, and provide a forum for detailed task-specific technical discussions outside of project team meetings.

Each region will determine who will participate on the project team based on available resources. The PL should work with their AM and Technical Services Manager to determine who will be assigned to their team. (This equates to Activity ID 018)

TASK 3 – REVIEW AND CONFIRM PROJECT SCOPE

This task is one of the first activities on all projects, and includes assembling the project team for a scoping trip to the project site. The project team will need to review the existing project prospectus and other existing background materials that may exist to validate the purpose of the project, the proposed solution, and the preliminary engineering work that will be required to develop the project. (This equates to Activity ID 009)

For information about project lifecycle Title VI and Environmental Justice considerations, visit the Title VI Plan at Oregon.gov/ODOT/CS/Civil Rights.

TASK 4 – ROADWAY CONCEPTUAL DESIGN

This task is intended to help confirm the general proposed scope of the project design, as well as develop a map to show the Area of Potential Effect, for subsequent field survey, base mapping, and environmental baseline/reconnaissance report activities. The roadway designer will use available base maps, which may include as-constructed plans, aerial photos, topographic quad maps or other existing mapping, to prepare a very conceptual layout of the proposed project, with the goal of generating a map showing the general anticipated limits of the proposed construction, to guide the surveyors and environmental specialists in field survey and environmental research work. This task will also help to confirm and validate the overall scope of the project as stated in the project prospectus, as part of the work-planning process. (This equates to Activity ID 011)

TASK 5 – CONTRACTS

Some projects will require contracting with the consultant community in order to design the project. If it is determined that outside help is needed the project teams appropriate Technical Center Representative for the needed discipline will be responsible for the negotiation and execution of any consultant contracts associated with their discipline and the project. The PL, AM, and Technical Center Manager will coordinate these tasks. (This equates to Activity ID 010)

TASK 6 – INTERGOVERNMENTAL AGREEMENT (IGA)

The PL, in consultation with the project team and region management, identifies issues that may require a formal written agreement with city, county, metropolitan, state, federal, and other public agencies. Such issues may include, but are not limited to, cost sharing for project engineering or construction, maintenance responsibilities, local road and street closures, and impacts to publicly-owned utilities. The PL is the person assigned to coordinate and monitor all phases of a project, but does not have the authority to negotiate the terms of an agreement. The PL must provide a complete package of information to the designated agreement specialist, include the necessary agreement(s) in the project schedule, track agreement status, and ensure the agreement is signed and executed before advertising the project or beginning any work outlined in the agreement.

If an IGA is needed you should contact the Agreement Coordinators within the regional office or the ODOT Procurement Office (OPO) Agreements Team for assistance. (This equates to Activity ID 210)

TASK 7 – PUBLIC INVOLVEMENT PLAN

During Phase 1 (Program Development), a draft Public Involvement Plan should have been developed. During Phase 2, the PL and project team continue to work on the PI plan, following the steps below to update and implement it as more information is revealed and new issues arise:

Planning:

- Confirm that the PI plan objectives are viable and aligned with the project
- Continued identification and validation of any potential problems, issues and concerns about the project
- Identify and assign available resources to implement the plan

- Develop a budget
- Conduct/update stakeholder analysis
- Select/update engagement techniques
- Develop a high-level timeline
- Identify evaluation techniques to measure the success of the overall process and each engagement
- Determine when feedback and follow-up will occur for each engagement

Preparation and Organization

- Determine where the events will be held
- Determine what publicity will be needed
- Determine what information will be distributed to stakeholders
- Determine who will be responsible for planning and organizing each engagement
- Develop a detailed schedule

Implementation

- Implement and monitor the plan
- Develop a Project Information Paper
- Confirm arrangements for each engagement
- Identify strategies for dealing with difficulties
- Implement each engagement
- Compile feedback from each engagement
- Provide follow-up information for each engagement
- Implement evaluation technique
- Modify plan as needed

(This equates to Activity ID 002)

ODOT's *Project Delivery Public Involvement Resource Guide* and Operational Notice #12 provide additional guidance.

For information about project lifecycle Title VI and Environmental Justice and Emerging Small Business (ESB) considerations, visit Oregon.gov/ODOT/CS/Civil Rights.

TASK 8 – CREATING A PROJECT SHAREPOINT SITE

Once a schedule is created in the RMS a project SharePoint is automatically created. A project SharePoint provides a project repository where the project team can communicate, share documents, and work together on the project. Using SharePoint as a project repository allows the PL to create a central point of reference for all project materials to be used by anyone involved in the project. Once the project comes to an official close, the repository provides an audit trail documenting the history and evolution of the project.

The project team can add information to the SharePoint site, such as events, names and phone numbers of people with whom the project team communicates, and to-do items. When a project SharePoint site is first created, it comes with the following built-in features:

- **Lists**: The project team can fill the following built-in lists with information and customize the lists if desired.
  - Announcements: The announcements list is a place to post information for the project team
  - Contacts: The contacts list stores information such as name, telephone number, e-mail address, and street address
  - Events: The events list is a place to post important dates (i.e. meetings, bid let date, etc.)
  - Links: The links list displays hyperlinks to Web pages of interest to project team members
  - Tasks: The tasks list provides a to-do list for project team members
- **Libraries**: Document, picture, and form libraries are collections of files that are shared with project team members. A library appears on a page that lists each file and its properties, as well as a hyperlink to the file. The PL can set up a template for a document library so that all files created in the library share common features.
- **Discussion Boards**: Provide a forum for conversing about topics that interest your team. Project team members can post comments and reply to others' comments, reducing the need for widely distributed e-mail threads.
- **Surveys**: Provide a way of polling project team members (No Activity ID for this task)

TASK 9 – PROJECT TEAM WORK PLAN

The project team work plan is used to guide execution and control of the project. It forms the basis for all management efforts associated with the project. The work plan can also be used to communicate with project stakeholders and gain support and understanding of the project. Time spent developing the appropriate structure for organizing and managing project activities improves performance in the executing and controlling of the project. The work plan is a compilation of the project prospectus, the schedule, the budget, and the control plans. The PL will use these documents as tools for managing the scope, schedule, and budget.

During the Draft STIP milestone the project scoping team will complete the core planning processes which will result in the following documents that will become a part of the work plan:

- Project prospectus
- Project resource recommendations

- Project schedule
- Project budget

At Project Initiation the PL and the project team should develop project control plans that outline the procedures that will be used to control the execution of the project. Because of the complexity of highway construction projects control plans should be developed for how risk, change, quality, and issues will be managed and how information about the project will be communicated. The PL and the project team should consider developing and implementing the following documents to become a part of the work plan:

- Risk management
- Communications
- Change management
- Quality control
- Issue management

These documents control the project management processes (i.e. initiating, planning, executing, controlling, and closing) not the product-oriented processes (e.g. NEPA, ROW acquisition, PS&E submittal, stakeholder participation, etc.). ODOT has project management processes for change management and quality management. The PL should ensure that those processes are integrated into the projects change and quality management plans. ODOT also has product-oriented processes for insurance risk management and stakeholder participation and communications.

This section focuses on the project management processes that the PL will use in order to control the execution of the Project Development stage. (This equates to Activity ID 030)

Subtask 9.1 – Risk Management

The approach outlined in the following process provides a consistent method for identifying, measuring, and controlling risks during the course of the project. The benefits of effective risk management include maximizing the probability and consequences of positive events and minimizing the probability and consequences of adverse events to project objectives. It is more effective to avoid a potential risk than to fix a realized one. A project with good risk management is more predictable and controllable.

A risk management plan is fundamental to the successful delivery of the project. A risk management plan ensures that each risk identified within the project environment is documented, prioritized and mitigated wherever possible.

The PL should implement the following six key processes:

- A process for conducting an initial risk assessment

- A process for the identification of project risks
- A process for the logging and prioritization of project risks
- A process for the determination of risk mitigating actions
- A process for the monitoring and control of assigned risk mitigating actions
- A process for the closure of project risks

The PL should develop a draft project team risk management plan before the project team kickoff meeting. The project team should finalize the risk management plan based on what the PL developed. The PL and the project team will be responsible for updating the plan in each subsequent lifecycle component and continue to monitor and control risks throughout the life of the project development stage.

See the Risk Management Template for best practices on conducting a risk assessment and developing a risk management plan. (No Activity ID for this task)

Subtask 9.2 – Change Management

Change will be encountered during the life of a project. The project scope, schedule, budget, and resources will all be areas of potential change.

The acknowledgement that change may be encountered, along with a commitment to on-time, on-budget delivery of the agreed upon project scope emphasizes the importance of active project and change management for attaining project success. Managing change will require planning, discipline, and effective communication among the entire project team (including specialty groups, consultants, and contractors), management, and stakeholders. As a change management plan is executed, the following should occur: improved relationship with customers, improved financial performance, reduced project delays, better project teamwork, improved management of project quality, and ultimately on-time delivery.

Change control requires the following:

All project work plan items are baselined when the project work plan is approved. Once the project work plan items are baselined, changes to the baseline are managed through a formal change process.

Changes are coordinated among all knowledge areas of the project. For example, a proposed schedule change may also impact the cost, risk, quality, and staffing of the project.

ODOT has formal processes for managing changes. The PL and the project team should integrate the statewide and regions processes into their Change Management Plan.

The PL should develop a draft change management plan before the project team kickoff meeting. The plan should describe the project's process for managing requested project changes and should include the following elements:

- Initiating a change request
- Logging and tracking change requests
- Assigning change requests for analysis and recommendation
- Implementing change request resolution actions (acceptance, delayed acceptance or rejection of change request)
- How accepted changes will be integrated into the project
- Roles and responsibilities in the change management process

The project team should finalize the change management plan. Once the change management plan is finalized the process should be communicated to all project team members and stakeholders. The PL and the project team will be responsible for updating the plan in each subsequent lifecycle component and continue to monitor and control changes throughout the life of the project development stage.

See the Project Change Management Template for best practices on how to develop a project change management plan. (No Activity ID for this task)

For information about project lifecycle Title VI and Environmental Justice considerations, visit the Title VI Plan at Oregon.gov/ODOT/CS/Civil Rights.

Subtask 9.3 – Quality Control

Quality doesn't happen by accident. It must be planned so there is agreement about how quality is measured, when quality checks occur and how corrective actions are determined and implemented. The Quality Control (QC) plan is a tool that can help the project deliver the highest possible quality result within committed resources, schedule, and budget.

ODOT has formal processes for managing quality. Every region has a QC plan that ensures that the project's deliverables are of acceptable quality. The PL must ensure that the region QC plan for project deliverables is implemented for each project. To implement a QC plan, a PL:

- Selects and assigns qualified professionals to perform the project tasks
- Assigns qualified specialists to oversee all elements of the work and carry out a consistent, deliberate program of QC
- Instills a sense of ownership and personal concern felt by every person on the design team towards quality and continually improving the quality process
- Makes certain that all personnel involved in performing the work have a clear understanding of the scope and intent of the overall project, and the appropriate design criteria and environmental concerns, in order to ensure that the work product meets or exceeds ODOT expectations

- Makes certain that all personnel involved in performing the work are aware of the project schedule, and understand the importance of meeting intermediate deadlines as well as final completion dates
- Makes certain that designers and reviewers have a clear understanding of the work requirements and of their responsibilities
- Arranges for peer reviews to be conducted by qualified personnel outside of the design team
- Documents the QC process properly, to the degree appropriate to each project

See each region's Quality Control Plans. (No Activity ID for this task)

Subtask 9.4 – Issue Management

Issues tracking can be an integral part of project management. Issues are best used to capture work items that are not easily identified in assignments or tasks within projects. The purpose of issue management is to provide a method to identify and resolve the issues that impact the scope, schedule, budget, or quality of the project. Issue management identifies realistic project constraints and allows project team members to maintain a realistic workload.

Project team members can use the Issues page in Project Web Access and PLs can use Project Web Access or the Issues option in the Collaborate menu in Project Professional to submit issues about project details. PLs, resource managers, and team leads can then determine whether the issues will have an effect on the project and identify strategies to manage the issues before they become larger problems.

The issues tracking feature enables you to do the following:

- Customize the forms that are used to track issues for a project
- Link issues to multiple tasks in a project, and link issues to documents, risks, and other issues
- View issue histories
- Search issues
- Receive alerts about issues status
- View graphical reports on issues
- Edit issues
- Associate graphical indicators for issues with tasks, projects, and resource assignments (No Activity ID for this task)

For information about project lifecycle Title VI and Environmental Justice considerations, visit the Title VI Plan at Oregon.gov/ODOT/CS/Civil Rights.

TASK 10 – PRELIMINARY SURVEY AND BASE MAPPING

Location surveys are performed to provide the designer with information about the project site. The products generated by the location survey depend upon the type and scope of the project. These products may include: Geodetic Control Monuments, Horizontal Control Network, Vertical Control Network, Planimetric Map, Digital Terrain Model, Property Monument Recovery Map, Existing Right of Way Centerline and Boundary Resolution Map, and a variety of other specific purpose maps, such as Utility, Airport Permit, Railroad Encroachment, etc.

Base Maps are the beginning of almost all ODOT design work. A Base Map is an electronic, three dimensional, topographic map of the project area as it is before construction. Base Maps can be developed by ODOT or Consultant Survey Crews. Survey Crews are dispatched to the project site to locate all features in a Northing, Easting and Elevation coordinate format.

Generally, the information included on, and the limits of each Base Map are a result of the project scope as defined by the originating project manager. Survey Crews are then sent into the field to obtain the necessary information to the accuracies required. These accuracies vary from project to project and can range from hundredths of a foot in critical areas, to feet in the rugged mountains of Oregon. It is necessary to be familiar with the accuracies of each project. Each Base Map should include enough information to design the project to the limits as set forth in the project prospectus.

Subtask 10.1 – Survey Work Request

The PL must submit a Survey Work Request in order to have the preliminary survey and base mapping work started. The PL should consult with the Region Surveyor and the project team during preparation of the project work plan to determine the required survey and mapping needs for the project. A written work request is prepared, which should include a map with an outline of the area for which field surveying and mapping is needed.

The work request must include details on each element of the work required, including but not necessarily limited to the following:

- Geodetic Survey Control
- Monument Survey and Survey Filing Map
- ROW Alignment Resolution
- Base Mapping
- Digital Terrain Model
- Hydraulic Survey
- Mapping of Environmental Features (This equates to Activity ID 040)

Subtask 10.2 – Survey Field Packet

The surveyor will need to assemble a packet of information for the survey crew to use during the field survey. Typically, for most projects, this includes research at the County Surveyor's office to get copies of filed county surveys, tax lot maps, and other survey data. The packet may contain copies of as-constructed plans that show the locations of features that the designer will need tied, such as culverts and storm sewer pipes. A monument recovery notebook is prepared that lists the recorded monuments that are anticipated to be within the project area, including Public Land Survey System survey control points and benchmarks that may be used for horizontal and vertical survey control. A drawing showing the limits of the survey work that is to be done, as well as a written description of the survey work that is required, is included. (This equates to Activity ID 041)

Subtask 10.3 – Geodetic Survey Control

At this subtask the surveyor is setting survey control points, photogrammetry premarks, and establishing coordinates for use in controlling photogrammetric mapping and field surveying. The surveyor prepares and files a control survey map with the local County Surveyor's Office, as required by law. Geodetic survey control points are required on ever project where additional ROW may be required, as well as for projects that will use photogrammetry for mapping. If survey control points with reliable known coordinates are already available in the project area, then this subtask may not be needed. (This equates to Activity ID 055)

Subtask 10.4 – Photogrammetry Mapping

Aerial photographs can be ordered through Geometronics and obtained for the preparation of controlled CADD base maps, orthophotos, and digital terrain models. It is important to determine the intended use of aerial photography up front – low altitude photos work best for use in preparing accurate CADD digital terrain models. Forested areas may not be practical. It is common to have a project flown at a low altitude (1000' for fixed-wing) and a higher flight covering more area for a mosaic and extended mapping that may be needed for drainage or environmental study. Helicopter photos taken 300 feet above the ground can provide accuracy comparable to a ground survey, with a corresponding higher cost. Early and accurate planning would be documented in a Geometronics Project Agreement.

Geometronics has a wide range of data and equipment available, including a laser scanner, LIDAR data, maps and orthophotos for the entire state. Photogrammetrists can now see 3D views of Microstation files, with vector data superimposed on imagery.

It is best to contact the Geometrics Unit very early to request photogrammetric products, immediately after STIP approval, if possible. (This equates to Activity ID 065)

Subtask 10.5 – Base Map and Terrain Model

This subtask consists of all activities required to complete detailed base maps and digital terrain models that are required for a project. The deliverables for this subtask include CAD base map file and a digital terrain model file for the existing ground surface, as well as a Confidence Point Report on the digital terrain model. (This equates to Activity ID 254)

Subtask 10.6 – Field Survey for Design Acceptance Phase

This subtask consists of all field survey tasks required to complete detailed base maps, digital terrain models, roadside inventories, and monument recovery surveys that may be required for the project. Typically, for most projects, this includes establishing horizontal and vertical survey control, monument search and ties, topographic survey, utility locates and ties and possibly subsurface utility exploration and hydraulic surveys, as required.

This subtask can take anywhere from 20 to 40 weeks to complete depending on the environmental classification. (This equates to Activity ID 070 for Class 1 & 3 Env projects, Activity ID 255 for Class 2 Env projects)

Subtask 10.7 – LRW Recovery Survey, Retracement Map, ROW Base Map

This subtask is needed for all projects that will involve acquisition of additional ROW and/or on projects where there is a chance that existing survey monuments could be destroyed or disturbed. This subtask consists of preparation of an existing ROW centerline resolution, a monument recovery survey filing map, and preparation of a ROW base map. (This equates to Activity ID 258)

TASK 11 – HAZARDOUS MATERIALS CORRIDOR STUDY

The HazMat Corridor Study involves a review of the proposed project to determine if there is potential for hazardous material sites to be present within the area of potential impacts of the project, that should either be avoided if possible during preliminary project design or that may require a more detailed study later in the project if impacts cannot be avoided. The HazMat Corridor Study is provided to the REC or Environmental Project Manager, who will incorporate it into the EBR or Environmental Reconnaissance Report, which is then provided to the PL. This is

done very early in the project development process, during the time that the field survey and base map are being prepared. The hazardous materials specialist will obtain a copy of the project prospectus and discuss the proposed scope of the project with the PL. The hazardous materials specialist will make a site visit to the project to become familiar with the site and with the locations of potentially contaminated properties and their proximity to any proposed highway widening or realignment that could result in impacts to known or potentially contaminated sites. The hazardous materials specialist will obtain a copy of the project base map and note the locations of known or potentially contaminated sites on the base map and prepare a brief report on the potential for hazardous materials within the area of potential impact and a recommendation on any further hazardous material investigations that should be conducted.

The research for the HazMat Corridor Study should be initiated as soon as the designer can provide an outline of the maximum project limits on a map. In most cases a full Corridor Study report is required, but certain circumstances can limit this work, as set out in the table below.

Project Elements	**Yes (Or Unknown)**	**No**
Could there be any land acquisition?	Go to 3	Go to 2
Could there be excavation below road base?	Go to 3	See **A**
Is the area completely undeveloped? (i.e. no buildings, parking or storage areas, agriculture (other than grazing), etc.	See **B**	See **C**
Report Required		
A – No HazMat Corridor Study Required **B** – Corridor Study limited to aerial photo and OSFM spill database review – use Corridor Study Memo **C** – Full HazMat Corridor Study required – use full Corridor Study Report		

In all cases, Region HazMat must also determine whether there are other waste management issues associated with the project (e.g. asbestos, lead-based paint, PCBs, etc.) and ensure that the appropriate special provisions are included in the final plans.

The full HazMat Corridor Study report includes:

- A description of the corridor (proposed project components, physical setting, and adjacent land use involving hazardous materials)
- A review of historic records going back 50 years, if possible
- An environmental records review
- A conclusion regarding potential sources of contamination and recommendations

In agricultural areas where no other contamination is expected, surface soil samples may be collected and analyzed for herbicides and/or pesticides.

The limited HazMat Corridor Study Memo includes:

- A description of the corridor (proposed project components and current land use)
- A review of historic aerial photos to ensure that the area has remained undeveloped and the road has always been paved
- A review of the Oregon State Fire Marshal spill database

Note: if a major spill has occurred or the road was historically unpaved and could have been oiled for dust suppression, the limited HazMat Corridor Study Memo should recommend sampling. (This equates to Activity ID 154)

TASK 12 – ENVIRONMENTAL BASELINE REPORT

If it was determined that an Environmental Baseline Report (EBR) is needed it will need to be developed at this point. The EBR will generally be written prior to the first project kick-off meeting, or early enough in the project development process to fully realize the potential for avoidance.

The purpose of the EBR is to provide existing environmental resource information for selected CE projects prior to the beginning of project design, and to identify those environmental resources which may be affected by a project. The EBR will be provided to designers and project teams to assist them in developing project alternatives that avoid or minimize impacts to environmental resources.

If it is determined that an EBR is need the REC uses a completed Prospectus Part 3 and checklist to aid in preparing the EBR. Occasionally an EBR can be developed prior to the development of the Prospectus Part 3.

The following outlines ODOT's procedures for preparing an EBR:

- The REC will coordinate with the project team to identify the study area of potential project impact. The Area of Potential Impact (API) should be broad enough to encompass all potential design alternatives including right of way, access roads, staging areas, easements, agency supplied material sources, and temporary structures. RECs will be responsible for coordinating the final EBR document. Note: An Environmental Consultant may prepare the EBR under contract, but the REC will serve as the project team representative.
- The PL will provide a project description including engineering-related purpose and an aerial map, or other scale-appropriate mapping of the

project area with the area of project impact delineated on it to the REC. The REC will provide this information to the EC, if the EBR preparation is contracted out.

- The REC will conduct a search of the project file to determine if any baseline work has been conducted in the study area in the past, and will provide any background information to the appropriate technical staff member (i.e., wetlands, noise, air, etc.)
- The REC will coordinate with the appropriate regional technical center staff and consultant staff to determine what environmental issues need to be included in the EBR.
- The REC will provide the region technical center and/or consultant staffs with a project description, purpose and need, all appropriate existing engineering data and project aerial mapping.
- The ODOT or consultant technical staffs then prepare the appropriate technical memos, summaries, or reports. If the technical information is prepared by consulting forces, the information will be reviewed by an appropriate ODOT staff person.
- The regional ODOT technical center staff will provide draft reports or technical memos to their REC for peer review. If consultants are responsible for preparing technical reports, the appropriate ODOT technical staff member will review their draft reports.
- The ODOT or consultant technical staff will incorporate any necessary changes and provide the REC or EC with final technical reports and/or memos.
- The REC or EC will prepare a draft EBR, which summarizes the information in the technical reports. The REC will distribute the final document to the project team, including the PL, Project Designer(s), and technical staff (if requested).

The project team and project designer will use the information and recommendations included in the EBR to develop design alternatives which avoid or minimize effects to environmental resources to meet the project's purpose and need. (This equates to Activity ID 100)

For information about project lifecycle Title VI and Environmental Justice considerations, visit the Title VI Plan at Oregon.gov/ODOT/CS/Civil Rights.

TASK 13 – WORK ZONE TRAFFIC ISSUES

The initial work zone traffic issues identification task is to identify potential restrictions on lane closures and detouring of traffic that could affect the design of the project. This is done prior to the formal Work Zone Analysis and Restriction

Report, and is based on the best traffic data that is available at the Project Initiation Phase. (This equates to Activity ID 329)

TASK 14 – PAVEMENT DESIGN

The Pavement Design Report provides recommended pavement and base types and depths for the proposed project design. The report should include analyses based on an evaluation of all the properties of the pavement and base materials involved, calculation of anticipated truck traffic loadings, related cost analysis, development of material type and depth recommendations using current pavement design procedures. This task also includes any field investigation that may be required to prepare the final pavement design. A pavement design is needed for projects that involve construction of new roadways and for rehabilitation of existing pavements as well. The completed Pavement Design Report is provided to the PL and to the Roadway Designer.

The pavement design for each project will be determined by the Pavement Design Group. Because the depth of surfacing is a major factor in the project design and cost, the pavement design is needed early in the project development process. If the Pavement Design Group is to complete their design work on time, keeping them informed of any changes in the project scope and schedule is very important.

The primary function of the Pavement Design Group is to provide the most practical and cost effective pavement/base/subgrade design for the conditions and criteria for a specific project. Development of the design is accomplished through a combination of field investigation, data analysis, and application of appropriate design procedures. Pavement design procedures and ODOT Policies are outlined in the ODOT Pavement Design Guide. The surfacing type selection will be the responsibility of the Pavement Design Group and will not be left to the competitive bidding process.

Once the project scope is established, the pavement designer can begin the field investigation. Because of the limited availability of the Pavement Design Field Crew and other factors, scheduling fieldwork several months prior to the date when a complete design is necessary is important. Any changes in the project scope could require additional field work and should be brought to the attention of the pavement designer as soon as possible.

Field work for most projects will involve deflection testing of the existing road surface. This work cannot be performed when the existing pavement or subgrade is frozen. For this reason field work for projects in frost susceptible areas needs to be completed during the summer prior to the time a design is required. This may

in some instances (particularly for Regions 4 and 5 and projects at the higher elevations in the Cascades) require the scope and project schedule to be finalized eight to nine months in advance of the time a pavement design is required. Typically, if a pavement design for a project in the above areas is needed prior to July of a given year a work request needs to be provided by August of the previous year. (This equates to Activity ID 245)

TASK 15 – TRAFFIC COUNTS AND PRELIMINARY TRAFFIC ANALYSIS

When traffic volume counts are required, the time of year for taking counts is often critical to obtain relevant seasonal traffic data, and may therefore require a lot of lead time before actually taking the counts.

This task may include the following activities:

- Taking automated "hose" traffic volume counts and/or manual turning movement and vehicle classification counts
- Preparation of future traffic volume estimates or projections
- Review and analysis of 3 or 5 year crash history, Safety Priority Index System site files and other crash information, and make recommendations on improvements to eliminate or reduce future crashes
- Perform traffic analysis to determine if a roadway or intersection meets the Manual on Uniform Traffic Control Devices (MUTCD) and/or ODOT minimum warrants for potential installation of left or right turn lanes, signals and/or illumination systems
- Prepare all information necessary to apply for and obtain approval from the State Traffic Engineer for installation of a new traffic signal or other traffic control device(s)

Project Initiation Deliverables

At the completion of this milestone the PL needs to ensure that the following deliverables are completed at a minimum:

- Project team kick-off meeting
- Project team work plan
- Project team resource roster
- Refined stakeholder participation and communication plan

(This equates to Activity ID 045)

LIFECYCLE MILESTONE 3: DESIGN ACCEPTANCE

The Design Acceptance milestone is a critical point of decision-making that establishes the geometric boundaries of the project footprint, and allows for the concurrent 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.

Design acceptance 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 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.

Significant scope, schedule, and budget changes may occur between project initiation and design acceptance. This is the time, through stakeholder input, to ensure we are developing the right project, for the right price, at the right time. Any significant changes after design acceptance must go through the formal change management process, so it's best to gather input and make needed adjustments before design acceptance. This milestone happens typically prior to the schedule "lock in" date.

Significant changes can be defined as changes to the footprint that will affect right-of-way, or permit timelines that would move the bid let date, require additional funds, or delay the project schedule.

During the design acceptance phase, the project team:

- Studies outstanding issues related to project location and design
- Develops conceptual designs for design elements
- Identifies impacts of the design elements
- Selects and obtains approval of a design for advancement

TASK 1 – UPDATE PUBLIC INVOLVEMENT PLAN

At the start of each major phase of work on a project, the PL in collaboration with the PIO, should review and as necessary update or review the plan. This task may occur at several points during a project, depending on the size and complexity of the project, the amount of stakeholder interest and/or controversy involved in the

project, and the amount of change in the scope and/or design of the project during the previous phase of work.

The PL should also ensure that all tasks associated with stakeholder participation and communications are implemented during the Project Development stage. (This equates to Activity ID 005)

For information about project lifecycle Title VI and Environmental Justice and Emerging Small Business (ESB) considerations, visit Oregon.gov/ODOT/CS/Civil Rights.

TASK 2 – MOBILITY STRATEGY AND TRAFFIC MANAGEMENT PLAN

In September 2004, FHWA published updates to the work zone regulations at 23 CFR 630 Subpart J. The updated Rule is referred to as the Work Zone Safety and Mobility Rule and applies to all state and local governments that receive Federal-aid highway funding. Transportation agencies are required to comply with the provisions of the Rule by October 12, 2007. The changes made to the regulations broaden the former Rule to better address the work zone issues of today and the future.

Growing congestion on many roads, and an increasing need to perform rehabilitation and reconstruction work on existing roads already carrying traffic, are some of the issues that have lead to additional, more complex challenges to maintaining work zone safety and mobility. To help address these issues, the Rule provides a decision-making framework that facilitates comprehensive consideration of the broader safety and mobility impacts of work zones across project development stages, and the adoption of additional strategies that help manage these impacts during project implementation.

At the heart of the Rule is a requirement for agencies to develop an agency-level work zone safety and mobility policy. The policy is intended to support systematic consideration and management of work zone impacts across all stages of project development. Based on the policy, agencies will develop standard processes and procedures to support implementation of the policy. These processes and procedures shall include the use of work zone safety and operational data, work zone training, and work zone process reviews.

Agencies are also encouraged to develop procedures for work zone impacts assessment. The third primary element of the Rule calls for the development of project-level procedures to address the work zone impacts of individual projects. These project-level procedures include identifying projects that an agency expects will cause a relatively high level of disruption (referred to in the Rule as significant

projects) and developing and implementing Transportation Management Plans (TMPs) for all projects.

A TMP lays out a set of coordinated transportation management strategies and describes how they will be used to manage the work zone impacts of a road project. Transportation management strategies for a work zone include temporary traffic control measures and devices; public information and outreach; and operational strategies such as travel demand management, signal retiming, and traffic incident management. The scope, content, and level of detail of a TMP may vary based on the anticipated work zone impacts of the project.

A TMP is a plan comprised of three main components – the Traffic Control Plan (TCP), a compilation of traffic operation strategies and a public information campaign or action plan. At a minimum, the TMP will always include a TCP. The criteria below will help the project team determine which components will be necessary for the project TMP:
A TMP consisting of all three components listed above will be required on any project receiving Federal Aid and deemed a "significant" project by meeting any of the following criteria:

- On an Interstate freeway within a designated Transportation Management Area (TMA)
- Project budget greater than $5 million
- A TMP consisting of only the TCP will be required for all other projects.

However, it is recommended for projects not meeting the criteria listed above yet having a complex scope, long duration, involving a detour or other such impacts to traffic, that the project team consider incorporating some level of traffic operation and public information strategies into the TMP.

For information regarding the development of a TMP go to the guidance document for TMP Development on either of the following websites:
http://www.oregon.gov/ODOT/HWY/TRAFFIC-ROADWAY/traffic_control.shtml
www.obdp.org

For more information about TMPs and the Rule go to FHWA's website at http://www.ops.fhwa.dot.gov/wz/resources/publications/trans_mgmt_plans/index.htm (This equates to Activity ID 331)

For information about project lifecycle Title VI and Environmental Justice considerations, visit the Title VI Plan at Oregon.gov/ODOT/CS/Civil Rights.

TASK 3 –ROADWAY DESIGN

During the roadway design, the designer will develop the following deliverables:

- Interchange Layouts
- Roadway Design
- Design Narrative

During the design process, the designer will continuously be working with the different project team members in obtaining and distributing project design information. This process will vary depending on the type of project and the project schedule established by the project team. After the project design alternatives have been developed through the environmental and public involvement process, a recommended project alternative is selected. As with the project design alternative process the designer continues to work with the different project team members in the refinement of the selected project alternative design. The final product from a designer's perspective is a complete set of contract plans and specifications.

Subtask 3.1 – Interchange Layouts

The Preliminary Design Unit is available to provide assistance in exploring alternative geometric design concepts for interchanges. This subtask may involve providing advice to designers in other units and review of designs prepared by others, and can also include complete design and drafting services to produce interchange layouts and display maps for use in public meetings or hearings. Typically, the Transportation Planning and Analysis Unit (TPAU) will perform traffic analysis for each alternative design and the Preliminary Design Unit may make additional geometric design refinements on the basis of the results of the traffic analysis and input on decisions made by the project team, in an interactive and iterative engineering design process. The process starts with brainstorming preliminary alternative concepts, evaluate those alternative concepts and carry the best ones through to the completion of final project design. This subtask may also include the preparation and approval of a final interchange layout sheet, when rebuilding or otherwise modifying an existing interchange. (This equates to Activity ID 095)

Subtask 3.2 –Roadway Design

This subtask, which starts after completion of the field survey for design acceptance and base mapping activities, and continues through most of this milestone, consists of the preliminary design of horizontal and vertical roadway alignments, typical sections, super-elevation, cut and fill slopes, preliminary roadway drainage, preliminary stage construction design, preliminary erosion control measures quantity calculations and preliminary bid item summaries, preliminary cost estimates, completion of the roadside inventory, design exception and design concurrence requests, design narratives, design maps, profiles, cross sections and other deliverables necessary to prepare the preliminary roadway design "footprint" of the project, so that other technical disciplines can perform

other elements of the design that are needed to obtain design acceptance. (This equates to Activity ID 275)

Subtask 3.3 –Traffic Control Design

The Traffic Control Design subtask is development of the preliminary design of the traffic control plan (TCP) for a project. This is done in close collaboration with development of the preliminary stage construction plans for the project. The deliverable is a set of preliminary or concept-level plans for inclusion in the design acceptance package for the project, a brief narrative describing the proposed TCP, and a quantity summary/cost estimates for major bid items that are anticipated to be required to implement the proposed TCP. (This equates to Activity ID 337)

Subtask 3.4 –Design Narrative

The Design Narrative, sometimes referenced as the location design narrative provides a summarized description of what the planned work entails and the current state of the infrastructure—both of which add important information about why the project is being undertaken. This is an important consideration: Why is this project being built? The answers help design personnel, including consultants, become more aware of added expectations that may need to be incorporated into the project design. It is also a way to manage to the intended scope and keep the project team focused on the desired solution. Some of the information may include:

- Alternatives analysis; this provides a summary of what other options were considered prior to developing a recommended course of action, along with justification as to why those alternatives were not feasible.
- Project Design, Team and Management Members; who has been involved in the project from all levels.
- Project Schedule
- Access Management Summary

(No Activity ID for this task)

TASK 4 –ACCESS MANAGEMENT

Completion of the required access management deliverables are intended to ensure that the critical decisions are made in a timely manner and incorporated into subsequent project design, ROW acquisition, communication plans, budget, and schedule.

Each region must determine who is responsible for the required deliverables. PD-03 identifies the manager who is accountable for the deliverables, but does not specify who will complete each one. For more information, visit Resources for Access Management Planning.

Access Management Deliverables:

- Access Management Strategy (AMStrat): is required for any project or section of a project that involves mitigation, modification, or removal of legal approaches. The AMStrat may be a standalone document or an element of an Access Management Plan (AMP) or Interchange Area Management Plan (IAMP).
- Official Project Access List (OPAL): documents approval of all accesses to be provided within the project limits upon completion of the project. Documented approval of this list by the RAME and the Technical Center Manager is required.
- Access Deficiency List: this list is a subset of the OPAL. It lists all accesses that will remain open upon completion of the project but are considered priorities for future mitigation, modification or removal. The accesses are added to the list because the issue of concern cannot be addressed within the scope and budget of the project. The legal status of the approach is irrelevant for purposes of listing; approaches may be listed no matter what their legal status (permitted, un-permitted, grandfathered, illegal, etc.) This list is prioritized by the region and submitted to the Statewide Access Management Program Office. The statewide office will develop criteria for the region to use in prioritizing this list. The purpose of the Access Deficiency List is to develop a statewide inventory that helps to assess funding needs and priorities for improvements. It is recommended that the list also be sent to the district office where these accesses can be flagged for action if future change of use or other actions allow.
- Access Management Element of Design Acceptance Memorandum: narrative that describes the principal design features to address access management that will be incorporated into the project, i.e. medians, driveway consolidation, revising local street connections, access control, turning movement restrictions, etc. This is often included in the overall project Design Narrative.
- Access Modification and Closure Letters Delivered to Property Owners: Letters notifying property owners of changes that will be made to their access as part of the project and their appeal rights under OAR 734-051.

Copies of all closure letters are to be reviewed by the Statewide Access Management Program Office prior to mailing to the landowner. Some decisions regarding access may not be known at this milestone. The Project Communication Plan should establish expectations and provide guidance for communicating with property owners who may be affected by decisions at a future point in the project.

- IGA Provisions to Address Local Government Access Issues (if applicable): These provisions address work that the local government needs to authorize to occur as part of the project because it affects facilities or land under local jurisdiction. For example, closing or changing the alignment of local streets, or moving an access from the state highway to a local road. It is important to identify the need for such actions as early as possible and to work with local governments to develop IGA provisions. Depending on the nature of the local actions and the local code, amendments to the local Transportation System Plan (TSP) or Comprehensive Plan may be required. These amendments can involve lengthy public hearing processes which could impact the project schedule and budget. A TSP amendment is a land use decision and must occur before the final environmental document is issued for a Class 1 or Class 3 project or before construction of a Class 2 project.
- Updated Schedule and Budget: The schedule and budget should be updated to complete the access management work. Updates should be incorporated into the overall schedule for completing project work.
- OTC Decision Package (if applicable): In some cases, an AMP, AMPI, or IAMP may constitute a Facility Plan that requires approval by the OTC. In such cases, the project needs to be scheduled on the OTC agenda and the necessary information and reports assembled for timely submittal. (This equates to Activity ID 102 & 104)

For a complete list of required AM documents, please refer to Operational Notice #03, or contact ODOT Access Management.

TASK 5 –ENVIRONMENTAL STUDIES

The full spectrum of environmental impacts is evaluated for Class 1 and 3 projects and documented in a DEIS/FEIS (Class 1) or EA/REA (Class 3). Projects that become Class 2 projects (Categorical Exclusions) are evaluated to determine that there are minimal impacts, if any, and documented in the Part 3 of the Prospectus. Class 2 projects may also be documented in staff reports or documents focused on one environmental subject area. The level of detail required is driven by the nature of the impacts, not necessarily the class of the project.

Environmental studies may include the following depending on the project classification:

- Roadside Development Concept
- Historic (Section 106) Determination of Eligibility (DOE)
- Regulatory Review/Approval of Historic (Section 106) Determination of Eligibility (DOE)
- Wetland Functional Impact Assessment
- Wetland Mitigation Concept Strategy
- Noise Report and Preliminary Mitigation Design
- Archeological Ground Surveys
- Water Quality Report/Water Resources Impact Assessment
- Air Quality Report
- Slopes IV Programmatic Permitting

For full detail and guidance, visit the ODOT Environmental Section's guidance Website

For information about project lifecycle Title VI and Environmental Justice considerations, visit the Title VI Plan at Oregon.gov/ODOT/CS/Civil Rights.

Subtask 5.1 – Roadside Development Concept

This subtask consists of developing concepts and cost estimates for projects where roadside development is appropriate or required. This may include developing visual objectives for the protection or enhancement of views of natural or cultural features, for screening unsightly objects and for modifying views of the highway from adjacent property. The PL must coordinate the involvement of local stakeholders to solicit their input and feedback on roadside development alternatives. Maintenance personnel need to be consulted to discuss and reach agreement on available staff and budget for roadside development maintenance and for input on specific issues (such as plant species, irrigation systems etc.). "Hardscaping" and other visual enhancement features may also be explored during this subtask. (This equates to Activity ID 125)

For information about project lifecycle Title VI and Environmental Justice considerations, visit the Title VI Plan at Oregon.gov/ODOT/CS/Civil Rights.

Subtask 5.2 – Historic Determination of Eligibility

Historic resources are properties that are listed in or eligible for the National Register of Historic Places. This can include historic districts, buildings structures, objects and sites, and is not limited to resources that have already been identified in surveys, the National Register, or Statewide Goal 5 resources. A cultural resources professional should evaluate all historic resources that are 50 years old or older to determine if further investigation is needed. Determinations of Eligibility (DOE) for the National Register must be prepared for the historic resources that are potentially affected by projects. The DOE is a brief report with

a physical description, historic significance, boundaries, map, and photographs that is submitted by ODOT to the State Historic Preservation Office (SHPO) for concurrence. This subtask includes the evaluation of the historic resources, preparation of the DOEs for each historic resource, and submittal of the DOEs to SHPO for review and approval. (This equates to Activity ID 160)

Subtask 5.3 – Wetland Functional Impact Assessment

A Wetland Functional Impact Assessment is required for projects that would permanently affect wetlands. A functional assessment must be completed in accordance with the Oregon Division of State Lands (DSL) requirements and submitted with the Section 404/Removal-Fill Application. An assessment must be completed for the affected wetlands, and wetland mitigation and reference sites. (This equates to Activity ID 369)

Subtask 5.4 – Wetland Mitigation Concept Strategy

The Wetland Mitigation Concept Strategy is intended for inclusion in permit submittals for 404 and DSL permits, and is used by Landscape Architecture Group to develop the Wetland Mitigation Plans and by ROW for property acquisition, if necessary. This report includes: description of functions and values of project area wetlands, quantification of area of impacts from the preferred/selected alternative, evaluation of impacts on wetland functions and values, evaluation of cumulative impacts on wetlands documentation of avoidance and minimization of impacts and presentation of conceptual mitigation plan. This report is based on: wetland delineation report, functional assessment based on Hydrogeomorphic or WET2 methods, coordination with regulatory agencies.

On a Class 1 or 3 project, the Wetland Mitigation Concept Strategy is prepared prior to completion of the DEIS or EA. It follows completion of the Wetland Functional Impact Assessment, and precedes preparation of the Wetland Report. On a Class 2 project, the Wetland Mitigation Concept Strategy is prepared during the DAP (following completion of the Wetland Functional Impact Assessment). (This equates to Activity ID 370)

Subtask 5.5 – Noise Report and Preliminary Mitigation Design

A Noise Report is usually needed when:

- There will be added traffic lanes on the proposed project; and/or
- There will be a significant alignment shift in the proposed roadway.

Although most Noise Reports are prepared for Class 1 or 3 projects, some Class 2 projects may also require one. The Noise Report must contain sufficient information to satisfy the requirements of NEPA and the FHWA Noise Standard. The report includes measuring existing traffic noise levels and calculating

predicted future traffic noise levels that may result fro construction of the proposed project and predicted future traffic noise levels that may occur without the project. Recommendations will be included on noise abatement measures, such as noise walls and berms. The purpose of the Noise Report is to ensure that the project will not create new noise violations, worsen existing violations or create a nuisance to surrounding property owners.

The report is delivered to the Environmental Project Manager for inclusion in the Draft Environmental Document (for Class 1 or 3 projects) and to the PL. (This equates to Activity ID 170)

For information about project lifecycle Title VI and Environmental Justice considerations, visit the Title VI Plan at Oregon.gov/ODOT/CS/Civil Rights.

Subtask 5.6 – Archeological Ground Surveys

There are three levels of effort involved in identifying archaeological sites on any transportation project and assessing impacts to archaeological sites:

Phase I:
Projects that have a potential to affect archaeological resources initiate Phase I, which can consist of one or more of the following:

- a search of archaeological site records and historic documents
- a field survey
- exploratory subsurface probing if appropriate.

If no impacts will occur, or no sites are present in the area, a short report documenting findings is submitted to the State Historic Preservation Office (SHPO) and the process ends.

Phase II:
If sites are identified through Phase I evaluation and will be impacted by the project, sub-surface testing is conducted to determine boundaries, content, integrity and significance under National Historic Preservation Act (NHPA) criteria.

If sites are determined 'not significant', no further investigations are needed.

If a site is determined to be significant, a Determination of Eligibility (DOE) is submitted to the National Register of Historic Places and is reviewed by the appropriate Indian Tribe, the State Historic Preservation Office (SHPO), and the Federal Advisory Council on Historic Preservation (ACHP). In addition, a Finding of Effect is submitted, which evaluates the project's impact on the affected resource. If a project is determined to have an effect upon the resource, then mitigation strategies must be identified.

Phase III:

If an archaeological site is determined significant, and avoidance is not a feasible option, data recovery (excavation) is conducted to record and preserve the information from the site. When data recovery is necessary, a data recovery plan is submitted to outline:

- current archaeological research relating to the site proposed for recovery
- how the site in question will contribute to current research
- the level of recovery that is appropriate to address the questions identified.

Oversight of this process rests most heavily on the ODOT, which must determine if the proposed research design is appropriate, and if the level of research effort is sufficient to comply with federal law and Memoranda of Agreement (MOA) with the Tribes. In addition, the SHPO and ACHP also provide final review.

Phase 3 is costly and a very slow process. It may take between 6-9 months to negotiate terms of the MOA with the SHPO and tribes. Data Recovery excavations and analysis may take up to 3 years or more to complete. (This equates to Activity ID 126)

Subtask 5.7 –Water Resources Report

The Water Resources Report identifies existing water quality and water quantity conditions in the project area, the potential impacts of the project on water quality or water flow conditions within or affected by the project area, both during and after construction, and mitigation measures to minimize impacts to water quality and quantity. The purpose of this work is to determine the amount of mitigation necessary to avoid violation of water quality regulations or to mitigate increases in water flow that might affect floodplain levels, remain in ESA compliance, and to otherwise avoid harming designated beneficial uses of the receiving water.

The completed report is delivered to the Environmental Project Manager for inclusion in the Draft NEPA Environmental Document and is forwarded to the water resources/stormwater designer(s) to assist in guiding water quality and quantity design work. (This equates to Activity ID 185)

Subtask 5.8 – Air Quality Reports

Air Quality (AQ) Reports are prepared to meet three distinct sets of regulatory requirements and processes:

1. NEPA Requirements (Statewide)

AQ Reports for Class 1 projects must contain sufficient information to satisfy NEPA and Transportation Conformity Rule requirements. Information documented in the AQ Report is incorporated into the project Draft EIS.

AQ Reports for Class 3 projects and Class 2 projects may be as rigorous as a Class 1 project or may not be required at all. Projects located in air quality "non-attainment" or "maintenance" areas that add capacity or significantly alter operational characteristics (signalization, channelization, etc.) must meet Transportation Conformity Rule requirements. For Class 3 projects, FHWA will not issue a Finding of No Significant Impact (FONSI) without a determination of conformity in the REA. As with Class 1 projects, the AQ Report is typically prepared for inclusion in the EA.

Class 2 or 3 projects in areas designated, as in "attainment'" of air quality standards typically do not require analysis of air pollutant emission levels or concentrations unless there is specific concern for potential impacts. Therefore, AQ Reports are not frequently prepared for projects in attainment areas. If documentation is desired, for inclusion in the EA or the project file, a memo outlining the scope of the project and a discussion of the projects potential impact on air quality is prepared.

Class 2 projects are somewhat different in that there may not be state or federal approvals prior to PS&E. In this case, the AQ Report should be prepared sufficiently in advance that a conformity determination can be made prior to PS&E, but far enough along in the process that no changes in project scope or design are anticipated. Distribution of the report should go to Project File, PL, Region, DEQ, FHWA (if projects requires federal money or approval) and interested parties.

2. Transportation Conformity Rule Requirements

Conformity requirements are applicable to transportation actions in designated air quality "non-attainment" or "maintenance" areas. Regional Transportation Plans (RTP); Metropolitan Transportation Improvement Programs (MTIP) and projects must meet criteria established in the State Transportation Conformity Rule in four metropolitan areas; METRO/Portland, Salem/Keizer, Eugene/Springfield and Medford. In addition, STIP projects must meet conformity criteria in the following rural areas: Grants Pass, Klamath Falls, La Grande, Lakeview, and Medford/Ashland (outside Medford UGB).

The STIP conformity rule uses the term "rural" to define non-metropolitan areas that are designated "non-attainment" or "maintenance." In Oregon, there are five "rural" areas where STIP conformity determinations are required. Technical analyses to facilitate STIP conformity determinations are prepared by ODOT or regional governments. Areas and agency responsible for STIP conformity are as follows: Grants Pass - RVCOG; Klamath Falls - ODOT; La Grande - ODOT; Lakeview - ODOT; and Oakridge - ODOT. STIP conformity determinations are submitted to the ODOT STIP coordinator, region and local governments.

A project level conformity determination must be made for all transportation projects in air quality non-attainment and maintenance areas, if, the project involves the addition of capacity or any other feature which could be considered regionally significant or involves the modification or addition of features that affect facility operational characteristics, such as intersection channelization or signalization. In areas designated as non-attainment or maintenance areas for the pollutant carbon monoxide (CO), the local effects of these projects on CO concentrations must be considered to determine if a "hot-spot' analysis is warranted prior to making a project level conformity determination. Areas where CO hot-spot analysis must be considered are as follows: METRO/Portland; Salem/Keizer; Eugene/Springfield; Medford; Grants Pass; and Klamath Falls.

In all cases, the project-level conformity determination is the responsibility of the project sponsor. To meet project-level conformity requirements, a project must be identified in a conforming RTP, conforming MTIP or STIP and must not create any new or exacerbate any existing CO hot spots.

3. Indirect Source Construction Permit (Lane County)

An Indirect Source Construction Permit is required for all transportation projects in Lane County that meet the following criteria: any highway proposed for construction with an anticipated annual Average Daily Traffic volume of 20,000 or more vehicles per day within ten years of completion, or being modified so that the annual ADT will be increased to 20,000 or more or will be increased by 10,000 or more vehicles within ten years of completion. Lane Regional Air Pollution Authority (LRAPA) is the agency responsible for review, comment and permit approval. An AQ Report is prepared to document all information requirements. The project sponsor is responsible for obtaining the permit prior to beginning construction. (This equates to Activity ID 140)

Subtask 5.9 SLOPES IV Programmatic Permitting

The Standard Local Operating Procedures for Endangered Species (SLOPES IV) contains a programmatic biological opinion and incidental-take statement. It is an agreement between the U.S. Army Corps of Engineers (Corps) and National Marine Fisheries Service (NMFS) that if used appropriately allows projects to be permitted without going through individual Endangered Species Act Section 7 consultation.

SLOPES provides a focus for discussion between NMFS, the Corps, and applicants regarding ways to reduce or remove the adverse effects of regulated actions on ESA–listed fish species and on designated critical habitat. There are four types of actions addressed in SLOPES

- Major Hazard Response
- Streambank and Channel Stabilization
- Maintenance, Rehabilitation and Replacement
- Utility line stream crossings

In general, if a project is determined to be appropriate for a programmatic permit, the project will have a shorter permitting timeline. But to determine if the project is a good candidate requires significantly more up-front evaluation of biological and hydraulic considerations, and may lead to increased construction costs. This is described in detail in the SLOPES IV handbook. For more information, view the Slopes IV Guidebook at: ftp://ftp.odot.state.or.us/SLOPES_IV/SlopesIVHandbook(V1.3)Final102508.doc (No Activity ID for this task)

Subtask 5.10 – Conceptual Noise Mitigation Design

This subtask, which follows completion of the Noise Report and Preliminary Mitigation Design, is used only on Class 1 or 3 projects, where additional development of the proposed noise mitigation measure(s) may be needed to complete the draft NEPA Environmental Document. Design may include further design development and/or analysis of concepts for sound walls, sound berms, or other noise mitigation concepts. This subtask is complete when the information required to complete the draft EIS or EA has been developed. (This equates to Activity ID 170)

TASK 6 –TRAFFIC DESIGN

Subtask 6.1 – Traffic Analysis (Includes Air, Noise, and Energy)

The Traffic Analysis is usually done in support of alternatives analysis and is a requirement for all Class 1 and 3 projects that require either an EIS or EA. A traffic analysis consists of analyzing the traffic related effects of the proposed design alternative(s) on study area intersections and roadway segments. A report is produced which includes volume-to-capacity analysis for each alternative design and for the “no build” alternative and may include recommendations on mitigation measures for problem locations (i.e. new turn lanes or new traffic signals). The report also provides traffic data needed to do energy, noise, and air quality analysis on each alternative.

A traffic analysis may also be required on some Class 2 projects or for some projects where the NEPA Environmental Document was completed years earlier, for many of the same purposes stated above.

The traffic report is provided to the PL and Environmental Project Manager. (This equates to Activity ID 090)

Subtask 6.2 – Work Zone Analysis, Restrictions and Detours

The PL requests a Work Zone Analysis and Restrictions Report as soon as the general scope of the project has been established. The report consists of traffic analysis to determine the potential for excessive delays to the traveling public created by lane closures or detours during construction. Repot results may be used during stage construction design to ensure that the project can be built with minimal traffic interruption. The report examines hourly projections of capacity for the project and details how many lanes will be required to maintain a table level of flow. Other types of analysis that may be requested include recommendations on lane rental charges a benefit/cost analysis for detours, minimum storage length calculations for intersections, as well as any other anticipated traffic engineering needs for work zones.

The report is delivered to the PL who should forward a copy to the roadway designer. (This equates to Activity ID 330)

Subtask 6.3 –Sign Design

This subtask is to develop the preliminary design for permanent signing. One of the key outcomes of this subtask is to determine if additional ROW and/or easements may be necessary to install signs, and if so, how much additional ROW or easements, so that the draft ROW map can show what is needed for signs. This subtask involves developing the signing design to the level of detail necessary to ensure that the project feasibility, cost and overall footprint have been established, so that the project can proceed through the design acceptance milestone. (This equates to Activity ID 504)

Subtask 6.4 –Signal Design

This subtask is to develop the preliminary design for traffic signals, for new or replacement traffic signals, flashing beacons, ramp meters, signal interconnect systems, emergency vehicle preemption systems, and other signal-related features. One of the key outcomes of this subtask is to determine if additional ROW and/or easements may be necessary to install traffic signals, and if so, how much additional ROW or easements, so that the draft ROW map can show what is needed for signals. Another key outcome is to ensure that Traffic Control Device Approval (which is required for a new signal) has been obtained from the State Traffic Engineer.

This subtask involves developing the signal design to the level of detail necessary to ensure that the project feasibility, cost and overall footprint have been established, so that the project can proceed. (This equates to Activity ID 529)

Subtask 6.5 –Illumination Design

This subtask is to develop the preliminary design for roadway illumination systems. One of the key outcomes of this subtask is to determine if additional ROW and/or easements may be necessary to install an illumination system, and if so, how much additional ROW or easements, so that the draft ROW map can show what is needed for illumination. This subtask involves developing the illumination design to the level of detail necessary to ensure that the project feasibility, cost and overall footprints have been established, so that the project can proceed through the design acceptance milestone. (This equates to Activity ID 489)

TASK 7 –STRUCTURE DESIGN

Subtask 7.1 – Start TS&L Bridge Design

The purpose of the TS&L Design is to develop the general type, size, and location of all project bridges to a level of detail necessary to prepare the Bridge Hydraulics Report and to perform the Geotechnical Exploration and prepare the Preliminary Geotechnical Report. At the end of this stage of bridge design, the locations of bridge bents, pilings, footings, and superstructure type are sufficiently developed so the Bridge Hydraulics Report can be prepared, and so that the locations of geotechnical boreholes that are needed for the bridge foundation design are known. When the Bridge Hydraulics Report and the Preliminary Geotechnical Report are completed, the Finalize TS&L Bridge Design can start. (This equates to Activity ID 310)

Subtask 7.2 – Finalize TS&L Bridge Design

The purpose of the finalize TS&L Design is to complete the general type, size, and location of all project bridges to a level of detail necessary to prepare the final type, size, and location Bridge Design Report.

When the Bridge Hydraulics Report and the Preliminary Geotechnical Report are completed the Finalize TS&L Bridge Design can be performed. This subtask includes design and drafting needed to prepare preliminary plan sheets showing the preliminary plan view and elevation for each structure, a preliminary engineers cost estimate, and a narrative report describing each structure and its alternatives. (This equates to Activity ID 311)

Subtask 7.3 –Retaining/Sound Wall Design

The purpose of this subtask is to provide for the time needed for evaluation of alternative retaining wall types for a project, at design acceptance, and to prepare a simple plan/evaluation drawings showing the overall length, height, and

anticipated type of wall that is likely to be feasible and cost effective for each wall and an evaluation of the potential ROW needed to construct each wall. The deliverables for this subtask include conceptual plan/evaluation drawings for each retaining wall, a preliminary cost estimate for each wall, and a brief narrative describing the alternatives that were considered and the reasons why a specific wall type is proposed. (This equates to Activity ID 316)

Subtask 7.4 –Traffic Structures Design

The purpose of this subtask is develop the preliminary design for traffic structures such as sign bridges cantilevered sign supports or tower poles for very large directional signs, for VMS or for other ITS features that might be incorporated into a modernization, bridge, or preservation project.

This subtask involves developing the traffic structure design to the level of detail necessary to ensure that the project feasibility, cost and overall footprint have been established, so that the project can proceed through the design acceptance milestone. This may, in some cases, require geotechnical foundation exploration and analysis, in the case of any traffic structures where there are questions about the feasibility of installing the proposed structure in a particular location. The final deliverables (drawings, cost estimate, narrative, etc.) would be more or less similar to that produced during the TS&L Bridge Design task. (This equates to Activity ID 481)

TASK 8 –GEO/HYDRO DESIGN AND STUDIES

Subtask 8.1 – HazMat Site Assessment

Project activities that may disturb hazardous materials include excavation, utility trenching, and building demolition. The purchase of contaminated ROW can also create future fiscal liabilities for the department. Project teams are responsible for ensuring that hazardous materials are adequately investigated during project development and the hazardous materials studies and findings are properly documented. All reasonable efforts will be made to identify hazardous material sites potentially affecting transportation projects. The identification of hazardous material sites will start as early as practical and will continue as the project is developed until all sites have been investigated and addressed.

A Hazardous Materials specialist should conduct hazardous material investigations. The level of investigation is different for each project. Projects in commercial or industrial areas warrant more thorough investigations than those in rural or residential areas. A minimum level of investigation would involve reviewing DEQ records and an on-site visit or reconnaissance. Additional investigations may involve historic aerial photos, PUC records, State Fire Marshal records, fire insurance maps, interviews with the local residents or businesses, interviews with

ODOT maintenance personnel, deed searches, business registries, tests of building materials, and soil or groundwater testing.

The Level 2 Preliminary Site Investigation (PSI) documents the findings of environmental sampling conducted to determine the presence and/or extent of contamination related to potential sources identified in the HazMat Corridor Study. Results of the Level 2 PSI should be discussed with the recipients, to ensure that they understand the impacts and the required mitigation measures. (This equates to Activity ID 155)

For information about project lifecycle Title VI and Environmental Justice considerations, visit the Title VI Plan at Oregon.gov/ODOT/CS/Civil Rights.

Subtask 8.2 – Material Source/Disposal Site Concepts

ODOT currently owns approximately 700 material sources located around the state. These sources collectively form a network of hard rock, borrow, disposal and maintenance material sources. They are used to various degrees to meet the needs for construction, maintenance and safety of the state transportation system. A unique parcel or combination of parcels of land which are ODOT owned or controlled specifically identified as the location from which material can be removed for utilization in the construction of a project and the continued maintenance of the project. Material can either be in place naturally occurring earthen material or earthen material which has been transported to this location from another site or sites and stockpiled for future use. Material from this source may or may not require secondary processing prior to incorporation into the project.

A preliminary determination will need to be made as to whether or not a material source site or sites may need to be developed as part of the project work. At the time of project scoping, certain project assumptions will be required to assist in making this decision.

If the initial determination is to pursue development of a public resource site or sites, but further along in the process based on more refined design it is determined no source is needed or no source can be made available, the work can be dropped. The problems occur when source need is not identified until late in the process, when inadequate time and/or resources are available to complete the necessary work.

If the determination is that a public site(s) should be pursued for potential use on the project, the person(s) responsible for pursuing the sites should use the ODOT Material Source Checklist to help guide the development process.

A geologist will need to review existing sources within the project vicinity and determine which site or sites (if any) will be offered to meet the anticipated

project needs. They will let the PL and project team know that a prospective source(s) will be offered for the project and verify that the proper schedule elements are included. (This assumes that use of a state owned or controlled source was identified in the original scope of the project or has been agreed upon with the PL or appropriate person(s)). (This equates to Activity ID 387)

Subtask 8.3 – Bridge Hydraulics Report

The Bridge Hydraulics Report is prepared following the completion of subtask 7.1 – Start TS&L Bridge Design, once the overall geometry of the proposed bridge or large culvert is fixed. The Bridge Hydraulics Report is prepared to provide the bridge designer with essential information for the Finalize TS&L Bridge Design subtask.

The hydraulic engineer will perform a hydrologic analysis of the drainage basin of the stream to determine peak design stream water flow rates. The hydraulic engineer will then prepare a hydraulic analysis using the calculated stream design flow rates and surveyed stream profiles, stream cross sections and the proposed roadway profile to determine the minimum hydraulic opening for the proposed bridge or box culvert, as required, to avoid raising the elevation of floodwaters above the established 100 year floodway or floodplain elevation.

For any culvert 48 inches or larger in diameter, similar hydrologic and hydraulic analysis would be performed. In the case of a project where a drainage channel may need to be relocated as part of the project, the hydraulic engineer may be asked to provide a preliminary recommendation on the new channel typical cross section and profile. Also, in the case of projects where flooding is a problem, the hydraulic engineer may be asked to assist in developing designs for stormwater detention facilities.

The results of this data will be used by the bridge and roadway designers to refine the preliminary bridge and roadway design, prior to completion of the draft DAP. (This equates to Activity ID 261)

Subtask 8.4 – Geotechnical Exploration

Most geotechnical work is specific to a site where some type of civil work will be constructed and includes at least three parts. The first part is an investigation of subsurface conditions that always includes characterization of the subsurface. This is usually the most costly of the three parts and the one that takes the longest time. Subsurface characterization usually on around drilling, excavating or other means to sample and identify the nature and extent of soil and rock materials that will either be used to support facilities or will themselves be used as construction materials. Industry practice, judgment and experience are all considered in defining the scope of the field investigation. Often, significant pressure is exerted to do less field investigation than may be necessary to provide quality information

because of the cost and time required. Less than adequate investigation almost always results in construction problems, delays, change orders and claims.

The second part starts with a review of the samples and other field information and then centers around laboratory testing to determine soil properties. Depending on the project and the subsurface, the scope of this part may vary dramatically.

In the last part, the previously obtained information is used to develop design information. The issues that can be addressed in this step have already been summarized in the first section. Normally, design information is presented in a written report that also usually includes documentation of the entire process. Reports present the design information to the roadway designer, project manager, inspectors, contractors and others who may have an interest. (This equates to Activity ID 280)

Subtask 8.5 – Preliminary Geotechnical Report

The Preliminary Geotechnical Report is prepared following completion of the Geotechnical Exploration and is intended for use in completing the Finalize TS&L Bridge Design subtask and in completing the roadway design at design acceptance.

The Preliminary Geotechnical Report is prepared for any project that includes a new bridge, retaining walls, large cuts or fills, or other features that may require design of foundations or remediation of geological instability, such as landslide stabilization. The report will include preliminary recommendations on bridge and retaining wall foundation design, earthwork slopes, earthwork shrink and swell factors, and options for how to mitigate geological instability. It may also include slope stability analysis for potentially unstable cut or fill slopes or for existing landslides, as well as the results of laboratory tests on soil parameters. (This equates to Activity ID 295)

For information about project lifecycle Title VI and Environmental Justice considerations, visit the Title VI Plan at Oregon.gov/ODOT/CS/Civil Rights.

Subtask 8.6 – Water Quality/Quantity Needs Identified

The water quality engineer/designer will identify the stormwater treatment and detention requirements. The engineer/designer will use PD-05 in determining the need for stormwater quality mitigation for runoff from ODOT projects and the level of mitigation that could be necessary.

Drainage requirements, including pavement and roadway drainage, storm sewers, small culverts and ditches, overside drains, etc., as well as water quality and quantity needs are identified in the Preliminary Stormwater Report, developed at

design acceptance. The final Stormwater Report is developed at the final design milestone. These documents may be produced by either a roadway designer, or hydraulics engineer. (This equates to Activity ID 263)

TASK 9 –DESIGN ACCEPTANCE SURVEY - PHASE 2 (FINAL SURVEY)

The DAP Survey task is to provide for additional or supplemental field survey and mapping work that may be needed during design acceptance. It is normal that during this phase of work questions may come up that require additional field survey and mapping work beyond that which is done during the initial field survey and base map tasks. There may be a need to collect additional original ground terrain data in some areas, if the proposed limits of the roadway excavation or embankments go beyond the area previously surveyed. Additional drainage or utility surveying may be deemed necessary by the roadway, bridge, and traffic or geotechnical designer(s). (This equates to Activity ID 256)

TASK 10 –UTILITY IMPACTS REPORT ("DESIGN ACCEPTANCE UTILITY CONFLICT LIST")

At a point where the design is fairly well-developed, the Region Utility Specialist, with assistance from the roadway designer in the Region Technical Center, will prepare a preliminary list of anticipated utility conflicts with the proposed construction. The purpose of developing a utility impacts report during design acceptance is to identify utility conflicts that could affect the overall footprint of the project, including the construction cost, ROW cost, environmental impacts, and/or that could affect the schedule for the project. It is especially important at design acceptance to identify utility conflicts that may result in excavation, such as traffic signals, storm drainage etc.

The report includes both non-reimbursable and reimbursable utility relocations. As the Utility Impacts Report is preliminary, typically it would not be used to develop the Utility Conflict Letters, but would be used in evaluating the need for Utility Test-Hole Excavation to further refine the list of utility conflicts. (This equates to Activity ID 256)

TASK 11 –DRAFT RAILROAD MAPS

This task involves preparation of draft proposed ROW and/or easement lines and dimensions for permanent fee ROW, permanent easements or temporary easements that are needed from railroad ROW for a project. This task takes place when the preliminary design of a project is substantially complete and the project construction footprint has been established, and must be completed prior to completion of the design acceptance milestone. The draft railroad map(s) are provided to the roadway designer to incorporate into the preliminary conceptual plan sheets that will be circulated for review during the DAP review. When design acceptance is complete, the final railroad map(s) activity can be prepared, which includes preparation of the final railroad encroachment maps and legal descriptions of any property that must be acquired from a railroad.

Railroad Orders should also be drafted at the time of design acceptance. A Railroad Order regulates the crossing by defining the responsibilities of both the road authority and the railroad in terms of the various rail crossing components. The need for railroad crossing orders should be identified during the scoping process, and the completed orders should be ready by design acceptance. (This equates to Activity ID 349)

TASK 12 –DRAFT RIGHT OF WAY MAP

This task starts after the proposed construction footprint has been developed as part of design acceptance. This task involves drafting the proposed ROW and easement lines and dimensions, but does not include preparing ROW descriptions. The draft ROW map is prepared prior to completion of the design acceptance milestone, which is distributed for review prior to completion and approval of this phase of the project, to ensure that the proposed ROW is sufficient to build the project. The final ROW map and description is prepared after design acceptance has been obtained. (This equates to Activity ID 454)

For information about project lifecycle Title VI and Environmental Justice considerations, visit the Title VI Plan at Oregon.gov/ODOT/CS/Civil Rights.

TASK 13 –DESIGN ACCEPTANCE VALUE ENGINEERING STUDY

Value Engineering (VE) is the systematic application of recognized techniques by multi-disciplined teams which identifies the function of a product or service, establishes a worth for that function, generates alternatives through the use of creative thinking, and provides the needed functions at the lowest overall cost.

The following projects require a VE study:

- Federal-aid funded National Highway System projects with an estimated total cost of $20 million or more
- Design-Build projects with an estimated total cost of $20 million or more

All other highway projects in the STIP will need to be screened to see if they must have a formal VE study completed. Projects that make good VE study candidates have one or more of the following attributes:

- Projects that have a high cost
- Projects that have substantially exceeded preliminary cost estimates
- Projects with alternative solutions to documented problems
- Major structures
- Complex projects
- Projects using critical or high cost materials and procedures
- Projects with multiple phases
- Projects with complex traffic staging

If a VE study is required a study team is assembled. The team is composed of a small number of multi-disciplinary senior technical staff who have not been involved in the project to date. The VE Team reviews proposed design alternative(s) to date, identifies essential functions of the project elements and generates alternatives through creative thinking. The VE study report is presented to the project team for final decision. (This equates to Activity ID 108)

TASK 14 –DESIGN ACCEPTANCE CONSTRUCTION COST ESTIMATE

This task consists of assembling a preliminary bid item/quantity summary/cost estimate for a project, near the end of design acceptance. The work consists of assembling the project estimate from lists of bid items, unit costs and quantities that should be provided by various technical disciplines that have been working on the project. The purpose of preparing a construction cost estimate at design acceptance is to verify that the estimated cost of construction is consistent with the available programmed funding for the project. (This equates to Activity ID 424)

TASK 15 –DESIGN ACCEPTANCE CONSTRUCTION SCHEDULE

Near the point where the design acceptance milestone is complete, a preliminary construction schedule is prepared, to help determine the approximate timeframe that might be needed to build the project. The purpose of developing a construction schedule at this point in the project is primarily to identify the overall timeframe that may be required for construction, as well as to identify construction activities and sequencing that could potentially make the project more difficult to build, or that might extend the construction timeframe beyond what may have been expected when the project was programmed in the STIP. The level of detail in the Construction Schedule should be sufficient to clearly identify the major work elements that make up the critical path for construction, as well as identifying work that must be done at specific times of the year. (This equates to Activity ID 402)

TASK 16 – SMALL CONTRACTING OPPORTUNITIES

Small Contracting Opportunities
At the point of achieving design acceptance, alternative contracting decisions should be finalized in order to provide adequate advanced notice to interested contractors such as those identified as part of ODOT's Small Contracting Program (SCP). The SCP provides Oregon small, disadvantaged, minority and women-owned businesses the opportunity to compete for and receive ODOT work typically completed by larger firms.

Oregon's small business community is the backbone of Oregon's economy, and ODOT has committed to doing a better job at engaging them in ODOT work. The project team should proactively seek small contracting opportunities within the larger project and identify work that could stand alone as separate, smaller contracts at the conclusion of design acceptance. (No Activity ID for this task)

TASK 17 – DESIGN ACCEPTANCE REVIEW AND COMPLETION

The Design Acceptance Package, or DAP is the tangible culmination of all activities that are needed to begin the drafting of contract plans for construction. It consists of a complete set of Plans for Approved Design. Plans for design acceptance are supported by a design narrative and consists of all substantial features of a project that allows the project team to proceed with the preparation of contract plans. Plans for design acceptance are at the stage where the project team has a high degree of confidence that the scope of the project will not change and that ROW and environmental permits can be acquired in time to meet the scheduled project letting date. Design acceptance plans will generally require a title sheet, typical section, detail sheets, and layout sheets.

The PL needs to facilitate the design acceptance review and completion stage. The following table illustrates who is responsible for providing each deliverable and who is the approving authority (Note: in some cases the approving authority can delegate the approval responsibilities to someone else.).

Deliverable	Responsible to Provide	Approving Authority
Design Acceptance Memo	PL	Area Manager and Technical Center Manager
Design Acceptance checklist	PL	Area Manager and Technical Center Manager
Environmental Documentation	Technical Provider	Lead NEPA Agency
Design Acceptance Plans	Technical Provider	Area Manager and Technical Center Manager
Design Narrative and/or Bridge TS&L Report	Technical Provider	Area Manager and Technical Center Manager
Design Exception Request(s)	Technical Provider	State Roadway Engineer
Access Management Design Documentation and Proposed Deviation(s)	Technical Provider	Area Manager / Technical Center Manager
Updated schedule and estimates	PL	Area Manager and Technical Center Manager

Subtask 17.1 – Compile Draft Design Acceptance Package (DAP) and Distribute for Review

This task consists of assembling the Draft DAP, making copies, and distributing them for review. The package should include a design narrative describing the project, a preliminary bid item summary/quantity estimate/cost estimate, a preliminary construction schedule, preliminary utility conflict list, and a set of preliminary plans, as a minimum.

Depending on the size and complexity of the project, the DAP may also include copies or summaries of various reports that may have been prepared during design acceptance, such as the TS&L Bridge Design Report, Bridge Hydraulics Report, Pavement Design Report, Hazardous Materials Report, Preliminary Geotechnical Report, and possibly various environmental reports. The DAP plan set should include preliminary versions of plans for as many elements of the project as possible.

The desired outcome of preparing many of the plans is to establish the overall project footprint, including the preliminary ROW and easement lines, so that design acceptance provides the reviewers with an opportunity to determine if the proposed ROW will accommodate the project as proposed.

The DAP is distributed for review to the members of the project team and other Region Technical Center staff. (This equates to Activity ID 305)

Subtask 17.2 – Design Acceptance Review

This task consists of reviewing the Draft DAP and providing comments to the PL. The PL and/or the lead designer receives and compiles review comments and prepares responses to each review comment. Review comments that are more difficult to address, or that may require further discussion to resolve, should be brought up at the Design Acceptance Workshop (DAW). (This equates to Activity ID 306)

Subtask 17.3 –Design Acceptance Constructability Review

A Constructability Review is a review of the preliminary design of a project to help identify potential problems that may be encountered in constructing the project as designed, so that appropriate changes can be made to the design before a final design footprint has been established. The Constructability Review should take place at a point where the project design has substantially taken shape and design drawings are available for review.

The PL will arrange for a small team of construction specialists. The team will review all the design drawings, including preliminary conceptual stage construction drawings, and confer with each other on any problems they may see, as well as potential opportunities to improve the design to make it easier and possibly less expensive to build. The team's findings and recommendations are presented to the project team for consideration. (This equates to Activity ID 328)

Subtask 17.4 – Design Acceptance Workshop

The DAW is typically held shortly after the design acceptance package review, and is usually a half- or full-day meeting with the project team and Region Technical Center staff who have reviewed the draft package.

The workshop provides an opportunity for the project team and other stakeholders to discuss the design acceptance review comments that may require changes to the project design. Prior to the DAW, the PL and/or the lead designer prepares a list of review comments and responses/actions taken for each comment, and highlights those review comments that require discussion and resolution at the DAW. (This equates to Activity ID 307)

Subtask 17.5 – Obtain Design Acceptance Approval

This subtask consists of the PL and members of the design team completing a review of the comments submitted on the Draft Design Acceptance Package, and to make appropriate revisions to prepare the Final DAP, and finally and most importantly, to obtain the necessary signatures of the Certification of Approved Design, or Design Acceptance Memorandum which documents design acceptance.

The Design Acceptance Memorandum, also known as the Certification of Approved Design Memo, is the final deliverable documenting design acceptance. The Design Acceptance milestone is achieved when the Design Acceptance Certification Memo is signed by the PD-02-defined accountable manager or delegated authority, typically the Area Manager and Technical Center Manager. The Memo should summarize the findings of work leading up to the milestone, and resultant highlights of project decision-making, such as known risks or certainties, status of design exceptions, permits, intergovernmental agreements, etc. At a minimum, the Design Acceptance Memorandum should answer the following key questions:

- Have we effectively completed public involvement for this project for the decisions necessary to address all footprint-related impacts? If not, and we are choosing to move forward and accept the design, have we carefully researched, evaluated and documented the risks and trade-offs?

- Do we know enough about this project (the relatively certainties, pros, cons, risks, permit expectations, etc) to proceed with buying right of way, or to complete the project within the existing right-of-way? Or are we deciding that in order for the project to be successful, the project will need to be completed within the existing right-of-way?

- Do we know enough about this project to successfully obtain environmental permits (particularly without negatively affecting the right-of-way footprint decision)?

- Have we done enough work on the types, sizes and locations of the primary project features to know we have a solid scope, schedule, and budget to move on to construction? Or, weighing risks and trade-offs, are we making a defensible decision to move forward without the amount of work we would like to have at this point?

- Have we addressed and weighed any other known project risks, trade-offs, and design assumptions that have been made to date?

Design Acceptance Phase Deliverables

At the completion of this milestone the PL needs to ensure that the following deliverables are completed:

- Design Acceptance checklist
- Environmental documentation
- Design Acceptance Plans
- Design narrative and/or Bridge TS&L Report
- Design Exception Request(s) (if necessary)
- Access Management Design documentation and proposed deviation(s) (see PD-03)

- Updated schedule and estimates/budget
- Design Acceptance Memo signed by accountable manager or delegated authority

Other deliverables are likely needed to be completed during this milestone depending on the region and/or project specific requirements. (This equates to Activity ID 308)

For information about project lifecycle Title VI and Environmental Justice considerations, visit the Title VI Plan at Oregon.gov/ODOT/CS/Civil Rights.

LIFECYCLE MILESTONE 4: ADVANCED PLANS (DESIGN ACCEPTANCE TO FINAL PS&E)

The next milestone in the Project Delivery Lifecycle is Advanced Plans, which takes the project from design acceptance through Final PS&E. Once design acceptance has established concurrence amongst project stakeholders and confirmed readiness to develop construction contract documents, this milestone further refines the project footprint in order to acquire right of way and continue with environmental permitting, if needed.

TASK 1 – ROW MAP AND DESCRIPTIONS

This task involves preparing the final ROW map and all property descriptions required by the project. Activities include reviewing and revising proposed new ROW and easement lines that were originally prepared as part of the Draft ROW Map task during design acceptance and writing legal property descriptions based on the revised ROW design. (This equates to Activity ID 455)

For information about project lifecycle Title VI and Environmental Justice considerations, visit the Title VI Plan at Oregon.gov/ODOT/CS/Civil Rights.

TASK 2 – PROPOSED ROW STAKING

This task is to provide for staking the limits of proposed ROW or easements, for the purpose of facilitating ROW appraisal and acquisition, and to provide property owners with a better idea of how much property is needed for the project.

This task starts at approximately the same time as ROW acquisition, after design acceptance and then the ROW map and description have both been completed. The Senior ROW Agent for the project will provide the PL with a list of the ROW files that must be staked in the field, and the PL will coordinate with the Region Survey Manager, who will oversee the actual survey work. (This equates to Activity ID 257)

TASK 3 – RIGHT OF WAY ACQUISITION

Using the completed ROW map and descriptions the Senior ROW Agent prepares a programming estimate of the cost of acquisition of necessary ROW, easements, and relocations and submits the estimate to the ROW Headquarters for authorization to proceed. When authorization has been granted, appraisals for each ROW file are then prepared, either using ODOT staff appraisers or private appraisers. The appraisals are reviewed and written offers prepared and submitted to each property owner.

Oregon law includes a variety of provisions that give property owners certain timeframes to review and respond to offers and an owner can either accept an offer or reject it. Condemnation is available as a "last resort," after the required minimum timeframes have passed, to allow ODOT to gain possession of needed property and proceed with construction. Improvements on the ROW purchased must be sold, moved or demolished.

After selling what can be sold, the region ROW staff will contract with demolition experts to complete demolition. ROW acquisition is complete when the ROW Certification document has been completed by the region ROW supervisor or agent.

This task also involves managing the removal of hazardous materials in state-owned ROW, or in properties that have been or are about to be purchased for a project. When a hazardous material site is identified, ODOT will work with the property owner and DEQ to determine the best process for decontamination. If the property owner is unwilling or unable to clean up the site, and the property is needed immediately for a roadway project, then ODOT will have to decontaminate the site. This task is complete when DEQ provides ODOT with a "No Further Action Required" letter, confirming that the hazardous material contamination has been remedied to the satisfaction of DEQ. This portion of the activity is complete when the ROW is cleared for construction. (This equates to Activity ID 406)

For information about project lifecycle Title VI and Environmental Justice considerations, visit the Title VI Plan at Oregon.gov/ODOT/CS/Civil Rights.

TASK 4 – RAILROAD MAPS

Where a roadway project involves any work, permanent or temporary, within ROW owned by a railroad, an encroachment map is required for temporary or permanent easements and/or possibly fee ROW. This task consists of all activities required to prepare maps showing ROW requirements with respect to railroads. This task is done following completion of design acceptance and is complete when

the maps are delivered to the Railroad and Utilities Engineer. (This equates to Activity ID 350)

TASK 5 – RAILROAD ROW PURCHASE AND AGREEMENTS

The ODOT Railroad Engineer will take the lead role in preparing applications for permits and construction/maintenance agreements and in negotiations with railroads where ROW may be needed. Where Railroad ROW or an associated agreement is required, this task includes preparing purchase agreements, crossing permits, other operating permits and/or easement agreements, negotiating with the railroad(s), receiving approval from the railroad(s) and making payment to the railroad, when needed. (This equates to Activity ID 355)

TASK 6 – ROW CERTIFICATION

At the conclusion of the ROW Acquisition and no later than assembling and submitting the Final PS&E tasks, the project Senior ROW agent will prepare the ROW Certification, which certifies that any ROW, permanent and/or temporary easements and construction right of entry permits that are required to build the project have been acquired. If ROW holdouts exist at the time when the project is scheduled to go to the Office of Pre-Letting for the PS&E Pre-Letting review, the ROW Certification must list the holdouts. The ROW Certification must also list any restrictions or conditions imposed by ROW settlements. The ROW Certification is provided to the PL for inclusion in the Final PS&E submittal.

Note: ROW certifications are required on every project – even ones with no ROW acquisition needed. (This equates to Activity ID 461)

TASK 7 - PERMITS AND CLEARANCES

During the design of an alternative, particular permit requirements are identified in order to meet regulations. Some of these permits involve wetlands, material sources, fish passage, airport clearance, railroad, utilities, waterways, and local ordinances. It is critical to obtain the permit prior to PS&E submission. As with ROW, permits and clearances are secured as the final project alternative is designed. There are a number of permits and clearances required from various sources prior to construction of a project. Permits and clearances should be obtained with enough time to make any changes to the project plans prior to PS&E, as may be dictated by the conditions of the permit.

Below is a list of possible permits and clearances that may need to be obtained, who is responsible for obtaining them, and the approximate duration of time needed to obtain them. Note that if the project is a class 1 or 3, the environmental program manager is responsible for many of these permits and clearances.

Permit/Clearance	Responsible Person	Duration	Activity ID
Intergovernmental Agreements	PL	20 weeks	210
OTC Decision/Approval Action	PL	18 weeks	226
Threatened and Endangered Species Act (ESA) Clearance	REC	31 weeks	146
State ESA Plant and Wildlife Species Assessment	REC	14 weeks	383
Stormwater Management Plan	REC	25 weeks	264
404/DSL Fill/Removal Permit	REC	25 weeks	379
Section 4(f) Documentation	REC	16 weeks	156
Section 6(f) conversion approval by NPS	REC/EPM	18 months	
Archaeology Clearance/Recovery	REC	12 weeks	136
Archaeology Finding of Effect (FOE)	REC	12 weeks	138
Historic (Section 106) Finding of Effect (FOE)	REC	13 weeks	164
Historic (Section 106) 4(f) Documentation	REC	8 weeks	172
Coast Guard Permit	Permits Specialist	20 weeks	320
DOGAMI (Material Source) Permit	REC	24 weeks	395
Local Permits	PL	33 weeks	410
Land Use Actions	Area Planner	60 weeks	220
Transportation System Plan (TSP) Amendments	Area Planner	26 weeks	222
Railroad Orders	Crossing Safety	64 weeks	356

	Specialist		

TASK 7.1 CATEGORICAL EXCLUSION CLOSEOUT

TASK 7.1.1 - CATEGORICAL EXCLUSION Closeout Documents

This is a new task that is required on all Categorical Exclusion projects that receive Federal Highway Administration (FHWA) funding or needs some kind of FHWA approval (e.g., interstate access).

In order for FHWA to meet its legal requirements for classification of CE projects, FHWA has determined that specific parts of the environmental process must be completed and documented prior to subsequent FHWA approvals, such as Right-of-Way and Construction authorizations. All environmental permits, clearances, and approvals as specified in the "Completion Guidance for the Categorical Exclusion (CE) Closeout Document" must be completed (including appropriate attachments) in order for FHWA to classify a project as a Categorical Exclusion.

FHWA requires completion of specific environmental clearances and permits prior to final classification of a proposed project as a CE and prior to the authorization of Right-of-Way or Construction funds.

Depending upon the type of Categorical Exclusion process, there may be one of three types of closeout documents needed:

1. CE Closeout Document (requires FHWA Oregon Division approval)
2. Programmatic CE Closeout Document
3. Memorandum to FHWA Oregon Division

For more detail about the Categorical Exclusion Closeout process refer to the following Technical Bulletin GE09-05(B): "Categorical Exclusion (CE) Closeout Process, Guidance, and Documentation" found at
http://www.oregon.gov/ODOT/HWY/GEOENVIRONMENTAL/policy_memos.shtml
(This equates to Activity ID 538)

TASK 7.1.2 - FHWA Review of CATEGORICAL EXCLUSION Closeout Documents

This task account for time allowed for FHWA to review and approve the Categorical Exclusion Closeout Documents and authorize Federal Aid funding for Right-of-Way acquisition or Construction.
(This equates to Activity ID 539)

PRELIMINARY PLANS

The main purpose of this step is an additional technical and construction review between DAP and Advanced Plans. This is not a required milestone from PD-02; it is optional. (This equates to Activity ID 461)

For information about project lifecycle Title VI and Environmental Justice considerations, visit the Title VI Plan at Oregon.gov/ODOT/CS/Civil Rights.

TASK 1 – UPDATE STAKEHOLDER PARTICIPATION AND COMMUNICATION PLAN

At the start of each major phase of work on a project, the PL in collaboration with the PIO, should review and as necessary update or review the plan. This task may occur at several points during a project, depending on the size and complexity of the project, the amount of stakeholder interest and/or controversy involved in the project, and the amount of change in the scope and/or design of the project during the previous phase of work.

The PL should also ensure that all tasks associated with stakeholder participation and communications are implemented during the Project Development stage. (This equates to Activity ID 012)

For information about project lifecycle Title VI and Environmental Justice considerations, visit the Title VI Plan at Oregon.gov/ODOT/CS/Civil Rights.

TASK 2 – NOISE MITIGATION FINAL DESIGN

This task consists of all activities required to determine the required dimensions (final location, length, height, etc.) of any noise mitigation measures (i.e. noise walls or berms) that will be incorporated into the project. This task occurs after DAP is complete, and is done when the required information is ready for preparation of the Preliminary Soundwall PS&E. (This equates to Activity ID 360)

TASK 3 – ACCESS MODIFICATION AND CLOSURE LETTERS

Where the adopted Access Management Strategy for a project includes modifications and/or closures of existing access points onto a state highway, it is necessary to prepare and send letters to the owners of each property whose access will be affected, to formally notify the owners of the proposed change in access. (This equates to Activity ID 101)

TASK 4 – UTILITY TEST-HOLE EXCAVATION

In some cases, utility test-hole excavation can reduce overall project costs, by providing more precise horizontal and vertical locations for underground utilities, which may allow the designer to avoid or minimize impacts to utilities. Following development of the initial Utility Conflict List, the RUS, in collaboration with the project designer and/or geo-hydro, bridge or other relevant specialists, would prepare a list of locations where verified vertical and horizontal location data might be useful or is required. The RUS will then prepare and submit request(s) for this data to the owner(s) of the specific utility(s) for which the data is requested.

Typically, the utility owners are responsible for the cost of utility test-hole excavation. There is a possibility of reducing utility relocations as a result of getting better data on the locations of underground utilities. If a utility is reimbursable, ODOT will hire a potholing contractor or reimburse the utility for the cost of the potholing contractor. The test-hole excavation contractors provide the depth and horizontal location of the utility at each point requested. To allow the test-hole excavation contractor to establish precise horizontal locations at each point, it is usually necessary to either set survey control points near each test-hole location, or if possible to have a survey crew tie each utility test-hole location.

Following receipt of the test-hole data, the roadway designer would input the verified vertical and horizontal data into the project base mapping, in some cases using the data to create 3-dimensional linework for an underground utility line, so that the utility line can be displayed as a surface on cross sections to better identify potential conflicts with the proposed construction. (This equates to Activity ID 116)

TASK 5 – PRELIMINARY PLANS

After drafting of the various Preliminary Plans has been completed, the design team supervisor/Technical Services roadway discipline manager will review them before printing. The roadway designer will distribute the Preliminary Plans according to the Plan Distribution Procedures. A prompt and thorough review by all interested parties at this stage is crucial for timely and responsive Advanced Plans.

The following is a list of Preliminary Plans that should be assembled and reviewed (if applicable to the project):

- Preliminary Roadway Plans; Specs and Estimate (This equates to Activity ID 400)
- Preliminary Bridge Plans; Specs and Estimate (This equates to Activity ID 313)
- Preliminary Traffic Structures Plans; Specs and Estimate (This equates to Activity ID 482)
- Preliminary Retaining Wall Plans; Specs and Estimate (This equates to Activity ID 317)
- Preliminary Soundwall Plans; Specs and Estimate (This equates to Activity ID 361)
- Preliminary Geotechnical Plans; Specs; Estimate and Final Geotech Report (This equates to Activity ID 406)
- Preliminary Hazardous Materials Plans; Specs; Estimate and Report (Phase 2) (This equates to Activity ID 467)
- Preliminary Material Source and Disposal Site Plans; Specs and Estimate (This equates to Activity ID 388)
- Preliminary Roadside Development Plans; Specs and Estimate (This equates to Activity ID 385)
- Preliminary Wetland Mitigation Plans; Specs and Estimate (This equates to Activity ID 375)
- Preliminary Erosion Control Plans; Specs and Estimate (This equates to Activity ID 413)
- Preliminary Hydraulics/Utilities Plans; Specs and Estimate (This equates to Activity ID 416)
- Preliminary Water Quality and Detention Plans; Specs and Estimate (This equates to Activity ID 266)
- Preliminary Traffic Control Plans; Specs and Estimate (This equates to Activity ID 338)
- Preliminary Sign Plans; Specs and Estimate (This equates to Activity ID 505)
- Preliminary Striping Plans; Specs and Estimate (This equates to Activity ID 541)
- Preliminary Signal Plans; Specs and Estimate (This equates to Activity ID 530)

- Preliminary Illumination Plans; Specs and Estimate (This equates to Activity ID 490)

TASK 6 – REVISE CONSTRUCTION COST ESTIMATE

Near the point where the Preliminary Plans are complete, the preliminary bid item/quantity summary/construction cost estimate is reviewed and revised, as needed. The individual technical disciplines provide updates to their portion of the construction cost estimate as part of developing the Preliminary and Advance Plans. The intent is to flesh out more details in the construction cost estimate as the project design progresses at each phase of design. The purpose of updating the construction cost estimate at the Preliminary and Advance phases is to verify that the current estimated cost of construction is consistent with the available programmed funding for the project. (This equates to Activity ID 425)

TASK 7 – REVISE CONSTRUCTION SCHEDULE

Near the point where the Preliminary Plans are complete, the preliminary construction schedule developed during design acceptance is reviewed and revised, as needed. The intent is to flesh out more details in the construction schedule as the project design progresses at each phase of design. The construction schedule will be used to help determine the contract completion date that will be listed in the contract special provisions. (This equates to Activity ID 360)

TASK 8 – COMPILE PRELIMINARY SPECIAL PROVISIONS

The specification writer will prepare and compile the preliminary special provisions prepared by each technical discipline, using current standard specifications, supplementing them with necessary additions and revisions to fit the project. This includes collecting and combining special provisions for all roadway, bridge, traffic control, erosion control, roadside development, wetland mitigation, material source sign, signal, illumination, and striping bid items. This also includes preparing special provisions to account for utility relocation issues, potential ROW file holdouts and special city, county, state or federal permit requirements. (This equates to Activity ID 547)

TASK 9 – PRELIMINARY PLAN REVIEW AND COMPLETION

Subtask 9.1 – Assemble, Copy and Distribute

The Preliminary Plans for all disciplines are assembled together with the special provisions and printed to be distributed for the review. The distribution of Preliminary Plans and Special Provisions is handled by the specifications writer, the roadway designer, or other regional designee. (This equates to Activity ID 428)

Subtask 9.2 – Utility Conflict List and Letters

When the Preliminary Plans have been completed, including walls, grade changes, drainage, or any other features that may conflict with utilities, the Utility Conflict List—prepared during design acceptance—documents conflicts between existing utilities and the proposed project design. The list is prepared by the RUS, in collaboration with the project designer and project manager's office.

Prior to preparation of the Utility Conflict List, it is important that the locations of existing utilities have been verified, which typically involves submitting the project base mapping to the utility owners with a request that they review the base mapping and indicate any missing or incorrect utility features. If utility test-hole excavation is done, it should be done prior to completion of the Utility Conflict List and the preparation of the Utility Conflict Letters.

The Utility Conflict Letters are the official required notification to each utility owner that relocation or adjustment of their utility facilities will be required prior to or during construction of the project. The Utility Conflict Letter will be sent to the utility owner with a copy of the Utility Conflict List and project design mapping showing the locations of anticipated utility conflicts. The Utility Conflict Letter includes a request for the utility owner to prepare and submit a Utility Relocation Plan and Schedule for relocating or adjusting their facilities, and also to submit a Utility Reimbursement Request, if the cost of relocation of utilities is reimbursable. If the utility relocation is reimbursable, the utility will be given the option of adding the relocation work to the ODOT contract. The Utility Conflict List will also include a target date for utility relocation work, in cases where the work will be done prior to construction. (This equates to Activity ID 117)

Subtask 9.3 – Preliminary Plan Review

This task is to allow a wide review of the preliminary plans. This review is very important since it is the first opportunity for the project team and others to look at a complete set of detailed plans that have construction notes and design details as well as a set of preliminary special provisions.

When all of the preliminary plans and special provisions have been completed, full sets are copied and distributed to the project team members, various ODOT staff,

and city, county, state agency staff for review, as appropriate, with a brief project narrative and a cover letter explaining the review comment deadline date, contact person and address to send comments. The normal period allowed for review after receipt of the plans is 2 weeks.

The PL and/or roadway designer will collect review comments and should discuss any major suggested changes with the project team before revisions are made. (This equates to Activity ID 429)

For information about project lifecycle Title VI and Environmental Justice considerations, visit the Title VI Plan at Oregon.gov/ODOT/CS/Civil Rights.

Subtask 9.4 – Preliminary Plans Constructability Review

A Constructability Review is a review of the preliminary design of a project to help identify potential problems that may be encountered in constructing the project as designed, so that appropriate changes can be made to the design well before the Approved Design milestone. The Constructability Review should take place at a point where the project design has substantially taken shape and design drawings are available for review.

The PL will arrange for a small team of construction specialists. The team will review all the design drawings, including preliminary conceptual stage construction drawings, and confer with each other on any problems they may see, as well as potential opportunities to improve the design to make it easier and possibly less expensive to build. The team's findings and recommendations are presented to the project team for consideration. (This equates to Activity ID 332)

Subtask 9.5 – Value Engineering Study

The following projects require a VE study:
Federal-aid funded National Highway System projects with an estimated total cost of $20 million or more
Design-Build projects with an estimated total cost of $20 million or more

All other highway projects in the STIP will need to be screened to see if they must have a formal VE study completed. Projects that make good VE study candidates have one or more of the following attributes:

- Projects that have a high cost
- Projects that have substantially exceeded preliminary cost estimates
- Projects with alternative solutions to documented problems
- Major structure
- Complex projects
- Projects using critical or high cost materials and procedures
- Projects with multiple phases
- Projects with complex traffic staging (This equates to Activity ID 109)

ADVANCED PLANS

This is a key interim step of the contract document phase, and requires all project disciplines to review draft contract documents for completeness and accuracy. It is the primary opportunity for technical staff to provide quality control review of the project plans, specifications, and estimate as a package.

Advance Plans, which include the revisions resulting from the Preliminary Plan review, are in accordance with the approved project schedule. They are accompanied by the project's special provisions. The project team should fill out the PS&E checklist as a status point to evaluate how the project is progressing towards PS&E.

TASK 1 – UPDATE STAKEHOLDER PARTICIPATION AND COMMUNICATION PLAN

At the start of each major phase of work on a project, the PL in collaboration with the PIO, should review and as necessary update or review the plan. This task may occur at several points during a project, depending on the size and complexity of the project, the amount of stakeholder interest and/or controversy involved in the project, and the amount of change in the scope and/or design of the project during the previous phase of work.

The PL should also ensure that all tasks associated with stakeholder participation and communications are implemented during the Project Development stage. (This equates to Activity ID 013)

For information about project lifecycle Title VI and Environmental Justice considerations, visit the Title VI Plan at Oregon.gov/ODOT/CS/Civil Rights.

TASK 2 – REVIEW AND APPROVE UTILITY RELOCATION PLANS

Utility owners have 30 calendar days following receipt of a Utility Conflict Letter to prepare and submit Utility Relocation Plans to ODOT for review and approval. The RUS, in collaboration with the project designer and the PL, will review utility relocation plans and schedules to ensure that all identified utility conflicts are addressed in the Relocation Plans, and that the proposed schedule for relocation will not impact the schedule for the project, or that if relocation must occur during construction of the project, that the proposed relocation can be accommodated without excessive delay for the construction contractor.

If the proposed Utility Relocation Plan is acceptable, the RUS will direct the utility to proceed with relocation work, pending approval of permits to work within the highway ROW.

If the proposed utility relocation plan or schedule is not acceptable, then further consultation with the utility will be needed to come up with a plan and/or schedule that are acceptable. (This equates to Activity ID 119)

TASK 3 – ADVANCED PLANS

The following is a list of Advanced Plans that are typically developed (if applicable to the project):

- Advance Roadway Plans; Specs and Estimate (This equates to Activity ID 420)
- Advance Bridge Plans; Specs and Estimate (This equates to Activity ID 314)
- Advance Traffic Structures Plans; Specs and Estimate (This equates to Activity ID 483)
- Advance Retaining Wall Plans; Specs and Estimate (This equates to Activity ID 318)
- Advance Soundwall Plans; Specs and Estimate (This equates to Activity ID 362)
- Advance Geotechnical Plans; Specs and Estimate (This equates to Activity ID 407)
- Advance Hazardous Materials Plans; Specs and Estimate (This equates to Activity ID 468)
- Advance Material Source and Disposal Site Plans; Specs and Estimate (This equates to Activity ID 389)
- Advance Roadside Development Plans; Specs and Estimate (This equates to Activity ID 434)
- Advance Wetland Mitigation Plans; Specs and Estimate (This equates to Activity ID 439)
- Advance Erosion Control Plans; Specs and Estimate (This equates to Activity ID 414)
- Advance Hydraulics/Utilities Plans; Specs and Estimate (This equates to Activity ID 417)
- Advance Water Quality and Detention Plans; Specs and Estimate (This equates to Activity ID 267)
- Advance Traffic Control Plans; Specs and Estimate (This equates to Activity ID 339)
- Advance Sign Plans; Specs and Estimate (This equates to Activity ID 515)
- Advance Striping Plans; Specs and Estimate (This equates to Activity ID 542)

- Advance Signal Plans; Specs and Estimate (This equates to Activity ID 535)
- Advance Illumination Plans; Specs and Estimate (This equates to Activity ID 495)

TASK 4 – INSURANCE RISK ASSESSMENT

The first step in the insurance risk assessment process is the completion of the risk assessment portion of PDWP. The PL must facilitate this process with the project team. It will require in-depth knowledge of the project including location, environmental, safety, rail, hazardous materials and all other project elements identified during project scoping and design.

The identified risk exposures will be mitigated through project management, insurance, and bonding. The PL will provide the specification writer the information needed to complete the special provisions for insurance. The specification writer is responsible for completing the special provisions for insurance in the contract documents for the project based on the insurance risk assessment provided by the PL.

The insurance risk assessment tool is available at http://highway.intranet.odot.state.or.us/cf/pdwp/risk/index.cfm (This equates to Activity ID 546)

TASK 5 – REVISE CONSTRUCTION COST ESTIMATE

Near the point where the Advance Plans are complete, the preliminary bid item/quantity summary/construction cost estimate is reviewed and revised, as needed. The individual technical disciplines provide updates to their portion of the construction cost estimate as part of developing the Advance Plans. The intent is to flesh out more details in the construction cost estimate as the project design progresses at each phase of design. The purpose of updating the construction cost estimate at the Preliminary and Advance phases is to verify that the current estimated cost of construction is consistent with the available programmed funding for the project. This equates to Activity ID 422)

TASK 6 – REVISE CONSTRUCTION SCHEDULE

Near the point where the Advance Plans are complete, the preliminary construction schedule developed during DAP is reviewed and revised, as needed. The intent is to flesh out more details in the construction schedule as the project design progresses at each phase of design. The construction schedule will be used to help determine the contract completion date that will be listed in the contract special provisions. This equates to Activity ID 397)

TASK 7 – UTILITY STATUS REPORT

After the Region Utility Specialist and lead designer have reviewed and approved the Utility Relocation Plans submitted by the utilities (see Activity ID 119, TASK 2 – REVIEW AND APPROVE UTILITY RELOCATION PLANS), the Region Utility Specialist prepares the Utility Status Report that lists the utility conflicts and anticipated timing of utility relocations that are required to build the project. The Region Utility Specialist also prepares Utility Specifications for the project special provisions, listing each utility that may have facilities within the project, and those that may be working on relocations during construction of the project, with names and phone numbers for contacts at each utility. The Draft Utility Specifications are then incorporated into the Advance Special Provisions for distribution for the Advance Plan Review.

The Region Utility Specialist will also review the Utility Specifications prior to completion of the Final PS&E, to ensure that any required revisions have been made prior to completion of the contract bid documents. In some cases, the final disposition of the timing of some utility relocations may not be known until very late in the Final Plans phase of a project. (This equates to Activity ID 405)

TASK 8 – COMPILE ADVANCE SPECIAL PROVISIONS

The specification writer will prepare and compile the final special provisions prepared by each technical discipline, using current standard specifications, supplementing them with necessary additions and revisions to fit the project. This includes collecting and combining special provisions for all roadway, bridge, traffic control, erosion control, roadside development, wetland mitigation, material source sign, signal, illumination, and striping bid items. This also includes preparing special provisions to account for utility relocation issues, potential ROW file holdouts and special city, county, state or federal permit requirements.

As the final plan review is the last time that the special provisions will be reviewed the final special provisions must be complete prior to sending them out for review during the final plan review. All permit and clearance activities and ROW acquisition should be complete prior to completion of this task, so that any

special provisions that are included in the permit requirements or ROW holdouts can be incorporated into the final special provisions so they can be reviewed during the final plans review. (This equates to Activity ID 548)

TASK 9 – DRAFT PS&E SUBMITTAL CHECKLIST

After the Advance Plans and special provisions have been completed, but prior to the Advance Plans Review, the PL fills out a draft version of the PS&E submittal checklist. This is a first draft version of the PS&E submittal checklist, which is prepared to document the completeness of the Advance PS&E submittal, and to identify any items that must be complete prior to completion of Final PS&E, such as ROW acquisition, permits and clearances, etc. Prior to the Final Plans Review, the PL will revise/finalize the draft PS&E submittal checklist. (This equates to Activity ID 473)

TASK10 – ADVANCE PLAN REVIEW AND COMPLETION

Subtask 10.1 – Assemble, Copy and Distribute

The Advance Plans for all disciplines are assembled together with the special provisions and printed to be distributed for the review. The distribution of Advance Plans and special provisions is handled by the specifications writer. (This equates to Activity ID 433)

Subtask 10.2 – Advance Plan Review

When all of the Advance Plans and special provisions have been completed, full sets are copied and distributed to the project team members, various ODOT staff, and city, county, state agency staff for review, as appropriate, with a cover letter explaining the deadline date and location to send comments. The normal period allowed for review after receipt of the plans is 2 weeks. The PL, roadway designer, or the specifications writer should be designated in the cover memo as the point person to receive and collect the review comments.

Following the 2 week review period, a Plans-in-Hands meeting is usually held, when the project team will meet to discus and resolve any significant issues identified during the review, before preparation of final plans and special provisions. The PL, roadway designer, or the specifications writer should all prepare for the Plans-in-Hands meeting by collecting and studying review comments and deciding which issues should be brought before the entire project team for discussion at the meeting. (This equates to Activity ID 430)

Subtask 10.3 – Advance Plans Constructability Review

A Constructability Review is a review of the preliminary design of a project to help identify potential problems that may be encountered in constructing the project as designed, so that appropriate changes can be made to the design well before the Approved Design milestone. The Constructability Review should take place at a point where the project design has substantially taken shape and design drawings are available for review.

The PL will arrange for a small team of construction specialists. The team will review all the design drawings, including preliminary conceptual stage construction drawings, and confer with each other on any problems they may see, as well as potential opportunities to improve the design to make it easier and possible less expensive to build. The team's findings and recommendations are presented to the project team for consideration. (This equates to Activity ID 333)

Subtask 10.4 – Plans-in-Hand Meeting

In accordance with the approved project schedule, a Plans-In-Hand review is held in the field, if the project is complex enough to require it. This review includes all appropriate department personnel and any outside agency people who may be involved. An on-site review of the project is often made, as this is the last opportunity to discuss and resolve anticipated problems or issues relating to the plans or specifications before the contract is let. It is critical to have Advance Plan comments submitted to the designer prior to scheduling this meeting as the primary focus of the meeting is to resolve issues where disagreement remains, not to discuss each and every comment. (This equates to Activity ID 471)

Advance Plan Deliverables

At the completion of this milestone the PL needs to ensure that the following deliverables are completed:

- Documents required for plans specifications and estimates (PS&E) submittal
- Draft Construction Schedule
- Plans-In-Hand Meeting
- Draft PS&E submittal checklist
- Insurance Risk Assessment

LIFECYCLE MILESTONE 5: FINAL PLANS

This step occurs in follow-up to the Plans-In-Hand meeting review and comment on the advanced plans and specifications. It is the last opportunity for contract documents to be reviewed by technical staff for quality control and document completeness, before the project is ready to move forward for FHWA review (when needed) and PS&E submittal. In some smaller projects, teams may not issue the Final Plans for additional review. When the schedule allows, this step enablers review of the package in its entirety with the corrections from the Advanced Plans phase.

TASK 1 – UPDATE PUBLIC INVOLVEMENT PLAN

At the start of each major phase of work on a project, the PL in collaboration with the PIO, should review and as necessary update or review the plan. This task may occur at several points during a project, depending on the size and complexity of the project, the amount of stakeholder interest and/or controversy involved in the project, and the amount of change in the scope and/or design of the project during the previous phase of work.

The PL should also ensure that all tasks associated with stakeholder participation and communications are implemented during the Project Development stage. (This equates to Activity ID 014)

For information about project lifecycle Title VI and Environmental Justice, Emerging Small Business (ESB), and Labor Compliance considerations, visit Oregon.gov/ODOT/CS/Civil Rights.

TASK 2 – ACCESS MANAGEMENT

Completion of the deliverables listed for this task will ensure that permit records are updated, required administrative actions are completed, and that deliverables and requirements have been met.

Each region must determine who is responsible for the required deliverables. PD-03 identifies the manager who is accountable for the deliverables, but does not specify who will complete each one.

Access Management Deliverables:

- Confirmation of CHAMPS Records: This deliverable confirms that information in the CHAMPS has been reviewed and revised to accurately reflect the status for all approaches after the project's completion. This may result in issuing new permits or revising existing permit records. The confirmation required by this deliverable may be noted on the Official Project Access List or by separate memo to the project file. A copy of the confirmation must be submitted to the Statewide Access Management Program Office.
- Local TSP or Comprehensive Plan Amendments (if applicable): Completion of local government actions needed to authorize project work affecting facilities or land under local jurisdiction. This requirement applies only to Class 2 environmental projects at this milestone. (For Class 1 and Class 3 projects, these actions must occur before the final environmental document is issued.)
- OTC Decision/Approval Action (if applicable): Project file documentation of approval action by OTC may consist of a memo-to-file, OTC minutes (or excerpt), or other documentation of official action. Note: this should be completed much earlier – just documented here at the latest.
- Access Management Checklist: The Checklist is completed by the Technical Services Branch, Office of Pre-Letting. Projects will not be released for bid advertising until all requirements listed are documented or can be otherwise verified. Exceptions to this requirement may be granted by the Roadway Section Manager in accordance with the Office of Pre-Letting procedures. (This equates to Activity ID 462)

TASK 3 – FINAL PLANS

After revisions, Mylar's are produced which are signed by the Engineer of Record and the Technical Services Managing Engineer. After federal approval, the Final Plans are printed between five and six weeks before the project's bid let date.

The following is a list of Final Plans that are typically developed (if applicable to the project):

- Final Roadway Plans - Specs & Estimate (This equates to Activity ID 484)
- Final Bridge Plans - Specs & Estimate (This equates to Activity ID 315)
- Final Traffic Structures Plans - Specs & Estimate (This equates to Activity ID 482)
- Final Retaining Wall Plans - Specs & Estimate (This equates to Activity ID 319)
- Final Soundwall Plans - Specs & Estimate (This equates to Activity ID 363)
- Final Geotechnical Plans - Specs & Estimate (This equates to Activity ID 408)

- Final Hazardous Materials Plans - Specs & Estimate (This equates to Activity ID 469)
- Final Material Source and Disposal Site Plans - Specs & Estimate (This equates to Activity ID 390)
- Final Roadside Development Plans - Specs & Estimate (This equates to Activity ID 435)
- Final Wetland Mitigation Plans - Specs & Estimate (This equates to Activity ID 440)
- Final Erosion Control Plans - Specs & Estimate (This equates to Activity ID 415)
- Final Hydraulic Plans - Specs & Estimate (This equates to Activity ID 418)
- Final Water Quality and Detention Plans - Specs & Estimate (This equates to Activity ID 268)
- Final Traffic Control Plans - Specs & Estimate (This equates to Activity ID 340)
- Final Sign Plans - Specs & Estimate (This equates to Activity ID 520)
- Final Striping Plans - Specs & Estimate (This equates to Activity ID 543)
- Final Signal Plans - Specs & Estimate (This equates to Activity ID 540)
- Final Illumination Plans - Specs & Estimate (This equates to Activity ID 500)

Final Plans include:

- Submittal of completed – signature ready – Mylar's
- Completed Specifications
- Approved Design Exceptions
- Signed Intergovernmental Agreements
- Final Engineer's Estimate including Anticipated Items and Construction Schedule
- Environmental Clearances
- Federal, state and local permits
- ROW Certification (cleared by award)
- Funding identified and finalized
- OTC approval for scope changes
- FHWA approval for STIP changes

Projects missing any of the above items will not be advertised. Exceptions to this require the approval of the Executive Deputy Director with consultation from the Region Manager and the Technical Services Manager.

The Final PS&E need to be submitted to the Office of Pre-Letting.

TASK 4 – FINAL CONSTRUCTION COST ESTIMATE

This task, which is often referred to as the "Engineers Estimate", is performed when the Final Plans and special provisions have been completed, and all of the technical disciplines that are working on the plans have submitted their final bid item/quantity summaries. The final construction cost estimate will eventually be used to analyze the bids received from the construction contractors.

This task represents a more formal refinement of preliminary cost estimates from earlier phases of project design, and includes the following steps:

- Verify validity of all bid items
- Update cost estimate based on revised quantities
- Verify and/or update unit costs using historical cost data from the Estimator Database
- Review and identify quantities, checking for consistency and reasonableness
- Assure lump sum, miscellaneous, and anticipated bid items are appropriate and have necessary backup information provided

The Construction Cost Estimate is a confidential document, and is not to be shared with any potential bidders on a project. Typically the final estimate is provided to only a select few ODOT staff who have a "need to know" the final estimates, and is kept confidential until after bids have been opened and the bids have been compared with the final estimate. (This equates to Activity ID 426)

For more information about project lifecyle Emerging Small Business (ESB), Equal Employment Opportunity (EEO), On-the-Job Training (OJT) and Workforce Development Program (WDP) considerations, visit Oregon.gov/ODOT/CS/Civil Rights.

TASK 5 – FINAL CONSTRUCTION SCHEDULE

At this point where the Final Plans are complete, the construction schedule that was originally developed during the DAP and updated during the Preliminary and Advance Plans phases is reviewed and revised, as needed. The intent is to flesh out more details in the construction schedule based on the Final Plans, and ensure that the construction schedule accurately captures the critical path for construction and that the schedule reflects a realistic overall timeframe for construction. (This equates to Activity ID 404)

TASK 6 – COMPILE FINAL SPECIAL PROVISIONS

The specifications writer will prepare and compile the final special provisions prepared by each technical discipline.

The final special provisions must be complete prior to sending them out for review during the Final Plan Review. All permit and clearance activities and ROW acquisition should b complete prior to completion of this task, so that any special provisions that included in permit requirements or ROW holdouts can be incorporated into the final special provisions so they can be reviewed during the Final Plan Review. (This equates to Activity ID 549)

TASK 7 – REVISE PS&E SUBMITTAL CHECKLIST

After the Final Plans and special provisions have been completed, but prior to the Final Plan Review, the PL revises the Draft PS&E Submittal Checklist that was prepared during the Advance Plan Phase. The revised, final PS&E Submittal Checklist is intended to document the readiness of the project for advertising, and to identify any items that may not yet be complete and might therefore require exceptions to allow the project to proceed to advertising on the established advertisement date.
This task can take approximately 1 week to complete. (This equates to Activity ID 474)

TASK 8 – FINAL PLAN REVIEW AND COMPLETION

Subtask 8.1 – Assemble, Copy and Distribute

The Final Plans for all disciplines are assembled together with the special provisions and printed to be distributed for the Final Plan Review. The distribution of Final Plans and Special Provisions is handled by the specifications writer. (This equates to Activity ID 476)

Subtask 8.2 – Final Plan Review

When all of the final plans and special provisions have been completed, full sets are copied and distributed for a final internal review by key ODOT staff in the Region Technical Center, and by the Construction Project Manager's office and other key staff, as determined by the project team and/or PL.

The purpose of this final review is to identify and correct any remaining significant errors or omissions in the plans, special provisions and bid item/quantity summary. It is essential at this stage that a final bid-ability review is performed by one or more experienced staff, to ensure that all required bid items are accounted for appropriately in the plans, special provisions, and bid item/quantity summary. During this final review, review comments are typically shared with the designers for each technical discipline, and revisions made to the PS&E as needed to prepare the PS&E for printing mylars and for submittal of the PS&E to the Office of Pre-Letting for the PS&E Pre-Letting review. (This equates to Activity ID 477)

Subtask 8.3 – Print and Assemble Mylars

After the Final Plan Review is complete, and any final revisions have been made to the Final Plans, mylar plan sheets are plotted, reviewed and signed by the Engineer of Record. (This equates to Activity ID 478)

Subtask 8.4 – Assemble and Submit Final PS&E to Office of Pre-Letting

After subtask 8.3 is complete, and all revisions to the Final Special Provisions, Final Construction Cost Estimate, Final Construction Schedule, and PS&E Submittal Checklist have been completed, the final PS&E are assembled and submitted to the Office of Pre-Letting for the PS&E Pre-Letting Review. At the conclusion of this subtask, the work of the Region Technical Center should be complete.

Final Plan Deliverables: At the completion of this milestone the PL needs to ensure that the following deliverables are completed:

- Final documents required for PS&E submittal
- Updated Construction schedule
- Revised PS&E submittal checklist

(This equates to Activity ID 479)

LIFECYCLE MILESTONE 6: PS&E SUBMITTAL

This point of decision-making provides certainty of the completeness of a project for bid advertisement through Commission Services. Decision-making with any desired interim milestones between Design Acceptance and PS&E Submittal (e.g., Preliminary, Advanced, Final Plans) should be addressed through individual Quality Control Plans and Project Development Change Requests as needed.

TASK 1 – MANAGING THE EXCEPTION LETTER

PD-02 exception letters provide a mechanism to request authorization allowing a project to proceed to bid advertisement given some incomplete PS&E submittal requirement(s). The exception letter must list all outstanding items and include for each item:

- a resolution plan
- the expected resolution date
- the responsible person for each outstanding item

By default, approved PD-02 exceptions letters are assumed to authorize projects to proceed to advertisement only. Projects will not be allowed to proceed to bid opening, project award, or issuance of a Notice to Proceed unless explicitly requested in the exception letter and approved by the Deputy Director. Unless PD-02 letters explicitly request authorization to advertise and award, contracts will not be issued until confirmation from the PL that the outstanding issues have been satisfactorily resolved.

In all cases, the Office of Pre-Letting (OPL) QA staff has been tasked to track identified outstanding PD-02 issues by periodically querying the PL regarding the status of the resolution plan(s). The project PL carries the responsibility to confirm to the OPL QA staff that all the listed issues have been resolved. The ODOT Procurement Office Construction Contracting Unit must also be so advised so they can proceed with contract award. This notification needs to be in writing (e-mail preferred) and can be directed to the project QA engineer, to OPO Construction Contracting directly, or both.

To see an example of a PD-02 Exception letter go to "A User's Guide to PS&E Delivery."

PS&E Submittal Deliverables: At the completion of this milestone the PL needs to ensure that the required deliverables are completed. Deliverables include all

items identified on the PS&E Checklist (criteria and requirements as determined by the State Roadway Engineer), typically including:

- PS&E documents
- Construction Schedule
- Project Completeness Memo/Checklist signed by the accountable manager or delegated authority
- Quality Control Certification from technical resource provider(s)

Projects missing any of the applicable items in the PS&E deliverables may not be advertised and may be removed from the contract letting schedule. The Roadway Section's Office of Pre-Letting will communicate this immediately to those who submitted the PS&E package. Mitigation will be the responsibility of those responsible for delivering the work (e.g., Region Manager), and if necessary the project will be rescheduled for bid advertisement. Exceptions to this require the approval of the Highway Division Deputy Director in consultation with the affected Region Manager and the Chief Engineer.

The following is a list of Tasks that are typically included in the PS&E Submittal Phase (if applicable to the project):

- PS&E Acceptance (This equates to Activity ID 551)
- FHWA Review (This equates to Activity ID 553)
- PS&E Pre-Letting Review (This equates to Activity ID 550)
- Advertising (This equates to Activity ID 555)

For information about project lifecycle Title VI and Environmental Justice considerations, visit the Title VI Plan at Oregon.gov/ODOT/CS/Civil Rights.

LIFECYCLE MILESTONE 7: PROJECT DEVELOPMENT CLOSEOUT

The Project Development Closeout milestone begins after PS&E Submittal deliverables are accepted. The major focus of the closeout is administrative closure and logistics. Project Development closeout includes the following key elements:

1. Transition of the project to the CPM/PM for implementation of Stage 3.
2. Completing, collecting, and archiving project records.
3. Documenting the successes and the lessons learned of the project.

TASK 1 – PROJECT TRANSITION

Once the PL completes the Project Development stage, the PM will take over the Construction Management stage. The elements of this process include transferring the completed work and remaining project responsibilities to others; demobilizing the appropriate project team members and facilities; and closing out the administrative and financial processes associated with the stage.

The purpose of a complete transit package is to assure that the Construction office has all needed documentation and design data to construct the project. The table below lists the possible items that a project may include and details all items that were created by someone other than the roadway designer. It will be a negotiation between the contacts, the PM, and the roadway designer on what items need to be obtained and who will obtain them. Often the PM will already have a copy and will not require another.

ITEM	CONTACT
Contact List of personnel and PDT members involved in the project	PL
List of the Engineer of Record for each discipline	PL
Prospectus Project Leader	PL
Permits associated with the project	PL
Inter-Governmental Agreements (IGA)	PL
Environmental documentation (Historical, BA, BO, wetlands, etc.)	Environmental Specialist
ROW Obligations	ROW Representative

ROW Certifications	ROW Representative
Access Management Plan	Access Sub-team
Technical Reports	Technical Representative
Utility Agreements, work performed, status of completion, and schedule of work	Utility Coordinator
Original Ground Confidence Report	Project Surveyor
ODOT survey maps Project Surveyor	Project Surveyor
Bridge Location data	Bridge Designer
Final Pavement Design	Pavement Designer

The roadway designer will be responsible for compiling all applicable items listed below:

- Designer Narrative
- Exception/Concurrence Letters
- Preliminary Plan Review Comments/Changes (explanation of what comments were or were not incorporated for at least the major design issues)
- Advance Plan Review Comments/Changes (explanation of why comments were or were not incorporated for at least the major design issues)
- Reports/Spread sheets (include electronic and/or hardcopy)
- Alignment reports
- Grade reports (discuss/negotiate level of detail necessary with the project manager's office)
- Pipe Locations (enough information may be on the plan sheets if station, offset, and elevation are shown)
- Bid item quantity calculations and summary
- Microstation/Inroads file list with location of files (use standard naming conventions)
- Project photographs and Video (if available)
- Utility Conflict map and list
- Any pertinent correspondence

The items can be in either electronic or hard copy format. Either way there needs to be a transmittal letter detailing all applicable items from the list and where they can be located (either a directory location or in a project notebook).

The PL will set up a handoff meeting with the relevant lead staff to handoff the project and discuss major items. The Roadway Designer will arrange a day and time to discuss the technical items contained in the in detail, with the construction support person, project inspector, and/or the PM. The PL may attend the Pre-Construction meeting when the contract is awarded.

TASK 2 – PROJECT ARCHIVES

Throughout the course of the project, the PL/PM should have maintained a project repository. As the project progressed, the purpose of the repository was to create a central point of reference for all project materials to be used by anyone involved in the project. Once the project comes to an official close, the repository provides an audit trail documenting the history and evolution of the project.

During Project Closeout for each stage, the PL/PM should examine the repository to ensure that all relevant project-related material, documents produced, decisions made, issues raised and correspondence exchanged have been captured.

When the project is officially closed, the project repository should include the materials as specified in the retention schedules. There are 2 types of records retention schedules:

General Records Retention Schedules are published as OAR 166. The OAR provides state and local agencies with the lawful authority to destroy or otherwise dispose of commonly occurring public records.

Special Records Retention Schedules are specific to the records of a particular agency, and are published in the Oregon Blue Book.

ODOT – Highway Division has a signed agreement prepared by the Records Management Unit and approved by the Secretary of State, Archives Division, which lists and describes the division's records and specifies the length of time the records must to be kept.

The Records Retention Document lists the Special Records Retention for project delivery that need to be retained and which division is responsible. This list does not cover everything. You must refer to the General and Special Records Retention Schedules for a complete listing.

TASK 3 – LESSONS LEARNED

Throughout each project life cycle, lessons are learned and opportunities for improvement are discovered. As part of a continuous improvement process, documenting lessons learned helps the project team discover the root causes of problems that occurred and avoid those problems in later project stages or future projects.

When documenting the lessons learned, you will want to answer these questions:

- What worked well—or didn't work—for this project or for the project team?
- What needs to be done over or differently?
- What surprises did the team have to deal with?
- What project circumstances were not anticipated?
- Were the project goals attained? If not, what changes need to be made to meet goals in the future?