ESTUARY AND SALMON RESTORATION PROGRAM (ESRP)

Design and Restoration Project Deliverables

Overview

This document guides a sponsor through the typical stages of site-specific restoration project development: conceptual design, intermediate design, final design, and construction. It is anchored by the Project Deliverables Table, which outlines the full suite of deliverables included in the design and construction process, how they are connected to a particular project stage, and when each deliverable must be provided to RCO. The Project Deliverables Table is followed by a description of each deliverable.

The goals of this document are to do the following:

1. Inform applicants of the project deliverables typically required of ESRP design and restoration projects.

2. Ensure consistent technical standards and project documentation for the public record and to support technical review.

This document will serve as a key resource for a sponsor to develop a design or construction project application and scopes of work for the design and engineering teams.

Project Deliverables Table

The table below outlines standard stages for site-specific restoration projects. This table specifies deliverables typically required for each stage of project development and when to provide each deliverable to RCO.

For an applicant proposing multiple design stages as part of a single application, the most advanced design stage proposed forms the basis for required deliverables at the end of the project.

The grant agreement will include the specific design deliverables required based on project type, application, technical review recommendations, and the sponsor's experience.

Submit a Basis of Design Report

A Basis of Design Report is a required deliverable of all RCO-funded design stages and provides a record of the technical analyses and decisions that support the design. The report provides the detail necessary for technical reviewers, grants managers, permitting authorities, stakeholders, and other funders to understand how a project meets its goals and objectives. The Project Deliverables Table below outlines report chapters or sections that follow the standard design development process. The level of completion and detail of each chapter are dependent upon the design stages (conceptual, intermediate, final).

		Project Stage			
	Deliverables	**Conceptual Design**	**Intermediate Design**	**Final Design**	**Construction**
1	Landownership Certification Form	Due before agreement	Due before agreement	Due before agreement	Due before agreement
2	Cultural Resources Compliance	Needed actions complete before disturbing ground	Needed actions complete before disturbing ground	Needed actions complete before disturbing ground	Needed actions complete before disturbing ground
3a	Basis of Design Report: Introduction, Goals and Objectives	Due by closing	Due by closing	Due by closing	Due before construction. May be waived for projects entering grant round with final design nearly complete.
3b	Basis of Design Report: Site Characterization	Due by closing	Due by closing	Due by closing	Due before construction. May be waived for projects entering grant round with final design nearly complete.

	Deliverables	Project Stage			
		Conceptual Design	Intermediate Design	Final Design	Construction
3c	Basis of Design Report: Alternatives Assessment and Selection	Due by closing	Due by closing	Due by closing	Due before construction. May be waived for projects entering grant round with final design nearly complete.
3d	Basis of Design Report: Cost Estimates	Due by closing	Due by closing	Due by closing	Due before construction. May be waived for projects entering grant round with final design nearly complete.
3e	Basis of Design Report: Design Considerations, Evaluations, and Analyses	¾	Due by closing	Due by closing	Due before construction. May be waived for projects entering grant round with final design nearly complete.
3f	Basis of Design Report: Permitter and Stakeholder Consultation	¾	Expected of later design stages	Due by closing	Due before construction. May be waived for projects entering grant round with final design nearly complete.
3g	Basis of Design Report: Next Steps	Due by closing	Expected of early design stages	¾	¾

	Deliverables	Project Stage			
		Conceptual Design	Intermediate Design	Final Design	Construction
4	Completed Modeling and Evaluations (if Not Included in Basis of Design Report)	Due by closing	Due by closing	Due by closing	Due by closing
5	Design Drawings	Due by closing	Due by closing	Due by closing	Permitted designs due before construction
6	Planting Plan (if Relevant)	Due by closing	Due by closing	Due by closing	Due before implementation
7	Construction Permits	¾	Optional	Optional	Due before construction
8	Construction Quantities	¾	¾	Due by closing	Due before construction
9	Final Design Technical Specifications	¾	¾	Due by closing	Due before construction
10	Contract Bidding Documents	¾	¾	Optional	Due before construction
11	Landowner Agreement(s)	¾	¾	¾	Due before construction if land not owned by sponsor
12	As-built Documentation and Project Photos	¾	¾	¾	Due by closing
13	Project Photos	¾	¾	¾	Due by closing
14	Stewardship Plan	¾	¾	¾	Due by closing if land owned by sponsor
15	Final Communication Plan (Beach Restoration Small Grants Program Only)	Due by closing	Due by closing	Due by closing	Due by closing

	Deliverables	Project Stage			
		Conceptual Design	Intermediate Design	Final Design	Construction
16	Funding Acknowledgement Signs	¾	¾	¾	Due by closing on public land or sponsor-owned property; Optional on private property.

Project Deliverables Table Descriptions

1. Landownership Certification Form

This form, signed by the sponsor, must be submitted before RCO issues a grant agreement to ensure that the sponsor has reviewed property information and that there are no encumbrances that adversely would affect the ability to restore the property. Visit the RCO website to download a Landownership Certification Form.

2. Cultural Resource Compliance

Real property restored through RCO funding is subject to Governor's Executive Order 21-02 or compliance with section 106 of the National Historic Preservation Act. RCO requires documented compliance with the applicable cultural resources review process before any ground-disturbing activities (including minor disturbances like geotechnical engineering). RCO will begin the initial consultation during the agreement award stage. If next steps or further review are determined to be necessary, these should be included in subsequent design applications.

3. Basis of Design Report

The Basis of Design Report is a detailed record of a project design process that accompanies visual plans and drawings. The following steps or chapters outline the full suite of information considered and documented if appropriate for the project type. Pay attention and ensure the project provides the content outlined in these chapters, rather than adhering to the layout.

3a. Introduction, Goals, and Objectives

The project introduction will include a clear explanation of the fundamental purpose of the project, description of the problem, site-specific limiting factors for specific Endangered Species Act-listed salmonids or other priority species, and the specific restoration goals and objectives of the project. Identifying goals and objectives for each project is a critical

technical framework that demonstrates a project's certainty of success and benefits for estuary and nearshore ecosystem recovery.

Goals–Goals articulate desired biological outcomes (i.e., desired future conditions) and what fish or other wildlife species, life stages, and/or seasonal needs will benefit from those outcomes.

Objectives–Objectives define the specific project outputs produced to achieve the stated project goals. Objectives are SMART (Specific, Measurable, Achievable, Relevant, and Time-bound). Note that project objectives are not the same as work tasks in a project's scope of work.

3b. Site Characterization

A detailed characterization of existing conditions relevant to project design, in the context of established goals and objectives. The level of information will vary from project to project, but typically includes the following elements when available:

- A summary of site, reach, drift cell, and/or watershed conditions
- Relevant site, reach, drift cell, and watershed history leading to the observed problems
- Biological and water quality factors as they relate to the project conditions
- Topographic, geomorphic, and vegetative survey information
- Surrounding habitat types and land uses
- Landowner and community expectations
- Water velocities, depths, and flow rates applicable to species and life stages being targeted by restoration practices
- Groundwater or hyporheic flow ranges
- Tidal elevation and ranges
- Available sediment sampling information
- Site constraints and maintenance requirements that may present challenges to natural process-based restoration

3c Alternatives Assessment and Selection

A core element of the restoration planning process is identifying the range of feasible approaches to meet the project's goals and objectives. This section will include a description

and evaluation of these design alternatives considered to achieve the project goals and objectives culminating in the selection and of a preferred alternative with supporting rationale.

Include a written comparison of each of the alternatives through a thorough evaluation process based on consistent criteria. The applicant is highly encouraged to include visual depictions (maps with design elements applied to the specific site) or typical style drawings to show a comparison of alternatives.

The sponsor should engage partners and stakeholders in the alternative selection process and is encouraged to also engage other technical experts and permitters in projects that are complex, large scale, may pose high risk, or employ novel techniques. Large-scale projects and/or those that may affect a broad spectrum of the community should consider developing a public engagement strategy to overcome obstacles and identify multi-benefit opportunities. The target audience for public engagement may include local residents; Tribes; diking districts; industry groups; non-governmental organizations; wildlife, hunting, fishing, and recreation groups; and local, state, and federal agencies. Consider engaging with groups and key individuals outside of traditional audiences, as appropriate.

When assessing alternatives, the sponsor's team will consider the following evaluation criteria, at a minimum:

- Connection to project goals and objectives
- Tangible benefit to all targeted species and life stages
- Stakeholder comments and community support
- Economic feasibility (appropriate cost-to-benefit ratio)
- Likelihood of success
- Ongoing maintenance requirements
- Project sustainability and resilience

The sponsor must identify clearly and justify selection of a preferred design alternative to achieve project objectives, which will form the basis of all subsequent design stages.

The preferred alternative will include a detailed written description of all proposed design elements. To meet conceptual design requirements, the preferred alternative will depict an accurately scaled site plan view drawing of existing conditions and project elements. Specifically, the drawings for the preferred alternative must include, at a minimum, the following:

- An area/location map

- Property boundaries and land ownership (either surveyed or approximated)
- Roads and other existing infrastructure
- Scale and north arrow
- Water bodies and direction of flow
- Bank-full width (freshwater), mean high water line (marine)
- Approximate location and appropriately scaled dimensions of proposed design elements

3d. Cost Estimate

The level of detail and accuracy of a cost estimate for construction is driven by the stage of design. Conceptual design-level construction cost estimates are rough calculations not based on thorough quantification of project costs but rather professional opinions of similar project costs. They are intended as an initial estimate to inform evaluation of differences between project alternatives.

Intermediate-level design cost estimates include quantified costs derived from the design process, further refined and updated at final design. Detail will include estimates of line items such as the following:

- Materials
- Contract labor costs
- Construction supervision
- Special services such as surveys, materials testing, and geotechnical
- Sales taxes

3e. Design Considerations and Analyses

This chapter describes all specific design criteria that define the intent and expectations for each project element. Design criteria are specific, measurable attributes of project features that clarify the purpose of each project element and articulate how each element will contribute to the project's overall goals and objectives. Include justification and documentation of design methods applied, including assumptions that facilitated the design. Provide design output, including analytical results of all technical and design analyses and how these translate to project element designs.

The Basis of Design Report must include all raw data, computational data, model output, and other reports (geotechnical, hydraulic modeling, topographic survey, wetland delineation,

etc.), either as appendices or incorporated into the Design Considerations and Analysis chapter.

3f. Permitting, Tribal, and Stakeholder Consultation

The Basis of Design Report can include a description of regulatory, Tribal, and/or other public consultation activities. Review and address comments from agencies, Tribes, and stakeholders, if comments were received. This section is optional based on proposed deliverables or as outreach, feedback, and discussion with stakeholders occur during the design process.

3g. Next Steps

The design report for conceptual and early-stage design projects should include a discussion of priority next steps and data collection to fill critical data gaps and advance project design. This is especially important if a gap in time or staff change is expected before proceeding to the next stage of design.

4. Completed Modeling and Evaluations

Attach to PRISM all completed modeling and evaluation reports and design memos (unless they already are included as appendices to the Basis of Design Report).

5. Design Drawings

The preparation of design drawings is key to completing a successful habitat restoration project. All design and restoration projects require design drawings in digital format (e.g., AutoCAD). Each drawing should be to scale, with vertical and horizontal scales on the drawings being kept the same when possible.

The minimum drawing requirements for permit-level and later design stages depict all project elements in sufficient detail to support project permitting and construction and include at least the following:

- Existing site plan showing area/location map; property boundaries; landownership; road, utilities, or other infrastructure as appropriate; scale; north arrow; water bodies and direction of flow; and bank-full width or mean low and high water (marine waters).

- Project site plan view drawing(s) showing proposed actions overlaid on the site plan (above). The site plan will include all project elements including installation and removal of fill, wood, rock, culverts, and infrastructure; clearing and staging; dewatering, etc. Include additional structural design details as needed.

- Longitudinal profile and multiple cross-sections at important project locations showing water surface elevations relevant to the design (e.g., ordinary high water, maximum design flow, tidal elevations, flood elevations.)

- LiDAR (Light Detection and Ranging) layer with location of all major project elements, if available.

Include additional design drawings where available for complex projects or projects with multiple features or sites.

6. Planting Plan

Unless included in other design material, a sponsor with a planting component to the project should submit a planting plan that at a minimum includes a plan view drawing showing the planned extent of planting and weed control in the project area, species list (or lists if species compositions vary across the site), and a description of planned weed control methods and required site preparation. Planned maintenance may be addressed in the planting plan or in a separate site stewardship plan or landowner agreement.

7. Construction Permits

Permitting is an optional step in a design project, but consultation with permitting agencies is highly encouraged for large, complex projects and those employing novel techniques. Feedback from permitting agencies can inform the final design. Including permitting in the design project scope of work is a matter of timing and project complexity. Some applicants include developing permit applications in the design scopes and wait until receiving construction funding to submit permit applications. Some applicants include submitting permits in the final design scopes of work. The sponsor may be asked to provide documentation with uploaded copies and permit numbers with issue dates submitted in a PRISM progress report before starting construction.

8. Construction Quantities

The design report or drawing plan will outline quantified materials, occasionally listed separately. The level of detail is dependent upon the stage of design but fully refined at final design to ensure well developed costs estimates and bid packages.

9. Final Design Technical Specifications

The final design plans, report, or a separate document will include the technical specifications. Support all work shown on project drawings with one or more technical specifications to further describe and/or control the work. The construction contractor should know about project materials, technical requirements, project elevations, permit requirements, or any other elements of the proposed project. Clear and detailed technical

specifications reduce on-the-ground adjustments and changes that may deviate from the original project objectives.

10. Contract Bidding Documents and Conditions

Developing contract documents is an optional step in a design-only project because it may be more practical during the construction phase.

If the sponsor's construction crew will build the project, then bid documents and contract conditions are not required; however, the requirements for technical specifications and a detailed list of work items (above) still apply.

Bidding documents will include a bid form, definitions, a proposed agreement, general conditions, special provisions, technical specifications, and the project drawings.

The sponsor will select contractors using good business practices, which could include selective negotiations with known contractors, public advertisement for bids, or competitive bidding using some combination of proposed price and contractor qualifications. The contractor selection process should be objective and defensible in case of contest and follow all applicable state and required federal procurement procedures.

11. Landowner Agreement

Landowner agreements are required for restoration projects on land that the sponsor does not own. A signed landowner agreement must be provided to RCO before restoration or before a sponsor is reimbursed for any restoration or construction expenses. The purpose of this agreement is to identify and confirm the terms, conditions, and obligations agreed upon between the project sponsor, who is undertaking a project, and the landowner, who owns the property on which the project will take place.

The agreement is a document between the sponsor and the landowner that, at a minimum, allows access to the site by the sponsor and RCO staff for project implementation, inspection, maintenance, and monitoring; clearly states that the landowner will not intentionally compromise the integrity of the project; and clearly describes and assigns all project monitoring and maintenance responsibilities. The landowner agreement remains in effect for a minimum of ten years from the date of project completion. The date of project completion is the date of final payment to the sponsor, as defined in the grant agreement. It is the sponsor's responsibility to inform the landowner of this date.

Visit the RCO website to download a Landowner Agreement Template.

If a project will occur over or in a navigable body of water, authorization to use state-owned aquatic lands may be needed from the Washington Department of Natural Resources. More information about the process is in the "Property Requirements" heading of section 3 in RCO manual 5.

12. As-Built Drawing and Documentation

Document all changes made during construction. "As-built drawing" is the conventional term applied to project design drawings modified by the engineer after construction to document the completed project. Prepare an "as-built drawing" if changes were made to the final design during construction or if the sponsor used a field-fit construction approach. Submit these drawings to the RCO grants manager after project completion. Instead of the conventional "as-built drawing" described above, RCO may allow the sponsor to submit the following as-built documentation:

- Original final designs (if no changes were made during construction).
- Original final designs with a list of change orders describing the construction changes.
- A design memo from the engineer with notations on the final design or construction plans identifying the changed elements of the project with photograph points and photographs showing the project after construction.

13. Project Photos

Attach at least two photos of the completed project to PRISM in a JPG format. Additional photos are encouraged and may be provided in other formats.

14. Restoration Stewardship Plan

If a sponsor completes a restoration project on land the sponsor owns, the sponsor must complete a ten-year stewardship plan before the project closes. A stewardship plan ensures the landowner will maintain the project area at least ten years after completion. Visit the RCO website to download a Restoration Stewardship Plan Template with recommendation components.

15. Final Communication Plan

This deliverable is required only for the Beach Restoration Small Grants Program. A core goal of the Beach Restoration Small Grants Program is for projects to serve as demonstration sites for neighboring property owners, local communities, and other marine waterfront landowners in the greater Puget Sound. A draft communication plan is due at final application. A final communication plan is due as part of the funded grant deliverables.

Each project sponsor must coordinate with the local Shore Friendly organization when developing the communication plan. The ESRP Management Team expects a straightforward plan ranging from one to five pages. Communication plan guidance and an example is on RCO's ESRP website.

16. Funding Acknowledgement Signs

A restoration project on public and sponsor-owned property should be marked with a funding recognition sign. A restoration project on private property does not need a funding recognition sign, but the sponsor is encouraged to erect them, with landowner permission, if the project work is visible to the public. The RCO grants manager can provide small metal funding acknowledgement signs or funding program logos to sponsors.