

Scatter Canyon Water Quality/ Channel Stabilization Project

Scope of Services

This Scope of Services (Scope) describes the engineering services to be performed by Brown and Caldwell (Consultant) for the City of Oregon City (City), Oregon, in order to finalize the design of the Scatter Canyon Water Quality/Channel Stabilization project (Scatter Canyon Project or Project).

Project Description

The following Scope outlines the tasks necessary to advance the 30 percent plan design of the Scatter Canyon Project to the 90 percent and Final (100 percent) completion design levels. The project site is located along an unnamed tributary to Newell Creek, commonly referred to as Scatter Canyon, located at Mountain View Cemetery in Oregon City. The initial site investigations included a wetland delineation, site survey, Phase I site assessment and cultural resources review. Based on information collected through site investigations, a conceptual design was developed and refined. The purpose of the Scatter Canyon Project is to stabilize the existing stream channel at this site in order to improve water quality and reduce channel down cutting. Aesthetics and access will also be important in the project design, as the project site is used as a spiritual visiting place for patrons of the adjacent cemetery to scatter ashes of loved ones.

Deliverables for this project include 90 percent complete and Final plans and specifications submittals, and an engineer's cost estimate.

Phase 1 Project Management

Objective	To provide management of engineering services in support of design including oversight of project schedule, scope, and budget and maintain communications with the City.
Activities	<p>Phase 1 includes the following activities:</p> <ul style="list-style-type: none">• Manage schedule, budget, and scope.• Document meeting decisions and action items, assign activities to appropriate team members, and follow up to ensure timely resolution.• Monitor project progress, including work completed, work remaining, budget expended, and schedule.• Manage the quality control review of all work activities and project deliverables.• Prepare and submit a monthly invoice with invoice summary report.• Coordinate with subconsultants.• Coordinate with the City's Project Manager and project review team.
Deliverables	<p>Phase 1 deliverables are listed below.</p> <ul style="list-style-type: none">• Project schedule• Monthly invoices with work summary

Assumptions Effective duration of the project will be approximately 6 months from Notice to Proceed.

Phase 2 Design Support Services

Objective To provide geotechnical, landscape architect, and permitting services to support final design.

Task 2.1 Geotechnical Services

Activities The firm of Shannon & Wilson, Inc., (SW) will serve as the geotechnical engineer for the Project. SW will conduct field explorations and other design-support activities that include the following:

- **Literature Review, Reconnaissance and Explorations.** SW will review existing information and perform site reconnaissance and explorations that will include the following tasks:
 - A geologic literature search, including review of relevant and available geologic mapping, well logs, digital aerial photos, and LiDAR.
 - Site reconnaissance to map geotechnical features, erosion, bank failures, observe soil types and groundwater seepage in the channel sidewalls, and mark exploration locations for utility locates. A SW engineer or geologist will perform this work.
 - Two hand-auger borings to a depth of 15 feet, or refusal, along the channel. The sites will be selected based on the field reconnaissance and will be selected to correspond to the steepest or most critical bank slope section. A SW engineer or geologist will perform the hand augers, log the borings, and collect soil samples.
- **Geotechnical Hazards Evaluation and Report.** The geotechnical evaluation will include the following tasks:
 - Provide a discussion of soil conditions and prepare graphical logs of the soils in gINT software.
 - Provide a discussion on the presence of observed or mapped landslide hazards.
 - Provide a review of site findings, including observations or any tension cracks, scarps, or evidence of global stability issues.
 - Provide up to 2 hours of post report consultation to answer geotechnical related questions.

Deliverables Task 2.1 deliverables are listed below.

- An electronic copy of the draft geotechnical hazards report will be prepared and submitted for review and comment. Review comments will be incorporated into the final letter report.

Assumptions Task 2.1 assumptions are listed below.

- The City will provide site access.
- Permits will not be required for explorations.
- No environmental testing will be performed.
- The site soils, surface water, and groundwater are not contaminated.
- The one-call Utility Notification Center will be used to locate utilities and no private utility locator will be required.
- No detailed limit equilibrium analysis will be performed using specialized software, such as Slope-W.

- This Scope does not include recommendations for landslide stabilization (if global instability of the slope is observed).
- This Scope does not include geotechnical evaluation of bioengineering of outfall channel enhancements.
- Survey results of the channel will be provided to Consultant.

Task 2.2 Environmental Permitting

Activities The firm of Pacific Habitat Services, Inc., (PHS) will perform the permitting consulting services for the Project. PHS has already performed a wetland delineation report which has been submitted to the Oregon Department of State Lands (DSL) for approval. PHS will also assist in obtaining permits and approvals for anticipated impacts to wetlands or waterways, as required by the DSL and the U.S. Army Corps of Engineers (Corps).

Deliverable Joint Permit Application for proposed impacts to the tributary to Newell Creek

Assumptions Task 2.2 assumptions are listed below:

- Impacts to wetlands or waterways are temporary and will result in a net enhancement of existing conditions in the tributary; the project should therefore meet the criteria of the State Local Operating Procedures for Endangered Species (SLOPES). A biological assessment is therefore not required. No net loss of resource area or function means that no additional wetland or waterway mitigation will be required (proposed actions will be self-mitigating).
- The City will handle all permit fees.
- Enhancement projects in stream, wetland, riparian, and/or upland areas are allowed within Oregon City's Natural Resources Overlay District (NROD) and will not require the issuance of an NROD permit; the proposed action is exempted from the NROD regulations. No project elements requiring NROD permitting are part of proposed actions.
- A Joint Permit Application (to be submitted for review to both the DSL and Corps) will be prepared by PHS.
- Prior to application submittal, the project team will attend one, on-site pre-application meeting with State and Federal regulatory agencies. Attendees should include representatives from the DSL, Corps, Oregon Department of Fish and Wildlife, and Oregon Department of Environmental Quality.
- The Stream Function Assessment Method for Oregon will be completed and submitted as part of the Joint Permit Application.
- JPA does not ensure permit

Task 2.3 Landscape Architecture

Activities The firm of GreenWorks, P.C. (GreenWorks) will act as the landscape architect on the Project and provide revegetation and planting plans to advance the design to Final plans and specifications.

Deliverables Task 2.3 deliverables are listed below:

- 90 percent complete and Final plans and specifications
- Cost estimate

Assumptions Task 2.3 assumptions are listed below:

- GreenWorks is not responsible for parking lot layout, site grading, or drainage.
- Structural engineering necessary for design of walls, trellises, fences, and other landscape features, will be provided by others.
- The fee for a consulting arborist, if necessary, is not included.
- The following services are excluded from Greenworks' scope of work: subsurface condition evaluations, soil issue evaluations (including suitability for plant material, soil content, level of compaction), lot line location, drainage, utilities' location, signage, security, and lighting.
- The City acknowledges and agrees that proper project maintenance will be required after the project is complete. Without adequate maintenance and care on the part of the City, portions of the landscape may never mature and function in the manner intended, resulting in a design that does not achieve the original intent expressed by the designer to the City. GreenWorks cannot be responsible for conditions or events that result from inadequate or improper maintenance.

Phase 3 Design Development

Objective Conduct analysis and evaluation to support development of the 90 percent design.

Assumptions Phase 3 assumptions are listed below:

- City staff will participate in one review meeting.
- City staff will include internal or external stakeholders in any meetings or gather stakeholder feedback, as appropriate.
- Draft TM (limited to 4 pages plus attachments) will be brief and limited to information necessary to inform the design.

Task 3.1 Project kickoff and plan review

Activities Meet with City staff and review the previously developed 30 percent plan set. The meeting is intended to revisit the 30 percent design and discuss recommended refinements/modifications to be incorporated into the final design in Phase 4.

Deliverables Meeting notes

Task 3.2 Design calculations

Activities Task 3.2 includes the following activities:

- Complete a hydrologic study of the drainage catchment contributing to Scatter Canyon and determine peak and channel forming flows at the project location. Based on the channel shape proposed in the 30 percent design, Consultant will calculate stream depth and expected velocity for critical rain events.
- Refine the proposed channel geometry to accommodate the expected flows and size rip rap and channel stabilization measures for the project area.
- Prepare a draft technical memorandum (TM) to summarize findings and document the design calculations.

Deliverables Draft TM and attachments

Phase 4 Detailed Design for Scatter Canyon

Objective: To provide engineering services and develop Final plans. The design will build on and advance the 30 percent plans. The design will incorporate water quality, aesthetics, channel stabilization, conveyance, and replanting of the area. The Final design will employ a natural, yet functional and aesthetic design, to meet the goals of stakeholders.

Assumptions Phase 4 assumptions are listed below:

- The City will provide the 30 percent design files, including survey base map, in electronic CAD format.
- No additional survey will be completed.
- The plans will be designed in accordance with City's public works standards and Oregon APWA/ODOT Standard Specifications (2015)
- 22X34 plans and specifications, in PDF format, will be submitted for 90 percent design review and comment by the City.
- 90% design review meeting will be attended by two BC staff for up to two hours.
- City engineering will participate in one plan review meeting and provide information, as necessary, for review and comment of the design in the form of a comment log.
- City to compile plan comments from City staff and stakeholders and resolve conflicting comments prior to delivery to Consultant.
- No services during construction are included in this Scope.
- Special provisions specifications will be limited to three.
- Cost estimate will be based on 2018 ODOT bid tabs and 2018 RSMeans.
- Design will not be in compliance with ADA code.

Task 4.1 90 percent Design Activities

Activities Task 4.1 includes the following activities:

- Prepare construction plans to a 90 percent design level. The plans will provide the information necessary for construction of the Scatter Canyon Project.
- Develop a list of bid items based on the 90 percent plans.
- Prepare a preliminary engineers' cost estimate.

Deliverables 22X34 90 percent plans in electronic PDF format

Task 4.2 Specifications

Activities Develop special provisions to be included in the project specifications.

Deliverables Draft special provisions in electronic PDF format

Task 4.3 Engineers Cost Estimate

Activities Prepare a preliminary engineers' cost estimate.

Deliverables 90 percent bid items list and preliminary cost estimate

Task 4.4 Design Review Meeting

Activities Hold one project review meeting in person with the City to review and collect comments on the 90 percent package before finalizing plan set.

Task 4.5 Final Design Activities

Activities Task 4.2 includes the following activities:

- Prepare Final (100 percent) plans and specifications for the City to use for obtaining the necessary construction permits for the project.
- Prepare a Final engineers' estimate based on the Final plans.
- Prepare a response spreadsheet to document the manner in which the Final plans address the City's comments on the 90 percent plan submittal.

Deliverables Task 4.2 deliverables are listed below:

- 22X34 plan documents plans, specifications, and engineer's estimate in PDF format
- 100 percent comments and response spreadsheet

Task 4.6 QA/QC

Activities Conduct an internal QA/QC and constructability review on the 90 percent and Final design package.

Brown and Caldwell Budget

July 29, 2019

Oregon City, City of (OR) -- Oregon City Scatter Canyon Design																		
		Martinez, Robert T	Eldon, Miranda	Retzlaff, Ryan G	Suesser, Thomas	Bell, Janice	Whirly, Nathan S	Wilson, Joanna B	Paire, Wendy M			Shannon and Wilson	Pacific Habitat	Greenworks				
Phase	Phase Description	PM	PA							Total Labor Hours	Total Labor Effort	Cost	Cost	Cost	Total Sub Cost	Total Expense Cost	Total Expense Effort	Total Effort
		\$247.00	\$92.00	\$191.00	\$107.00	\$141.00	\$141.00	\$92.00	\$123.00									
001	Project Management	12	8	0	0	0	0	7	0	27	4,344	0	0	0	0	0	0	4,344
002	Design Support Services	0	0	0	0	0	0	0	0	0	0	6,545	15,974	8,000	30,519	30,519	32,045	32,045
003	Design Development	3	0	11	19	2	0	0	4	39	5,649	50	0	0	50	50	53	5,702
004	Detailed Design	7	0	44	48	22	54	0	8	183	26,969	50	0	0	50	50	53	27,022
TOTAL		22	8	55	67	24	54	7	12	249	38,034	6,645	15,974	8,000	30,619	30,619	32,150	69,112

Hours and Dollars are rounded to nearest whole number.