

**FINAL PROJECT REPORT**

**FOR**

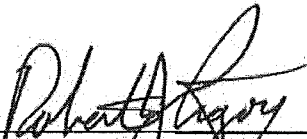
**G1200460**


Habitat Status and Trends Monitoring for the Lower Columbia River Region

City of Longview

Total Cost of Project: \$189,740  
Grant or Loan Amount: \$189,740

Project Start Date: February 22, 2012  
End Date: June 30, 2013

  
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Robert Gregory, PE      Date 9-3-13  
City Manager

  
\_\_\_\_\_  
Josh Johnson, PE      Date  
Street/Stormwater Manager

## OVERVIEW DESCRIPTION OF PROJECT

This project combined ongoing efforts by municipal stormwater managers in Southwest Washington with those led by the Pacific Northwest Aquatic Monitoring Partnership (PNAMP) to develop an integrated status and trends monitoring (ISTM) design for the Lower Columbia region that builds on existing programs in order to provide necessary surface water, aquatic habitat, and watershed health information to scientists and decision makers. This project consisted of two tasks intended to prepare for NPDES compliance. The two project tasks were:

Task 1 – Project Administration/Management

Task 2 – Identify Monitoring Designs, Sample Frames, Protocols, and Analytical Tools

Task 3 – Trade-off Analysis to Develop Recommendations for Monitoring

Task 4 – Recommend Monitoring Design, Implementation, and Reporting Mechanisms

## OUTCOME

### Task 1 - Project Administration and Management

- a. Effective administration and management of this grant project
- b. Maintenance of all project records
- c. Submittal of all required performance items

Task #1 was fully completed. Six quarterly reports were submitted, apparently to Ecology's satisfaction. Two reimbursement requests were submitted.

### Task 2 - Identify Monitoring Designs, Sample Frames, Protocols, and Analytical Tools

Task #2 was fully completed. Stormwater managers' priority management questions were identified, and existing stormwater monitoring programs documented. This information was then integrated with similar information from ISTM partners to develop a summary list of management questions and the monitoring metrics needed to answer those questions. Sets of management questions that focused on the same set of metrics were organized into Management Question Groups. These groups formed the basis for analyzing gaps where monitoring data is needed to answer management questions. Input on these management questions, associated metrics, and gap analysis was gathered in a technical workshop held in January of 2013. Workshop feedback, along with feedback solicited via email, contributed to the development of three alternative monitoring scenarios, which were presented at a second technical workshop in February of 2013. Simultaneously, statistical evaluation was conducted to

determine the feasibility of combining probabilistic and non-probabilistic (opportunistic) sampling designs. Results and discussion regarding this stage of the project are available in Technical Report 1 (see attached).

### Task 3 – Trade-off Analysis to Develop Recommendations for Monitoring

Task #3 was fully completed. The trade-off analysis evaluated the alternative monitoring scenarios. It investigated ways in which the monitoring strategy could be scaled up or down to address priority monitoring questions and the relative costs and benefits associated with varying the number of metrics sampled. This trade-off analysis proceeded based on the varying design options for one of the three alternative monitoring scenarios presented at the February technical workshop. Participants of that workshop and entities that provided input following the workshop agreed that the moderate scenario, Scenario 2, was the most feasible option. The metrics under Scenario 2 were prioritized, or tiered, to create three levels of effort, which were then taken through the trade-off analysis. As part of this analysis, target populations and related spatial scales were clarified and resulting discrepancies in water Qa/Qx and habitat monitoring designs addressed. A stormwater technical subgroup meeting/workshop was also held during Stage 2 to further refine priorities for water Qa/Qx metrics, and to finalize monitoring frequencies, timing, and field collection methodologies. Meanwhile, statistical evaluation explored the utility of a Generalized Random Tessellation Survey (GRTS)-based design versus other spatial designs for reducing bias and increasing precision. Other efforts assessed potential funding mechanisms and collaboration options for stormwater permittees. Monitoring design options and participant interests were further explored in the April technical workshop where the many design options within each alternative monitoring scenario were vetted. Technical Report 2 (see attached) included results from that workshop and other details regarding the methods and results from this stage of the project.

### Task 4 – Recommend Monitoring Design, Implementation, and Reporting Mechanisms

Task #4 was fully completed. Work continued toward developing final recommendations for the coordinated monitoring strategy. These recommendations included modifications based on feedback from the April workshop and a habitat technical subgroup meeting that was held on April 30, 2013 with primarily ISTM partners. Additional feedback was received during a meeting on April 29, 2013 with stormwater managers in the region. A brief overview of the project to date was provided and some feedback was offered, which was also incorporated during this stage of the project. Recommendations regarding habitat metrics and strata were incorporated into the draft final recommendations. The Lower Columbia Master Sample was completed during this phase of the project to include legacy sites from existing monitoring programs. The Lower Columbia Master Sample and the recommended methods for the program have been uploaded to MonitoringResources.org. The final technical workshop was held on May 22, 2013.

Results from that meeting and other information about this stage of the project are included in the third (and final) report (see attached).

## **EVALUATION**

Various types of monitoring are currently being conducted across the Lower Columbia Region. There are multiple large-scale status and trends programs in place that focus on evaluating salmon habitat conditions and assessing whether current salmon recovery efforts are making progress. Phase I stormwater permittees currently conduct receiving water monitoring and permittees of the smaller municipalities (Phase II) may begin monitoring water quality and quantity, benthos, habitat, and sediment chemistry as early as 2018. Although monitoring efforts are underway, there is a need for regional coordination to implement a region-wide monitoring strategy that will improve data sharing and provide a more broad-scale understanding of the status and trends of habitat across the region. Furthermore, this monitoring strategy will need to collect the information necessary to identify habitat and water Qa/QX conditions that are limiting achievement of recovery goals. The Lower Columbia Habitat Status and Trends Project was initiated to develop recommendations for a coordinated habitat and water Qa/QX status and trends monitoring strategy for the Lower Columbia Region that fills the aforementioned needs and builds upon ongoing work in the region. Its final recommendations for an integrated monitoring strategy design built upon ongoing work within the region and provide a baseline upon which a monitoring strategy for the Lower Columbia Region can be crafted. Prior to implementation, additional work will be required to field test the design, apply lessons learned through that process, and work through process-related specifics. The results of this project have provided the basis for initiating the implementation process.

## **FOLLOW-UP**

Pursue funding with Ecology and other sources to continue the completion and then begin to implement the monitoring design strategy by:

1. Completing a detailed monitoring design that addresses the key questions and information gaps identified during the previous project;
2. Conducting a pilot study of the monitoring design in two Lower Columbia subbasins to help assess the adequacy of the design and implementation approaches, costs and logistics; and
3. Conducting an outreach program to promote understanding and gain support for implementation of this design strategy.

## **GENERAL COMMENTS**

Thanks to Ecology for the grant. Thanks to the Lower Columbia Fish Recovery Board and all other partners for their participation and contributions.

September 9, 2013 – Communications Team

Kristin, Sandy, Shelly, Tami, Sharon, Amy, Melanie, Cynthia

**Shelly- Update on the video conference scheduled on 10/1**, time change to 9:30 (ends at 11:00 a.m.) because Polly is kicking it off and had a conflict at 10 a.m. Shelly is planning to send the invite today to the "160", Polly is supposed to follow up with managers to ensure staff attend – all four regions and Bellingham Field Office. Bernadette printed posters of the timeline and they will be sent to regions/BFO. Admin in each location will help with posters, and refreshments. Shelly and Bernadette are working on the presentation. Sandy will follow-up with setting up video-taping of the conference (taping is not going to be announced).

**Agate recipient training today for the business team** at 10 a.m. It will be recorded, all can see it later. WQ needs to quickly turn that around into training and guidance for applicants.

**Melanie- Update on website.** Based on feedback, made some changes. There's sub-set of groups working on critical/time-sensitive info to Erin who is creating development content. Heard back from all except Shelly on progress. Substantial progress is being made with the goal of going live with some of it by October 1 when EAGL goes live. Shelly posted her stuff but needs to send links to where it is, sent Sandy a start on (opening page)? - Erik can beef it up. EAGL front page info needed – Shelly/Amy will touch base on Tuesday to use Bernadette's example and tweak it to reflect ECY.

**Shelly- Funding opportunity pages live** – if CPG wants one, it needs to be put into the "format" and go to Erin. Amy offered to help Sharon for CPG.

Sandy thanked Shelly/Bernadette for presentation last week. Hope that will be used again.

Melanie- curious about what kind of communication we are having with our clients during the interim period (now and live EAGL). Are we keeping them posted as to on-track status? Shelly answered – for the website, put together a blurb to send out to list-serve as a quick communication. Probably need to get approval to send it out from Jeff.

Sandy – idea: would it be helpful to number them and put them someplace? Shelly answered that was the plan for the communications workplan (identified as need).

Maybe we should save a corner of the website for "communications" storage (on the portal page? EAGL landing page? Both?). Amy will schedule a meeting for communications team to discuss this (?).

Cynthia is a EAGL tester and will keep us apprised as she tests.

