To: Steve Wall, Public Works Director
Brian Monnin, Engineer III – Stormwater
City of Camas, WA

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Subject: Proposal for Monitoring Plan Update

Introduction

Based on our conversation with the City of Camas on September 18th, 2024 AWR and Aquatic Insight have developed this proposal to update the Lacamas, Round and Fallen Leaf Monitoring Program. The overall goal of this project is to develop an updated monitoring plan that can be used for 1) ongoing data collection, 2) to identify when to conduct lake treatments (and post treatment monitoring) and 3) responding to cyanobacteria harmful algal bloom (cHAB) events.

Scope of Work

The scope of work is broken into two tasks: 1) review the past data analysis and interpretation of lake limnology and 2) utilize the lake ecology insights to develop an updated monitoring plan for 2025 and beyond.

Task 1. Data Review and Interpretation

Objective

The objective of this task is to review past data analysis and interpretations of the water quality and limnology in the lakes to inform updating the monitoring plan.

Activities

- Review the data analysis summary by Geosyntec (expected January 2025)
- Review the LCMP monitoring data results
- Review the Lacamas Watershed Council data from 2022 to 2024
- Review any data collected by Aquatechnex in 2024
- Review existing stormwater data collected in 2022 to present.
- Review current monitoring plan, developed by Geosyntec.
- Review previous conceptual models of the lake limnology and develop a refined conceptual model for specific time periods and processes in the lakes to help target monitoring and lake treatments.
- Draft initial sections of the updated monitoring plan to summarize the conceptual models of interest.
- Develop a short PowerPoint and check in meeting with the City.

Assumptions

- No new extensive data analysis will be conducted as part of this task.
- The City will provide all of the data and reports to be reviewed in this task.

Deliverables

- PowerPoint slide deck presenting key conceptual models of the lake.

Task 2. Update Monitoring Plan

Objective

The objective of this task is to update the lake monitoring plan for: ongoing data collection, supporting lake treatments, and responding to cHAB events for Lacamas, Round and Fallen Leaf Lakes.

Activities

- Develop key concepts and framework
- Based on the results of Task 1, develop the key concepts and framework for the new monitoring plan, leveraging past data collection, conceptual models and goals for this plan.
- The key concepts should include multiple "subplans" for situations like:
    - Baseline monitoring
    - Triggers for treatment
    - Before, during and after algal blooms
- The framework should also include recommendations and guidance on which treatment strategies to implement in specific water quality conditions, such as during high spring flow, between diatom and cyanobacteria activity, and during late season turn-over events for example.
- Develop a short PowerPoint on the key concepts and framework for the new monitoring plan and meet with the City for the feedback.
- Develop a first draft Monitoring Plan
- Present the first draft Monitoring Plan to the City in a meeting and seek feedback.
- Finalize the first draft Monitoring Plan and submit to the City for review.
- Respond to City comments, and finalize the new Monitoring Plan.

Assumptions

- The draft Monitoring Plan will undergo one round of review before being finalized.
- The City will provide one set of consolidated comments on the draft Monitoring Plan.

Deliverables

- Draft and Final Monitoring Plan for Lacamas, Round and Fallen Leaf Lakes

Task 3. Cove Management

Objective

The objective of this task is to develop an approach to managing water quality in the cove area of Lacamas Lake (Figure 1), which tends to be more isolated from the rest of the lake.

Figure 1. Cove area in Lacamas Lake.

Activities

- Work with the City to establish water quality goals for the cove area
- Develop some key ideas and strategies for managing this area of the lake
- Share these ideas with the City in a short PowerPoint and seek feedback.
- Based on feedback further refine and flush out management strategies for the cove and then develop a draft technical memorandum documenting the strategies and submit to the City for review.
- Respond to City comments, and finalize the technical memorandum.

Assumptions

- The draft technical memorandum will undergo one round of review before being finalized.
- The City will provide one set of consolidated comments on the draft technical memorandum.

Deliverables

- Draft and Final technical memorandum for managing the cove in Lacamas Lake.

Schedule

Once under contract and the Geosyntec review is completed (January 2025), we will begin the work described above immediately, anticipating a start date of January 15, 2025. The schedule for completing the three tasks is by March 31, 2025.

Budget

The budget for the project is provided in the table below. The rates used in this budget are AWR Team established 2025 rates and will remain constant for the duration of the project. The budget requested for the project is $46,300. The budget estimate was developed with no markup on expenses, and no markup on subconsultant costs by AWR.

Task	Title	Cost
1	Data Review and Interpretation	$14,900
2	Update Monitoring Plan	$26,600
3	Cove Management	$4,800
	Total	$46,300