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Bioretention Hydrologic Performance Study Progress Report: First Quarter 2016 (January 1, 2016 - March 31, 2016).

Clear Creek Solutions (CCS) conducted the following work as part of the Bioretention Hydrologic Performance Study in the first quarter of 2016:

PHASE I RECAP

Task 2 Prepare Site Selection Criteria and Conduct Selection Process

Completed in 2015.

Task 3. Development of the QAPP.

Deliverable 3.1: Draft QAPP for all sites addressing monitoring methods and analysis delivered to the City of Bellingham.

The draft QAPP was submitted by the consultant team to the City of Bellingham on November 3, 2015, and accepted by Ecology as a completed deliverable for this task.

Deliverable 3.2: Final QAPP and detailed Phase II scope of work delivered to the City of Bellingham.

The final QAPP was submitted by the consultant team to the City of Bellingham and the Department of Ecology on February 10, 2016, after receiving comments from the Department of Ecology. This submittal completed Phase I.

PHASE II

The Phase II contract was received from the City of Bellingham on January 29, 2016. Following review of the Phase II scope of work and budget by the consultant team it was determined that the Phase II scope and budget needed to be updated to be consistent with the final QAPP. The updated Phase II contract scope of work and budget were signed and returned to the City of Bellingham on March 18, 2016*.

*The Phase II contract was signed by the City of Bellingham and returned to the consultant team on April 11, 2016.

The original Phase II scope and budget were written prior to the completion of Phase I and the development of the QAPP. The original assumption made in the Phase II scope and budget (by Bill Reilly) was that the consultant team would handle the purchase of the monitoring equipment for Phase II, but that the equipment would be owned by the City of Bellingham. After some discussion the team decided that it makes more sense, both in terms of logistics and administrative considerations and costs, for the City of Bellingham to purchase the monitoring equipment through the City's Purchasing Office. This way the City and the Department of Ecology will be assured that the purchase will be in accordance with state procurement rules and procedures. The cost of the monitoring equipment was removed from the Consultant Services Agreement and will have to be handled in a separate agreement between the City of Bellingham and the Department of Ecology. Note that the consultant team will still develop and provide to the City a complete list of the monitoring equipment required for Phase II.

The original Phase II equipment cost estimate was approximately \$49K (including tax). With the completion of Phase I and the selection of the monitoring sites for Phase II, this equipment cost estimate has increased to \$85K (including tax). The reason for the increase is the need for additional equipment because some of the sites have multiple inlets or outlets that will need individual monitoring. This was not known prior to our visits of the sites.

With the removal of the monitoring equipment purchase from the consultant Phase II contract the consultant budget was decreased from \$457,734 to \$446,644.

Other changes to the scope and budget have offset some of the savings in the consultant budget resulting from the removal of the equipment purchase from the budget, field work efficiency savings, and the elimination of an unneeded data management task. These changes are the new (and previously unbudgeted) deliverables in tasks 4, 5, and 6. While all of these deliverables are quite reasonable and will add to the quality and completeness of the final product, they also added to the project cost.

Note that the monitoring period has been clarified in the scope to be for five months (from October 2016 through February 2017). The project target dates have been adjusted accordingly.

Ecology and the PSEMP Stormwater Work Group have expressed interest in extending the monitoring period beyond its planned end date of February 2017. However, for the purposes of this initial Phase II scope and budget we stayed with the original plan of five months of monitoring. We will provide information on the cost of extended monitoring, if requested, but we decided that it was important to first get this Phase II contract signed and under way.

The consultant team highly recommends that the City of Bellingham request additional funding for the Phase II monitoring equipment purchase as soon as possible so that the timing of the purchase of the equipment (current schedule purchase deadline is September 1, 2016) is not delayed. Any potential delay will jeopardize the ability of the consultant team to install and make operational the monitoring equipment at the ten bioretention sites by the October 1, 2016, deadline.

The consultant team also recommends that the City of Bellingham discuss with the Department of Ecology and the PSEMP Stormwater Work Group extending the monitoring period beyond the planned end monitoring date of February 2017. If requested, the consultant team will provide a cost estimate for the extension of the monitoring period.