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October 25, 2019

Dr. Linda Hardison, Dr. Gerrad Jones
Oregon State University
Corvallis, OR, 97330

Greetings Dr. Hardison and Dr. Jones,

We are pleased to reach out to you this week with an overview of our current project status.

Our team began building the hydrologic and hydraulic models. Since our meeting, we have started gathering necessary data for building the model of the stream under current conditions. Looking ahead to the next two weeks, we would like to set up a meeting with you to discuss placing sensors in the creek for measuring water flow. Accurate measurements of flow will be critical for improving our modeling.

The attached memo provides a closer look at our current progress, goals for the next two weeks, and specific needs about what our team will need. You will also find our calendar detailing project deliverables and associated deadlines. Please feel free to contact us with any questions, suggestions, or resources related to the project.

Thank you again for your time and the opportunity to get involved in such an exciting project. We are eager to contribute to the restoration efforts at Lamprey Creek.

Cheers,

Derec Chumley

Project Lead

MEMO

To: Dr. Linda Hardison, Dr. Gerrad Jones
From: Derec Chumley
Subject: Progress update for project start
Date: October 25, 2019
CC: Brooke Bennett *(Communications Lead)*, Anna Burton *(Organizational Lead)*, Dr. John Selker *(Professor)*

Progress Update:
The project team spent the last two weeks researching topics to gain a better understanding of possible methods for reaching the ultimate design goals. Our research covered livestock management in wetlands and riparian areas, hydraulic and hydrological modeling, and environmental monitoring for streamflow data that can be used by the models.

We concluded that there are three distinct landscapes to model: (1) a straight channel representing current conditions, (2) a constructed meandering channel, and (3) an unstructured flow over the floodplain by filling in the current channel. We plan to assess the model under multiple flow regimes as well as the impacts to flow regimes stemming from urban development upstream of Lamprey Creek. Our team assessed numerous options for obtaining flow data and ultimately settled on installing an absolute pressure gauge and physical stage meter in the creek to obtain stream depth. We also plan to visit the gauge site to survey stream velocities using the salt dilution method. Using this depth and velocity data along with dimensional measurements of the sampling site, we can build a stage-discharge relationship that will inform the modeled discharge.

Commitments for the Next Two Weeks:
Our team will focus on estimating the streamflow conditions and gathering land use data of the surrounding areas to model the catchment. This will allow us to start estimating the housing development's effects on stream discharge. Our team will also need to make time to go to the site and assess sensor placement to provide us with accurate and obtainable flow data. Without this data verifying the model will be a challenge.

Needs from Client:
The team would like to setup a time for a site visit with the client to gain familiarity with the area and assess possible sensor locations.