

Semi-Annual Progress Report

Send progress report to: Brandi Lubliner
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General Information

Contract / Grant Agreement Number: IAA No. C1900143

Project Title: **The effects of mulch on stormwater treatment and maintenance effort in bioretention systems**

Organization: Washington State University

Project Manager: Anand Jayakaran

Reporting Period: July 1, 2019 to December 31, 2019

Date this Form was Completed April 15, 2020

Brief description of Tasks and Deliverable Achievements for current report period.

Task 1: Project Management

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|--|--|--|--|
| Percent of Task Completed: | 0% | | |
| All deliverables to be completed: | Deliverables 1.1 to 1.4: Semi Annual reports #s 1 to 4 | | |
| Deliverables completed in previous reporting periods: | none | | |
| Deliverables completed in this reporting period: | Deliverable 1.1 (this report) | | |
| Description of Achievements: | 1. A technical advisory committee (TAC) of 6 members was formed in September 2019. 2. The TAC received a draft version of the Quality Assurance Project | | |
| Challenges faced: | none to report | | |

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| Task 2: Quality Assurance and Project Protocol (QAPP) development | | | |
| Percent of Task Completed: | 50% | | |
| All deliverables to be completed: | Deliverable 2.1 & 2.2: Draft and final QAPP | | |
| Deliverables completed in previous reporting periods: | none | | |
| Deliverables completed in this reporting period: | Deliverable 2.1: Draft QAPP | | |
| Description of Achievements: | A draft QAPP was completed and sent to the TAC for their approval | | |
| Challenges faced: | none to report | | |

Semi-Annual Progress Report

| Task 3: Bioretention system preparation and instrumentation | | | | | |
|--|--|--|--|--|--|
| Percent of Task Completed: | 75% | | | | |
| All deliverables to be completed: | Deliverable 3.1: Memo of completed instrumentation | | | | |
| Deliverables completed in previous reporting periods: | none | | | | |
| Deliverables completed in this reporting period: | none | | | | |
| Description of Achievements: | <ol style="list-style-type: none"> 1. Flowmeters were installed to measure bioretention cell outflows were calibrated. 2. Flowmeters were connected to dataloggers, and the wired into the lexisting data collection network at the LID facilities at WSU Puyallup. 3. Soil moisture sensors were purchased. 4. The three different types of mulch were purchased and installed in 12 bioretention cells. Previously installed mulch was first removed. Four cells were left unmulched as control. | | | | |
| Challenges faced: | Three of the 16 bioretention cells appeared to develop leaks. Those three cells were re-excavated and leaks in the underlying pond liner patched. | | | | |

| Task 4: Quantifying maintenance effort and plant survival | | | | | |
|--|--|--|--|--|--|
| Percent of Task Completed: | 0% | | | | |
| All deliverables to be completed: | Deliverable 4.1: A memo that describes and compares the total effort associated with monitoring of maintenance at 16 bioretention cells at the study site | | | | |
| Deliverables completed in previous reporting periods: | none | | | | |
| Deliverables completed in this reporting period: | none to report | | | | |
| Description of Achievements: | none to report | | | | |
| Challenges faced: | none to report | | | | |

Semi-Annual Progress Report

| Task 5: Quantifying mulch effects on water quality and water quantity | | | | | |
|--|--|--|--|--|--|
| Percent of Task Completed: | 0% | | | | |
| All deliverables to be completed: | Deliverable 5.1: Draft analysis and presentation shared with TAC meeting # 2 of all effort Deliverable 5.2: Revised analysis and revised report shared with TAC meeting # 3 | | | | |
| Deliverables completed in previous reporting periods: | none | | | | |
| Deliverables completed in this reporting period: | none to report | | | | |
| Description of Achievements: | none to report | | | | |
| Challenges faced: | none to report | | | | |

| Task 6: Communication | | | | | |
|--|--|--|--|--|--|
| Percent of Task Completed: | 0% | | | | |
| All deliverables to be completed: | Deliverable 6.1: Draft report of the whole study Deliverable 6.2: Final Report with complete appendices Deliverable 6.3: Two presentations – one for the Stormwater Work Group, and another for regional stormwater related conference Deliverable 6.4: Draft fact sheet per SAM format | | | | |
| Deliverables completed in previous reporting periods: | none | | | | |
| Deliverables completed in this reporting period: | none to report | | | | |
| Description of Achievements: | none to report | | | | |
| Challenges faced: | none to report | | | | |