

Semi-Annual Progress Report

Send progress report to: Brandi Lubliner
 Department of Ecology
 PO Box 47600
 Olympia, WA 98504-7600

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: **January 1, 2020 to June 30, 2020**

Date this Form was Completed July 13, 2020

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

Task 1: Project Management

Percent of Task Completed:	50%		
All deliverables to be completed:	Deliverables 1.1 to 1.4: Semi Annual reports #s 1 to 4		
Deliverables completed in previous reporting periods:	Deliverable 1.1		
Deliverables completed in this reporting period:	Deliverable 1.2 (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		

Task 2: Quality Assurance and Project Protocol (QAPP) development			
Percent of Task Completed:	100%		
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:	Project QAPP was completed, sent to the TAC for their approval, revised, and approved by SAM Coordinator		
Challenges faced:	none to report		

Semi-Annual Progress Report

Task 3: Bioretention system preparation and instrumentation					
Percent of Task Completed:	100%				
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:	Deliverable 3.1: Memo of completed instrumentation				
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:	20%				
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:	Measurements of maintenance and survival is ongoing				
Challenges faced:	none to report				

Semi-Annual Progress Report

Task 5: Quantifying mulch effects on water quality and water quantity					
Percent of Task Completed:	30%				
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:	Two storm events have been completed, analyses of data (hydrologic and water quality) is ongoing				
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				