

# Supplemental Budget Request

Status: Pending

Public Works

Stormwater

Suppl ID # 3555 Fund Cost Center Originator: Holly Faulstich

Expenditure Type: One-Time Year 2 2022 Add'l FTE  Add'l Space  Priority 1

Name of Request: PBB for Geneva Bioretention Pilot Project

X  12/7/21  
 Department Head Signature (Required on Hard Copy Submission) Date

Costs:	Object	Object Description	Amount Requested
	4334.0311	CZM-FCCAP Grant	(\$971,250)
	6110	Regular Salaries & Wages	\$64,000
	6290	Applied Benefits	\$47,000
	6630	Professional Services	\$341,000
	6699	Other Services-Interfund	\$33,000
	7199	Other Miscellaneous/Inte	\$194,250
	7199	Other Miscellaneous/Inte	\$3,000
	7380	Other Improvements	\$807,000
	8301.132	Operating Transfer In	(\$268,000)
	8301.324	Operating Transfer In	(\$250,000)
	<b>Request Total</b>		<b>\$0</b>

**1a. Description of request:**

The Geneva Bioretention Pilot Project will improve water quality in Lake Whatcom through the retrofit of a bioretention facility in the Geneva neighborhood. This project will utilize a newly developed High Performance Bioretention Soil Mix (HPBSM) to provide treatment for total suspended solids, dissolved copper, dissolved zinc, and total phosphorus. This is a priority capital project and is listed as item number three on the 2022-2027 Six-Year Water Resources Improvement Program for the Lake Whatcom watershed. This supplemental budget request includes costs for design, easement acquisition and construction of this project.

The Stormwater Division was successful in obtaining a Water Quality Combined Financial Assistance grant from the Washington State Department of Ecology (Ecology) to aid in funding the design and construction of the stormwater retrofits. This ASR request, in the amount of \$1,489,250 (including a 15% contingency), will be funded by the Washington State Department of Ecology and local funds. The Ecology grant will reimburse up to the seventy-five percent of eligible county expenses on this project for a maximum reimbursement of \$971,250. The remainder will be funded by a transfer from the Real Estate Excise Tax II fund (\$250,000) and from the Lake Whatcom Stormwater Utility fund (\$268,000).

**1b. Primary customers:**

The primary customers of this project are the citizens of Whatcom County, residents of the City of Bellingham, and anyone who benefits from recreational use of Lake Whatcom.

**2. Problem to be solved:**

Lake Whatcom supplies drinking water to approximately 100,000 residents in the Bellingham area. Elevated levels of phosphorus have caused Lake Whatcom to be placed on Washington State's 303(d) listing as an impaired water body. It is a listed water body with a Total Maximum Daily Load (TMDL) for phosphorus and bacteria. The Lake Whatcom Watershed Total Phosphorus and Bacteria TMDL: Volume 2 Water Quality Improvement Report and Implementation Strategy identifies improving phosphorus

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removal in stormwater facilities as a priority program area.

This project will significantly improve local water quality and provide field verification for the new Washington State High Performance Bioretention Soil Mix (HPBSM) specification for adoption statewide. The project site is located in the Geneva neighborhood on the shores of Lake Whatcom. Initial design of the existing roadside swales did not include plans for phosphorus or bacteria capture. Runoff from this neighborhood drains directly to Lake Whatcom.

### 3a. Options / Advantages:

This project will help protect and restore water quality in Lake Whatcom by reducing stormwater impacts from existing infrastructure and development. The failure to reduce phosphorus loading to Lake Whatcom can result in costly water quality treatment, reduced use of Lake Whatcom as a fishing and recreational facility, and the overall deterioration of the biological function of the watershed. This project will contribute to the overall goal of water quality and assist with meeting the TMDL requirements of retrofitting development to mimic the phosphorus loading of a forested watershed.

The existing facility targeted for replacement was designed in 2005 before appropriate guidelines were developed for phosphorus management in bioretention systems. Structural issues such as inadequate ponding depths and drainage also preclude the facility from providing adequate phosphorus treatment for the Lake. This project will design and construct a new bioretention facility using the new HPBSM specification to dramatically improve phosphorus treatment. The proposed bioretention configuration with the HPBSM will increase phosphorus removal from approximately 10 percent to more than 50 percent from the total inflowing runoff volume annually from 126 acres of residential, roadway, and forested areas.

### 3b. Cost savings:

While no direct cost savings would be experienced, the failure to reduce phosphorus loading to Lake Whatcom can result in costly removal/treatment of excessive algae blooms and increased costs for maintaining drinking water filters, etc.

### 4a. Outcomes:

The construction and installation of the high-performance bioretention pilot project to treat stormwater entering Lake Whatcom will indicate that the project outcomes have been met.

Field performance of the new HPBSM will be quantified for several years following installation. This effectiveness monitoring will assist the Stormwater Division in quantifying in-field phosphorus reduction and provide information for the continuing improvement of water quality design work in the Lake Whatcom watershed. Refinements to the BSM specifications will be made to improve performance and the constructed facility will be properly maintained to ensure continued water quality benefits.

The project is scheduled for construction in the summer of 2023, subject to approval of the requested funds.

### 4b. Measures:

Success will be measured based on HPBSM performance and observed water quality improvements including reductions in bacteria, total suspended solids, dissolved copper, dissolved zinc, and total phosphorus. The project will be evaluated per the Technology Assessment Protocol-Ecology (TAPE), which is a peer-reviewed regulatory verification and certification process for emerging stormwater treatment technologies.

### 5a. Other Departments/Agencies:

Public Works Maintenance and Operations will be involved in any future maintenance of the facility.

### 5b. Name the person in charge of implementation and what they are responsible for:

Jordan Lofdahl, Public Works Maintenance and Operations NPDES Crew Lead, is responsible for any facility maintenance required.

### 6. Funding Source:

Funding sources include Washington State Department of Ecology grant, REET II funding and Lake

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Whatcom Stormwater Utility funding.