

Supplemental Budget

Status: Pending

Public Works

Division: Stormwater

Suppl ID XXXX

Fund

Cost Center

Originator:

Request Type: Regular ASR Cost Maintenance Retirement

Expenditure Type Ongoing One-Time Add'l FTE Add'l Space Priority 1

Name of Request: Cedar Hill Culvert Replacement Project; SWLW23-05

Budget		
Object	Description:	Request
Request Total		

1a. Describe the proposed activity or service, and indicate whether it is a higher or lower priority than existing services in department budget: (If this is for a retirement, include the name of employee and his or her projected date of retirement).

A drainage reach currently flows under the cul-de-sac of Cedar Hills Court through a 30-inch culvert. During the storm event in 2021 this culvert became plugged and sent debris and stormwater over the roadway. The debris displacement caused by the flooding destroyed the inlet section of the culvert and partially buried the culvert with sediment and debris. County roadway inspection (responding to neighborhood concerns) discovered that the 30-inch corrugated metal pipe (CMP) culvert is failing due to corrosion, sedimentation, under-capacity and other factors associated with the flood event, pipe condition and increased nearby development. Neighbors report that the existing culvert fails to pass larger storm events and stormwater flows across the cul-de-sac bulb and reenters the drainage course. The project will evaluate the capacity of the existing culvert and replace the pipe with an appropriated sized culvert.

The Stormwater Division was successful in obtaining Federal Emergency Management Agency (FEMA) assistance to aid in funding of the preliminary design of the culvert replacement. This ASR request, in the amount of \$176,492.00, will be funded by the FEMA (\$68,842.80), Military Department Emergency Management Division (\$3,824.60) and Real Estate Excise Tax II fund (\$103,824.60). The FEMA grant will reimburse up to the ninety percent of eligible county

expenses on this project for a maximum reimbursement of \$76,492.00 with this option to request additional finding if project exceeds initial disbursement amount.

1b. Who are the primary customers for this service? (Skip this question if this is for a Retirement or Cost Maintenance Request)

The primary customers of this project are the property owners along [Cottonwood-Cedar Hills Court](#) that are affected when high flows send debris and stormwater over the roadway, and Whatcom County as the manager of the surface water along the county roadways, roadway subgrade and culvert condition and maintenance.

2. Describe the problem that this request addresses and why Whatcom County needs to address it.

The culvert under the cul-de-sac at the end of [Cottonwood-Cedar Hills Court](#) was damaged during the 2021 storm event and was plugged with debris and the bottom of the compromised metal culvert was further compromised by the abrasive force of the cobble that was displaced during the event. The culvert is being held together by approximately 75% of the circumference of the culvert for the entire approximate 100-foot length. Since the bottom of the pipe is largely missing the stormwater flows on the outside of the pipe and through the road grade. The size and slope of this culvert also does not allow for the capacity of stormwater and sediment that enters the culvert to efficiently pass through the pipe. Also, armoring, along the water course channel, upstream and downstream of the culvert was displaced during the storm leaving vulnerable bank that are susceptible to erosion.

3a. What other options have you considered? Why is this the best option?

During preliminary analysis of the damage and experience with similar problems at other locations throughout the county, it was determined that installation of an overflow structure at the inlet of the culvert would allow for the stormwater to bypass the inlet through an overflow this reducing the over the road flooding. This structure would also provide storage for sediment within the sump of the structure and during times of sediment displacement this would provide a collection location where this material can be removed before it deposits in the culvert. Increasing the size of the culvert and increasing the slope of the culvert would allow for sediment and debris that does make it into the culvert to pass through the system more readily.

3b. What are the specific cost savings (quantify):

The potential cost savings from this improvement would come from the reduction of maintenance cost and personnel resources used to address issues that result from the culvert becoming impounded. This project would also replace the stormwater to within the culvert and reduce the risk of a cost catastrophic failure of the road embankment.

4a. What outcomes will be delivered and when?

The reduction of the occurrences that the inlet becoming impounded will be immediate, following the completion of the project. Replacing the armoring of the water course channel will reduce the susceptibility of erosion that may potentially cause property damage to adjacent property owners. The sediment create by the potential erosion would also be eliminated from enter the culvert. The current anticipated schedule for this project includes consultant selection early 2024 and construction in summer 2025.

4b. How will you know whether the outcomes happened? How will success be measured? (quantify)

This site will be monitored following the installation of the improvements to ensure the functionality of the system. This monitoring will be done prior to and concluding storm events to ensure that the improvement accommodates the capacity of water that flows through the system. The reduction of calls from citizens will also inform us of whether the improvement is functioning as intended.

5a. Will this ASR impact other departments or agencies? If so, please identify the departments and/or agencies impacted and explain what the impacts(s) will be:

This project will reduce the complaints/requests for assistance from property owners impacted by the current culvert configurations inadequacy. The culvert replacement will re-bed a new culvert reducing the risk of failure of the roadway that is a risk due to the condition of the culvert.

5b. If another department or agency is responsible for part of the implementation, name the person in charge of implementation and what they are responsible for:

Michael Koenen, Public Works Assistant Superintendent, is responsible for any facility maintenance.

6. What is the funding source for this request?

The preliminary engineering will be funded by the FEMA (\$68,842.80), Military Department Emergency Management Division (\$3,824.60) and Real Estate Excise Tax II fund (\$103,824.60).