



Snohomish County

East Valley UGAs Drainage Needs Report

Executive Summary

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This report is one in a series of eleven reports that are being produced for the Drainage Needs Report (DNR) project. Each of these DNR reports identifies drainage and other surface water needs, as well as recommended improvements, within most of the unincorporated Urban Growth Areas (UGAs) of Snohomish County. The goals of this project are to reduce road and property flooding, to protect and improve aquatic habitat, and to reduce stormwater pollution.

The study area for this DNR report includes the unincorporated UGA(s) for Monroe, Sultan and Gold Bar within the Snohomish and Skykomish watersheds. One of the primary results of this DNR report is a list of recommended Capital Improvement Program (CIP) projects, which is provided below. These recommended CIP projects consist of drainage improvements to address flooding problems, property acquisitions to protect aquatic habitat, and stream and wetland improvements to enhance aquatic habitat.

Due to budget constraints, the analyses conducted for this report were primarily qualitative in nature. The identification of existing drainage problems in the study area was based on a combination of discussions with County staff, a review of the County's Drainage Rehabilitation and Investigation (DRI) database, and field investigations. Additional data was collected from various sources, including the County's Geographic Information System (GIS) data, aerial photographs, and as-built construction records. The field reconnaissance was generally performed at the locations of drainage complaints and of those systems identified by County staff as having historical drainage problems. (In addition, habitat assessments of wetland conditions, streamside vegetation conditions and fish passage were completed and evaluated within the unincorporated UGAs.

A summary of the conditions that characterize drainage in this DNR study area is given below.

Land Use: The land use is urban low-density for all three unincorporated UGAs.

Drainage Systems:

- Monroe Unincorporated UGA: Roadside ditches and culverts collect a majority of the stormwater runoff.
- Sultan Unincorporated UGA: Stormwater is collected by a combination of a ditch/culvert and piped storm sewer system.
- Gold Bar Unincorporated UGA: Stormwater runoff sheetflows directly into May Creek.

Natural Systems:

- Monroe Unincorporated UGA: Two major surface water conveyance systems include Woods Creek and Cripple Creek. Woods Creek flows into the Skykomish River and Cripple Creek flows into French Creek.

- Sultan Unincorporated UGA: Three major surface water conveyance systems include Winters Creek, Wagleys Creek, and the Sultan River. All three systems eventually flow into the Skykomish River.
- Gold Bar Unincorporated UGA: Two major surface water conveyance systems include May Creek and the Wallace River. May Creek flows into the Wallace River, which then discharges into the Skykomish River near Sultan.

Based on the available information and a qualitative assessment, the following problems and proposed CIP projects have been identified. As previously mentioned, these recommended CIP projects consist of drainage improvements to address flooding problems, property acquisitions to protect aquatic habitat, and stream and wetland improvements to enhance aquatic habitat. Specific improvements include replacing undersized systems, replacing culverts with fish passage culverts and acquiring land to prevent further degradation of aquatic habitat. It should be noted that, in addition to funding, there are quantitative analyses, survey, detailed design, permits, and other activities that are typically required in order to implement the CIP projects.

The recommended projects for each of the three unincorporated UGAs are listed below.

Table ES-1 Recommended Improvements in Monroe					
CIP No.	Project Location	Problem Addressed	Proposed Improvements	Public/Private Responsibility	Planning Level Cost Estimate
EV-MO-1	161 st Avenue SE , 160 th Street SE, 166 th Street SE	blown out culverts ponding on the west side of 161 st Ave SE deep ditches close to the edge of pavement erosion, slumping and downcutting of vegetation in ditches heavy vegetation in ditches (166 th) buried outlet (166 th)	Replace 700' of ditch on the west side of 161 st St SE with 18" storm sewer Install (4) Type 2-48" catch basins Connect existing cross culvert on 166 th St SE to new system Maintenance: clear areas of heavy vegetation in ditches and at the buried outlet	public	\$108,400
EV-MO-2	Area around Robinhood Lane	poorly routed ditches shallow ditches silted up/buried inlets/outlets overgrown ditch filled in ditches portion of an asphalt berm missing	Provide erosion control Maintenance: Clear vegetation from culvert inlets and outlets; fill gap in asphalt berm; regrade 4500' of roadside ditch	public	\$2,600

**Table ES-1 (continued)
Recommended Improvements in Monroe**

CIP No.	Project Location	Problem Addressed	Proposed Improvements	Public/Private Responsibility	Planning Level Cost Estimate
EV-MO-3	209 th Ave SE	Creek flows through an undersized drainage system	Replace existing 12" and 18" storm drain with 30" and 36" storm drain	public	\$164,400
EV-MO-4	Tributary of Woods Creek crossing Ingraham Rd (WOODS1)	Fish Passage issues: high velocities, low water depth, perched culvert	Replace two existing culverts with a 72" x 42" fish-passage culvert	public	\$223,400
EV-MO-5	Cripple Creek crossing at 126 th St SE (CRIP2)	Fish Passage: high velocities	Replace existing (2) 36" CMPs with a 65"x 54" Alum. Pipe Arch	public	\$199,700
EV-MO-6	Cripple Creek crossing 179 th Ave SE (CRIP3)	Flooding: overtopping at the 10-yr flow	Replace existing system with a 95" x 67" Alum. Pipe Arch	public	\$247,600
EV-MO-7	Riparian corridor along the segment of Cripple Creek between 179 th Avenue SE and 130 th Place SE	Decreased quantity and quality of aquatic habitat. Future impacts are expected to continue this trend.	Acquire 20 acres (200-foot wide by 4,400-foot long) of high quality Riparian Corridor	private	\$412,000
EV-MO-8	400-foot long segment on the main east branch of the West Fork of Woods Creek	Lacks native woody vegetation (shown as riparian unit W2 on Figure 2-5)	Plant a 2-acre riparian corridor with native woody vegetation and install livestock exclusion fence.	private	\$13,000
EV-MO-9	A 700-foot long segment on the west branch of West Fork Woods Creek	Lacks native woody vegetation (shown as riparian unit W9 on Figure 2-5)	Plant a 3-acre riparian corridor with native woody vegetation and install livestock exclusion fence.	private	\$20,800
EV-MO-10	Wetland No. 101 (mapped by NWI) on the West branch of West Fork Woods Creek	Farming activities have disturbed plant community and wildlife habitat.	Plant the 14-acre wetland with native vegetation.	private	\$74,100

**Table ES-2
Recommended Improvements in Sultan**

CIP No.	Project Location	Problem Addressed	Proposed Improvements	Public/Private Responsibility	Planning Level Cost Estimate
EV-SU-1	Wagley's Creek crossing 132nd St SE (WAGLEY1)	road overtops at the 2-yr flood	Replace existing 24" CMP with a Corr. Alum. Pipe Arch 49"x33".	public	\$33,800
EV-SU-2	Northern crossing of Wagley's Creek at 339th Ave SE (WAGLEY2)	road overtops at the 2-yr flood	Replace existing 24" CMP with a Corr. Alum. Pipe Arch 57"x38".	public	\$48,700
EV-SU-3	Southern crossing of Wagley's Creek at 339th Ave SE (WAGLEY3)	erosion and slumping down stream of the crossing, lack of riparian vegetation	Plant riparian vegetation.	public	\$8,200
EV-SU-4	Winter's Creek crossing 135th St SE (WINTER1)	road overtops at the 10-yr flood	Replace existing 36" conc pipes and 18" PVC with a 9'7"x4'1" Alum. Box Culvert.	¹ City of Sultan	\$106,800
EV-SU-5	Winter's Creek crossing Gohr Road (WINTER2)	road overtops at the 2-yr flood	Replace existing 24" CMP with flared end with a 9'7"x4'1" Alum. Box Culvert.	¹ City of Sultan	\$89,000
EV-SU-6	Winter's Creek crossing Trout Farm Rd. (WINTER3)	road overtops at the 2-yr flood	Replace existing 24" CMP with a 9'7"x4'1" Alum. Box Culvert.	¹ City of Sultan	\$105,800
EV-SU-7	The 3,000-foot long fish-bearing reach of Wagley's Creek between 339th Avenue SE and 140th Street SE	Domination of pasture grasses and blackberry which lack shade and LWD recruitment.	Plant a 14-acre riparian corridor with native woody vegetation and install livestock exclusion fence.	private	\$93,600
EV-SU-8	The eastern (left) bank of the Sultan River within the unincorporated Sultan UGA	Cleared or sparsely forested areas that lack LWD recruitment.	Selectively plant up to 2 acres of native trees and shrubs on the east (left) bank of the Sultan River.	private	\$7,800
EV-SU-9	Sultan River	Past stream impacts in the unincorporated Sultan UGA have decreased the quantity and quality of aquatic habitat. Future impacts are expected to continue this trend.	Acquire Kein's side channel and bar covering approximately 12 acres west across Sultan River from Winters Creek to protect spawning chum and overwintering coho.	private	\$179,000

¹ These project are in the City of Sultan, however flooding or fish passage issues in these areas could have impacts on the unincorporated UGA upstream of these project locations

Table ES-3					
Recommended Improvements in Gold Bar					
CIP No.	Project Location	Problem Addressed	Proposed Improvements	Public/Private Responsibility	Planning Level Cost Estimate
EV-GB-1	Riparian corridor along May Creek within the unincorporated Gold Bar UGA	Several cleared or sparsely forested areas that lack LWD recruitment and shade.	Selectively plant up to 2 acres of native trees and shrubs along May Creek.	private	\$7,800
EV-GB-2	Riparian corridor in the headwaters of May Creek upstream of the unincorporated Gold Bar UGA.	Decreased the quantity and quality of aquatic habitat. Future impacts are expected to continue this trend.	Acquire approximately 30 acres of high-quality riparian corridor in this area.	private	\$395,000
EV-GB-3	Oxbow wetland (No. 103) on May Creek in Gold Bar.	Decreased the quantity and quality of aquatic habitat. Future impacts are expected to continue this trend.	Acquire a 10-acre oxbow wetland.	private	\$127,000

In addition to the recommended CIP projects listed in above, some maintenance recommendations were also included in this report.