



Snohomish County

Little Bear Creek Drainage Needs Report

Executive Summary

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The Little Bear Creek Drainage Needs Report (DNR) is one of a series of 11 drainage plans completed for most of Snohomish County's Urban Growth Areas (UGAs). The purpose of these plans is to identify flooding and surface water problems and to recommend solutions.

In order to gain a better understanding of the drainage systems, streams, and wetlands within the unincorporated UGAs of Snohomish County, the Snohomish County Council authorized, in 2001, the accelerated development of drainage plans for these areas. The purpose of the DNR project is to plan for existing and future drainage infrastructure needs in a way that identifies how to reduce road and property flooding, protect and enhance aquatic habitat, and reduce stormwater pollution. This Little Bear Creek DNR is one of a series of 11 individual reports that were prepared, in addition to a summary report for the entire DNR project.

This DNR addresses three areas within the unincorporated UGA in the Little Bear Creek basin:

- The 788-acre Silver Firs development north of 160th Street SE and Gateway Middle School
- The 212-acre Jewell and Maltby study area immediately northwest of Bothell
- The 958-acre State Route (SR) 522 study area immediately north of Woodinville

Scope of Analyses: The Little Bear Creek study area is limited to the unincorporated portions of this basin and does not include the entire basin. A qualitative evaluation was performed for 14 existing drainage systems that have experienced a history of drainage problems. In addition, drainage complaints recorded by the County for this study area were investigated through field reconnaissance. No water quality or habitat analyses were conducted for this study.

Land use varies significantly among these three study areas. The Silver Firs study area is approximately 95 percent developed with most of the development occurring in the last 10 years. The development mostly consists of residential homes and includes Gateway Middle School. The Jewell-Maltby study area is less developed than Silver Firs and has a large wetland near Maltby Road. The SR-522 study area has a mixture of residential, commercial, and industrial development and is traversed by SR-522 and the Burlington Northern Santa Fe (BNSF) Railroad.

Existing drainage systems within the study areas generally consist of ditches and culverts, pipes and structures, stormwater control facilities, and two major creeks (Little Bear and Daniels Creek).

Work for this report was generally qualitative and was based on an assessment of past drainage complaints, a review of the existing drainage infrastructure, and an assessment of 14 drainage systems of concern that were identified by Snohomish County. Data was collected from a variety of sources including the County's Geographic Information System (GIS), assessor maps, aerial photographs, and the Snohomish County Drainage Rehabilitation and Investigation (DRI) program. Field reconnaissance was performed for

all the drainage systems of concern and at the locations of drainage complaints and potential CIP projects, including those identified by County staff.

A total of 33 surface water problems were identified in the Little Bear Creek study areas. While this project focused on evaluating flooding problems along existing drainage systems, other types of problems such as erosion and fish passage problems were also identified. Approximately half of the identified problems occur within the SR-522 study area. Fourteen of these are for “drainage systems of concern” that were identified by Snohomish County staff as having a history of drainage problems. Seventeen problems were related to drainage complaints filed with the County, and two drainage problems were identified during DNR field investigations. Many of these flooding problems are due to undersized pipes and channels in the developed areas of the basin and/or blocked pipes which are clogged with sediment or vegetation.

Table ES-1	
Recommended CIP Projects for Little Bear Creek DNR	
9 Flooding Projects	\$828,000
1 Flooding/Habitat Projects	\$100,000
1 Flooding/Erosion Projects	\$107,000
Total Recommended 11 Projects	\$1,035,000

As indicated in Table ES-1, a total of 11 flooding projects are recommended, at an estimated implementation cost of approximately \$1 million. Two of these projects address identified habitat and erosion problems as well. The projects generally include increasing pipe sizes and either cleaning, stabilizing or enlarging ditches or replacing ditches with pipes. In order to implement the recommended projects, a number of

issues will need to be considered, such as available funding, project responsibility, prioritization of projects, detail design, construction sequence, and permits. These issues are discussed in more detail in Section 17.0.

The 11 recommended projects are listed in Table ES-2. The majority of these are drainage infrastructure improvements. In addition to the recommended projects, some drainage systems were observed to require maintenance. These systems are described in Section 3 of this report.

Table ES-2 Recommended CIP Projects				
Project	Location	Problem Addressed	Proposed Improvements	Planning Level Cost Estimate
Silver Firs Study Area				
LB-LB-F-Ex-1	156th St SE & 54th Ave SE Drainage Improvement	Flooding of private property and road	Construct pipe system and 200' of channel	\$123,000
LB-LB-F-Ex-2	156th St SE & 53rd Ave SE Drainage Improvement	Flooding of 156th St SE, home, and private property	Construct 300' of channel, and regrade 100' of existing channel	\$22,000
Jewell-Maltby Study Area				
LB-LB-F-Ex-3	199th St SE & Jewell Road Drainage Improvement	Flooding of private property and Jewell Road	Construct asphalt berm, pipe system, & regrade ditch	\$24,000
LB-LB-F-Ex-4	SE Jewell & York Road Drainage Improvement	Flooding of private property and Jewell Road	Clean and restore outlet channel	\$49,000
SR 522 Study Area				
LB-LB-F-Ex-5	Maltby Community Park & Broadway Drainage Improvement	Flooding of private property	Construct asphalt berm, pipe system, & regrade ditch	\$85,000
LB-LB-EF-Ex-6	Broadway to 224th St SE Drainage Improvement	Erosion, flooding, & stream blockage	Construct two pipe systems and remove stream blockage	\$100,000
LB-LB-F-Ex-7	87th Ave SE to SR 522 Drainage Improvement	Flooding of private property and West Bostian	Construct 550' of channel and 40' of 18" & 36" pipe	\$88,000
LB-LB-F-Ex-8	233rd PL SE Drainage Improvement	Flooding of private property and 233rd SE	Regrade 150' and construct 550' of channel & 330' of pipe	\$90,000
LB-LB-F-Ex-9	238th St SE & 63rd Ave SE Drainage Improvement	Flooding of private property and 238th St SE & 63rd Ave SE	Construct asphalt berm, pipe system, & regrade ditch	\$247,000
LB-LB-EF-Ex-10	240th St SE & Snohomish-Woodinville Highway Drainage Improvement	Erosion & flooding of 240th Street SE & private property	Stabilize existing ditches, replace 12" culvert, and construct sediment basin	\$107,000
LB-LB-F-Ex-11	Snohomish-Woodinville Highway between 242nd St SE & County Line	Flooding of Snohomish-Woodinville Highway	Unplug existing culvert, regrade ditch, and enlarge culvert across highway & wrecking yard	\$100,000
Total				\$1,035,000