

2016 DRAINAGE UTILITY ANNUAL REPORT



Cover Photo: Big Indian Slough Revegetation

A Message from the Commissioners

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Ron Wesen
District 1

Ken Dahlstedt
District 2

Lisa Janicki
District 3

The purpose of this 2016 Drainage Utility Annual Report is to highlight our progress in addressing drainage issues in Skagit County. This report is intended to help you better understand the purpose and function of the Drainage Utility and illustrate how we expend your tax dollars in a responsible fashion to address your needs.

Through efficient utilization of Drainage Utility dollars, our goal is to respect and preserve Skagit County’s natural water courses, provide adequate cost-effective surface water management services, and ensure proper enforcement of all federal, state, and local statutes and regulations. While managing drainage issues can be complex, complicated, and, at times, controversial, we have continued to achieve this goal. As we move forward in addressing drainage and storm water concerns in 2017, we will continue to provide this valuable service to the citizens of Skagit County, and make sure your tax dollars are spent wisely in a coordinated fashion.

A Message from the Director of Public Works

We are pleased to submit the Drainage Utility Report for 2016.

The Drainage Utility first began to address drainage issues in Skagit County in 1997. Since that time, over 150 projects have been constructed, and hundreds of small drainage problems have been corrected. Drainage concerns have been resolved that impact dozens of private properties, as well as those that impact only a few. The completed projects have been located County-wide.

Combining efforts with others have increased the positive impact of Drainage Utility projects, and increased the effectiveness of the Drainage Utility funds. Projects have been successfully completed through partnership with various drainage districts, Skagit Land Trust, Seattle City Light, Upper Skagit Indian Tribe, Swinomish Indian Tribal Community, Skagit River System Cooperative, Washington State Department of Ecology, Washington State Department of Transportation, U. S. Army Corps of Engineers, Snohomish and Whatcom counties, and numerous cities located in Skagit County. This cooperation has enabled achievement of the maximum benefit from stormwater control projects.

Thanks to the efforts of the Public Works Department and the support of the Board of County Commissioners, the Drainage Utility will continue to provide this important service to the citizens of Skagit County.



Dan Berentson
Public Works Director

Purpose of the Drainage Utility

Skagit County's drainage problems are interrelated and ongoing. Often, the source of a drainage problem is from surface water or runoff that has traveled from other parts of the County. Managing our stormwater and drainage problems can be very expensive, particularly if it involves capital improvements. Long-term solutions are often too costly for individual drainage districts or property owners to bear alone and are unfair, many say, because surface water from other parts of the County can contribute to localized problems. In addition, solving one problem may also create or affect other drainage concerns nearby or many miles away. The Drainage Utility is a solution that addresses the needs of everyone and shares the costs in an equitable manner.

History of the Drainage Utility

For many years, road funds provided the only source of funding for drainage projects. As a result, Skagit County only addressed drainage problems within County road rights-of-way.

In order to address a wider range of drainage problems, Skagit County pursued the idea of a County-wide Drainage Utility. Led by constituent pressure and support, the Drainage Utility formed in December 1994.

The Drainage Utility now allows the County to address drainage problems unrelated to road drainage while allowing road funds to focus on roadway improvement projects. The Drainage Utility includes all areas within Skagit County with the exception of those with established service boundaries of their own. These include drainage districts, incorporated cities and towns, federal and reservation lands, commercial timber lands, and waterways.

What drainage issues does the Drainage Utility address?

Many water-related projects ranging from the construction of pump stations and piping to tide gates and ditching systems are eligible for Drainage Utility funding. Problems associated with the impacts of increased stormwater from developed areas are also eligible.

The Drainage Utility only addresses drainage concerns; however, stormwater-related water quality issues may also be corrected by a Drainage Utility Project. For example, a soil stability and erosion reduction project that includes river and stream bank restoration may also correct excessive sedimentation resulting from stormwater runoff.

All drainage and stormwater problems are evaluated and prioritized to ensure that the most urgent needs are dealt with in an expedient manner. Given the large number of problems identified to date, as well as fixed financial resources, lower prioritized projects may not be immediately corrected, but the County reviews and assesses every problem reported.

Drainage Utility Project Limitations

State law mandates that Drainage Utility funds may only be used for stormwater control facilities. However, Drainage Utility funds can be used on cooperative watershed management actions, including watershed management partnerships and other governmental agreements, for purposes of water supply, water quality, and water resource and habitat protection and management. Drainage Utility funds may not transfer to any other fund such as the County General Fund.

Goals of the Drainage Utility (As stated in Resolution 15882)

Respect and preserve Skagit County's natural water courses

Identify surface water management problems and recommend solutions that minimize expenditure of public money

Identify functions of individual agencies and reduce the duplication of governmental services by encouraging interagency communication and cooperation

Establish equitable funding sources

Provide adequate cost-effective surface water management services to the citizens of Skagit County

Ensure proper enforcement of all federal, state, and local statutes and regulations pertaining to surface water management and ensure that those who benefit also assume responsibility

Successful 2016 Projects

The Drainage Utility successfully completed several projects and evaluations during 2016 with a total value of about \$304,000.

West Gilligan Road—Salmon Creek

For the past 20 years, sediment management along West Gilligan Road (Salmon Creek) has been problematic. During the 2009 rain event, a large amount of sediment deposited in the project area and has caused some localized flooding during subsequent high water events. This project re-established a meandering channel along West Gilligan Road and through an adjacent property owner’s field before re-entering the historically over-dredged Salmon Creek channel. The new channel is approximately 750 feet in length. Skagit County Road Operations paid for their routine maintenance along West Gilligan Road while the Drainage Utility paid for the newly re-routed channel.



Childs Creek Conveyance and Acquisition

The Childs Creek Conveyance and Acquisition Project builds upon previous studies and efforts in the watershed, including the Childs Creek Alternatives Feasibility Study (2012) and the Lyman Hamilton Highway Bridge Type, Size, and Location Report (2013). There is a chronic drainage concern with sediment deposition at the Lyman Hamilton Highway causing backwater and reduced conveyance. Based on the need to do sediment removals at the bridge, the County commissioned a sediment management alternative feasibility study. This study concluded that some in-stream maintenance will always be necessary, but steps can be taken to reduce the in-stream maintenance, such as a sediment pond. Parcels 41581 and 41582, which are immediately adjacent to left bank of Childs Creek, just downstream of State Route 20, is a frequently flooded area and was purchased with the long-term goal of off channel sediment management.



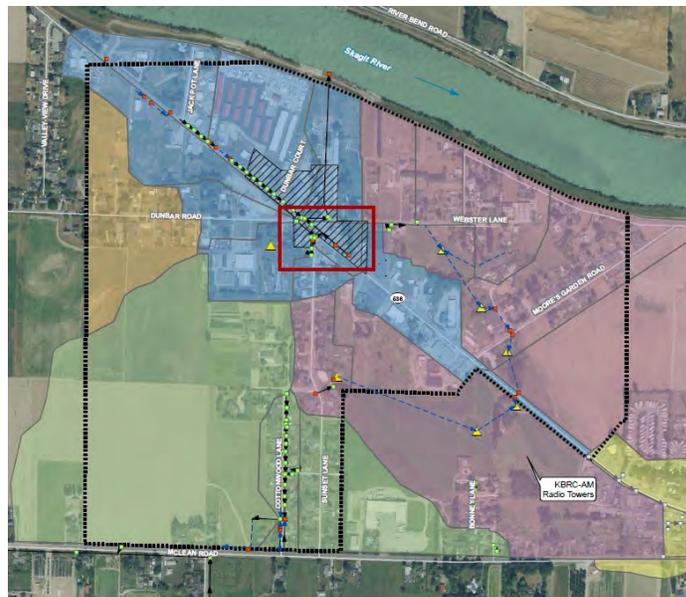
Dunbar Road Stormwater Management Plan

A review of drainage complaints and existing drainage information identified a high groundwater table and seepage from the Skagit River, a lack of drainage infrastructure, a lack of existing infrastructure maintenance, and operational problems with an existing Dunbar Road pump station as the primary deficiencies.

The future build-out stormwater plan proposes conceptual stormwater approaches for four sub-areas and identifies how future development can be accommodated.

Water-level data were collected in well casings located along the Skagit River and two topographical depressions near State Route 536 and were compared to U. S. Geological Survey water-level data for the Skagit River. A close relationship was distinguished between river, groundwater, and surface water level wells.

In addition to groundwater modeling, a runoff model and a stormwater model were developed to size future conveyance system and a new pump station

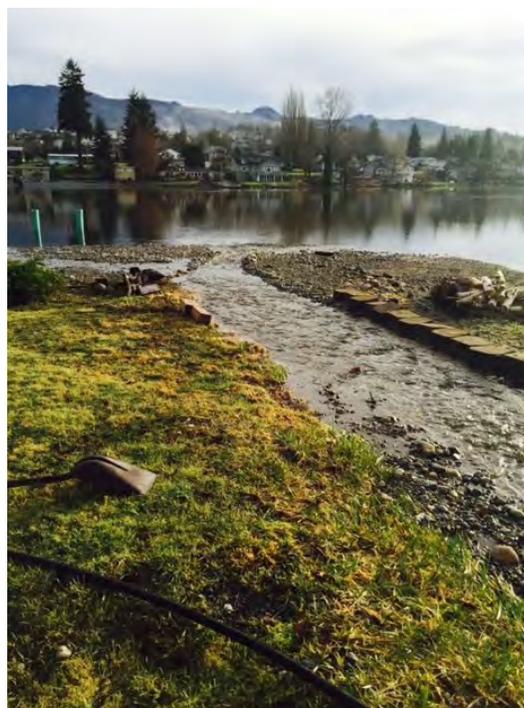


Big Lake Tributary Sediment Investigation

At completion of approximately 50 cubic yards of sediment from within an unnamed tributary to Big Lake a small study was contracted via Watershed Science and Engineering in order to meet Washington Fish and Wildlife Department permit requirements.

The study was performed to determine the approximate sediment load to be expected and alternatives to limit the risk. The study concluded for the existing basin conditions, annual instantaneous peak discharges range from a 2-year flow of 19 cfs to a 100-year flow of 59.9 cfs.

To read the completed study you can view it at the Skagit County website.



Drainage Concerns

In addition to large capital facility projects, the Drainage Utility provides up to \$5,000 for minor repairs or modifications to man-made conveyance systems. Common concerns include:

- Ditch maintenance, grading, and/or cleaning
- Culvert cleaning
- Catch-basin cleaning or installation

For local drainage concerns, or to file a complaint, contact Nikki Davis at ndavis@co.skagit.wa.us or (360) 416-1400. Concerns that exceed \$5,000 are considered projects and are evaluated and prioritized with all other County stormwater projects.

The Drainage Utility has received over 1,400 drainage concerns in the 20 years it has been managing stormwater drainage. In 2016, the Drainage Utility received 47 new drainage concerns. A few of the completed drainage concerns are described below:

Slice Drive Outfall

An existing Outfall running between two properties and ending at the top of a high bank, was in need of replacement. Drainage Utility and Skagit County Road District #1 were able to obtain the appropriate permits and replace the existing with a new pipe and catchbasins. The pipe was extended to the beach, minimizing the risk of erosion.



South Shore Conveyance Maintenance

An existing cross culvert was unable to flow within the outfall conveyance flowing into Lake Cavanaugh. Runoff waters were avulsing from within the system and sheet flowing across private properties causing some property damage. Drainage Utility along with Environmental Services were able to obtain the proper permits and complete the reestablishment of the existing system.

Planting of the newly exposed banks (not pictured) were including in the completion of the project.

Lorenzen Abandoned Culvert Removal

The Lorenzen Creek watershed is currently being studied to improve existing crossings. During research of the system an old abandoned culvert was discovered and appeared to be creating a constriction for low flow waters. Drainage Utility was able to remove the culvert with the proper permits.



National Pollutant Discharge Elimination System (NPDES) Highlights

Stormwater Awareness

County staff attended, and hosted once, quarterly North Sound Permit Coordinator meetings and APWA Stormwater meetings to exchange ideas on how other jurisdictions operate.

To promote awareness of stormwater facilities and the maintenance necessary to keep facilities functioning, a private stormwater facility maintenance workshop was coordinated and held at the Port of Skagit County on May 5, 2016 with 27 attendees. The agenda included a municipal overview; detention pond maintenance “Nuts & Bolts”, and involving your local community. A field tour of the stormwater detention facilities on Port of Skagit property was provided for training on how to inspect and maintain a stormwater facility. Additionally, handbooks were compiled and provided to all of the attendees. Promotion of the event was conducted via direct mail to Homeowners Association contact lists, press release provided to local media and promotional fliers.



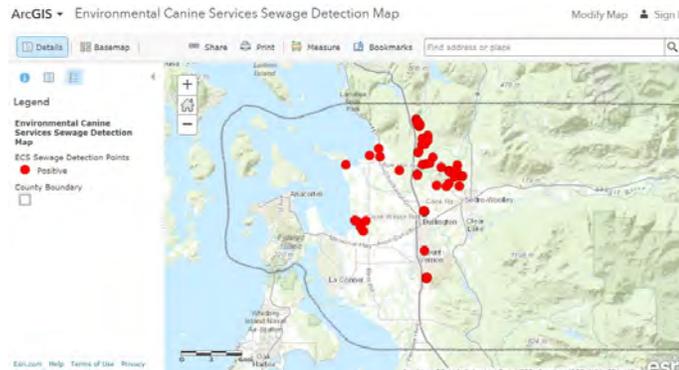
Taking a look at sediment accumulation in a stormwater detention vault.



*Crush:
IDDE K9*

Illicit Discharge Detection & Elimination

In 2016, Crush, the sewage sniffing dog continued to help staff sniff out and find illicit discharges into the county’s stormwater drainage system so we could correct the problems. A new online map was created with all of the locations where Crush the sewage-sniffing dog detected sewage. The pollution Crush helps us to find is from human sewage, most likely indicating failing septic systems.



This is a helpful reminder for folks to have their septic tank inspected every 1-3 years (depending on the type of system). Inspections are not the same as pumping; inspections can help find little problems before they become big, expensive ones. Staff investigated reports of illicit discharges, to correct or minimize the threat to human health, welfare and/or the environment.

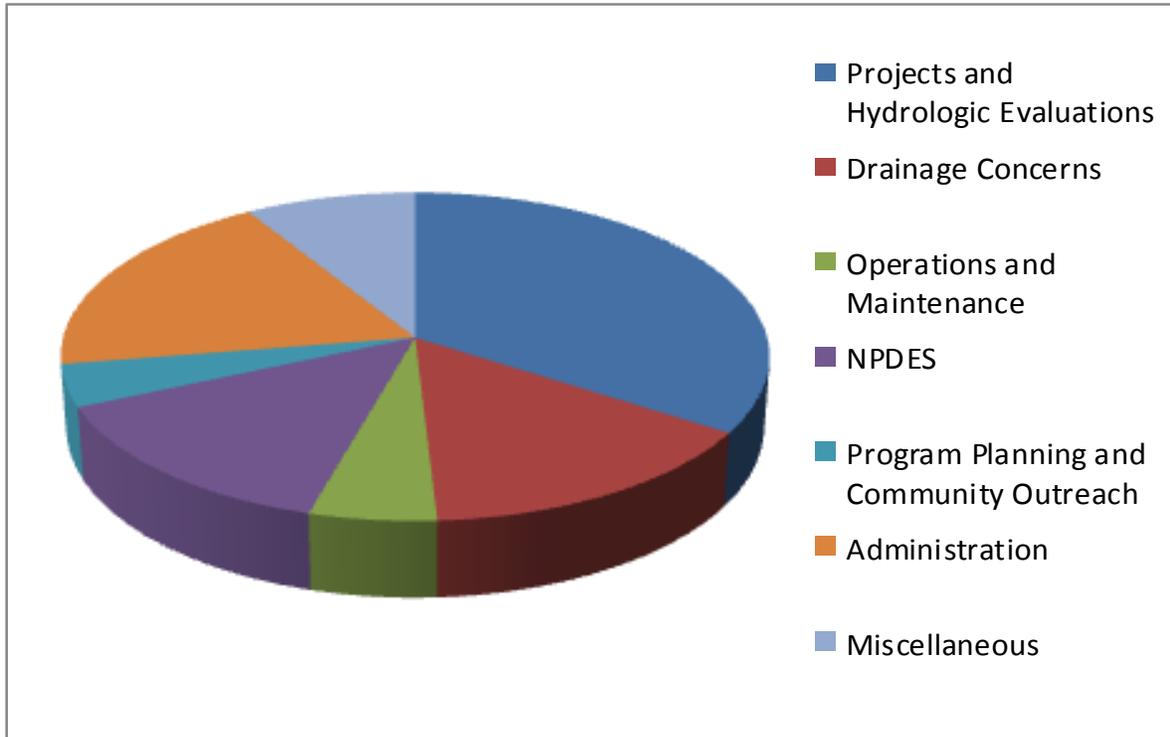
Education and Outreach

On April 28, 2016 staff held a demonstration booth, amongst several demonstration booths/stations at the Mount Vernon High School Science night. The Mount Vernon High School Science night is a community showcase – where students demonstrate what they have learned in exhibition rooms. Community businesses and organizations that use science in their daily work bring hands-on demonstrations. Colleges and Universities tell about their science programs. The pervious pavement demonstration fountain was a huge hit with all ages of attendees of the Science night. The fountain demonstrates how the water that hits the permeable pavement surface infiltrates and disperses into the ground. During rain events, traditional pavements create a sheet flow of water, which picks up contaminants and carries them into the nearest catch basin, which in turn ends up in our waterways.

The photo is of the county parking lot to the north of the Administration Building. The parking lot is composed of various Low Impact Development (LID) techniques, including pervious pavement and rain gardens. The photo was taken on July 22, 2016. On that date, 0.39 inches of rain fell. The pervious pavement and rain gardens soaked up all of that rain, and slowly dispersed it into the ground.



Drainage Utility Budget Summary



Drainage Utility Distribution

*All values are rounded to account for end of the year projects whose charges carry over into 2017.

2016 Drainage Utility Distribution		
Projects and Hydrologic Evaluations	\$543,347	34%
Drainage Concerns	\$234,771	15%
Operations and Maintenance	\$82,607	5%
NPDES	\$221,004	14%
Program Planning and Community Outreach	\$65,942	4%
Administration	\$298,767	19%
Miscellaneous	\$138,046	9%
TOTAL	\$1,584,484	100%

Category Descriptions

Projects: Constructed capital facilities

Hydrologic Evaluations: Sedimentation, evaluation, watershed stormwater management planning, conveyance sizing

Drainage Concerns: Property owner complaints and minor drainage system repairs

Operations and Maintenance: Expenses to operate and maintain existing stormwater facilities

NPDES: Compliance with the NPDES Phase II Permit

Program Planning and Community Outreach: Planning future projects and evaluations, and community interface

Administration and Miscellaneous: Costs of implementing and managing the Drainage Utility Program and coordination and planning with other entities, such as cities and drainage districts

**Skagit County Drainage Utility
2016 Year End Report**

Board of County Commissioners

Ron Wesen

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