WHATCOM COUNTY
PUBLIC WORKS DEPARTMENT

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MEMORANDUM

TO: The Honorable Jack Louws, Whatcom County Executive, and Honorable Members of the Whatcom County Council

THROUGH: Jon Hutchings, Director

FROM: Gary S. Stoyka, Natural Resources Program Manager

DATE: October 9, 2018

RE: October 16, 2018 Council Surface Water Work Session

Please refer to the proposed agenda below for the next Surface Water Work Session. Additional supporting documents may be distributed at or before the meeting.

AGENDA

Date:	Tuesday, October 16, 2018
Time:	10:30 a.m. to 12:00 p.m.
Place:	Civic Center Garden Level Conference Room

Time	Topic	Council Action Requested	Background Information Attached
10:30 AM – 11:00 AM	Pollution Identification & Correction (PIC) Program – Overview of Fall Strategy	Discussion	Fall Strategy
11:00 AM – 12:00 PM	Whatcom County Landslide Inventory	Discussion	Briefing Sheet

If you have questions, please feel free to call me at (360) 778-6218.

cc:

Mike McFarlane	Joe Rutan	Paula Harris	John Wolpers	Mike Donahue
Beth Bushaw	Jeff Hegedus	John Thompson	Kraig Olason	Erika Douglas
Tyler Schroeder	Josh Fleischmann	Karen Frakes	Jennifer Schneider	Jill Nixon
Sue Blake	Roland Middleton	Dana Brown-Davis	Atina Casas	Cathy Craver
George Boggs	Ryan Ericson	Lonni Cummings	Kristi Felbinger	Mark Personius

Whatcom Clean Water Program (WCWP) 2018 Fall Strategy (October-December)
Nooksack Watershed/Portage Bay

The Portage Bay Shellfish Protection District was initially established in 1998 in response to a shellfish harvest downgrade. After upgrades in 2003 and 2006 restored year-round shellfish harvesting, recovery work became less intensive. By 2012, elevated bacteria results were observed in both the freshwater and marine systems. In 2015 and 2016, portions of the Portage Bay shellfish growing areas were downgraded to conditional approval with spring and fall closures due to poor water quality.

The WCWP formed in late 2012 as a partnership of organizations working to reduce fecal coliform bacteria in surface waters to achieve and maintain "Approved" classification of Whatcom County's shellfish growing areas. The partnership is carrying out Pollution Identification and Correction (PIC) strategies working with the lower Nooksack River watershed community to find and fix preventable bacteria pollution sources impacting surface waters flowing to Portage Bay. The PIC program is a multi-faceted approach through monitoring and field observation, community outreach and engagement, transboundary collaboration, technical and financial assistance, and a regulatory backstop.

The fall season (October through December), is a critical period for water quality improvement in the Nooksack River watershed and Portage Bay. While overall bacteria levels are declining in both the Nooksack watershed and Portage Bay, we often detect elevated bacteria concentrations during the fall season. Many of these bacteria spikes are observed during rain events and periods of river rise. A specific strategy has been developed for fall 2018 to identify and address bacteria sources during this critical period to help recover year-round shellfish harvest in Portage Bay. The figures below illustrate the elevated fecal coliform bacteria concentrations observed during the spring and fall closure periods.

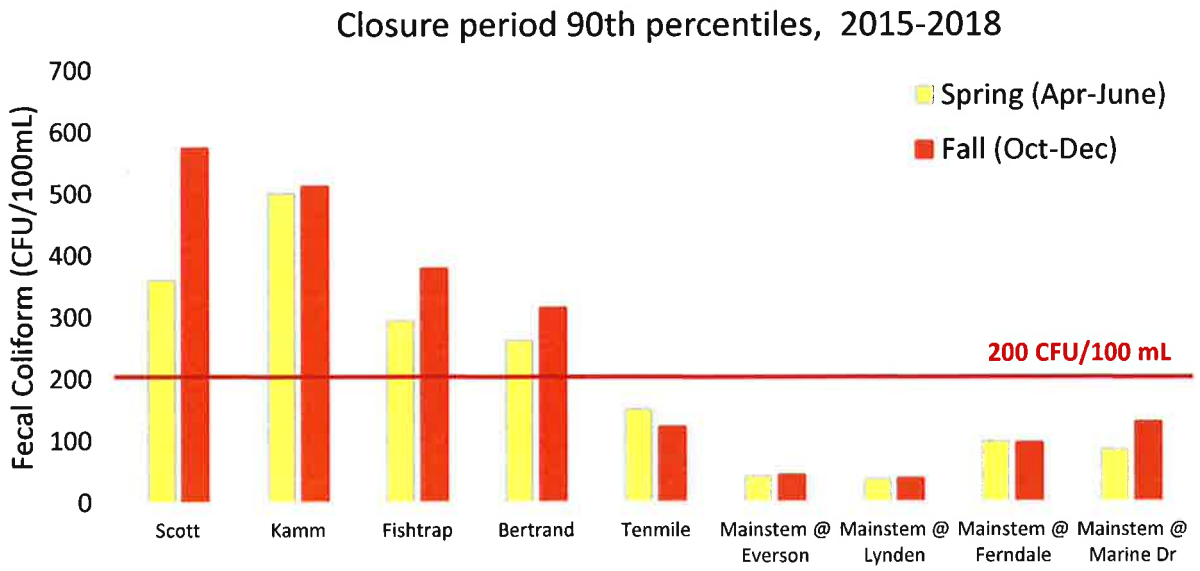

Figure 1. Freshwater site fecal coliform estimated 90th percentiles during spring and fall closure periods. The five tributary sites represent the lowest station in the tributary (S1, K1, F1, B1, and T1). Mainstem sites are ordered from upstream to downstream.

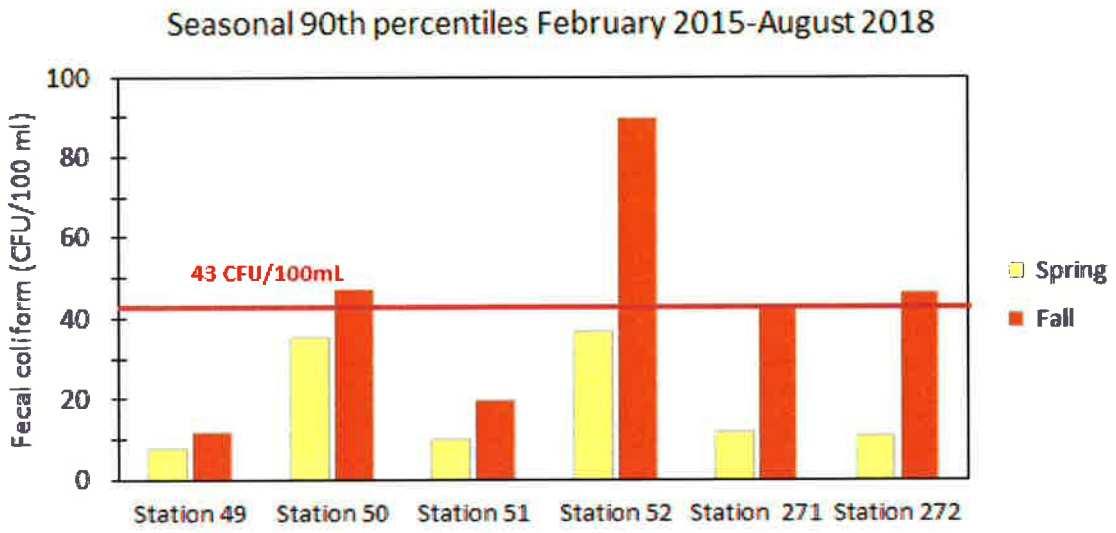

Figure 2. Marine site fecal coliform estimated 90th percentiles for spring and fall closure periods.

Water Quality Monitoring

The Whatcom Clean Water Program (WCWP) is data driven. Multiple agencies collect water samples in both the marine and freshwater systems to identify long-term patterns in water quality, compare site status to water quality standards, and identify hot spots in need of fecal coliform bacteria reduction. *A data team is meeting to develop, implement, and review/report progress of the water quality monitoring and results during the fall 2018 strategy.*

Marine Sampling- Currently, marine sampling in Portage Bay occurs on a monthly basis at twelve stations. Samples are collected by the Washington State Department of Health (DOH) or Lummi Natural Resources (LNR) and analyzed at the DOH lab. *The marine sampling will continue during the fall 2018 strategy.*

Routine or Ambient Sampling- Whatcom County Public Works (WCPW) collects routine freshwater samples at nineteen stations in the Nooksack watershed two times per month. One sample run per month is scheduled to take place the day before Portage Bay marine sampling occurs. During this once-monthly coordinated date, additional samples are collected by Washington State Department of Agriculture (WSDA), Washington State Department of Ecology (ECY), the Tenmile Clean Water Group (TCWG), Nooksack Indian Tribe (NIT), Lummi Natural Resources (LNR), and some Watershed Improvement Districts (WIDs) to further characterize the US portion of the watershed. Langley Environmental Partners Society (LEPS) also conducts sampling of 12 ambient sites in the Canadian portion of the watershed during these coordinated sample runs. *The routine sampling will continue during the fall 2018 strategy.*

Storm Event and Source Identification Monitoring- *During fall 2018, additional sites will be monitored during storm events to determine conditions and to bracket hot spots identified during routine and storm*

event sampling. Partners are developing a storm event monitoring plan to describe how storm events will be defined and forecast, how subareas for storm event monitoring will be identified, and which bacterial analysis will be conducted. ECY and WSDA staff will conduct the majority of storm event monitoring. Field staff will use background information and data from routine monitoring, transboundary monitoring, field observations, weather forecasts and models to determine priority areas for storm event and source identification monitoring. LNR staff will conduct storm event sampling at all on-Reservation sites flowing into Portage Bay on at least one occasion during the fall of 2018.

During select bracket sampling, a fluorometer will be used to detect optical brighteners and help determine locations with potential septic system concerns. Staff will document pipes with water flow entering ditch and creek systems and will sample as needed for source identification.

Data Sharing

Staff from multiple agencies will send preliminary water quality results for routine, storm event, and source identification samples to Whatcom Conservation District (WCD) staff as soon as possible after received from the lab. WCD will post preliminary results to the online, interactive water quality maps. WCPW, WSDA, and ECY staff will ask the lab to quickly post preliminary results to the lab's online database during the fall period. If two- day turnaround on posting preliminary data to online reports is not feasible, preliminary results above 200 cfu/100mL received from the lab via e-mail will be shared with agency partners to facilitate timely follow up windshield surveys and sampling. WCWP partners will also ask the lab to inform agencies of confirmation analysis on plate colonies. In these cases, agencies will report preliminary data after the confirmation analysis has been completed. Monitoring staff will review final lab reports when they are received and any changes from the preliminary results will be reported to the WCD for revisions to the online map.

Communications and Community Outreach

Communications and outreach are essential components of raising awareness and engaging community members in acting to reduce fecal coliform bacteria pollution in the Nooksack watershed. The diverse sources of bacteria in this watershed require diverse community solutions and actions. To promote water quality improvements in the fall, community members must take action both before and during the wet season. *A communications team is meeting to develop, implement, and review/report progress of the outreach component of the fall 2018 strategy.*

<u>General Outreach and Messaging</u>

- A one-page fact sheet will be created to describe the WCWP, goals, partners, roles, and resources. This fact sheet will be used at community events, agency offices, site visits with landowners, and in mailers. The fact sheet will be completed by the first week of October.
- The WCWP website will be re-established to provide an overview of the program, progress reports, and links to individual agency resources.

- The WCD will co-host the Chum Run on September 15, 2018. WCPW and ECY will host booths with water quality and PIC information at the event. Over 200 people participated in the 2017 Chum Run. *Over 250 people participated in the 2018 Chum Run.*
- Four WCWP agencies (WCPW, WCD, ECY, LNR) will host booths at the SeaFeast on September 22, 2018. Booths will include the WCD watershed model, the WCPW rascally raccoon game, and information on water quality, best management practices, dog walking kits, and incentive programs. SeaFeast anticipates 12,000 participants in 2018.
- WCPW staff will develop and send the Whatcom County Pollution Identification and Correction (PIC) Newsletter to approximately 1,000 landowners in the Nooksack watershed in October 2018. The newsletter will contain information on water quality status, actions taken in 2018 to improve water quality, watershed stewardship tips, and rebate opportunities.
- Whatcom County Planning and Development Services (PDS) staff will develop and send the Natural Resources Newsletter to approximately 18,000 rural landowners countywide in late fall. This newsletter provides information and contacts for natural resource programs, including farm planning, PIC, and rebate opportunities). Articles will be prepared and submitted to PDS by October 2018.
- WCPW will develop (3-4) Facebook posts for domestic pets and urban wildlife sources and solutions for the fall season.

Agricultural Audience

The WCD will lead on development and implementation of community outreach materials and events for agricultural topics. Activities will include:

- Sending wet season to approximately 500 landowners in September; postcards include manure management and mud management tips and information about the winter herd health workshop and financial incentive programs.
- Sending a monthly E-newsletter to approximately 600 participants.
- Maintaining the Manure Spreading Advisory (MSA) text alert system that provides alerts to 40 participants regarding changes in buffer widths and storm events.
- Posting weekly BMP Facebook memes and potential Nextdoor messages.
- Sponsoring KGMI radio ads for winter mud and manure management for 2 weeks.
- Issuing press releases for the WCD Farm Speaker Series monthly workshops to the *Lynden Tribune* and *Northern Light* newspapers. Workshop topics include: Winter Herd Health (September 20), Farm Grant Opportunities (October 18), and Goat Farmers Workshop (November 15).
- WCD farm planners personally inviting contacts to events (e.g. farm tour, etc.).
- Developing and distributing an annual WCD dairy newsletter to dairy operators providing information about cross-border partnerships, advances in record keeping and invitation to the January 2019 Manure Nutrient Management Training.

Other WCWP partners will supplement the WCD outreach efforts through additional avenues highlighting similar programs, rebates, BMPs and messages.

- WSDA hosts an online, interactive Story Map that will highlight information about workshops, BMPs, the WCD manure spreader, and rebate programs.
- The PDS Natural Resources newsletter is described above and can include message created for WCD outreach.
- ECY will send a wet season reminder mailing to landowners they have worked with since 2016 (see also landowner contact section).
- As time allows, develop a poster for wet season agricultural BMPs that can be posted at PDS and other locations.
- Share ads, Facebook posts, etc. with community partners for wider distribution.
- A WCPW partner packet will be developed for field staff. The packet will include information about the overall WCWP, technical assistance materials for small farm and septics, and rebate and other financial assistance programs.

Septic System Audience

Whatcom County Health and Public Works are partnering to develop and distribute community outreach messages regarding evaluations and maintenance of septic systems.

- In 2018, Water Week and the national Septic Smart Week coincide the week of September 17th.
    - Three social media posts will be developed for rebates, pumping, and myth busting. The tone of the posts is conversational, casual, funny, and helpful.
    - A media release about a septic workshop during Septic Smart Week will be developed and distributed. The media release ties water quality and septic maintenance together.
    - Facebook and Nextdoor posts will be developed to advertise the September 20th septic workshop.
- Health and Public Works developed messaging for 10 and 60 second radio spots for KGMI (local radio station). The Environmental Health Supervisor will also be interviewed for KGMI.
- Public Works and Health are also partnering on a social marketing campaign for routine septic maintenance that will kick off this fall.

Surveys and Tracking

Identifying bacteria sources during the critical fall season will be time-sensitive in order to implement fixes and reduce bacteria loads during rain events. Where feasible, it will be most effective to proactively identify potential sources and offer technical assistance before bacteria enters the surface water system. In those cases where bacteria hot spots are identified through water quality results, immediate fixes will be needed to stop the bacteria source from entering surface waters. *Windshield surveys will be a regular part of surveillance efforts to protect and improve water quality.* The watershed has been broken into smaller geographic areas to assist in regular windshield surveys by WSDA, ECY, and Whatcom County. WSDA will be the lead for windshield surveys in Scott and will also conduct surveys in other watersheds with dairies. ECY will be the lead for Kamm, Bertrand, and Anderson watersheds. Whatcom County will be the lead for Fishtrap, Tenmile, and will assist with Anderson. Other areas will be observed by WCPW partner agencies during monitoring runs or other

field work. A document or data catalog describing specific site characteristics that may lead to bacteria discharge to surface waters will be developed to assist staff with windshield surveys.

Through windshield surveys and water quality monitoring during previous years, agencies have identified sites with conditions that may result in bacteria pollution discharge. These sites are placed on agency watch lists (or parking lots lists). Agency staff will review watch list properties prior to the wet season to determine whether improvements to protect water quality have been implemented, if conditions of concern remain, needs for water quality monitoring, and strategies for contacting landowners proactively regarding conditions of concern.

As time and resources allow, develop a system to assist community members and WCWP partner staff with tracking locations, dates, and other details about wildlife concentrations in the nooksack River watershed. This system may build off the Birch Bay Storm Watchers reporting system.

Tracking Contacts and Progress

During the critical fall season, it is essential that conditions, agency contact with landowners, and parcel status are tracked in a coordinated way. WCWP partners strive to minimize instances where a landowner is contacted by multiple agencies and to ensure information and guidance is clear and consistent. Each WCWP partner fills a different role in the program and uses agency-specific tools for tracking landowner contacts and progress. We are working to create a collective tool to assist in illustrating which agencies are working with parcels, problems that have been identified, and progress that has been made. Agencies will use this tool to note parcels in hot spots that do not have water quality concerns.

Transboundary Work

A three year technical work plan for the Bertrand and Fishtrap watersheds has recently been approved for transboundary work. U.S. and Canadian field staff who work in Whatcom County and British Columbia (BC) will participate regularly in joint meetings; coordinate water quality and data analysis; and share technical and outreach materials and programs. Subcommittees will be formed as needed to address specific issues such as data sharing, the use of environmental DNA (eDNA) for bacteria source tracking, and strategies for outreach and social marketing. In BC, additional staff will be actively working to reduce bacteria pollution originating in the Canadian portion of the Nooksack River watershed.

During the Fall 2018, U.S. and BC staff will be working together on coordinated fecal coliform sampling in the transboundary portions of the Nooksack Watershed (Bertrand and Fishtrap). Both the BC Ministry of the Environment and the Whatcom Conservation District are beginning work during this fall period evaluating the use of eDNA as a tool for bacteria source tracking. While these projects will continue beyond the fall period into 2019, capturing bacteria sources during this fall period is critical to the evaluation and application of these eDNA methods.

Landowner Contacts

A WCWP goal is to work with landowners through voluntary technical and financial assistance to find and fix bacteria sources impacting surface waters. The following sections describe processes for contacting landowners with potential bacteria sources from agriculture land use or septic systems. Other potential bacteria pollution sources will be emphasized through community outreach materials and events. Agencies will address identified domestic pet, urban wildlife, stormwater, or municipal sewer concerns on a site-by-site basis.

Dairy Operations: WSDA will lead contact for dairy-related water quality concerns. Contacts will occur through routine or follow up inspections or may result in response to follow up to water quality sampling results and/or field observations. WSDA staff will reach out to dairy producers prior to the wet season with reminders about wet season BMPs.

Non-Dairy Agricultural Operations: The following categories and non-dairy agriculture landowner contact strategies are proposed for fall 2018. In each of these scenarios, the lead agency will check in with partner agency field staff for background information and previous contacts before initiating contact with the landowner.

1) *Environmental Report Tracking System (ERTS)*- ECY and PDS will review non-dairy bacteria related ERTS complaints and communicate to determine the validity of the water quality complaint and which agency is best suited to contact the landowner depending upon the concern (e.g. critical area ordinance violation or water quality discharge). ECY or PDS will contact the landowner with a description of the concern and an offer of technical assistance. ECY or PDS may provide technical assistance directly and /or make the landowner aware of assistance available through the WCD or a private consultant. ECY and PDS will follow their regulatory processes for ensuring compliance if a landowner chooses not to voluntarily correct an identified problem.
2) *Egregious violation (in need of immediate fix)*- Non-dairy agricultural operations with an active discharge identified through water quality monitoring and/or windshield surveys will be contacted directly by regulatory agencies. Situations that require an immediate fix to stop a discharge that is impacting water quality or causing a fish kill will receive contact by a regulatory agency to provide technical assistance. Agencies will follow their regulatory processes for ensuring compliance if a landowner chooses not to voluntarily correct an identified problem.
3) *Operation with water quality concern(s)*- Non-dairy agricultural operations with a water quality concern identified through water quality monitoring and/or windshield surveys will be contacted through the Pollution Identification and Correction (PIC) program fall streamlined contact process. When water quality sampling locates a hot spot, field staff (multi-agency) will review windshield survey data. Field staff will provide a list of parcels upstream of the hot spot with potential non-dairy agricultural operations to Whatcom County Public Works (WCPW). WCPW will send the PIC introduction letter and the first PIC letter (2 week response period) to these landowners/residents offering technical assistance through the WCD. These letters will include rebate inserts. During the 2 week response period, regulatory agencies will determine jurisdiction and further document water quality concerns with visual and bracket sampling. After the 2 week deadline, parcels with observable concerns that do not respond to the first PIC letter will be forwarded to ECY and PDS for

follow up as guided by each regulatory agency's compliance process. WCPW will send a second PIC letter to parcels in hot spots where site conditions are unable to be observed from the ROW and there has been no response to the initial PIC letter. The second PIC letter will ask landowners to respond to WCPW or WCD to: 1) indicate they have no livestock and do not use manure, 2) demonstrate they are using BMPs adequate to protect water quality, or 3) contact the WCD to request technical assistance.

4) *Operation with previous contact from a regulatory agency-* Non-dairy agricultural operations that have previously been contacted by a regulatory agency and have received technical assistance or compliance actions will receive an outreach letter or postcard this fall. This communication will remind residents to review practices to provide water quality protection. Reminders will include:
   1) Letters from ECY in the first week of October 2018 to remind landowners/operators to check BMPs to ensure water quality protection during the wet season. These will include a one page summary of the WCWP and small farm improvement rebate inserts.
   2) Farm plan inspection notices from PDS will be sent to Conservation Program on Agricultural Lands (CPAL) participants in the Nooksack watershed who have not completed an inspection in the past two years. Notices will be sent in October and November with the expectation that inspections will take place within 30 days of receipt. Farm plan inspections can be completed by the landowner (self-reporting), WCD farm planner, or through a PDS site visit. The intent of the inspection is to review implementation status of the farm plan. This provides an opportunity to identify BMPs that may need to be repaired or adjusted.

Septic Systems:

The Whatcom County Health Department will continue to implement the On-Site Sewage System (OSS) Operation and Maintenance Program and provide notices to landowners with an outdated Report of System Status (ROSS). Areas with water quality hot spots will be reviewed for ROSS compliance. Those sites with OSS concerns will be contacted by the Health Department following their standard process and procedures.

BRIEF SHEET AGENDA 11:00 AM – 12:00 PM

MEETING: Surface Water Work Session of the Whatcom County Council

MEETING DATE: October 16, 2018

AGENDA ITEM: Inventory of Whatcom County Landslides and Landslide Hazards presented by Stephen Slaughter, Landslide Hazards Program Manager, Washington Geological Survey, Department of Natural Resources

OUTCOMES: Information/Discussion

The purpose of this agenda brief sheet is to provide background information about the topic, recommendations, if applicable, and desired outcome.

Agenda Outcome:

Approval/Authorization ___ Direction ___ Feedback ___ Information/Discussion __X__

Outcomes Requested:

Provide information and the opportunity for Council discussion with Washington Geological Survey (WGS) and Whatcom County Planning and Development and Public Works staff regarding the landslide inventory, products to be generated, and project timelines.

Background:

The Washington Geological Survey (WGS) Landslide Hazards Program (LHP) has begun an ambitious project to help Washington communities reduce losses from landslides. We accomplish this by accurately mapping existing landslides and landslide susceptibility using lidar digital elevation models. The final mapping products are a tool for planners, public works, emergency managers, and community leaders help communities better understand landslide hazards and take action to reduce loss and increase public safety.

The final products are a report summarizing our findings, a landslide inventory map (where landslides have occurred), and a landslide susceptibility map (where landslides may occur). WGS shares the data through several means including a summary report of our findings, a downloadable geographic information systems (GIS) dataset for use by local governments, and as an online mapping tool (www.dnr.wa.gov/geologyportal) for use by non-GIS users and the public. It is important to note that the mapping process is heavily dependent on high-quality lidar data, so mapping is only possible where this data is available. The expected completion date of the project is summer 2019.

Examples of completed projects:

- Pierce County
https://fortress.wa.gov/dnr/geologydata/publications/ger_ri39_pierce_county_landslide_inventory.zip

- Columbia Gorge
https://fortress.wa.gov/dnr/geologydata/publications/ger_ri40_columbia_gorge_landslide_inventory.zip

The mapping for these two projects can be easily viewed on the DNR Geologic Information Portal at: www.dnr.wa.gov/geologyportal Open the link to the portal and in the "Table of Contents" click "Landslide Data" then click "Landslide Inventory (beginning 2017)".