Summary of Watershed Management Plan

Skokomish-Dosewallips
Water Resource Inventory Area (WRIA 16)

Including the WRIA 14 South Shore Sub-Basin

Adopted by the WRIA 16 Planning Unit

Funded by a grant to the WRIA 16 Planning Unit from
the Washington State Department of Ecology
Watershed Planning Grant #G9900020

REVISED DRAFT July 18, 2006

Summary of WRIA 16 Watershed Management Plan

This document is a summary of the full *WRIA 16 Watershed Management Plan*, available from the Mason County Department of Community Development (*www.co.mason.wa.us*) or the Washington State Department of Ecology (*www.ecy.wa.gov/apps/watersheds/planning/16.html*). This summary presents the major findings and all recommendations. For further details about the background and issues concerning WRIA 16's water resources, please see the full *WRIA 16 Watershed Management Plan.*

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WRIA 16 Planning Unit Members

The WRIA 16 Planning Unit, active since 1999, deserves primary credit for developing this watershed plan. Through countless hours of research, discussions, and meetings, the Planning Unit initiated or contributed to the findings presented in this report and developed and reached consensus on the recommendations.

Initiating Governments

Jefferson County
Mason County
Mason County PUD #1
Skokomish Tribe
Washington State Dept. of Ecology (invited)

Other Voting Members

Agriculture Interests
Citizen Interests – Jefferson County
Citizen Interests – Mason County
Development Interests
Environmental Interests
Forestry Interests
Growth Management Interests
Jefferson County PUD #1
Lake Issues
Port Districts
Realtors and Builders
Recreation Interests
Shellfish Industry Interests

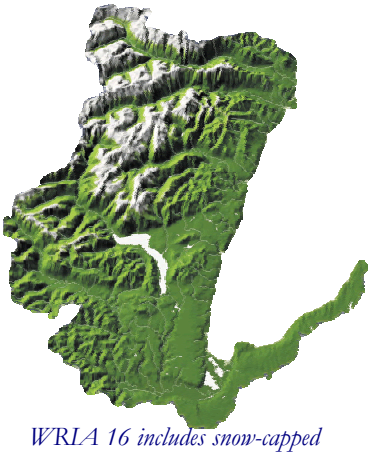
The Project Manager and Facilitator for the WRIA 16 Planning Unit is Susan Gulick of Sound Resolutions.

The WRIA 16 Watershed Management Plan was written primarily by Cascadia Consulting Group of Seattle, WA with contributions from Susan Gulick and Planning Unit members.

Several other organizations, including Golder Associates, EnviroVision, and Aspect Consulting also contributed to the plan development process by conducting scientific assessments.

WRIA 16 – The Skokomish-Dosewallips Watershed

The Skokomish-Dosewallips watershed – or Water Resource Inventory Area (WRIA) 16 – is located on the eastern slope of Washington State's Olympic Peninsula. Bordering the western and southern shores of Hood Canal, the watershed's 670 square miles of diverse landscape cover an area from the snow-capped Olympic Mountains at over 7,000 feet high to the low-lying floodplains of the Skokomish River Valley. A rural area with a growing population and a strong summer tourist season, WRIA 16 has approximately 8,000 permanent residents, most of which reside along the shore of Hood Canal. The largest communities in the watershed are Brinnon, Lilliwaup, Hoodsport, Potlatch, and Union. WRIA 16 is one of 62 Water Resource Inventory Areas delineated throughout Washington for the purposes of collaboratively addressing water-related issues.



WRIA 16 includes snow-capped mountains and lowland floodplains

WRIA 16 includes several rivers and streams that flow from headwaters in the Olympic Mountains down to Hood Canal, a natural, glacier-carved fjord that is part of Puget Sound. As shown in the map on page 2, the WRIA includes all rivers and creeks that flow into or lie between the Dosewallips River in the north and the Skokomish River in the south. The plan also includes the southern shore of Hood Canal between Union and the western outskirts of Belfair. Although technically part of the neighboring Kennedy-Goldsborough watershed (WRIA 14), Hood Canal's southern shore is being considered in this plan since the area shares more in common with WRIA 16 than with the rest of WRIA 14, which does not drain to Hood Canal. The Planning Units of WRIA 14 and WRIA 16 executed a formal agreement that WRIA 16 would undertake watershed planning for Hood Canal's south shore, an agreement that was approved by the Department of Ecology. Of the four WRIAs surrounding Hood Canal, WRIA 16 is the only WRIA that drains exclusively to Hood Canal.

The upper Dosewallips River

The WRIA 16 watershed contains five smaller drainage basins, termed "sub-basins" because they are smaller divisions within the overall WRIA 16 watershed:

- Dosewallips River sub-basin;
- Duckabush River sub-basin;
- Hamma Hamma River sub-basin;
- Finch/Lilliwaup Creeks sub-basin;
- Skokomish River sub-basin (including the North Fork, South Fork, and mainstem); and
- South Shore sub-basin.

By definition, a *watershed* is the land area that drains into a stream or other water body (e.g., a lake or ocean) and could also be called a drainage basin. According to this definition, the term *watershed* can be accurately used at a variety of scales. For example, a small creek, the Dosewallips River, and Hood Canal all have their own watersheds. In the remainder of this document, however, the term *watershed* refers to the collection of drainage basins that make up WRIA 16, even though WRIA 16 is not technically a single watershed.

Figure 1. Skokomish-Dosewallips Watershed (WRIA 16) and Its Sub-basins

The Watershed Planning Process

Mason County PUD #1 is a Planning Unit Member and the frequent site of Planning Unit meetings

In 1998, the Washington State Legislature passed the Watershed Planning Act, codified in the Revised Code of Washington, Title 90, Chapter 82 (RCW 90.82). This law addresses water quantity, water quality, fish habitat, and instream flow[1] at the local level. Under the act, the state grants funding to a Planning Unit, consisting of public agencies and non-governmental members, in each Water Resource Inventory Area, of which there are 62 in the state. In the Skokomish-Dosewallips watershed (WRIA 16), the Planning Unit consists of a broad mix of entities, including Mason and Jefferson counties, the Skokomish Tribe,[2] the Port of Hoodsport, Mason County Public Utility District #1, local community groups, citizen representatives, and other environmental, development, and recreation interests. The WRIA 16 Planning Unit has been working together on watershed planning since 1999 and adopted this watershed plan, which is intended to guide future water resource management in WRIA 16, on May 11, 2006. It was then adopted by the Mason and Jefferson county commissioners on July 11, 2006. This watershed plan makes recommendations concerning water quantity, water quality, habitat, and other topics, but it does not specifically recommend instream flows. The WRIA 16 Planning Unit, the Department of Ecology, and the Skokomish Tribe will continue to discuss the issue of instream flows.

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[1] An *instream flow* is typically a minimum flow rate that is set by rule to support fish habitat or other resources that a stream provides, such as water quality or recreation.

[2] The Skokomish Indian Tribe has participated in developing this plan in an effort to cooperatively work with neighboring governments and water users to improve the quality of the WRIA 16 watershed. The Tribe is concerned, however, that this plan not compromise its ongoing and future efforts in other arenas to protect and enforce tribal and individual members' rights, including but not limited to judicial and administrative proceedings as related to the Cushman Hydroelectric Project. Additionally, by Resolutions Nos. 98-76 and 00-19, the Skokomish Tribal Council declared that its participation not constitute agreement as to: (1) the availability of any surface or groundwaters in WRIA 16, at least during certain months of the year; (2) the amount of federally reserved rights in WRIA 16; (3) the estimated quantity of water available for further appropriation; and (4) any process that will interfere with its position in FERC licensing proceedings for the Cushman Project. Finally, the Tribe's participation does not constitute agreement that further studies are needed to determine the cause or degree of degradation in the WRIA 16 basin, or that higher instream flows will not substantially improve or resolve the degradation in WRIA 16 described in this plan.

WRIA 16 Water Resources

As part of its watershed planning process, the WRIA 16 Planning Unit has commissioned several assessments of WRIA 16's water quantity, water quality, fish habitat, and instream flow. These assessments provide a scientific foundation for watershed planning in the region, and they identified the following conditions in WRIA 16:

- **Water supply appears adequate in the short term, but more data are needed to assess expected future quantities and needs and to determine whether low summer flows impair fish habitat.** Stream flows are lower in the summer, and a rigorous analysis is needed to determine whether these lower flows are adequate to protect fish habitat and other uses the streams provide. In addition, current data are insufficient to assess the continuity between ground and surface waters and to provide other information that would help process applications for water rights in the watershed.
- **Water conservation would help avoid future water supply problems, particularly in high-growth areas such as the south shore of Hood Canal.** Water conservation may also help mitigate the possible long-term effects of climate change and may be needed to help address possible low-flow concerns in summer months.
- **Water-quality concerns do exist, as fecal coliform and stream temperature exceed state standards in several streams.** Fecal coliform and associated pathogens and nutrients can be a threat to public health as well as to the health of Hood Canal's aquatic ecosystems. High stream temperatures threaten habitat for a variety of organisms, including salmon.
- **Hood Canal suffers from low levels of dissolved oxygen.** WRIA 16 streams and stormwater runoff carry pathogens, nutrients, and chemicals from septic systems, roads, animals, and other sources into Hood Canal. Nitrogen in Hood Canal contributes to excessive algae and to the low dissolved oxygen problem in Hood Canal. Like other animals, marine life needs oxygen to survive. Low levels of dissolved oxygen are responsible for the widespread "fish kills" in Hood Canal that have affected thousands of juvenile perch and numerous fish, octopi, and sea cucumbers.
- **Saltwater intrusion may soon be a concern along the south shore of Hood Canal.** Saltwater intrusion threatens drinking water along the shores of Hood Canal, especially in the South Shore sub-basin. Saltwater intrusion is the seeping of saltwater into freshwater aquifers. Areas where freshwater aquifers are at or below the water level of Hood Canal – and where groundwater pumping rates are high – are particularly susceptible to saltwater intrusion.
- **Fish habitat has been compromised by development, land use, and historical forestry practices.** Roads and land development in the lower reaches of many streams have degraded stream habitat and limited fish access. Dike-building, stream-channeling, and removal of large woody debris have decreased habitat quality. Landslides in or near forest clearcuts have contributed excess sediment to creeks. Culverts and other barriers block fish migration in several creeks. And finally, bulkheads and shoreline development have degraded nearshore habitat.

Big leaf maple trees near Staircase along the North Fork of the Skokomish River

The WRIA 16 Planning Unit considered the above conditions, together with numerous other issues identified by the group or by the scientific literature, as it developed recommendations for water resources in WRIA 16.

Recommendations for WRIA 16

Butler Creek

The WRIA 16 Planning Unit identified over 100 options to address the key issues in the watershed. After reviewing these options, the Planning Unit developed final recommendations, which were adopted by consensus on May 11, 2006. The recommendations listed below, many of which are discussed further in the full *Watershed Management Plan* (see the *Issues and Options* appendices in that document), are designed to protect and enhance water quantity, water quality, and habitat in the watershed.

These recommendations should guide future water resource management in the watershed, including the efforts of federal, state, local, and tribal governments, non-profit organizations, businesses, universities, individuals, and other groups working to manage and conserve WRIA 16's water resources. However, the Planning Unit has agreed that nothing in this plan creates an obligation for a Planning Unit member unless that member determines that funding is available. Government members may also prioritize tasks based on available funding and need. Many of these issues will be clarified in Phase IV of watershed planning, when the Planning Unit prepares a detailed implementation plan and begins implementation of this watershed plan.

Following are the WRIA 16 Planning Unit's recommendations. These recommendations are taken from chapters three through six of the full *Watershed Management Plan* and are numbered as they are in the plan.

Water Quantity Recommendations

Data Needs

3.1.1. Prioritize water-quantity monitoring activities and pursue funding

The Planning Unit recommends that Mason and Jefferson counties, the Skokomish Tribe, and water purveyors develop a prioritized list of surface and groundwater-quantity monitoring activities and pursue funding (e.g. grants) for ongoing, comprehensive water-quantity monitoring throughout the watershed.

Water Conservation

3.2.1. Support and encourage tiered water rate structures

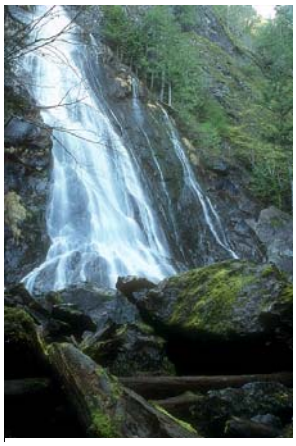
The Planning Unit supports the tiered rate structures adopted by the Jefferson and Mason PUDs #1 to encourage water conservation and encourages other water purveyors in the WRIA to adopt similar rate structures.

3.2.2. Offer rebates for low-flow fixtures and appliances

The Planning Unit recommends that all water purveyors in the WRIA pursue funding to offer rebates for the purchase of low-flow fixtures and appliances to encourage water conservation.

3.2.3. Offer water meters and encourage voluntary water metering

The Planning Unit recommends that water purveyors offer meters for sale to all interested water users in the WRIA and encourage water users to voluntarily meter their water use.



Rocky Brook Falls

3.2.4. Encourage golf courses to conserve water and minimize use of chemicals

The Planning Unit recommends that Mason and Jefferson counties encourage new golf courses in the WRIA to adopt and implement golf course management plans that address water conservation strategies (including water re-use), use of pesticides (including herbicides and insecticides) and fertilizers and other water-related impacts. The Planning Unit also recommends that Mason and Jefferson counties encourage existing golf courses to adopt golf course management plans.

3.2.5. Review alternative sewage and greywater regulations

The Planning Unit recommends that the state departments of Health and Ecology review alternative sewage and greywater treatment systems and revise regulations to allow greater use of these alternative sources of reused water, as appropriate.

Water Supply and Use

3.3.1. Encourage small public water systems over new permit-exempt wells

The Planning Unit recommends that the Department of Ecology, Mason and Jefferson counties, and water purveyors encourage the development and/or consolidation of small public water systems over the proliferation of exempt wells in areas: a) where appropriate zoning exists; b) where growth is anticipated by county planning efforts; and c) when it is fiscally feasible.

3.3.2. Determine future water needs of domestic and public water systems

The Planning Unit recommends that Mason and Jefferson counties, as part of planning under the Growth Management Act (GMA), determine how much additional water will be required to meet the water supply needs of single domestic wells and public water systems in the WRIA. At a minimum, the counties should use long-range demand forecasting consistent with GMA timelines (currently 20 years), but they are encouraged to consider 50 years. The counties should also work with water purveyors to integrate water supply forecasts into their analysis.

3.3.3. Implement water trusts and water banking

The Planning Unit recommends that the Department of Ecology work with Planning Unit members to develop and implement water trust and water banking opportunities that enhance instream flows.

3.3.4. Involve local parties in review of applications to remove water from the watershed

The Planning Unit recommends that the Department of Ecology involve local governments, tribal governments, and the Planning Unit throughout the review of applications for out-of-basin water transfers.

3.3.5. Allow rainwater capture below a certain threshold

The Planning Unit recommends that the Department of Ecology work with the legislature to recommend a specific quantity threshold for the amount of rainwater that can be captured without a permit and request that the legislature expressly authorize rainwater capture in quantities below this threshold. This permit exemption recommendation does not imply a recommended change in Washington State Department of Health policy regarding rain catchment for potable purposes.

3.3.6. Investigate winter water storage to enhance summer water supply

The Planning Unit recommends pursuing collaborative opportunities among Mason and Jefferson Counties, Mason and Jefferson PUDs, and the Skokomish Tribe to investigate the feasibility of multi-purpose storage projects that utilize seasonally available water to enhance aquifers and stream flows during critical low flow periods, while taking into account the benefits of high stream flows. This recommendation is merely to collaboratively study the feasibility of multi-purpose storage in WRIA 16 and should not be construed as a recommendation for any particular multi-purpose storage project.

Maidenhair fern

Water Quality Recommendations

Data Needs

4.1.1. Implement the WRIA 16 Surface Water Quality Monitoring Strategy

The Planning Unit recommends that the WRIA 16 Surface Water Quality Monitoring Strategy be implemented (same as recommendation 6.1.1).

4.1.2. Continue consistent and coordinated water-quality monitoring

The Planning Unit recommends that existing organizations conducting water-quality monitoring continue to work together and with the Planning Unit to ensure that consistent, coordinated water quality monitoring occurs that is responsive to the concerns of the community and is protective of the environment, including chemical, biological and physical health.

4.1.3. Better coordinate the State's water-quality monitoring

The Planning Unit encourages the state departments of Health and Ecology to better coordinate their respective water-quality monitoring efforts, including data sharing, rule making, enforcement, and other regulatory efforts.

4.1.4. Inventory and monitor dump sites and landfills

The Planning Unit recommends that Mason and Jefferson counties and the Department of Ecology prepare an inventory of current and former dump sites and landfills and, where appropriate, prepare and implement clean-up plans. Mason and Jefferson Counties should also seek grant funding to compile and assess water quality data from these sites.

4.1.5. Continue monitoring the Webb Hill biosolids application site

The Planning Unit recommends that Mason County and the Department of Ecology continue water quality monitoring efforts and initiate further investigations, as appropriate, at the Webb Hill biosolids application site to identify and assess impacts to surface and groundwater.

View from Mount Ellinor

4.1.6. Encourage water quality and quantity measurements in individual wells

The Planning Unit recommends that the Mason and Jefferson county health departments promote and encourage periodic voluntary measurement of water quality and water depth in individual wells. Water depth measurement should be conducted by a professional to protect the aquifer from contamination.

4.1.7. Determine impacts of septic systems on sensitive water bodies

The Planning Unit recommends that the Mason and Jefferson county health departments continue to track studies and other efforts underway to determine the impacts of nutrient and pathogen loading from septic systems near sensitive water bodies, and work with the Planning Unit to consider appropriate options, alternatives, or standards that might be pursued.

On-site Septic Systems

4.2.1. Implement septic system operation and maintenance programs

The Planning Unit recommends that Jefferson and Mason counties continue and expand their efforts to implement septic system operation and maintenance (O&M) programs and encourages the two counties to work together to collect comparable data. The Planning Unit recommends that the counties compile an annual report on the results of the O&M program for the local boards of health, and that this report be available to the public. Finally, the Planning Unit recommends that septic system inspections be required on a regular basis (as appropriate based on location, type and age).

4.2.2. Identify failing septic systems and notify owners

The Planning Unit recommends that Mason and Jefferson counties continue to identify failing septic systems and notify landowners of the need for remedial actions.

4.2.3. Assess sewers and other alternatives to septic systems in sensitive areas

The Planning Unit recommends that Mason and Jefferson counties assess the feasibility and effectiveness of providing sewer or community septic systems in environmentally sensitive areas, particularly where nutrients and pathogens are a concern. The Planning Unit also recommends that, where appropriate, the counties and the state Department of Health encourage alternative methods of septic waste management, including nutrient removal, non-discharging toilets, and greywater treatment systems.

4.2.4. Consider funding options for septic upgrades along shorelines and in other sensitive areas

The Planning Unit recommends that Mason and Jefferson counties consider a broad range of funding options to offset the costs of septic upgrades or conversion to community systems along shorelines or in other sensitive areas.

4.2.5. Require a septic system inspection upon the sale of a property

The Planning Unit recommends that Mason County require a septic system inspection by a certified septic professional upon the sale or transfer of property and require pumping if appropriate. The Planning Unit also recommends that Jefferson County continue its current program and work to improve compliance.

4.2.6. Encourage community wastewater treatment systems for new developments

The Planning Unit recommends that Mason and Jefferson counties encourage homeowner associations or private and public utilities to establish community wastewater treatment systems for appropriate new developments of four or more homes.

Animal Waste

4.3.1. Encourage farm plans and agricultural best management practices in critical areas

The Planning Unit encourages those farms in or adjacent to critical areas of the WRIA to have a current farm plan. Farm plans should consider seasonal restrictions on animal pastures to protect streams and floodplains from manure. The Planning Unit also recommends that the Mason and Jefferson conservation districts seek funding to 1) prepare farm plans, 2) provide financial assistance to help landowners implement agricultural best-management-practices, and 3) evaluate how effectively the farm plans and best management practices are being implemented.

4.3.2. Require manure management practices that protect floodwaters

The Planning Unit recommends that Mason and Jefferson counties require that manure in floodplains be managed in a manner that protects floodwaters from manure contamination.

4.3.3. Effectively manage pet waste in parks

The Planning Unit recommends that, where appropriate, Mason and Jefferson counties and the Washington State Parks Commission consider programs for the management of domestic animal waste at state and county parks in the WRIA.

Stormwater

4.4.1. Minimize impervious surface

The Planning Unit encourages Mason and Jefferson counties to ensure that County regulations minimize impervious surfaces and, to the extent feasible based on site conditions, maximize on-site infiltration, detention or reuse.

Dosewallips valley forest

4.4.2. Retain native vegetation

The Planning Unit recommends that Mason and Jefferson counties encourage retention of native vegetation throughout the WRIA.

4.4.3. Continue and expand stormwater management for state highways

The Planning Unit recommends that the legislature fully fund the Washington State Department of Transportation's stormwater management activities for state highways in the WRIA.

4.4.4. Implement best management practices for roadside ditches

The Planning Unit recommends that Mason and Jefferson counties, along with other appropriate agencies, pursue funding for best management practices along roadside ditches, including planting and vegetation retention, topsoil improvements, and installation and maintenance of filter strips to filter stormwater pollutants.

4.4.5. Establish riparian buffers and road maintenance standards for forestland owners

The Planning Unit encourages the Washington Forest Practices Board to establish riparian buffer regulations and road maintenance and abandonment planning criteria, based on best available science, for all forestland owners who are required to get a forest practices permit.

4.4.6. Expand County stormwater management programs

The Planning Unit recommends that Mason and Jefferson counties expand their stormwater management programs by adopting stormwater provisions, such as those in the current Puget Sound Conservation and Recovery Plan, including:

- Stormwater controls for appropriate new development and redevelopment;
- Stormwater site plan reviews;
- Stormwater control at construction sites;
- Proper operation and maintenance at stormwater facilities;
- Pollution source controls;
- Illicit discharges and water quality response;
- Problem identification and ranking;
- Low impact development; and
- Public education and outreach on stormwater.

Other

4.5.1. Implement Integrated Pest Management on publicly owned land

The Planning Unit recommends that Mason and Jefferson counties develop and implement a coordinated Integrated Pest Management program to minimize the use of pesticides (including herbicides and insecticides) on publicly owned land.

4.5.2. Address saltwater intrusion

The Planning Unit recommends that Mason County identify areas that are susceptible to seawater intrusion and consider adopting a program to address seawater intrusion. The Planning Unit also recommends that Jefferson County share information with Mason County on their saltwater intrusion program.

Habitat Recommendations

5.1.1. Support existing salmon recovery and habitat conservation programs

Deception Creek – main fork

The Planning Unit supports the following ongoing activities and recommends that these programs and/or similar programs be continued:

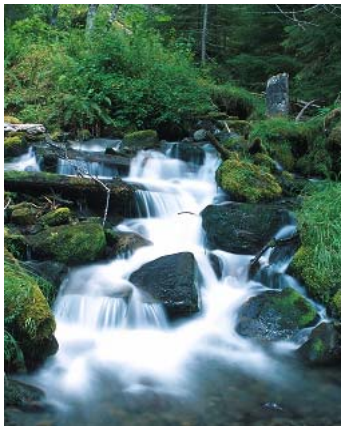
- Efforts by all the groups and agencies working to implement salmon recovery plans and associated projects;
- Habitat acquisition programs or conservation easements funded or implemented by land trusts, the Salmon Recovery Funding Board, Lead Entity groups, the Shared Strategy for Puget Sound, and others.
- Efforts to revegetate riparian areas;
- Efforts to improve large woody debris in streams;
- Salmon recovery efforts to address floodplain connectivity, riparian degradation, and channel complexity;
- Floodwater management planning to be integrated with salmon recovery efforts;
- Efforts to reduce adverse sedimentation;
- Efforts by the Mason County Weed Board to control invasive species;
- Efforts by the Mason and Jefferson conservation districts to implement the Conservation Reserve Enhancement Program (CREP).

5.1.2. Use vegetative management for danger trees in or near critical areas

The Planning Unit recommends that Mason and Jefferson counties adopt ordinances requiring or encouraging vegetative management as the first approach to danger trees in critical areas or their buffers. The Planning Unit also recommends that Mason and Jefferson counties and the state Department of Natural Resources (DNR) develop and implement requirements that felled danger trees (as defined by the DNR) in critical areas or buffers must remain on site as large woody debris, as appropriate.

5.1.3. Validate Department of Natural Resources stream typing designations

The Planning Unit recommends that the State Department of Natural Resources work with local entities to validate the stream typing designations in WRIA 16 with ground-truthing (i.e., field work) during seasonally appropriate times.



Lower Twin Falls – Dosewallips

5.1.4. Adopt the Forest and Fish Adaptive Management Program

The Planning Unit encourages the State Forest Practices Board to swiftly adopt the Adaptive Management Program rule-making petitions presented by the Policy Committee of the Forest and Fish Program in accordance with WAC 222-12-045.

5.1.5. Consider land preservation programs for critical habitat

The Planning Unit encourages Mason and Jefferson counties to consider such tools as a Conservation Futures Program, the transfer of development rights, and mitigation banking to preserve critical habitat.

Other Recommendations

Hood Canal

6.1.1. Implement the WRIA 16 *Surface Water Quality Monitoring Strategy*

The Planning Unit recommends that the WRIA 16 Surface Water Quality Monitoring Strategy be implemented (same as recommendation 4.1.1).

6.1.2. Minimize the discharge of effluent into Hood Canal

The Planning Unit recommends that, due to the special concerns in Hood Canal, the Department of Ecology consider including permit conditions requiring new wastewater treatment plants to include a water reuse/recharge component which eliminates the discharge of effluent into Hood Canal. The Planning Unit also recommends that Ecology strongly consider options to minimize discharges into Hood Canal when permits are renewed.

6.1.3. Provide adequate toilet facilities at popular recreation sites

The Planning Unit recommends that the state departments of Natural Resources and Fish and Wildlife, the Parks Commission, and the U.S. Forest Service provide an adequate number of toilets and soap dispensers at their popular fishing, camping or other highly-used recreation sites, where appropriate.

6.1.4. Assess and upgrade pump-out stations for recreational vehicles and boats

The Planning Unit recommends that Mason and Jefferson counties consider partnering with other stakeholders (such as State Parks and the Interagency Committee on Outdoor Recreation) to assess the adequacy of campground and marine pump-out stations for recreation vehicles and boats and then upgrade the facilities where necessary, subject to available funding. (See also recommendation 6.5.6.)

6.1.5. Use sewer systems instead of septic systems when necessary to protect environmental health

The Planning Unit recommends that the State Legislature develop specific provisions that allow for sewer systems in an Aquatic Rehabilitation Zone when necessary to protect the environment from degradation. Sewer systems in

such locations would only be appropriate if they are necessary to protect basic health and safety or the environment. These sewer systems must also be financially feasible at rural densities.

6.1.6. Maintain zoning limits where new sewer systems are used to alleviate septic system impacts

The Planning Unit recommends that if sewer systems are installed outside an Urban Growth Area to alleviate septic impacts in Hood Canal, Mason and Jefferson counties maintain the growth, density and build-out limits found within their respective Comprehensive Plan and development regulations.

6.1.7. Prioritize Department of Transportation stormwater projects that would improve Hood Canal

The Planning Unit recommends that the Washington State Department of Transportation consider the sensitivity of Hood Canal in prioritizing stormwater projects.

6.1.8. Educate the community on pesticide- and fertilizer-reduction and promote alternatives

The Planning Unit recommends that Mason and Jefferson counties, the Washington State University Extension offices in Mason and Jefferson counties, Mason and Jefferson conservation districts, Washington Sea Grant, and the Hood Canal Coordinating Council pursue funding to educate homeowners and businesses on the need to minimize use of pesticides (including herbicides and insecticides) and fertilizers and encourage the use of natural, slow-release fertilizers such as compost. Due to the special concerns of excess nitrogen and phosphorous in Hood Canal, the use of fertilizers should be strongly discouraged in the proximity of water (i.e. lakes, rivers, streams or marine waters).

Butler Creek – main fork

6.1.9. Communicate results of low dissolved oxygen studies

The Planning Unit recommends that the Puget Sound Action Team, the Hood Canal Coordinating Council, and other agencies implementing projects to address low dissolved oxygen, continue to track, publish and update measurable results from all funded projects so that this information can be easily shared and accessed by other participating entities and the general public.

6.1.10. Educate residents on nitrogen and phosphorous reduction in household products

The Planning Unit recommends that Mason and Jefferson counties expand existing education and outreach programs for residents to emphasize information on the benefits of avoiding nitrogen and phosphorous in household products, and to encourage retailers to offer these alternative products for sale in their stores.

6.1.11. Involve Watershed Planning Units in the development of regional governance for Hood Canal

The Planning Unit recommends that, as specified in the coordinating requirements of RCW 90.88.030(1)(b), the Hood Canal Coordinating Council solicit participation from Watershed Planning Units in developing its regional governance study design, research, and recommendations. The Planning Unit's intent is to assist the Council in developing governance recommendations that will clarify the roles and responsibilities of the many agencies and organizations involved in Hood Canal efforts, eliminate duplication, and optimize service delivery efficiencies.

6.1.12. Revise Shoreline Master Programs and plans

The Planning Unit recommends that Mason and Jefferson counties review their respective Shoreline Master programs and development regulations, and revise them if necessary to minimize new structures on riparian habitat (as defined by RCW 79A.15.010 (7)). The Planning Unit recommends that Mason County pursue funding to revise its Shoreline Master Plan (SMP) to incorporate the recommendations of this watershed plan. The Planning Unit also recommends Ecology give high priority to funding this effort due to the designation of Hood Canal Aquatic Rehabilitation Zone One.

6.1.13. Promote alternatives to bulkheads and other shoreline structures

In updating Shoreline Master Programs, the Planning Unit recommends that Mason and Jefferson counties consider: 1) initiating a public education program to educate the public about the impacts of shoreline structures and the need to move toward alternatives; 2) developing and implementing incentives for removing and replacing hard bulkheads and other shoreline structures that impede natural processes; and 3) adopting stringent restrictions on the installation of new hard bulkheads or other shoreline structures that impede natural processes, as well as encouraging soft-armoring or other non-structural alternatives where feasible.

6.1.14. Consider marine drift cells and sediment dynamics when issuing land use permits

The Planning Unit recommends that Mason and Jefferson counties consider the impacts to and protection of marine drift cells and source sediments in issuing shoreline and other land use permits.

6.1.15. Establish local improvement districts to fund shoreline improvements

The Planning Unit recommends that Mason and Jefferson counties encourage shoreline landowners to establish local improvement districts to fund the protection and restoration of shorelines.

6.1.16. Remove derelict gear and debris from Hood Canal and restore eelgrass beds

The Planning Unit recommends that the state Department of Natural Resources and tribes be fully funded to remove derelict or abandoned anchors, boats, floats, nets, treated pilings, and other debris in Hood Canal to improve and restore eelgrass beds and other natural habitat.

6.1.17. Separate the South Shore Sub-basin from WRIA 14

The Planning Unit recommends that the Legislature separate WRIA 14 into two WRIAs (14A and 14B) and that the south shore of Hood Canal (which is included in the WRIA 16 Planning Process under an agreement between WRIAs 14 and 16) be designated as WRIA 14B. The Planning Unit also recommends that WRIA 14B continue to be administered as part of WRIA 16 during plan implementation.

6.1.18. Evaluate the impact of marine mammals on Hood Canal's water quality

The Planning Unit supports an evaluation of marine mammals' impacts on fecal and nutrient loading in Hood Canal.

Funding

6.2.1. Fund the implementation of watershed plans through the State

The Planning Unit recommends that the legislature provide stable, ongoing funding for the implementation of watershed plans.

6.2.2. Research other opportunities for funding watershed plan implementation

The Planning Unit recommends that as part of its "Governance Study," the Hood Canal Coordinating Council include considerations for creating a stable, on-going funding source to implement the recommendations of the watershed plan or similar programs.

Education and Outreach

6.3.1. Educate residents on alternatives to permit-exempt wells

The Planning Unit recommends that the Department of Ecology work with the Planning Unit to develop and implement an ongoing education/outreach effort for current and future water users on state laws governing the use of permit-exempt groundwater withdrawals. The education and outreach program should encourage the development of small public water systems as an alternative to the proliferation of permit-exempt wells. The Planning Unit also recommends that the benefits of shared water systems for new development be advocated through existing outreach programs.

Field work on the Duckabush River (photo courtesy WDFW)

6.3.2. Educate the public on septic system, pet waste, and livestock waste management

The Planning Unit recommends that the Mason and Jefferson counties continue to give information to realtors and homeowners on fecal coliform/pathogen and nutrient impacts and prevention strategies, including proper septic system inspection, operation and maintenance, and pet waste management. In addition, the Planning Unit recommends that conservation districts and Washington State University Extension offices continue to provide information about livestock waste management and best management practices.

6.3.3. Encourage landowners to maintain native vegetation

The Planning Unit recommends that Mason and Jefferson counties initiate public education encouraging landowners to maintain native vegetative cover, which will improve stormwater infiltration.

6.3.4. Provide permit applicants with information on alternatives to bulkheads

The Planning Unit recommends that Mason and Jefferson counties and the Washington Department of Fish and Wildlife provide all applicants for bulkhead or armoring permits educational materials that explain why bulkheads are discouraged and provide information on beneficial alternatives.

6.3.5. Produce a report card on the state of the watershed

The Planning Unit recommends that the Planning Unit, with assistance from the Department of Ecology, develop a periodic report card on the state of the watershed and that this report be posted on the Department of Ecology web site.

Enforcement

6.4.1. Reduce illegal water withdrawals and water quality violations

The Planning Unit recommends that the state legislature adequately fund the Department of Ecology's enforcement operations to stop egregious illegal water withdrawals and diversions as well as water quality violations. The Department of Ecology should also coordinate with appropriate Planning Unit members to prioritize and initiate actions to bring those who are illegally withdrawing water into compliance.

Skokomish River

6.4.2. Establish penalties for removing large woody debris from streams

The Planning Unit recommends that state and local governments establish clear civil penalties to better enforce existing prohibitions to removing large woody debris from streams.

6.4.3. Adequately fund compliance and enforcement activities for existing laws and regulations

The Planning Unit recognizes that full compliance with existing laws and regulations would address many of the issues identified in this watershed plan. The Planning Unit recommends that the State Legislature and the boards of county commissioners for Mason and Jefferson counties give high priority to adequately funding compliance and enforcement activities.

6.4.4. Enforce illegal greywater and black-water discharges

The Planning Unit recommends that Mason and Jefferson counties increase enforcement of illegal grey-water and black-water discharges.

Support for Ongoing Activities

6.5.1. Continue existing stormwater education and outreach programs

The Planning Unit recommends that the Puget Sound Action Team, Washington Sea Grant, and Washington State University Extension continue their stormwater education and outreach programs in the watershed.

6.5.2. Revise critical areas ordinances to protect Hood Canal and the nearshore environment

The Planning Unit recommends that Mason and Jefferson counties continue to revise their critical areas ordinances based on best available science to provide adequate buffers, require compliance with Habitat Management Plans, establish and enforce improved stormwater treatment and controls, and maintain undeveloped marine drift cells.

The Planning Unit also recommends that each county develop a matrix of critical areas buffers and setbacks as a single, consolidated source of reference.

6.5.3. Minimize the number of new docks and stream crossings

The Planning Unit also recommends that Mason and Jefferson counties continue to encourage multiple-user docks and stream crossings to minimize the number of structures that impair habitat.

6.5.4. Revise development regulations to ensure consistency with the State's fish passage guidelines

The Planning Unit recommends that Mason and Jefferson counties continue to revise their development regulations to ensure they are consistent with the Washington Department of Fish and Wildlife's fish passage guidelines (http://wdfw.wa.gov/hab/engineer/habeng.htm).

6.5.5. Continue Master Gardener focus on minimizing pesticides and fertilizers

The Planning Unit recommends the Master Gardener curriculum continue to focus on minimizing the use of pesticides (including herbicides and insecticides) and fertilizers and emphasizing alternatives.

6.5.6. Assess adequacy of marine pump-out stations

The Planning Unit supports the Hood Canal Coordinating Council's efforts to assess whether the number of marine septic pumping stations are adequate to serve recreational boating in Hood Canal. The assessment should determine if the existing sites are adequately maintained and whether new sites are needed in specific areas. The assessment should also include recommendations for public education. (See also recommendation 6.1.4.)

6.5.7. Participate in efforts to address low dissolved oxygen in Hood Canal

The Planning Unit supports the activities of the Hood Canal Dissolved Oxygen Program and recommends that Planning Unit members continue participating in this and other regional efforts to address low dissolved oxygen issues. The Planning Unit also encourages HCDOP to address the impacts of low dissolved oxygen on ecological communities as well as on entire ecosystems.

6.5.8. Support water clean-up efforts

The Planning Unit supports water resource clean-up efforts in the watershed, including TMDLs and shellfish protection districts.

Information Gathering

6.6.1. Conduct follow-up studies to fill information gaps

The Planning Unit recommends that the following studies be completed, as funding allows. The Planning Unit recommends that Planning Unit members and other appropriate entities cooperatively pursue funding to complete these studies:

- A study of the comparative impact on impaired rivers and streams of withdrawing water from deeper confined aquifers as opposed to withdrawing water from shallow, unconfined aquifers thought to be in more direct hydraulic continuity with streams.

- A modeling or research effort to predict more specifically the stream flow impacts from climate change on WRIA 16 streams;
- Preparation of a groundwater quality monitoring strategy;
- Preparation of a groundwater quantity monitoring strategy;
- Exploring additional water storage opportunities; and
- GPS mapping and typing of wetlands by trained staff on routine site visits.

6.6.2. Develop a shared database of water-related data

The Planning Unit recommends that the Department of Ecology provide technical assistance to the Planning Unit to prepare a plan for the development of a shared database of water-related data, including GIS data sets. The plan will assign responsibilities to various Planning Unit members for data gathering, entry and maintenance of the database.

6.6.3. Develop a clearinghouse of data and information on Hood Canal

The Planning Unit recommends that the legislature create and fund a clearinghouse for all data and information gathered on Hood Canal. The information should be housed at a single location (such as the State Library) and made easily accessible to the public.

6.6.4. Archive studies on Hood Canal within the Timberland Library System

The Planning Unit recommends that copies of all publications and documents regarding Hood Canal be given to the Timberland Library System for easy access by local residents.

Plan Implementation

Plunge pool

6.7.1. Improve coordination and communication among water quality and water resource staff at both Mason and Jefferson counties

The Planning Unit recommends that Mason and Jefferson counties implement mechanisms to improve coordination and communication between water quality and water resource staff (including land use, public works and environmental health staff). This could range from improved channels of communication to consolidating these staff into a single department.

6.7.2. Incorporate *Watershed Plan* recommendations into local Comprehensive Plans

The Planning Unit encourages Mason and Jefferson counties to incorporate the watershed plan recommendations, where appropriate, into the local Comprehensive Plan, including resource ordinances and development regulations.

Sunrise on the Skokomish

For additional information or to obtain copies of the full *Watershed Management Plan* for WRIA 16:

Visit the WRIA 16 website:

www.ecy.wa.gov/apps/watersheds/planning/16.html

Or contact:

Mason County
Department of Community Development
411 North 5th
PO Box 279
Shelton, WA 98584

www.co.mason.wa.us
(360) 427-9670

Photographs courtesy of Bill Graham, PUD #1 of Jefferson County, unless otherwise noted.

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