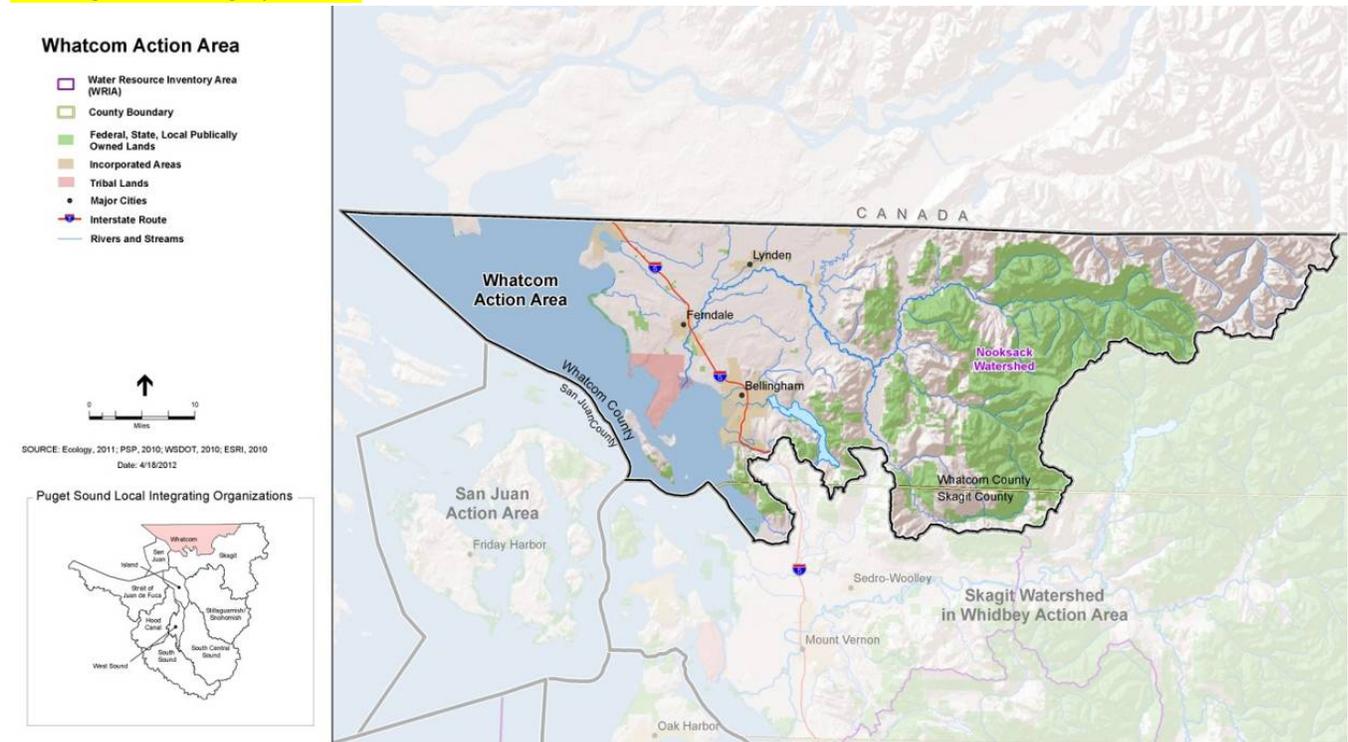


Whatcom County/Nooksack Watershed (WRIA 1)

Description of the Area

Whatcom County/Nooksack Watershed (Water Resource Inventory Area [WRIA] 1) is within the San Juan/Whatcom Action Area. It is located in the northwest corner of Washington State and encompasses the northeast corner of Puget Sound. WRIA 1 covers 1,410 square miles, largely in Whatcom County, but extends 21 square miles into Skagit County and 147 square miles into British Columbia, Canada. The San Juan/Whatcom Action Area is one of two action areas with streams crossing the international boundary with Canada. The Nooksack River, the watershed's namesake, originates from glaciers on Mount Shuksan in North Cascade National Park and Mount Baker, the highest point in the watershed at 10,778 feet, which is located in the Mount Baker–Snoqualmie National Forest. From the headwaters, the Nooksack River flows westerly through forest and farm land and past small cities to reach sea level at Bellingham Bay. Mount Baker is an active volcano and one of the snowiest places on earth. In 1999, the Mount Baker Ski Area set a world record with 95 feet of total snowfall in a single season. Yet despite some banner years for skiers, the many glaciers on Mount Baker have generally been in rapid retreat since the 1980s. Spring and early summer snowmelt feed the three forks that combine to form the mainstem Nooksack River near Deming, while glacial meltwater continues to feed two of the three branches, the North and Middle Forks, from mid-summer to early fall once the snowmelt is complete. Rainfall and groundwater contribute flow to the Nooksack River and are the primary sources of flow for the lowland tributaries and independent coastal streams.

[This figure is being updated.]



The Nooksack River has three main forks—north, middle, and south. Other major river systems in WRIA 1 include the Lummi River, Dakota Creek, and other independent coastal streams, and tributaries to the Fraser River in Canada including the Sumas River. Fishtrap and Bertrand Creeks are tributaries to the Nooksack River and both originate in British Columbia. There are more than 3,000 total miles of freshwater courses, including streams, rivers, lakes, ponds and wetlands, as well as 155 miles of marine shoreline in the Whatcom County portion of the area.

The Whatcom County portion of WRIA 1 is home to over 200,000 residents, with approximately 81,000 living in the city of Bellingham. The county is located between two major metropolitan areas: Vancouver, British Columbia, which supports over 2 million people 30 miles to the north, and King/Snohomish Counties, which include the cities of Everett and Seattle also support over 2 million people 60 to 100 miles to the south.

Approximately 85,300 acres (11%) of Whatcom County land is designated for agricultural use although agricultural production occurs on more than 140,000 acres. This land base supports robust dairy, berry, and seed potato production. Whatcom County's dairy industry ranks second out of 34 dairy-producing counties in the state and is in the top 5% of dairy production nationwide, with a farm gate value of \$190 million dollars per year. Half of the 103,000 milk cows in Puget Sound are in Whatcom County. The county also produces more than 65% of the nation's raspberries, with an estimated value of \$65 million in 2011. Other major crops include strawberries, blueberries, greenhouse and nursery items, poultry, eggs, and seed potatoes. Approximately 9% of Whatcom County's land use is agriculture, while 82% of the land is considered forest and rural. Cities and urban growth areas account for 7% of the land use. Other land uses consist of mining, industrial, and commercial development. Two refineries and an aluminum smelter operate in the Cherry Point area. Deep-water access at Cherry Point is a factor in future industrial activity in this location including the proposed coal transport facility, which would accommodate Panamax (65,000 to

85,000 tons) and Capesize (160,000 to 180,000 tons) deep-draft vessels. Western Washington University, the Port of Bellingham, and traditional commercial forestry and fishing also contribute to the region's economy. The former pulp mill site on Bellingham Bay is being redeveloped from a heavy industrial site to a mixed-use waterfront with parks, businesses, and public moorage that will be linked to downtown Bellingham, while portions of the Whatcom Waterway are reserved for deep-water commercial use.

The reservation lands of the Nooksack Tribe are located primarily along and in the vicinity of the Nooksack River and its tributaries. The Lummi Indian Nation lands include the Lummi and Sandy Point Peninsulas, Portage Island, and associated tidelands. The Nooksack River flows through the Lummi Reservation as it discharges into Bellingham Bay. Both tribes exercise treaty rights to fish, hunt, and gather throughout the Nooksack River watershed and adjoining marine areas. Shellfish harvest is an important activity for local tribes and a major commercial industry for the region. Commercial, ceremonial, and subsistence harvest of salmon in both marine and freshwater habitats are of particular importance to Lummi Nation and Nooksack Indian Tribe members. Recreational shellfish harvest is an active pursuit of area residents and recreational visitors at Semiahmoo Spit, Birch Bay, and Chuckanut Bay.

The relatively shallow depths of Birch Bay result in warm water temperatures and increased recreational activities in the summer. Of all Washington State Parks, Birch Bay State Park was the most visited for recreational shellfish harvesting in 2009. Lake Whatcom, another popular recreational and residential area, is also the drinking water reservoir for Bellingham and parts of Whatcom County. Winter recreation enthusiasts rely on the proximity to the Mount Baker Ski Area for easy access to snow sports. The residents of, and visitors to, Whatcom County, university students, tribal citizens, and pioneer descendants place a high value on the diverse environment and economy of Whatcom County. There is active participation in marine resource committees, watershed councils, and education and restoration programs related to the continued health of the local ecosystem.

Unique Ecosystem Characteristics and Assets

Mount Baker has been a landmark since humans first began to navigate and explore this corner of Puget Sound, and the abundant snowfields provide water and electricity for communities in Puget Sound. In addition to the striking natural beauty of Whatcom County, the region supports habitat types from alpine headwaters to tidal bays, along with farming, fishing, and forestry operations. This area sustains every native Pacific salmonid species, and includes unusual types such as riverine sockeye salmon and even-year pink salmon. The Chinook salmon populations in the North, Middle and South Forks of the Nooksack River have distinct genetic and timing traits that are considered to be crucial in retaining the diversity and viability of threatened Puget Sound Chinook salmon overall. All of the salmon species depend on the nearshore habitats for food and shelter as they adjust between freshwater and saltwater habitats.

The marine shorelines of Whatcom County produce surf smelt, sand lance, and anchovy, along with other fish and shellfish species. Birch Bay, Chuckanut Bay, and Lummi Island have recreational shellfish harvesting. Drayton Harbor, Lummi Bay, and Portage Bay have tribal and commercial shellfish growing areas, while Alden Bank offers shallow offshore habitat for isolated populations of geoduck, sea urchins, and clams. Several of these areas are currently prohibited, conditionally approved, or threatened for shellfish harvest due to poor water quality. The Cherry Point area was historically the most highly productive area for herring

in Puget Sound, producing an estimated 32% of all the known herring spawning in the sound, prior to a precipitous decline of 94% from 1973 to 2000.

Natural features and human activities have made Whatcom County an important area for migratory waterfowl, raptors, and other birds. The nearshore areas have abundant food sources for marine birds; and the floodplains, wetlands, and agricultural fields provide forage areas. Birch Bay is designated as a Shoreline of Statewide Significance, the only marine shoreline in Whatcom County with this designation. Greater Bellingham Bay, including Chuckanut and Portage Bays, Drayton Harbor, Semiahmoo Spit, and Birch Bay are portions of the Pacific Flyway and are stopovers for the migratory birds' flight path between the Fraser River estuary and Skagit Bay.

Local Implementation Structure and Planning Process

The WRIA 1 Policy Boards—WRIA 1 Watershed Joint Board and WRIA 1 Salmon Recovery Board—form the local integrating organization (LIO) for Whatcom County/Nooksack Watershed (WRIA 1), or Whatcom LIO. The Whatcom LIO was officially recognized by the Puget Sound Partnership's Leadership Council in November 2010.

The Whatcom LIO is a function of the existing integrated governance structure for WRIA 1 program management. The LIO operates with the WRIA 1 Policy Boards and Management Team and the staff teams.

The WRIA 1 Policy Boards provide policy direction and guidance. Their membership is shown below.

- WRIA 1 Watershed Joint Board
 - Whatcom County
 - Cities of Bellingham, Blain, Everson, Ferndale, Lynden, Nooksack and Sumas
 - Lummi Nation
 - Nooksack Indian Tribe
 - Washington Department of Fish and Wildlife
- WRIA 1 Salmon Recovery Board
 - City of Bellingham
 - City of Blaine
 - City of Everson
 - City of Ferndale
 - City of Lynden
 - City of Nooksack
 - City of Sumas
 - Whatcom County
 - Washington Department of Fish and Wildlife

- Lummi Nation
- Nooksack Indian Tribe

The WRIA 1 Management Team provides program oversight and administers the policies and directions of the WRIA 1 Policy Boards. It consists of representatives from the same entities as the policy boards.

The staff teams¹ support the Whatcom LIO through the development and implementation of local actions. The staff teams include staff members from the policy boards' membership.

For the 2014/2015 Action Agenda update, the staff teams focused on identifying near-term actions that could be implemented over the next 2 to 3 years and supported the Strategic Initiatives. The staff teams compiled a list of 33 actions representing the local priorities of participating jurisdictions and organizations. The management team used a rubric, typically consisting of the following questions, to narrow that list.

- Will the action have measurable watershed improvements (e.g., riparian function, stream habitat, water quality, water allocation, estuary function, nearshore habitat connectivity)?
- Is the action based on established and legitimate local planning process?
- Does the proponent have sufficient authority to implement and report on the action?
- Can the action be substantially completed by December 2016?
- Does the action address one of the Strategic Initiatives?

If the response to the first four questions was positive, the action was advanced by the management team to the policy boards as a recommended near-term action.

The updated near-term actions should not be construed to represent the priority of any individual contributor; rather, the near-term actions as a group are consistent with the Whatcom LIO's overall purpose to coordinate implementation of Action Agenda priorities consistent with or complementary to local priorities.

¹ In 2012, an ad hoc work group (the Whatcom Integration Team) was established for the purpose of updating and refining the March 16, 2012, update to the Puget Sound Action Agenda, and identifying options to present to the WRIA 1 Management Team for further integrating and advancing local priorities in the WRIA 1 decision-making structure. The options identified by the Whatcom Integration Team and presented to the WRIA 1 Management Team for the purpose of a 2014/2015 update included a staff team option. In June 2013, the WRIA 1 Policy Boards acted on the WRIA 1 Management Team recommendation of staff teams to support the WRIA 1 Policy Boards' LIO function.

Pressures

In 2011, the Whatcom LIO used guidance from Puget Sound Partnership staff to evaluate pressures relevant to the local ecosystem. The LIO prioritized 15 pressures as significant to the local ecosystem. In the summary table below, the pressures are listed alphabetically and organized geographically by aggregated watershed areas. The pressures are organized geographically because of the unique characteristics and land uses within this area. The aggregated watersheds are consistent with the aggregations in the WRIA 1 2010 State of the Watershed Report. The pressures were not revised for this update.

Pressures Identified by Aggregated Watersheds

Pressure(s)	Aggregated Watersheds						
	Nooksack Forks	Lower Nooksack	Coastal North ¹	Coastal West ¹	Coastal South ¹	Lake Whatcom	Sumas River
Agriculture, livestock grazing; agricultural runoff	X	X	X	X			X
Aquatic animal harvesting (includes threat of illegal fishing)	X	X	X	X	X	X	X
Culverts	X	X	X	X	X	X	X
Dams	X						
Freshwater levees/floodgates (includes outlet dam)	X	X				X	
Freshwater shoreline infrastructure (armoring, docks, bulkheads, other overwater structures)	X	X				X	
Industrial, domestic and municipal wastewater	X	X	X	X	X	X	X
Invasive species	X	X	X	X	X	X	X
Marine shoreline infrastructure (armoring, docks, bulkheads, other overwater structures)			X	X	X		
Oil and hazardous material spills (includes pipelines/tanker trucks/trains/ marinas/ports)	X	X	X	X	X	X	X
Recreational activities	X	X	X	X	X	X	X

Pressure(s)	Aggregated Watersheds						
	Nooksack Forks	Lower Nooksack	Coastal North ¹	Coastal West ¹	Coastal South ¹	Lake Whatcom	Sumas River
Residential and commercial development; runoff from built environment (unmanaged runoff)	X	X	X	X	X	X	X
Timber production (includes Lummi Reservation)	X		X	X	X	X	X
Transportation and service corridors (in WRIA 1 includes rail, roadways, ports, marinas, ferry terminal, border crossings, pipelines)	X	X	X	X	X	X	X
Water withdrawals/ diversions	X	X	X	X	X	X	X
¹ Includes adjacent marine waters.							

Local Near-Term Actions and Opportunities

The table below presents the local near-term actions for Whatcom County/Nooksack Watershed (WRIA). Each local near-term action is listed with an identification code—which includes the area abbreviation and a number—followed by a description of the action. The performance measures represent important, measureable, dated components of implementing each action. The owner is the entity or entities responsible for implementation of the near-term action, with the primary owner being responsible for tracking and reporting progress toward completing the action. The final column provides regional context for each local action, identifying the primary sub-strategy to which it is most closely linked as well as other sub-strategies that the LIO associates with the action. Local near-term actions are also listed in Section 3 in the context of their primary sub-strategies.

Local Near-Term Actions in Whatcom County/Nooksack Watershed (WRIA 1)

	Near-Term Action	Performance Measures	Owner(s) ¹	Regional Sub-Strategy ²
WH1	Implement Chinook restoration projects in the WRIA 1 Salmon Recovery 3-Year Work Plan. The preparation and updating of the 3-year work plan is an element of salmon recovery and is a regional requirement for lead entities, occurring annually. The local recovery plan and restoration strategies are the foundation for the updates, and reflect local restoration strategies and priorities.	<ul style="list-style-type: none"> By January 2016, WRIA 1 Sponsors prepare designs for up to six priority chinook projects in the Nooksack River Forks. By January 2016, WRIA 1 Sponsors complete up to five instream projects in the Nooksack River Forks that create up to 20 primary pools and 4 miles of channel and off-channel habitat. By January 2016, WRIA 1 Sponsors acquire up to 100 acres of priority habitat for protection and/or restoration in the Nooksack River Forks. By January 2016, WRIA 1 Sponsors submit up to six applications for project funding. 	WRIA 1 Salmon Recovery Board (Lead Entity) <i>Nooksack Tribe, Lummi Nation, Whatcom County, Whatcom Land Trust, NSEA, Whatcom Conservation District, City of Bellingham, WDFW, USFS, and others are supporting partners</i>	A6.1 (A5.4)
WH2	WRIA 1 Forest Road Inventory and Assessment for implementation. Compile information on federal, state, and private forest roads identified as risks to aquatic resources. In addition, identify additional non-system roads and prioritize road segments based on	<ul style="list-style-type: none"> By December 2014, USFS complete Inventory and Assessment for Priority Drainages on USFS land. By December 2014, Nooksack and Lummi Natural Resource Staff provide information on private forest roads 	WRIA 1 Salmon Recovery Board <i>USFS, NNR, LNR</i>	C4.2 (B2.2)

Near-Term Action	Performance Measures	Owner(s) ¹	Regional Sub-Strategy ²
potential for mass wasting and sediment delivery to streams. Develop treatments for road decommissioning, storage, and seek funding for implementation.	<p>risk in priority drainages.</p> <ul style="list-style-type: none"> By June 2015, USFS and technical staff prioritize road segments for treatment. By June 2016, USFS finalize contract for treatment on road segments in priority areas. 		
<p>WH4 Padden Creek enhancements—24th to 30th Streets. This freshwater project greatly improves existing habitat conditions for the section of Padden Creek that is immediately upstream of the newly daylighted tunnel. This site is now accessible to salmonid species. The project will increase the diversity and amount of fish habitat available by reconnecting Padden Creek to its floodplain, adding log jams, boulders and pools in an urban environment. Steps include completing design, obtaining permits, constructing, planting the site, maintaining plantings, and monitoring site evolution.</p>	<ul style="list-style-type: none"> By November 2015, complete design. By January 2016, complete bid specifications and permit applications. By December 2016, complete construction. By January 2017, complete planting. 	City of Bellingham	A2.2 (B2.2)
<p>WH5 WRIA 1 culvert inventory maintenance. Whatcom County completed an inventory of culverts in WRIA 1 in 2005. The document may need to be updated to reflect culverts replaced or repaired and inventories recently completed by WDFW. Completing designs for priority fish passage barriers would enable those barriers to be “shovel-ready” when funding becomes available to implement projects.</p>	<ul style="list-style-type: none"> By December 2014, WDFW in collaboration with partners prepare an addendum to 2005 WRIA 1 Culvert Inventory (milestone). By December 2015, Sponsors prepare designs to fix up to three priority fish passage barriers (output). 	To be determined <i>USFS, Whatcom County Public Works, NSEA, WDFW</i>	A2.2
<p>WH6 Implement and expand the noxious weed eradication program. The Noxious Weed Board has implemented a program in Whatcom County to remove knotweed from the Nooksack Forks and spartina species from marine intertidal areas including the Nooksack and Lummi River deltas. Long term surveys and continued annual removal/treatment is necessary to prevent the establishment of spartina and to manage knotweed infestations.</p>	<ul style="list-style-type: none"> In 2014, continue follow-up treatments in forks using existing funding. By the end of 2015, if full funding is made available, extend treatments to all tributaries to the forks with first treatment of all tributaries and touch up treatments in previously treated areas. Through 2014, continue spartina surveys for early detection with existing funding. <ul style="list-style-type: none"> Remove new spartina clones detected. Continue seasonal removal of spartina close currently known. 	Whatcom County <i>Whatcom County Noxious Weed Board</i>	B5.3

Near-Term Action	Performance Measures	Owner(s) ¹	Regional Sub-Strategy ²
	<ul style="list-style-type: none"> ○ Recommend and implement herbicides if determined necessary. 		
<p>WH7 Waterfront and estuary habitat connectivity projects. Implement restoration projects, and protect marine shorelines through stewardship projects.</p>	<ul style="list-style-type: none"> ● Locust Beach– Marine Resources Committee in cooperation with City of Bellingham Parks Department to: <ul style="list-style-type: none"> ○ By December 2016, host four coordinated beach clean ups with local community groups at Locust Beach (e.g., kiteboarding club, dive club, Surfrider), and design and install interpretive and stewardship signs. ● Little Squalicum Estuary–City of Bellingham to: <ul style="list-style-type: none"> ○ By May 2014, complete design. ○ By May 2014, complete bid specifications and permit applications. ○ By December 2015, complete construction. ○ By January 2016, complete planting. ● Whatcom Waterway Between Roeder and Holly–City of Bellingham to: <ul style="list-style-type: none"> ○ By December 2013, complete feasibility and site characterization. ○ By December 2014, complete design, bid specifications and permit applications. ● Cornwall Beach Park Habitat Enhancements–City of Bellingham to: <ul style="list-style-type: none"> ○ By August 2014, complete Master Planning and 30% design. ● Willow Spring Culvert Removal–City of Bellingham to: <ul style="list-style-type: none"> ○ By April 2015, complete design. ○ By April 2015, complete bid specifications and permit applications. ○ By December 2016, complete construction. ○ By December 2016, complete planting. 	City of Bellingham	B2.2 (D7.6)
<p>WH8 Marietta Acquisition. Acquire properties in repetitive flood loss area to prevent future loss and to enhance upstream habitat restoration opportunities. Clean up three former gas stations sites as dictated by site conditions.</p>	<ul style="list-style-type: none"> ● By December 2015, complete Estuary and Salmon Restoration Program acquisitions. ● By December 2015, complete additional acquisitions. ● By December 2015, assess and remediate former gas station sites. 	Whatcom County	A5.4 (B3.2)

	Near-Term Action	Performance Measures	Owner(s) ¹	Regional Sub-Strategy ²
WH9	<p>Implement a pollution identification and control project in northern Chuckanut Bay (Mud Bay) to restore the recreational shellfish area. Through a partnership of community groups and local agencies, identify bacteria sources and implement water quality improvement projects to reduce bacteria levels in Mud Bay and restore the recreational shellfish area. This program includes:</p> <ul style="list-style-type: none"> • Monitoring. • Community outreach. • Technical and financial assistance for onsite sewage system operation and maintenance. • Stormwater retrofits. 	<ul style="list-style-type: none"> • By December 2014, develop a strategy with DOH with specific milestones to reopen the Mud Bay recreational shellfish area. • In January 2015, January 2016, and December 2016, host three meetings (one per each date listed) to inform and engage community members in water quality improvement). • Through December 2016, conduct monthly sampling at approximately 10 stations. Conduct bracketing monitoring to identify pollution sources. • By December 2015, evaluate 75% of onsite sewage system in the drainage area and repair 100% of identified failing systems. • By December 2015, develop and implement outreach strategies to address domestic pet and urban wildlife sources of bacteria. • By December 2015, identify opportunities for stormwater retrofits. 	<p>Whatcom County Marine Resources Committee</p> <p><i>Whatcom County Department of Health</i></p>	C9.4
WH10	<p>Implement Whatcom County Pollution Identification and Control Program. Through a partnership of local, state, and tribal agencies identify priority areas and implement projects to decrease bacteria levels in local marine waters, rivers, and streams. This program includes:</p> <ul style="list-style-type: none"> • Monitoring and focus area identification. • Community outreach and engagement. • Technical and financial assistance for agricultural operations. • Technical and financial assistance for onsite sewage system operation and maintenance. • Stormwater retrofits. • Regulatory backstop. • Nutrient Management, TMDL Implementation. 	<ul style="list-style-type: none"> • Through December 2016, conduct monthly sampling at approximately 90 stations. Conduct short-term ambient and bracketing monitoring in each focus area to identify pollution sources. Complete annual reviews of water quality results. • Through December 2016, identify a minimum of two focus areas per year. • Provide technical/financial assistance to 50 agricultural operations in focus areas per year. • Evaluate 75% of onsite sewage system in focus areas per year. Repair 100% of identified failures. • By December 2016, complete designs for two priority stormwater retrofits. • Water quality. • Shellfish beds. 	<p>Whatcom County</p> <p><i>Whatcom Conservation District, DOH, Ecology, WSDA, Lummi Nation, Nooksack Tribe</i></p>	C9.4
WH11	<p>Implement the Birch Bay watershed and aquatic resources management (BBWARM) district</p>	<ul style="list-style-type: none"> • Design and construct stormwater retrofit projects per the 6-Year Water Resources Improvement Program. 	<p>Whatcom County</p>	C2.1 (C2.5)

Near-Term Action	Performance Measures	Owner(s) ¹	Regional Sub-Strategy ²
<p>stormwater program. The BBWARM program includes both capital and programmatic elements to improve water quality, reduce flooding, and protect aquatic habitat. BBWARM works with a variety of partners including the Birch Bay Shellfish Protection District, Birch Bay Water Sewer District, Whatcom Conservation District, NSEA, MRC, and other Whatcom County programs. BBWARM program areas include:</p> <ul style="list-style-type: none"> • Capital Improvement Projects • Maintenance and Operations • Water Quality Monitoring • Education and Outreach 	<ul style="list-style-type: none"> • In 2014, complete the Central-North and Central-South Subwatershed Master Plans. • In 2015, complete the draft Terrell Creek Subwatershed Master Plan. • Host a minimum of three outreach events each year (e.g., rain barrel workshops, Discovery Days, Whatcom Water Weeks event). • Write and distribute an annual newsletter. • Maintain 11 pet waste stations near Birch Bay. • Participate in Whatcom County’s pollution identification and correction program. • Participate in Whatcom County’s NPDES Phase II program. 	BBWARM	
<p>WH12 Lake Whatcom watershed stormwater projects. Implement stormwater retrofit projects identified in the Lake Whatcom Comprehensive Stormwater Plan.</p> <ul style="list-style-type: none"> • Coronado-Fremont Stormwater Improvements: Construction of Phase 1 in 2013 included a bio-infiltration swale and stormwater vaults. The project will treat runoff from approx. 10 acres. • Academy Road Stormwater Improvements: Partner with the City of Bellingham on a joint stormwater retrofit project to improve stormwater quality in the Lake Whatcom Watershed. This project will treat runoff from approximately 80 acres. • Cedar Hills/Euclid Stormwater Improvements: Install rain gardens, filter vaults, and treatment swales. This project will treat runoff from approximately 60 acres. 	<ul style="list-style-type: none"> • Coronado-Fremont Stormwater Improvements: <ul style="list-style-type: none"> ○ By October 2014, Whatcom County to complete restoration of about 600 feet of creek channel and install treatment vaults. • Academy Road Stormwater Improvements—Whatcom County with City of Bellingham to: <ul style="list-style-type: none"> ○ By September 2014, complete engineering design. ○ By October 2015, construct pretreatment unit, biofiltration swale, filter cartridge vault, high flow bypass, and a vegetated buffer along the lake front. • Cedar Hills/Euclid Stormwater Improvements: <ul style="list-style-type: none"> ○ By September 2015, Whatcom County to complete design. 	Whatcom County	C2.3
<p>WH13 Birch Bay area stormwater projects. Implement stormwater retrofit projects identified in the Birch Bay Comprehensive Stormwater Plan:</p> <ul style="list-style-type: none"> • Birch Bay Stormwater Priority Retrofit Projects Pre-Design: Ecology Watershed protection and Restoration grant-funded project to complete preliminary design and analysis for priority capital 	<ul style="list-style-type: none"> • Birch Bay Stormwater Priority Retrofit Projects Pre-Design: <ul style="list-style-type: none"> ○ By December 2014, complete four preliminary solutions reports and four pre-design reports. • Beachway Drive & Fern/Park Stormwater Improvements: <ul style="list-style-type: none"> ○ By December 2014, replace one to two outfall structures, install an improved stormwater conveyance 	Whatcom County	C2.3

Near-Term Action	Performance Measures	Owner(s) ¹	Regional Sub-Strategy ²
<p>projects.</p> <ul style="list-style-type: none"> • Beachway Drive & Fern/Park Stormwater Improvements: Stormwater retrofit project to improve stormwater quality entering Birch Bay and reduce flooding impacts. • Harborview Road Culvert Replacement: Replace undersized driveway culverts and catch basins to alleviate flooding along Harborview Road. • Cottonwood Drive Drainage Improvements: Stormwater retrofit project to improve conveyance from uplands areas, reduce nearshore flooding, and provide additional drainage connections along Birch Bay Drive. Water quality treatment options will be incorporated. 	<p>system, and install water quality treatment swales.</p> <ul style="list-style-type: none"> • Harborview Road Culvert Replacement: <ul style="list-style-type: none"> ○ By December 2014, complete engineering design. ○ By December 2015, replace 10 undersized driveway culverts and two undersized catch basins. • Cottonwood Drive Drainage Improvements: <ul style="list-style-type: none"> ○ By September 2015, complete engineering design. 		
<p>WH14 Ferndale stormwater projects. Implement stormwater projects that address runoff to the Nooksack River, and that are identified in the City of Ferndale Stormwater Management Plan.</p> <ul style="list-style-type: none"> • Gateway Stormwater Facility projects: Upgrade the stormwater conveyance reaches identified in the 2013 Ferndale Gateway Stormwater Study and planned for implementation (project reaches W-R-2 and W-R-3). • Decant Design and Construction: Design and construct a covered facility for the City of Ferndale stormwater decant process, which currently is located in the floodplain. • City of Ferndale Stormwater Studies: Complete stormwater drainage studies for two areas within the City of Ferndale: Main Street and Labounty and Thornton Street Stormwater Pond. 	<ul style="list-style-type: none"> • Gateway Stormwater Facility projects: <ul style="list-style-type: none"> ○ By December 2016, construct two stormwater facilities. • Decant Design and Construction: <ul style="list-style-type: none"> ○ By December 2014, complete the decant design, pending a new site location. ○ By December 2016, construct. • City of Ferndale Stormwater Studies: <ul style="list-style-type: none"> ○ By December 2014, complete Main Street RAB Stormwater Study. ○ By December 2016, complete Thornton Street Stormwater Pond. 	City of Ferndale	C2.3

¹ Where secondary owners were identified, they are shown in italics after the primary owner.

² Where secondary regional sub-strategies were identified, they are shown in parentheses after the primary sub-strategy.

The near-term actions identified above represent a subset of the local priorities planned for implementation over the next 2 or 3 years. The remaining local priorities, listed below, provide important context for all of the work that is underway in the Whatcom County/Nooksack Watershed (WRIA 1). The fact that not all of the local priorities met the criteria in the rubric that was used to identify the set of near-term actions for this update does not lessen their importance in addressing local needs and, where applicable, obtaining funding to implement them.

Additional Priority Local Actions in Whatcom County/Nooksack Watershed (WRIA 1)

Local Action (Investment)	Principal Proponent/ Reporting Organization	Performance Measures	Existing Program or Plan
Lower Nooksack Overflow Corridors. Model and construct overflow corridors that reconnect the Nooksack River to its floodplain as a flood risk reduction and mainstem habitat protection mechanism.	Whatcom County Public Works with diking districts	<ul style="list-style-type: none"> • By December 2014, complete Reach 1 modeling and alternatives analysis. • By December 2015, scope and model Reach 2 and 3 corridors and conduct alternatives analysis. 	Whatcom County Public Works, River and Flood Division; salmon recovery
Implement aquatic invasive species management plans for Whatcom County Lakes. Continue boat inspections and educating the boating public about effective methods to prevent the introduction of aquatic invasive plant and animal species to all lakes in Whatcom County.	Whatcom County Public Works with Whatcom County Noxious Weed Board	<ul style="list-style-type: none"> • Continue mandatory inspection of all watercraft in Lake Whatcom and Lake Samish. • By end of 2015, evaluate all Whatcom County water bodies for potential expansion. 	
WRIA 1 Salmon Recovery Monitoring and Adaptive Management Plan. Develop a locally prepared plan that can be rolled up into the regional framework and that will inform local recovery plan addenda. Prepare narrative addenda to the WRIA 1 Salmonid Recovery Plan as appropriate to reflect changes and/or modifications to key actions based on adaptive management.	WRIA 1 Salmon Recovery Board with Nooksack Natural Resources and Lummi Natural Resources	<ul style="list-style-type: none"> • By March 2014, Salmon Recovery Staff Team prepares report on Status of Key Actions in Appendix B of the WRIA 1 Salmonid Recovery Plan (milestone). • By June 2014, Nooksack Natural Resources and Lummi Natural Resources technical staff working with Salmon Staff Team complete Worksheets for Regional Monitoring Framework (milestone). • By December 2014 Nooksack Natural Resources and Lummi Natural Resources technical staff working with Salmon Staff Team prepare a final WRIA 1 Salmon Recovery Monitoring and Adaptive Management Plan for approval (output). 	Salmon recovery
Improve and expand the purchase of development rights (PDR) program. Whatcom County has implemented a PDR	Whatcom County Planning and Development Services	<ul style="list-style-type: none"> • In November 2013, Whatcom County entered into a contract with consultant, who is assisting in development of a reverse auction strategy that 	Whatcom County Ag Strategic Plan

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<p>program, though it has not been heavily used. The Whatcom County Agricultural Advisory Committee has begun exploring a reverse auction strategy as a way to improve the program.</p>		<p>will focus on lots in the core ag zone. The reverse auction will be held winter 2014/2015.</p> <ul style="list-style-type: none"> • The PDR Oversight Committee is working with the Whatcom County Ag-Watershed grant project to develop agricultural metrics that might be used in a natural resource marketplace. 	
<p>Investigate the development of a transfer of development rights (TDR) program. The Whatcom County Agricultural Advisory Committee wants to explore setting up a TDR program for agricultural lands. The Agricultural Strategic Plan lists developing a TDR program to help achieve the goal of maintaining 100,000 acres of farmland in Whatcom County.</p>	<p>Whatcom County Planning and Development Services</p>	<ul style="list-style-type: none"> • Whatcom County plans on applying for a grant in 2014 to hire a consultant to do a feasibility study of a TDR program in Whatcom County. 	<p>Whatcom County Ag Strategic Plan</p>
<p>WRIA 1 Multipurpose Water Storage Assessment Report update and evaluation. Review the May 2003 WRIA 1 Multipurpose Water Storage Assessment and Annotated Bibliography and evaluate and identify storage options to implement in key areas. Coordinate the review and application to key areas with other water resource related programs such as floodplain management and salmon recovery. Identifying viable options for water storage as part of an overall management strategy for addressing seasonal low stream flows.</p>	<p>WRIA 1 Joint Board</p>	<ul style="list-style-type: none"> • By September 2014, review and update of storage option report (milestone). • By December 2014, GIS mapping of storage options in focus areas (output). • By March 2015, technical agreement on options to pursue for funding in key areas (milestone). • By December 2015, funding applications for two storage options in key areas (milestone). 	<p>WRIA 1 Watershed Management Plan</p>
<p>Implement a marine water aquatic invasive species management plan.</p>	<p>City of Bellingham</p>	<ul style="list-style-type: none"> • By December 2015, City of Bellingham identifies and implements aquatic invasive species management plan for marine waters. 	
<p>Implement riparian restoration and enhancement projects in priority areas of coastal drainages. Building upon the riparian condition and function assessment completed for coastal drainages, work with local partners to identify, design, and</p>	<p>Whatcom County, Whatcom Conservation District</p>		<p>Shellfish protection districts, Birch Bay Comprehensive Stormwater Plan, WRIA 1 Salmonid Recovery Plan,</p>

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implement riparian planting and stream channel restoration in priority areas of the coastal drainages.			complements critical areas ordinance, shoreline master program, and Nooksack and Drayton TMDLs
<p>Implement the 2013–2018 National Pollutant Discharge Elimination System Phase II Permit. Enhance and implement the requirements of the permit. The permit sections include:</p> <ul style="list-style-type: none"> • Public Education and Outreach • Public Involvement and Participation • Illicit Discharge Detection and Elimination • Controlling Runoff from New Development, Redevelopment, and Construction Sites • Municipal Operations and Maintenance • Monitoring and Assessment • Compliance with TMDL requirements 	Whatcom County, City of Bellingham, City of Lynden, City of Ferndale	<ul style="list-style-type: none"> • December 31, 2016, develop and adopt Low Impact Development principles requirement in land use and stormwater codes. • Coordinate outreach events regarding Low Impact Development principles prior to adoption of updated land use and stormwater codes. • Develop and implement maintenance and inspection program for public stormwater facilities • Coordinate one outreach event per year on the following topics: illicit discharges, private stormwater facility maintenance, and sustainable landscaping practices. 	2013–2018 Western Washington Phase II Municipal Stormwater Permit
<p>Terrell Creek Landowner Incentive Program. Whatcom Conservation District program in partnership with BBWARM provides cost-share funding to facilitate projects that benefit water quality in Terrell Creek and promote watershed stewardship activities. Current EPA grant funding ends June 2015.</p>	Whatcom Conservation District, Whatcom County/BBWARM	<ul style="list-style-type: none"> • In 2015, seek additional funding to continue farm/home visits, stream and riparian restoration projects, small farm plans, and onsite sewer system inspection assistance. 	Birch Bay Comprehensive Stormwater Plan
<p>Implement public outreach. Implement work plan activities and events in existing work plans from Whatcom Watershed Information Network, Marine Resources Committee, and other organizations.</p>	Whatcom Watershed Information Network with partnering organizations (e.g., Marine Resources Committee, Whatcom Conservation District, Nooksack Salmon Enhancement Association, Sustainable Connections,		Whatcom Watershed Information Network work plan; Marine Resources Committee Strategic Plan; other work plans

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<p>Implement the Lake Whatcom Management Program. Through a partnership between Whatcom County, the City of Bellingham, and the Lake Whatcom Water and Sewer District, improve water quality of Lake Whatcom and reduce phosphorus loading to achieve goals of the Lake Whatcom TMDL through priority tasks outlined in the Lake Whatcom Management Program's 5-Year Work Plan.</p>	<p>local governments, tribes) Whatcom County, City of Bellingham, and Lake Whatcom Water and Sewer District</p>		<p>2010–2014 Lake Whatcom Management Program 5-Year Work Plan</p>
<p>Swift Creek landslide Derived Asbestos Project. Implement phase 1 projects and explore feasibility of other projects to reduce the impacts on human health of landslide-supplied sediment containing naturally occurring asbestos.</p>	<p>Whatcom County Public Works with Ecology and EPA</p>		<p>Whatcom County Public Works 6-year Water Resources Improvement Program</p>
<p>International task force to address high nitrates/nitrate contamination of groundwater. The Sumas/Abbotsford Aquifer Task Force will review and perform an assessment of existing Washington and British Columbia plans that pertain to high nitrates and nitrate contamination of groundwater and manure management. The assessment will include existing programs and laws, both regulatory and non-regulatory, provide proposals for identified fixes within existing laws and programs, and provide proposals for new action items/programs, if needed for groundwater management area.</p>	<p>Ecology with partners</p>	<ul style="list-style-type: none"> • By December 2014, identify gaps in existing programs and laws (milestone). • By June 2015, prepare proposals for new action and programs, if needed, for groundwater management area (milestone). 	
<p>Climate change influences on WRIA 1 programs. Review conclusions of local analysis of if and how climate change and seasonal weather patterns may affect implementation of local plans and actions</p>	<p>WRIA 1 Joint Board and Salmon Recovery Board</p>	<ul style="list-style-type: none"> • By March 2015, complete review of conclusions in local analysis related to changing climatic conditions and seasonal weather patterns. • By December 2015, adopt policy guidance, if applicable, for incorporating into WRIA 1 	

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(e.g., instream flows, salmon restoration, flood hazard management planning). Based on review, consider applicable and appropriate policy guidance for local programs and projects to incorporate into programs as part of adaptive management.		strategies and plans.	
WRIA 1 Water and Natural Resource Management Funding Strategy. In 2005, a WRIA 1 Planning Unit subcommittee identified funding options for the WRIA 1 Watershed Management Plan. The funding option report should be updated to reflect current status and options for a reliable and local funding strategy to address water and natural resource management needs throughout WRIA 1.	WRIA 1 Joint Board and Salmon Recovery Board	<ul style="list-style-type: none"> • By December 2014, update to the WRIA 1 Water Management Funding Strategy presented to Joint Board (milestone). • Identify funding needs and prepare strategy for local funding to implement priority actions in approved plans (e.g., watershed management, shellfish protection, salmon recovery). 	WRIA 1 Watershed Management Plan; complements other plans
Locally Significant Capital Projects¹			
Pepin Creek Realignment. Realign the small Double Ditch tributary, which flows into Fishtrap Creek from headwaters in Canada. The system supports populations of coho salmon, fall Chinook salmon, cutthroat trout, and winter steelhead.	City of Lynden	<ul style="list-style-type: none"> • Complete property acquisition and easement for approximately 3,000 feet of new stream channel. • Complete full design for the entire 6,000-foot corridor. • Construct 3,000 feet of new stream channel, providing habitat for salmonids and steelhead. • Construct a new crossing, bridge or culvert, on Main Street over the new channel. 	
Integrated surface/groundwater model and data collection. Groundwater modeling (focused geographically) is needed to estimate the potential impacts on surface water from groundwater uses with a level of reliability that can satisfy stakeholders' needs. To serve this purpose, groundwater use needs to be quantified along with timing, locations of points of withdrawal and place of use (Chapter 4, Ground Water Data Assessment, 2013). An integrated surface/groundwater model that builds on existing	WRIA 1 Joint Board	<ul style="list-style-type: none"> • By May 2014, Joint Board agreement for proceeding with ground water/surface water model (milestone). • By December 2014, conceptual model (output). • By December 2015, quantification of water use and location of use (output). • By December 2015, numerical model developed (output). 	

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<p>models, data, and reports previously completed for WRIA 1 can support this need. Chapter 4 of the WRIA 1 Groundwater Data Assessment (June 2013 report) outlines different options for an integrated surface/groundwater model and data gaps relevant to groundwater modeling. Continued support of the U.S. Geological Survey agreement for maintaining stream gages in WRIA 1 is one element of the data collection.</p>			
<p>Middle Fork Passage Project. Address fish passage project on the Middle Fork Nooksack River.</p>	<p>City of Bellingham with Co-Managers</p>	<ul style="list-style-type: none"> • By March 2015, updated funding package for the 2012 Middle Fork Passage Project (milestone). • By January 2016, seek and obtain funding agreements for the Middle Fork Passage Project (milestone). 	
<p>¹ For this purpose, locally significant capital projects are actions or groups of actions that have multiple habitat benefits, have costs that exceed the range of typical grants (\$2 million), and are generally agreed to bring far-reaching influence.</p> <p>DOH = Department of Health; Ecology = Washington State Department of Ecology; EPA = U.S. Environmental Protection Agency; GIS = Geographic Information System; LIO = local integrating organization; NPDES = National Pollutant Discharge Elimination System; TMDL = total maximum daily load; USFS = U.S. Forest Service; WDFW = Washington Department of Fish and Wildlife; WRIA = Water Resources Inventory Area; WSDA = Washington State Department of Agriculture.</p>			