Appendix 1-A:
WRIA 18 Planning Framework

APPENDIX 1-A
WRIA 18 PLANNING FRAMEWORK

1-A.1 FEDERAL PLANNING FRAMEWORK

Endangered Species Act

The NOAA Fisheries (formerly NMFS) and USFWS (collectively, "the Services") administer the ESA (16 United States Code (USC) Sec. 1531 et seq). Section 9 of the ESA makes it unlawful to "take" any fish or wildlife listed as endangered or to violate any regulation promulgated under the ESA relating to listed species. Section 11 authorizes citizen lawsuits to enforce the ESA and enjoin any violation of it. Watershed Plans are directed to integrate with strategies developed under other processes to respond to potential and actual listings of salmon and other fish species under the ESA (90.82.100 RCW).

Uncertainty frequently exists regarding whether activities will adversely affect listed species and, if so, whether they are in compliance with the regulatory prohibition against "take." A body of case law supports numerous interpretations regarding the obligations created under ESA to state agencies, local governments, and citizens, as well as regarding the meaning of "take" and the scope and effect of the ESA and its implementing regulations. The ESA provides several "paths" to determine whether an action will be lawful and to protect governments and other parties against citizen suits or agency action. Essentially, there are three pathways to assurance of compliance with the ESA:

- Section 4(d) Rules for threatened species
- Section 7 consultation for federal actions
- Section 10 Habitat Conservation Plans for non-federal actions

Endangered Species Act Compliance: 4(d) Rules

Section 4(d) of the ESA provides that, for species listed as threatened, NMFS and USFWS shall issue regulations deemed "necessary and advisable to provide for the conservation of the species." These regulations may apply any or all of the Section 9 prohibitions regarding "take" which automatically apply to endangered species. Thus, a 4(d) Rule establishes protective regulations for species listed as threatened under the ESA.

A 4(d) Rule has been issued by NMFS (50 CFR 223) which governs take of Puget Sound Chinook and Hood Canal summer chum, both found in WRIA 18 waters. Four (d) Rules can be used to "except" certain activities from Section 9 prohibitions, so long as the programs adequately protect the listed species, and the recent NMFS Rule does so for 13 "programs". Generally, under a 4(d) Rule, compliance assurance is gained by demonstrating that actions are consistent with the Rule. However, this Rule sets "an enforceable performance standard (do not take listed fish) that applies to all entities and individuals within the Evolutionarily Significant Unit (ESU)" and leaves the door open for local governments and others to propose specific programs or actions that fall within the 13 specific and categorical "programs." A 4(d) Rule is essentially an informal consultation resulting in a letter from NMFS or USFWS agreeing that an action or

program is consistent with the Rule. If there is disagreement, one choice would be to move on to formal consultation under Section 7 or Section 10.
It is generally expected that any activity included as a 4(d) Rule exception will likely be incorporated into ESA Recovery Plans for listed salmonid species. A wide range of land and water planning and permitting activities carried out by local governments might adversely affect (or "take") a listed species, and can be provided a measure of protection under a 4(d) Rule. However, a 4(d) Rule does not provide certainty, as it can be reopened at any time new information justifies revisiting the Rule. A "target flow"[1] might be incorporated into a 4(d) Rule as part of an activity or program considered for an exception.

Endangered Species Act Compliance: Section 7 Consultation

Formal consultation is required under Section 7 when a federal action may affect listed species or designated critical habitat. The reach of Section 7 extends to non-federal parties when a federal permit, funding, or other approval is involved. Section 7 compliance begins with completing a Biological Assessment (BA). If a potential adverse effect is identified, a Biological Opinion (BO) is issued by NMFS or USFWS. The BO may find that there is "no jeopardy" to the continued existence of the species, or that jeopardy exists. An activity or project may proceed with "reasonable and prudent" measures under a no jeopardy opinion, or with reasonable and prudent alternatives under a jeopardy opinion. These measures or alternatives may include implementation of a target flow. A "no jeopardy" opinion, with or without the implementation of reasonable and prudent alternatives, does not provide certainty because the consultation may be reopened at any time new information justifies revisiting the BO.

Endangered Species Act Compliance: Section 10 Habitat Conservation Plan

A Habitat Conservation Plan (HCP) is in essence a contract which provides an "incidental take permit" (ITP) to non-federal entities whose programs or actions might "incidentally take" a listed species. The assurances provided through an HCP were first articulated as a "No Surprises" policy announced in 1994 by the Services. "No surprises" provided regulatory assurance to anyone holding an ITP issued under Section 10(a) of the ESA that there would be no additional land use restrictions or financial compensation required with respect to the species covered by the ITP. This would be the case even if unforeseen circumstances arose after the permit was issued which would otherwise indicate the need for additional mitigation. Therefore, an HCP provides a level of certainty not available under the 4(d) Rule or Section 7 consultation. HCPs are intended to provide coverage for a long-term planning horizon, up to 100 years. A target flow may be incorporated in an HCP and would have the effect that the HCP has: a binding contract providing coverage for incidental take for an agreed term.

"Target Flows" and NMFS Policy on Instream Flows

The Services may establish "target flows" to protect listed fish. A *target flow* is an operational concept used by the federal agencies with jurisdiction under ESA (NMFS and USFWS). It has no relation to State water rights, including minimum instream flows (see discussion below), although it may preempt them. The term "target flow" is not defined in law or regulation, but is employed as a tool to implement the Endangered Species Act. In that context, target flows are defined by the Services on a case-by-case

[1]See discussion below regarding the difference between a federal "target flow" and a state "minimum instream flow."

basis. Target flows are not formally established (unless in contract or through legal action brought under the Endangered Species Act), but are generally defined as goals that may be achievable in the long run, or in most years. They are often placed "in context" of existing water uses and flows, however they may require reduction in water use irrespective of state-issued water rights. Thus, the term as used by the Services is operationally similar to the concept of "target flow" as it was used in the DQ Plan (1994): a realistic goal in context of historical use.

Target flows are not clear-cut regulatory requirements adopted by rule, however, if an actual "take" (dead listed fish) is documented, the Services may enforce target flows irrespective of any other federal nexus and regardless of any rights to water granted by the State. Where a target flow has the effect of taking water from otherwise legal use (e.g., preempts a state water right), a federal court recently ruled that the government must pay property owners for the water taken to protect listed fish.

NMFS circulated a draft policy for estimating streamflow to protect salmon listed under the ESA. The policy considers such options as: using minimum depth criteria (e.g., for juveniles and spawners); setting target flows at 50 percent of the mean monthly flow (MMF); or using Physical Habitat Simulation (PHABSIM) results (weighted usable area) at 80 percent of the MMF.

Hydraulic Continuity

The regulatory prohibition against take may constrain the ability to withdraw from wells in continuity with rivers that have listed fish present. Where target flows exist and wells are withdrawing groundwater in continuity with surface flow, enforcement action could be taken by NMFS against groundwater withdrawals if the agency believed "take" had been documented. In practice, it seems that a higher standard would need to be met in terms of establishing the significance of this effect than the "one molecule" theory of legal impairment that has been held to apply in the interaction of Washington ground and surface water rights (see discussion below). However, there would be no generic difference between any of the ESA "pathways" in this regard; particular consultations, HCPs, or 4(d) Rules could differ in their specifics and consequences for action on hydraulic continuity.

U.S. Army Corps of Engineers Joint Aquatic Resources Permit Application (JARPA)

The Joint Aquatic Resources Permit Application (JARPA) integrates state and federal approvals for water-related projects in a single standard application. These include one or more of the following permits: Hydraulic Project Approvals, Shoreline Management Permits, Approvals for Exceedence of Water Quality Standards, Water Quality Certification, Coast Guard Bridge Permits, Department of Natural Resources (DNR) Use Authorization and Army Corps of Engineers (ACOE) Permits. This multi-permit application is used for a wide variety of alterations to both salt and fresh water bodies, including construction and other work toward and over the ordinary high water line. Applications may also include projects landward if they directly impact fish life and habitat.

U.S. Army Corps of Engineers Wetlands Nationwide and Individual Permits

Wetlands and streams are protected at a federal level under Section 404 of the Clean Water Act, administered by the Army Corps of Engineers. The Nationwide Permit (NWP) process may be used for projects potentially impacting wetlands and streams so long as minimal impacts and thresholds are observed. Impacts above minimum thresholds must apply for an Individual Permit (IP).

Natural Resources Conservation Service Programs

The NRCS sponsors programs that support farm management and conservation programs on eligible lands. These include the Environmental Quality Incentives Program (EQIP), Wildlife Habitat Incentives Program, Wetland Reserve Program, Conservation Reserve Program, Conservation Reserve Enhancement Program (CREP), and Farmland Protection Program.

Five CREP enrollments total 30 acres in the WRIA 18 area, and two WRIA 18 farms have participated in the EQIP program (one dairy conducting animal waste management and one tree farm implementing irrigation water management). EQIP pays up to 75 percent of the cost of conservation practices to improve or maintain natural resources. Examples include land management practices (e.g., nutrient management and a comprehensive nutrient management plan), manure management, integrated pest management, irrigation water management, and wildlife habitat management. EQIP also provides Conservation Innovation Grants to stimulate innovative approaches to environmental enhancement and protection in conjunction with agricultural production. EQIP funding also promotes ground and surface water conservation to improve irrigation systems, conversion to production of less water-intensive agricultural commodities, and improvement of water storage (e.g., by such measures as water banking and groundwater recharge).

1-A.2 STATE PLANNING FRAMEWORK

Washington Salmon Policy

Extinction is Not an Option: Washington's Statewide Strategy to Recover Salmon

The Governor's Salmon Recovery Office (GSRO), working with the Joint Natural Resources Cabinet released the *Statewide Strategy to Recover Salmon* (JNRC 1999) in September 1999. A "state vision of what needs to be done to recover salmon, it is intended to present major elements of an agenda for protection of salmon and aquatic resources." The Statewide Strategy states that "regional and local salmon recovery plans are the way the [Strategy] will be put to work and make salmon recovery a reality." These are conceived as the building blocks for recovery, and include the Puget Sound Shared Strategy in which WRIA 18 is participating (discussed below). The Statewide Strategy presents a Road Map for Recovery, covering current conditions and regulatory framework; a science-based, regional response; goals and objectives to recover salmon; and an early action plan. This document defines the "four H's" (habitat, harvest, hatcheries, and hydropower) as the core elements of the recovery strategy, and describes a recovery toolbox that includes education, enforcement and permit streamlining. It embraces monitoring and adaptive management as essential to effective decision-making. Habitat modules include strategies for agriculture, forestry, land use, urban stormwater, instream flows, clean water, and fish passage.

The GSRO and JNRC have developed a Salmon Recovery Action Plan for State Agencies to implement the Strategy and a Salmon Recovery Scorecard to measure progress. The Salmon Recovery Strategy serves as a long-term guide; the Action Plan outlines the State's priorities for short-term implementation of the Strategy; and the Scorecard is the State's performance monitoring system for tracking information, measuring progress, and changing course as needed.
The State Action Plan identifies specific additional salmon recovery activities that state agencies are undertaking each biennium. It focuses on new actions or modifications to existing actions, driven by the goals and objectives of the Strategy. The 1999-2001 Action Plan focused on local and state capacity-building and on-the-ground initiatives. In this biennium, it targets:

- Strengthening state guidance and regulatory tools (e.g., Forest Practices Rules, Shorelines Guidelines, Hydraulic Project Approval);
- Taking action in high priority geographic areas;
- Developing and providing regulatory and incentive-based guidance, technical information, and technical and financial support to build capacity in local and regional groups;
- Implementing adaptive management, including coordinated monitoring, information and data systems; and
- Developing and implementing education, outreach and volunteer programs.

The GSRO is charged with preparing a biennial "State of the Salmon Report". The JNSR (coordinated by the GSRO) *Guidance for Watershed Assessment for Salmon* and *Guidance for Watershed Planning for Salmon* are reviewed above. The GSRO also has coordinated the preparation of a *Reference Guide for Salmon Recovery* (JNRC 2002a) to provide background on salmon recovery at different scales (ranging from Pacific coastwide to local watersheds) and a *Roadmap for Salmon Habitat Conservation at the Watershed Level* (JNRC 2002b) to link salmon recovery effects at different jurisdictional scales (from local to federal). The Roadmap is intended to pick up where the Guidelines end.

Salmon Recovery Act and Salmon Recovery Funding Board

The Salmon Recovery Act (Engrossed Substitute House Bill 2496), passed in 1998 (the same session as the Watershed Management Act) found that repeated attempts to improve salmonid fish runs in the state had failed to avert listings under the ESA. Expressing the goal that the state retain primary management responsibility for the resource, the Legislature recognized that habitat restoration is vital to salmon recovery and provided for a coordinated framework to apply a local, science-based approach to identify, prioritize and fund salmon habitat restoration projects that "should be implemented without delay." The Act established a salmon recovery office within the Governor's office, and created an independent science panel, local technical advisory groups and an interagency review team to facilitate the process. The Act specified the use of critical pathways methodology to identify and prioritize habitat projects. In 1999, the legislature established the Salmon Recovery Funding Board (SRFB) to guide spending of funds targeted for recovery activities and projects.

Habitat restoration and protection projects are proposed and prioritized in annual cycles. Local “Lead Entity Groups” supported by the Washington Department of Fish and Wildlife draw on reviews by both technical and citizen advisory panels and present prioritized project lists to the SRFB. The SRFB has defined criteria to review the projects, and has encouraged Lead Entities to develop restoration strategies to guide project identification and priority-setting. Projects generally eligible for funding include habitat acquisition; instream passage and diversions; instream, riparian, upland and estuarine/nearshore marine habitat projects; and assessments or studies that enhance the habitat project list. Lead Entities apply the critical pathways methodology, including limiting factors analysis prepared by the Washington State Conservation Commission (WCC).

Watershed Plans are directed to rely on fish habitat restoration activities developed under the Salmon Recovery Act as the primary nonregulatory habitat component (90.82.100 RCW). This provides an annually updated list of projects that the Watershed Plan may recognize and incorporate. The scope of 2514 watershed plans addresses the larger issues, in setting broad objectives and priorities for habitat restoration in the WRIA to help guide the salmon recovery project identification and prioritization. Watershed plans also build linkages to habitat restoration and salmon recovery from the many natural resource management and planning processes at all levels of government and integrates these with the other elements of watershed planning (particularly water quantity and water quality).

WRIA 18 is included in the North Olympic Peninsula Lead Entity, whose strategy and process are discussed below.

Salmon Recovery Grant Program

The 2001 Legislature allocated one million dollars to the Washington Department of Fish and Wildlife (WDFW) for salmon recovery planning at the local or regional scales. The legislature directed WDFW to establish a model for regional salmon recovery plans. WDFW is coordinating with tribes, regional efforts (e.g., the Shared Strategy, reviewed below), Ecology, Northwest Power Planning Council (NWPPC), NMFS and USFWS to empower regional salmon recovery plans that are closely linked with local watershed plans. Plans are to include analysis of factors contributing to salmon decline or limiting recovery; recovery goals; actions to achieve goals; implementation plans and commitments; monitoring and adaptive management provisions; funding needs assessment; cost/benefit analysis; and public outreach plans. Clallam County has received funding under this program to partially fund a fisheries biologist who is providing technical assistance to DRMT and EMMT and serve as the liaison to the Shared Strategy and to the federal dam removal process on the Elwha.

Joint Natural Resources Cabinet Guidance on Watershed Assessment for Salmon (2001)

Governor Locke combined the efforts of 13 state agency heads in 1997 to establish the Joint Natural Resources Cabinet (JNRC). The JNRC was formed to develop interagency communication to efficiently coordinate environmental and natural resources policies. The JNRC developed strategies for salmon recovery that network together coastal concerns, state concerns, regional concerns, watershed concerns, local government concerns, harvest and hatchery initiatives, hydropower initiatives, and the Clean Water Act (CWA). Together the network address ways to:

- Focus on effects of human activities and actions in terms of habitat, harvest, hatcheries, and hydropower.
- Incorporate social and economic considerations into goals, objectives and actions.
- Include active citizen participation in governments' efforts at watershed and regional levels.
- Use sound ecological principles based on the best available science.
- Include long-term commitments to monitoring, adaptability, and accountability for results.

Washington's *Guidance for Watershed Assessment for Salmon* (JNRC 2001) and *Guidance for Watershed Planning for Salmon* (Guidelines) provide both a framework and an approach to watershed assessment and planning. The Guidelines were reviewed and the WRIA18 Watershed Plan incorporates them where appropriate. The Guidelines are narrower in their target and intent than the 2514 watershed planning process, focusing on salmon, salmon habitat conservation and salmon recovery. They define watershed assessment and planning as a means to that end. The WRIA 18 Watershed Plan is broader in scope and purpose, particularly in regard to water quantity and water quality for human use.

The Guidelines were prompted by the plethora of salmon recovery and watershed studies, projects and planning activities underway at all levels of government in the state and the region, which they aim to integrate. Although these guidelines recognize the Watershed Management Act, they define watershed planning as a means to improve the effectiveness of salmon conservation and recovery. A watershed assessment is considered a tool to manage salmon and their habitat, and a series of questions are used to identify limiting conditions, the processes that produce those conditions, and the linkages between salmon and habitat conditions. Box 1 describes some of the purposes and effects of the Guidelines.

The Guidelines begin with "habitat conditions," then analyze their underlying "causes" (e.g., habitat-forming processes) and "salmon response." The Guidelines suggest:

- Building "frameworks"
- Strategic decision-making
- Monitoring the effectiveness of actions
- Adaptive management
- Standardized data collection
- The use of analytical models

Box 1: Purposes and Effects of JNRC Watershed Guidelines

Liability Protection – To provide umbrella protection from liability for "take" under the Endangered Species Act (see discussion below). The current Guidelines de-emphasize the 4(d) Rule and emphasize Section 7 of the ESA (consultation).

Standardization – The Guidelines emphasize the need for standardized assessments, consistent approaches, and the ability to "roll up" watershed assessments for larger Evolutionarily Significant Units (ESU's). This is motivated, in part, by a concern that watershed plans and restoration recommendations may be focused on habitat conditions that are only symptoms of more pervasive underlying and driving factors. The Guidelines' concern is to understand and work at the level of ecosystem dynamics – the watershed land use, water use and fluvial geomorphology that drive "habitat-forming" processes.

Local Influence – The Guidelines shift influence in local watershed planning toward the Executive and state agencies. A number of suggestions are made to local watershed groups about how to think about their problems, what kind of decisions they may make, what kind of assessment work they must do to support their decisions, and how their recommendations should be shaped. The Guidelines do state that decisions may be made and actions taken prior to completing all elements of an assessment, and that no specific assessment tools or methods are required.

Funding -- Funding decisions for salmon recovery and habitat conservation or preservation are intended to be influenced by these Guidelines. Funding entities, particularly the Salmon Recovery Funding Board, are urged to use the Guidelines as criteria. While the Guidelines are voluntary (they have no regulatory authority or effect), drafts are assertive about the extent to which state and federal agencies and funding sources should base their decisions upon them. To the extent that watershed groups and local governments need funding to implement their plans, it may become difficult not to follow these Guidelines.

The "stages" and their "steps" of watershed assessment are given as follows:

Stage 1: Habitat Conditions

- Describe the watershed
- Describe stock status and trends
- Synthesize information

Stage 2: Causes

- Describe changes to habitat-forming processes
- Synthesize information

Stage 3: Salmon Response[2]

- Define salmon life history and habitat relationships
- Synthesize information

These stages were used in reviewing the draft outline for the Watershed Plan, to help assure that available watershed information is integrated and organized in a logical, useful way. Planning for salmon recovery is an important element in WRIA 18. Available information has been incorporated as much as possible, with links to other ongoing efforts. To the extent practicable, given the status of existing work, the guidance contained in the "synthesize information" step was used in preparing Phase 2

[2] The Guidelines state that approaches useful for this stage of work are rapidly evolving and hence guidance is limited and will be updated.

watershed inventories and assessments. Stage 3 goes into a level of detail for salmon recovery that is difficult to achieve in Watershed Plans within existing funding levels and schedule (although this guidance may be useful in other activities or for future generations of watershed plans).

For each stage, the Guidelines summarize decisions that may be supported by watershed assessment. The Guidelines do not draw very strong distinctions between the kinds of decisions enabled between the three stages. Part 3 of the Guidance on Watershed Assessment contains useful descriptions of various categories of projects that might be undertaken in watersheds (the list is consistent with the categorization used by the Salmon Recovery Funding Board) for the following categories of projects:

- Acquisition
- Instream Diversion
- Instream Passage
- Riparian Habitat
- Upland Habitat
- Estuarine/ Nearshore Marine

Very broadly, the Guidelines distinguish between two "types" of watershed plans:

- **Habitat Restoration** – generally near-term, immediate 'fixes' intended to address obvious problems." These provide 4(d) Rule protection only for habitat restoration projects.
- **Salmon Habitat Conservation** – "broader" issues, including preventative actions to "better manage land and water resources now and in the future." These are intended to provide broader 4(d) Rule protection for a range of land and water management actions that local government may undertake.

The relationship between 2514 watershed planning and these two types of plans and the process is not explicit. Box 2 (next page) summarize guidance provided for "salmon habitat conservation" plans.

Salmon and Watershed Health Monitoring Act

While there are already many agencies and citizen organizations doing monitoring of many watershed planning and salmon recovery activities, there is little coordination between them. This bill called for the development of a statewide monitoring strategy and action plan, and was intended to provide accountability, encourage refocusing watershed planning activities toward salmon recovery, greater coordination of existing monitoring activities, and sharing of information between organizations carrying out watershed planning and salmon recovery efforts. The bill establishes a monitoring oversight committee co-chaired by the director of the Salmon Recovery Office and the chair of the Salmon Recovery Funding Board, and made up of representatives from the Salmon Recovery Office, Ecology, and the Puget Sound Action Team, among others. The committee will also invite local government entities to participate. The monitoring oversight committee will report quarterly to a four-member steering committee composed of two Senate members appointed by the President of the Senate, and two House members appointed by the Co-Speakers.

Specific monitoring objectives are listed in the Act, including standardized protocols, sharing of data, and stable funding. The committee was to provide a monitoring strategy and action plan with the goal of achieving a coordinated monitoring program by June 2007. Planning Units are directed to implement the monitoring recommendations developed by the committee.

Wild Salmonid Policy (1997)

The WDFW and Wildlife and Western Washington Treaty Tribes (WWTT) developed a Joint Wild Salmonid Policy (JWSP) intended to guide and direct WDFW and signatory Tribes on matters of harvest management, hatchery operation, and salmonid habitat. It is intended to be a framework for rebuilding wild salmonid stocks and sustaining fisheries. The JWSP was adopted by the Washington Fish and Wildlife Commission (WFWC) on December 5, 1997, but is not a Tribal policy until a Tribal Government takes action to adopt it.

Box 2: JNRC Guidance for Salmon Conservation Plans

Content

Area of coverage – proposes inclusion of the WRIA and functionally related habitat if possible.
Watershed assessment – describes how the assessment is used in planning, acknowledges that planning may be iterative as information is gathered and upgraded, and encourages the use of existing information.
Setting goals – encourages a vision statement, biological goals and objectives, consistent with federal recovery goals and fisheries co-managers' goals.
Strategies and priorities – encourages direct linkage to problems identified in assessment, explicit prioritization and sequencing of strategies and actions, and consistency with regional salmon recovery plans.
Actions and certainty – plans should include an inventory of existing actions and plans; evidence of commitment by federal, state, tribal, and local governments and organizations; a statement of funding support or plans to seek funding; a statement of plan duration and action schedule; and an environmental assessment.
Mitigation for development projects – identifies the scale required for successful mitigation, encourages consistency with the State's Alternative Mitigation Policy Guidance and leveraging large-scale watershed projects to obtain mitigation.
Technical guidelines for projects affecting aquatic resources – these are appended and are specific to a wide variety of types of projects or actions.
Monitoring and evaluation – implementation and effectiveness monitoring, and plan evaluation are covered.
Data management – data standards and exchange protocols (e.g., disclosing data source and quality, providing for data sharing and use by others).
Adaptive management – encourages adaptive management tied to anticipated once-in-five-years Plan reevaluation and revision.

Process

Planning participation and decision processes – addresses the role and responsibilities of participants, the use of consensus as a criteria for decision-making, science/technical review of draft plans, public participation and involvement, and plan approval.
Plan certification – self-evaluation is encouraged and the possibility of state certification is raised (a first draft "evaluation checklist" included as an appendix is arcane and complicated; it is not clear what will be gained by answering its questions.

Linkages

Local and regional coordination – 2496 and 2514 coordination is encouraged, as well as coordination with state/tribal fisheries co-managers' species plans, Growth Management Act (GMA) planning, and any other watershed planning.
Integration with State and Federal efforts – addresses ESA recovery planning, Northwest Power Planning Council (NWPPC) subbasin planning, CWA, Washington's Agriculture/Fish/Water, and other federal lands conservation strategies.
Endangered Species Act Recognition and ESA compliance – addresses Section 7 consultation, Section 10 Habitat Conservation Plans, and 4(d) Rule plans or ordinances developed at the local level under the Municipal, Residential, Commercial and Industrial (MRCI) limit on take prohibitions.

Funding

Relationships between salmon habitat conservation priorities and habitat restoration priorities – encourages integration of 2496/SRFB.

The Joint Policy includes 16 joint policy statements, each of which is accompanied by performance standards. The 16 joint policy statements cover:

> A framework for implementation of the joint policy for fish populations, escapement, harvest management, and hatcheries.
>
> Spawner escapement

Conservation of genetic diversity

Ecological interactions (addressing the role of wild salmonids in sustaining natural ecosystem processes)

Harvest management

Cultured production and hatcheries

Habitat protection and management

Basin hydrology and instream flows

Water and sediment quality and sediment delivery and transport

Stream channel complexity

Riparian areas and wetlands

Lakes and reservoirs

Marine areas

Fish access and passage

Habitat restoration

Continued public input and science "upgrades"

The Policy states that reductions in harvest levels alone cannot maintain wild salmonid populations and asserts that protection and restoration of wild salmonid habitat is fundamental to meeting its overall goals. This will occur primarily through a combination of locally-based watershed planning and general state policy that will be flexibly implemented in light of local conditions. The Policy discusses the Timber Fish Wildlife and Growth Management Act processes (described below) as tools for protecting salmonid habitat. Because habitat protection requires specificity and guidance as to "what fish need", the Policy defines narrative and numeric performance measures that reflect the best available science to evaluate biological and physical processes for salmonids. WDFW is directed to review its Hydraulic Project Approval (HPA) rules and work with Tribes to commence rulemaking to effectively implement the habitat measures in the Policy. The Policy finds that a comprehensive watershed approach, including the nearshore marine waters will be necessary to protect and restore wild salmonid habitat. Nine components make up the Habitat Policy, arranged along salmonid life history needs and the physical processes and habitat types affecting them (policies 7 through 15 above).

The Policy favors a balance of local implementation and state regulation. It advocates for application of habitat goals, performance measures, and action strategies to all salmonid habitat, regardless of ownership. It states that WDFW and Tribes will cooperatively review local land use decisions and ordinance revisions, and will work to ensure rigorous enforcement of existing laws and regulations at all levels.

State Environmental Policy Act

Watershed plans developed under the Watershed Planning Act are required to comply with the State Environmental Policy Act (SEPA). Section 11.3 of the *Guide to Watershed Planning and Management* (EES 1998) discusses the requirements to conduct SEPA review for watershed plans and recommends performing SEPA analysis concurrent with plan development.

Recognizing that all the Planning Units will need to complete a similar analysis of water management strategies, Ecology sought and received funding to develop a generic SEPA document that would characterize the impacts of these strategies.

This document will identify and evaluate watershed plan elements (water quantity, water conservation, storage, reuse, water transfer, water quality, habitat items, etc.) and possible management strategies, as well as provide a general analysis of the probable significant environmental impacts associated with those elements and strategies. It will support informed decision-making regarding the trade-off posed by different approaches to plan implementation. It can also help the planning unit understand how a plan will create a framework for future on-the-ground activities. SEPA analysis is intended to help bring into focus the discussions and decisions that should occur during the planning phase in a watershed.

This statewide SEPA document is intended to provide the foundation for local and state SEPA compliance for watershed plans and for local and state implementation obligations within such plans. The document can be adopted by each individual Planning Unit; however, most Planning Units will need to supplement this document with local information from their watershed. While this product will not eliminate the local obligation to complete SEPA review, it will significantly reduce the amount of work needed to meet SEPA requirements, assisting in timely adoption and implementation of plans.

WRIA 18 is conducting SEPA compliance using Ecology's new "Non-Project Review Form". The NPRF is designed to be used concurrently with a non-project proposal, on the premise that the environmental analysis and proposal development are better integrated. As governments and other Planning Unit members make decisions or recommendations that may lead to more far-reaching actions, the NPRF provides a means of documenting those decisions and the environmental considerations they entail as they happen. The intended result is both planning and environmental documentation that better integrates and reflects environmental values. The WRIA 18 NPRF is available for review as a companion document to this Watershed Plan.

Shoreline Management Plans

The Shoreline Management Act (SMA) of 1971 (90.58 RCW) requires all jurisdictions containing shorelines of the state to adopt a Shoreline Management Master Program that manages development along streams, lakes over 20 acres and marine shorelines. These plans identify the ecological functions performed by shorelines and protect or restore them. Most inventories were conducted in the mid-1970s, and some are now being updated. These plans are relevant to the habitat element of the Watershed Plan, and Planning Units are directed to rely on SMA provisions affecting fish habitat (90.82.100 RCW).

In 1995, the Growth Management Act was amended to require the integration of a jurisdiction's Shoreline Master Program into its Comprehensive Plan. Ecology updated its 1971 Shoreline rule in 2001, but the Shoreline Hearings Board repealed the update in September 2001. Notwithstanding, many jurisdictions are proceeding under the repealed rule. (The Clallam County, City of Port Angeles, and City of Sequim Shoreline Management Plans or Master Programs are discussed in Section 1.3.4 below.)

Growth Management Plans

The Growth Management Act (GMA) was adopted by the Washington State Legislature in 1990 (Chapter 36.70A RCW, as amended), finding that uncoordinated and unplanned growth posed a threat to the environment, sustainable economic development, and the quality of life in Washington. Watershed Plans are directed to rely on GMA provisions affecting fish habitat (90.82.100 RCW). Where GMA applies, it couples land use and zoning with protection of critical areas, including salmonid habitat. The GMA requires state and local governments to manage Washington's growth by identifying and protecting critical areas and natural resource lands, designating urban growth areas, and preparing comprehensive plans and implementing them through capital investments and development regulations. This approach to growth management is unique to Washington and is based in the state's tradition of local government control and regional diversity. More detail is given below in the discussion of the Clallam County, City of Port Angeles, and City of Sequim Growth Management Plans.

Public Water Systems

Public water systems are regulated in Washington under Chapter 243-290 WAC. Drawing on surface or ground water sources, they treat, convey and deliver water for public use. Public water systems may be operated by municipalities, water districts, counties, private businesses, and homeowner associations. WRIA 18 public water systems range in size from small systems serving as few as two households, to large systems serving several thousand connections.

Many communities are served by more than one water supply system, with service areas that abut each other (or in some cases, overlap). In addition, it is important to recognize that some communities are also served by irrigation districts or ditch companies that deliver water to households for outdoor uses.

Water System Plans

Public water systems meeting certain criteria are required to submit a Water System Plan (WSP) to the State Department of Health (DOH) every six years. These plans offer useful information for the preparation of watershed plans, including:

- Utility service area
- Number of connections
- Supply sources, water rights, and physical facilities
- Water quality
- Operations
- Current water demand
- Projected future demographic conditions and water needs within the utility service area (typically to a 20-year planning horizon)
- Identification of strategies to meet these needs (e.g., further development of water sources, water conservation, water reclamation and reuse)
- Planned projects and associated costs

Water system plans can be particularly valuable in defining future water supply strategies, as required in Chapter 90.82.070 RCW. Strategies may be already identified by local water systems to meet community needs, and associated projects may be permitted and funded, or may require long lead times to develop.

Water System Coordination Act of 1977

The Public Water System Coordination Act (PWSCA) of 1977 (70.116 RCW, 246-293 WAC) was passed in 1977 to protect public health by providing for the development of minimum planning and design standards to ensure that water system development is consistent with regional needs. Other purposes of the Act include to coordinate development of water utility service and integrate water system development with land use planning within an area. Public water systems may have “interties”, allowing water to be exchanged or wheeled, and may have contractual relationships with one another for the provision of water.

The PWSCA allows a “critical water supply service area” to be designated by county government or by the DOH in areas warranted by inadequate water quality, unreliable service, or lack of coordinated planning. The process begins with a preliminary assessment of areas having known or suspected problems related to inadequate water quality, unreliable service or lack of coordinated planning. The preliminary assessment covers existing water systems, availability and adequacy of future water supply, service area boundaries, growth, and the status of water system planning. (Several of these elements are included in this Watershed Plan.)

If the preliminary assessment indicates problems with water quality, supply or service, the County or Department of Health may declare a critical water supply service area. If this is done, a water utility coordinating committee is established, boundaries for the critical water supply service area are drawn, and a coordinated water system plan is prepared. Once the boundaries are drawn, no new water system will be approved by Health unless an existing water system cannot provide service in a timely and reasonable manner. Within a critical water supply service area, boundaries among purveyors (including areas for future water service) are established by written agreement, or if no agreement is reached they may be set by the Department of Health based on a public hearing and findings for the protection of public health and well-being.

The establishment of a critical water supply service area has the effect of limiting and regulating the formation of new public water systems within the boundaries, and the source and manner in which water service will be provided to meet new demands. It directs those seeking water service first to nearby purveyors. If service cannot be provided in a “timely and reasonable manner”, new public water service may be developed.

The coordinated water system plan provides for maximum integration and coordination of public water system facilities, consistent with local land use and growth management plans. Typically, it consists of a compilation of existing water system plans prepared pursuant to WAC 248-54-580, with an Areawide Supplement. The Plan is reviewed by both county government and the Department of Health. There is no provision for dissolving a plan, once it is approved. Water purveyors within the critical water supply service area boundary must continue to prepare water system plans, and these are updated regularly in concert with the coordinated water system plan. The Areawide Supplement addresses joint-use or shared water system facilities and common water-related challenges. Conflicts are resolved via county government. Purveyors operating within the boundaries of the area covered by a coordinated water system plan must comply with the plan. This includes the construction of new public water system supply facilities.

Existing non-municipal public water systems may be exempt from planning requirements (except for the establishment of service area boundaries) if they have no plans for expanding water service beyond existing boundaries and meet minimum State Board of Health requirements. However, if the County permits development that will increase water demand beyond such a system's ability to provide service, the purveyor must participate in coordinated water system planning.

Group B Water Systems

Smaller public water systems, designated "Group B" water systems, generally serve from 2 to 14 connections. These public water systems are not subject to the federal Safe Drinking Water Act and have simplified requirements under state law and regulation. Minimum monitoring, system maintenance and reporting requirements apply to these systems, but less information about water use is generally available from them. The Department of Health may require that they be managed as "satellites" of larger systems under certain circumstances.

Water and Wastewater Utility System Planning

Utility systems responsible for wastewater treatment have a significant role to play in management of water resources at the watershed level. Their planning documents describe utility system features, explain their uses of water resources, and identify future capital projects. Like public water systems, wastewater collection and treatment systems may be owned and operated by a variety of organizations, including cities, counties, sewer districts, and private companies or associations. They range from small community systems serving a single subdivision or industrial site to large regional systems serving millions of people. Two primary types of wastewater plans are pertinent to watershed planning:

- General sewer plans, prepared by the owner or operator of a wastewater treatment facility and providing a comprehensive overview of facilities, needs, and capital projects.
- Sewerage general plans at the county level, assessing countywide facilities, needs and capital projects.

In addition, engineering reports or facility plans for the proposed City of Port Angeles facilities related to the Elwha restoration may be useful. General sewer plan and County sewerage general plan information that is likely to be of particular value in the watershed planning process includes:

- Service area
- Number of connections
- Characteristics of raw and treated wastewater
- Physical facilities
- Current wastewater flows
- Projected future demographic conditions and wastewater conveyance and treatment needs within the utility service area (typically to a 20-year planning horizon)
- Planned projects and associated costs

Stormwater Management

Stormwater refers to the portion of incipient precipitation that does not soak into the ground or evaporate, but runs off overland. Land use practices may alter the natural hydrology of a site or area, creating stormwater problems. The most significant contributor to stormwater runoff is the creation of impervious surfaces associated with land development (e.g., roads, parking lots, roofs). As it travels, stormwater picks up and carries debris, sediment, and pollutants in its path. Following natural or human conveyance, it enters and moves through streams, rivers, pipes, lakes, reservoirs and wetlands, affecting water flow and quality.

Unabated stormwater runoff can cause erosion, landslides, flooding and pollution. Runoff conveys pollutants and sediment from uplands to streams, degrading water quality; nationwide, it is one of the most significant sources of water contamination. It can deliver more water in a short time than natural stream channels can handle. Impervious cover can also decrease dry season base flows in streams by reducing natural infiltration. These effects alter natural flow regimes and can erode streambanks and change the shape and function of stream channels. Stormwater runoff not only delivers floodwaters but also may increase areas susceptible to flooding as it changes the landscape; for example a 100-year flood event may occur every 5 years with 25 percent impervious cover (Shuller 1996). Stormwater flow events may create fish migration barriers, scour spawning gravels, and degrade stream and riparian habitat structure. Where combined sewer overflows exist, stormwater may carry sewage into streams and harbors. Impervious surfaces also reduce groundwater recharge and affect groundwater supplies. As impervious cover increases the diversity and abundance of fish, wildlife, plants and sensitive habitats all decrease. These impacts can cost local government and property owners significant resources and losses.

Where stormwater runoff significantly affects basin water quality or hydrologic regimes, stormwater management is an important element of watershed planning. Impervious cover reaching more than 10 percent of watershed area is strongly associated with ecological stress (Shuller 1996).

Stormwater management is generally performed by local jurisdictions, such as cities, towns, or county governments (see discussion below for Clallam County and the cities of Sequim and Port Angeles). There is no statewide requirement that local entities develop stormwater management plans, as such. Where stormwater plans have been prepared, they typically cover relatively small hydrologic basins within the boundaries of the jurisdiction involved.

Comprehensive stormwater management programs address both water quality and water quantity issues, often as these are affected by the development of urban or suburban lands. Good stormwater management should facilitate natural stream flows and infiltration to maintain the natural water table. Stormwater management that meets these goals also will help stabilize river banks, maintain stream channels and riparian vegetation, retain spawning gravels and large woody debris, and reduce pollutant loads to natural streams. It is also important to protect groundwater from contamination. Because stormwater knows no jurisdictional boundaries, a framework for stormwater management is best established at a watershed scale. It is important that local jurisdictions coordinate in implementing standards for stormwater management. Stormwater management can and should be implemented in a fashion that does not inhibit economic development or significantly increase the cost of building new houses.

Low Impact Development

Low Impact Development (LID) is an innovative, ecosystem-based approach to land development and stormwater management designed to reduce impacts on watershed hydrology and aquatic resources. The objective of LID is to design each development site to protect or restore natural hydrology so that the overall integrity of the watershed is protected. This is done by using vegetation and small-scale hydrologic controls to create landscapes that treat and infiltrate stormwater on-site, and by directing runoff from impervious surfaces to vegetated areas and porous soils. LID landscapes regain their natural hydrologic functions, preserving natural flow patterns and volumes and greatly slowing water before it reaches streams, wetlands and other waters. Traditional stormwater facilities lead to excessive fluctuations in water levels, stream channel degradation and habitat loss. LID also increases developable land, reduces infrastructure costs, and reduces the burden of operations and maintenance. It also can increase property values. LID incentives are incorporated in the Ecology Stormwater Management Manual (discussed below)

EPA Phase II Stormwater Permits

The EPA adopted Phase II stormwater regulations in December 1999, which identified additional municipalities as subject to stormwater permitting requirements. WRIA 18 municipalities may fall under several of the qualifying criteria:

- All local governments which own or operate a municipal separate storm sewer system, and which are located in an “urbanized area” as defined by the Bureau of the Census;
- Additional local governments located outside an urbanized area, with populations of 10,000 or more, and with population densities of 1,000 persons per square mile;
- Additional local governments located outside an urbanized area, which are physically interconnected (through sewer systems or roads that drain into sewer systems) with a local government covered under the categories above; and,
- Additional specific categories of local governments, municipal industrial facilities, and federal and state facilities defined in EPA regulations.

Ecology is intending as a minimum that the identified Phase II communities adopt ordinances, minimum requirements, and BMPs equivalent to those in Ecology’s updated stormwater management manual (see discussion below).
The EPA Phase II minimum requirements include:

- Stormwater controls for new development and redevelopment
- Review of stormwater site plans
- Construction site inspections
- Permanent stormwater facility maintenance
- Source control program
- Illicit discharge detection and elimination
- Programs for public involvement and education
- Implementation schedule
- Integration into watershed planning
- Stable funding source

Low Impact Development (LID) is encouraged by EPA. These same elements are included in the *Puget Sound Water Quality Management Plan* (see discussion below),

with additional requirements for monitoring and to identify and rank existing problems. Municipalities that are not within the Puget Sound Basin, and that are not subject to Phase I or Phase II permits, are not required to adopt stormwater management programs.

Department of Ecology Stormwater Management Manual for Western Washington (2001)

Ecology's first stormwater manual was developed in 1992, in compliance with the *Puget Sound Water Quality Management Plan*. An updated five-*volume Stormwater Management Manual for Western Washington* was published in late 2001 (Ecology 2001b). According to Ecology, key revisions to the 1992 manual include:

- The geographic scope of the manual now includes all of Western Washington, addressing new federal regulations under the CWA and the Safe Drinking Water Act, as well as state regulations under the GMA.
- Thresholds for BMPs are changed such that nearly all projects will be required to apply appropriate flow control and runoff treatment BMPs, including on-site stormwater management.
- Flow control requirements are increased to address both peak flows and matching predevelopment duration of high flows. Continuous runoff models are to be used when available. Detention volume requirements are increased.
- Higher levels of treatment are required for discharges from most industrial, commercial, and multi-family sites and arterials and highways. Enhanced treatment is required for discharges to fish-bearing streams and lakes from industrial, commercial and multi-family sites, and highways and arterials.
- Significantly more detail is provided for construction site Surface Water Pollution Prevention Plans (SWPPP).

The objectives of the Manual are to provide a commonly accepted set of standards and guidance that will help avoid the need for costly studies; control the quality and quantity of runoff from new development and redevelopment; and comply with water quality standards that protect beneficial uses of waters. It is intended to complement land use management tools to protect natural resources and property values. The five volumes address thresholds, minimum requirements, and site plans; erosion and sediment control; hydrologic analysis; source control; and treatment selection and design. It provides minimum requirements for:

- Site plan preparation
- Construction site SWPPP
- Source control
- Preservation of natural drainage
- On-site stormwater management
- Treatment
- Flow control
- Wetlands protection
- Basin planning
- Operations and maintenance

The Manual provides guidance; it provides the best available science. However it has no independent authority and is not a Rule or regulation. Local jurisdictions may adopt

the Manual and require its use as a part of permitting for land development. Its use may help meet requirements under the federal CWA and ESA, and the State Water Pollution Control Act.

Washington Water Law

Water Rights

Washington water rights are legal authorizations to use public water for specific beneficial purposes. Water rights are required to divert any amount of surface water or to withdraw groundwater in amounts greater than 5000 gallons per day or to irrigate more than one-half acre of lawn or noncommercial garden (certain groundwater uses below these limits are exempt from permitting but are not exempt from any other statutory or regulatory requirements [RCW 90.44.080]). Each water right has a "priority date", which is the date the application was filed. Under the prior appropriation doctrine, used throughout the West, senior water rights (those first in time) are also "first in right"; that is, in times of shortage senior water rights may be exercised to the detriment of juniors. Water right certificates also specify the amount of water that may be taken (both instantaneous and annual), the source and point of diversion or place of withdrawal, the purpose of use, and sometimes season of use. These elements of a water right may not be changed except by formal transfer or change of a water right. Legislation in 2001 allowed applications for new rights to be processed separately from those for changing or transferring water rights. It may increase the feasibility or efficacy of future water supply strategies, which rely upon changes to existing water rights.

Uses of water which predate the State's water code (1917 for surface water and 1945 for groundwater) are registered with Ecology as water claims. A valid statement of claim establishes a right to continue using water in the amounts and for the purposes that predated the code. Such claims are examined for legitimacy through a general court adjudication, and awarded water right certificates as appropriate.

Water rights are obtained by application to the Department of Ecology, which issues a right only if the proposed use meets the following four tests:

- Water must be put to beneficial use
- No impairment of existing senior water rights
- Water must be available for appropriation
- A water right may not be issued if it would be detrimental to the public welfare

Relinquishment or Abandonment

Water rights may be lost if they are unused for a period of five consecutive years ("relinquishment") or abandoned if the right holder shows intent to do so. Statutory exemptions to relinquishment include water rights held for municipal purposes. Recent case law has directed that water rights may not be issued based on the capacity of a water system to put water to use, but must be based on actual use (that is, "perfected" through beneficial use). Unperfected quantities of water exist in many public water system's water rights.

Legislation passed in 2001 created additional exemptions from the "use it or lose it" rule of water rights. The list of "sufficient causes" for exception relinquishment now include:

- Temporarily reduced need for irrigation due to weather conditions, including

precipitation and temperature that warrant reduction in water use. This qualifies as long as diversion and delivery facilities are maintained for use of the full amount of the water right.

- Reliance upon temporary return flows instead of diversion or withdrawal of water from the primary supply source, as long as the return flows are measured by a method accepted by Ecology.
- The reduced use of irrigation water because of crop rotation or temporary changes in crops; unused water would not be relinquished if the remaining portion of the water continued to be beneficially used.

Minimum Instream Flow Rules

A *minimum instream flow* is a State flow set by rule, and applies to state water rights. It is junior to existing water rights and establishes a priority date for the instream flow which conditions future water rights. An instream flow rule generally has a priority date of the date of the rule adoption, however under Chapter 90.82 RCW, instream flows established through 2514 planning have a priority date as of two years after the Initiating Governments first receive funding from Ecology. Although an instream flow rule establishes a regulatory level of flow needed to protect and preserve fish and other instream environmental values, it does not mandate that the flow level be achieved. Because the rule may be junior to other senior water rights in the stream, an instream flow cannot be enforced against senior diversions of water flows fall below the levels adopted in the rule.

Biologically, flow levels may be developed for an instream flow rule in similar ways to target flows, using similar criteria. However, a target flow would normally focus on a specific listed species, whereas a minimum instream flow may consider a broader range of species and instream values. The main effect of a regulatory instream flow is to condition future determinations of water availability and water rights decisions. Water rights issued after rule adoption are subject to the instream flow rule and are required to cease diversion when flows drop below levels set by rule. An instream flow rule also protects senior water rights.

Hydraulic Continuity

State water rights constrain the ability to withdraw from wells in continuity with surface water that have instream flows established by rule. Wells water rights junior to an instream flow rule and in continuity with the regulated water are subject to interruption when affected rivers are at or below levels set by rule. Washington case law establishes that withdrawals in continuity with surface flows under such conditions constitute impairment. Approaches for establishing the existence of continuity and impairment were addressed by a technical committee convened by Ecology.

Trust Water Rights Program

In 1991, the Legislature directed Ecology to develop a state trust water rights program in response to “the need to develop and test means to facilitate the voluntary transfer of water and water rights, including conserved water, to provide water for presently unmet and emerging needs.” The Trust Water Rights program accepts voluntary transfers of water through donation, lease or purchase of a water right, and water that has been saved through conservation. Return flows, hydraulic continuity, and senior water rights

must be considered in calculating net conservation savings. Water placed in trust may be allocated to instream use or offstream uses under certain limitations. Transfers to instream flows are added to minimum instream flows where such rules exist. Water may be later removed from the Trust Program and reallocated to beneficial use under terms negotiated when the water is placed in the Program.

Legislation passed in 2001 revised the Trust Water Rights Program to encourage donations of water for the improvement of instream flows and for other beneficial uses. A water right now may be donated to Ecology with the condition that it be used to improve instream flows. Ecology is no longer required to examine donated water rights for potential impairments of existing water rights before a trust water right is exercised, if the donation is to be transferred to instream flows. Trust water rights within an area with an approved watershed plan must be consistent with the plan if it calls for such acquisitions. No public review of a donation is required, and donors are allowed to specify the terms of their donation. Any trust water right is exempt from relinquishment rules; donations are federally tax-deductible.

The Trust Water Rights program has been used to protect saved water and instream flows in the Dungeness River (see discussion above, Section 1.2.2).

Washington Water Acquisition Program

In July 2002, the Department of Ecology announced an initiative to increase flows in 10 river basins with vulnerable salmon and trout populations, including the Dungeness and Elwha rivers. The program provides an opportunity for farmers, ranchers and other water-right holders to participate in salmon recovery by selling, leasing, or donating their water where critically low stream flows are limiting to fish survival. Because establishing instream flows by rule does not actually restore flows to the river, this program seeks to obtain actual “wet” water rights from willing participants through purchase, lease, donation or trust agreements. The Dungeness water users participated in leasing during the 2001 drought, forgoing use of some of their water in August and September.

Conservancy Boards

Water conservancy boards (RCW 90.80) were created under Washington legislation in 1997 as a partnership between Ecology and local governments to speed up the review process for applications for transfers and changes to existing water rights.

Petitions to establish a Conservancy Boards first sent to county governments for review. Among those who can petition for a board are a utility district, a group of water right holders, or a city. The county legislative authority appoints “commissioners,” who are trained on state water law and hydrology. The board holds public hearings on transfer applications, and may conditionally approve or deny them. Ecology then has 45 days to respond to a County board recommendation before it becomes final.

Conservancy boards have undergone several changes since they were first introduced. In July 1999, administrative rules (WAC 173-153) were proposed for the boards, and adopted in November 2000. In December 2000, several environmental groups brought suit against Ecology claiming that the boards had more authority than the law allowed; the judge found that boards may not review new water rights applications, only modifications of existing water rights. This decision resulted in statutory changes by the 2001 Legislature. Now conservancy boards may serve multiple counties or WRIAs, and

may process the same types of modifications of water rights as may be processed by Ecology. This means that applications, both for changes and for new rights, may be processed more quickly. Other changes include the removal of federal Indian reservations and tribal lands held in trust by the federal government from conservancy boards' jurisdiction. Conservancy Board operations were also changed in several respects; most significantly, an applicant may chose whether to apply to a conservancy board or to Ecology, and may chose to move an application from Ecology to a board. Conservancy Boards are specifically directed to notify watershed planning units of applications for water rights changes, so Planning Units may comment. WRIA 18 does not have a Conservancy Board at this time.

Family Farm Water Rights

Family farm water rights located in urban growth areas or within city limits may be converted into other uses under a law passed in 2001. The Family Farm Act, passed by public initiative in 1977, gave priority to family farms (farms smaller than 2,000 acres) for irrigation permits on privately owned agricultural land. Because land was qualified as a family farm according to the definition that applied at the time the permit was issued, water rights were prohibited from being modified or used for purposes other than irrigation. Now family farms anywhere in the state may temporarily lease their water to other purposes, and surplus water resulting from conservation can be permanently converted to other purposes. The maximum size of a family farm has been increased from 2,000 acres to 6,000 acres.

Rule on Measuring Water Use

Measurement of water diversions, withdrawals, and/or usage is an important element in any effective program to manage water resources. This involves installation of gages, source meters, or other devices at the point the water is diverted or withdrawn, together with periodic collection and storage of measurement data. The Watershed Management Act indicates that watershed Planning Units must develop "an estimate of the surface and ground water actually being used" in the WRIA for which a watershed plan is developed (Chapter 90.82.070 RCW). Many Planning Units have found that data on water uses is limited in their WRIA or WRIAs.

Chapter 90.03.360 RCW, revised in 1993, addresses measurement of water diversions. Measuring is required for all diversions. Ecology must require measuring as a condition for all new surface water right permits and for existing water rights that meet at least one of the following two criteria:

- Surface water diversions greater than one cubic foot of water per second (even those predating statutory regulation of surface water rights); or
- Diversions and withdrawals from surface and ground water sources that support fish stocks classified as critical and depressed by the Washington Department of Fish and Wildlife (WDFW).

Following litigation over the water measurement law, Ecology has revised the water measuring rule and is issuing notice to require water measurement by the biggest water users in each of the 16 watersheds where fish stocks have been classified as critical and depressed by WDFW.

Water users comprising the top 80 percent of total water use in the 16 watersheds were required to measure their water use by December 2002. A number of these users, such as public utilities and large agricultural operations, already be measure their diversions and withdrawals. The primary difference from the past will be the addition of reporting requirements. These measurement requirements do not apply to individual household wells (e.g., wells exempt from water rights requirements); nor does it involve charging users for their water use.

The measurement and reporting requirements associated with the rule may provide additional data on water use that could be obtained by Planning Units for use in developing a watershed plan.

Washington Forestry Law and Regulation

Forest Practices Act (76.09 RCW)

In 1974, the Washington State legislature wrote the Forest Practices Act, Chapter 76.09 of the Revised Code of Washington (RCW) to protect water quality, provide fish and wildlife habitat, protect capital improvements, and ensure that harvested areas are reforested. The Act defines a plan to protect public resources while assuring that Washington continues to be a productive timber growing area. The Forest Practices Act regulates activities related to growing, harvesting, or processing timber, including Christmas trees, on all local government, state, and private forest lands. Forest practices are defined as:

> *… "practices related to growing, harvesting or processing timber, including but not limited to, road construction and maintenance, thinning, salvage, harvesting, reforestation, brush control, and using fertilizers or pesticides. These practices are regulated by the Washington Forest Practices Act and its corresponding rules."*

The Forest Practices Act has been amended many times since 1974. The Forest Practices Board was formed to adopt rules to protect soils, water, fish, wildlife and public capital improvements from the impacts of timber harvesting. Watershed Plans are directed not only to rely on provisions affecting fish habitat contained in the Forest Practices Act (90.82.100 RCW), but also not to create any obligations or restrictions on forest practices additional to or inconsistent with the FPA and its implementing rules (90.82.120 RCW).

Timber Fish and Wildlife Agreement (1987)

Considered the most significant amendment to the Forest Practices Act, the Timber Fish and Wildlife Agreement (TFWA) of 1987 arose from shared recognition that Washington needed a viable timber industry and it also needed to protect and enhance its fish, wildlife, water and cultural/archeological resources. Looking back on a history of competitive lobbying and court cases, and unsuccessful attempts to resolve contentious forest practices problems through negotiations, it was further recognized that in order for a new approach to timber and natural resources to be effective and successful, it needed to involve as many stakeholders as possible.

The TFWA presents a framework and procedures for managing Washington's forests to meet the needs of a viable timber industry while protecting fish, wildlife, water, and the cultural/archeological resources of Tribes. This Agreement represents a consensus of

the timber industry, environmentalists, and natural resource agencies. A highly inclusive approach was taken to the TFWA process. Participants included representatives of a number of Tribes, the Northwest Indian Fisheries Commission, the Columbia River Intertribal Fish Commission, Washington Environmental Council and Audubon Society, Washington Forest Protection Association, and Washington Farm Forest Association, Weyerhaeuser, Georgia Pacific, Plum Creek, and Simpson Timber companies, and the State departments of Natural Resources, Ecology, Fish and Game.

The 1987 Agreement supersedes the Forest Practice Rules in place at that time. Among its innovative actions TFWA created interdisciplinary teams to make on-site reviews of forest practices, reorganized DNR to improve enforcement, and improved harvest application review. The TFWA Rule package included provisions in the following areas:

- Riparian management zones (RMZ's)
- Adaptive management
- Alternate plans – Class III
- Application of chemicals
- Protection of Tribal cultural resources
- Resource management plans (RMP's)
- Upland management areas (voluntary)
- Interdisciplinary teams
- Reforestation

Forest and Fish Rules (1999)

The Forest and Fish Rules build on the Timber Fish and Wildlife Agreement and is intended to balance current needs of Washington's endangered fish with its timber industry. Continuing the work of caucuses originally convened under TFWA, the Forest and Fish Report (FFR) was written in 1999 in a collaborative process involving NMFS, the timber industry, tribes, state and federal agencies and citizen interest groups. It further develops the forestry module of the *Statewide Strategy to Recover Salmon: Extinction is Not An Option* (JNRC 1999), building on further cooperative efforts in policy, local and technical areas to address a new round of issues. The TFWA caucuses reconvened to address listings of salmonid fish stocks under the Endangered Species Act, as well as the listing of more than 660 Washington streams segments under Section 303(d) of the Clean Water Act. Other drivers were tribal and fishing industry unemployment, and the cost and uncertainty of investments in timber acquisition and harvest.

The rules are intended to develop biologically sound, economically practical and responsible forest management practices to improve streamside habitat on Washington's non-federal forestlands. Specifically, their objectives are to:

Better protect water quality and fish habitat by widening streamside buffers on most private and state forestlands.

Revise engineering requirements for locating and designing new roads, bridges and culverts; and for maintaining and abandoning existing roads.

Increase environmental review for logging, road building and other forest practices affecting unstable slopes.

Incorporate new and updated scientific findings as they become available, through

an adaptive management process.

Develop a watershed analysis system that addresses the cumulative effect of forest practices on, at a minimum, the public resources of fish, water, and public capital improvements of the state and its political subdivisions.

Through this program, small forest landowners are eligible to receive at least half of the commercial value of trees they leave standing to protect water quality and fish habitat. Washington will now compensate small forest landowners for leaving timber along fish-bearing streams.

The new rules bring Washington into compliance with the Clean Water Act for water quality on private and state forestland, and the Endangered Species Act for fish and other water dependent species. NMFS has found that the provisions of the FFR "provide important improvements in forest practice regulation which…will substantially protect and conserve listed fish in [Washington]." Considering these improvements in forest practices, NMFS' *4(d) Rule for Threatened Salmon and Steelhead on the West Coast* makes the determination that "it is not necessary to apply take prohibitions to non-Federal forest management activities conducted in the State of Washington… provided that (1) the action complies with forest practices regulations…that NMFS has found to protect habitat functions at least as well as the regulatory elements of the FFR; and (2) the activity also implements all non-regulatory elements of the FFR." This applies as well to actions under alternative plans that the Washington Department of Natural Resources has determined function at least as well as the state forest practice rules and that are reviewed by NMFS or any agency or tribe NMFS designates. Elements of the FFR that protect and conserve listed salmon and steelhead are summarized in NMFS' 4(d) Rule. It:

- Accurately classifies water bodies and makes stream typing information broadly available. It is tailored to protect and reinforce the functions and roles of different stream classes.
- Lays out a plan for properly designing, maintaining and upgrading existing and new forest roads. The plan includes assessment of the condition of all forest roads within five years and for all needed improvements to be completed within 15 years.
- Protects unstable slopes from increased failure rates and volume.
- Allows properly functioning conditions (PFCs) to be achieved in riparian areas along fish-bearing waters, including stream bank stability, shade, litterfall and nutrient input, large woody debris recruitment, and maintenance of the microclimate. The FFR ensures PFCs by establishing variable-width management zones. NMFS determined that these treatments will set riparian stands on a pathway to a set of desired future conditions, and that these stands will remain on that path without further harvest or silvicultural treatment.

More detail on these points, including a host of provisions for riparian management are provided in the FFR and the NMFS 4(d) Rule.

Agriculture, Fish & Water and Comprehensive Irrigation District Management Plans

Washington's *Statewide Strategy to Recover of Salmon* (JNRC 1999) initiated three key efforts, one of which related to agriculture. The agricultural strategy subsequently developed two distinct pathways for addressing endangered species and water quality

issues. The first focused on farming practices, through revision of the Natural Resource Conservation Service Field Office Technical Guide used in developing farm plans. The second focused on cooperating with irrigation and drainage districts in developing a planning manual for achieving water conservation and water quality improvements in their water delivery and drainage systems. Together, these two processes came to be known as the Agriculture, Fish and Water (AFW) process.

As part of the AFW process in cooperating with irrigation districts, guidelines were developed in 2001 for the preparation of Comprehensive Irrigation District Management Plans (CIDMP) by irrigation districts. The intent was to provide a voluntary and incentive-based process for improving irrigation district operations in response to the federal Endangered Species Act and Clean Water Act. The CIDMP process allows flexibility in addressing compliance with the two Acts, while obtaining assurances from federal agencies.

The CIDMP process establishes a framework for planning, gathers information and identifies actions, and defines an implementation program in a 10-step process. The process is guided by a Technical Advisory Team chaired by the irrigation district and staffed by state and federal agency and tribal biologists and independent scientists. The process is grounded in a detailed inventory of district facilities, operations and needs. Its centerpiece is an assessment of district impacts on water quality and fish habitat. Based on the assessment, needs for action are determined and a comprehensive action plan is developed. An implementation program is written to put the action plan to work. The CIDMP is intended to result in Implementation Agreements between the federal agencies and irrigation districts, which would be similar to Habitat Conservation Plans or TMDL agreements.

In WRIA 18, the Sequim-Dungeness Valley Agricultural Water Users Association (WUA) has been selected by the Washington Department of Agriculture to carry out a pilot CIDMP. The CIDMP process was funded in late 2001 and initiated in early 2002.

Dairy Nutrient Management Act

The Washington State Dairy Nutrient Management Act was passed by the State Legislature in 1998, significantly changing how water pollution from commercial dairy farms is addressed. The law establishes a technical assistance and inspection program for dairy farms to achieve water quality compliance. The dairy waste management program addresses the discharge of pollutants to surface and ground waters of the state. The law directs Ecology to inspect all farms for evidence of water quality violations, identify corrective actions, monitor the development of dairy waste management plans and identify farms in need of technical assistance.

All dairy farms were required to developand implement an approved dairy nutrient management plan. Conservation districts approve the plans. Dairy producers may appeal waste management plan decisions made by Conservation Districts to the Washington State Conservation Commission (WCC) and/or Pollution Hearings Board. The WCC has developed guidelines specifying the minimum elements a dairy waste management plan must contain. All five dairies in WRIA 18 have approved plans. None of these plans have been certified.

Water Storage

Legislation passed in 2001, provides for the assessment of potential site locations for water storage projects. In 2000, the Legislature created a Storage Task Force to examine the role of increased water storage in providing water supply for fish, population growth, and economic development. The charge to the Task Force included goals similar to the objectives for the water quantity element of watershed plans under the Watershed Management Act. Among the solutions discussed were options to store water when there is excess runoff and stream flow, for release during low-flow periods. The Task Force issued a *Report to the Legislature*, dated February 2001, identifying four categories of water storage, including new on-channel and off-channel dams, raising existing dams, and aquifer storage and recovery. Potential benefits and drawbacks to each were identified by the Task Force.

The report inventories storage projects in Washington, including nine projects constructed in the last 15 years. It discusses State, federal and tribal policies related to storage, describes planning considerations, and outlines permits needed for storage projects. It also covers environmental considerations, operational considerations, and financing of water storage. It also notes that there are alternatives to water storage, such as water conservation, reclaimed water, and preservation of "natural storage" related to ground water recharge and storm water runoff.

The Task Force recommended that water storage infrastructure needs should be inventoried and assessed through watershed planning processes, and that the State should help local watershed planning groups in assessing potential site locations for water storage projects. The assessments may include identification of potential sites for future water storage projects, including large or small projects, and alternatives such as off-channel, on-channel, underground, or enlarged storage. Other recommendations included:

State responsibilities should be coordinated by Ecology;

Permitting should be streamlined;

Planning and design must consider the context of "how water works" within an entire basin or watershed, including the natural hydrograph, groundwater recharge, functional floodplains, and biological needs;

Funding priority should be given to projects identified in adopted watershed plans;

Funding should cover costs of storage benefits, but cost-sharing should be promoted;

Small and medium scale off-channel or underground projects should be emphasized; and

Fish passage should be emphasized in assessments.

Water Quality Guidelines for Wetlands

These guidelines describe how Washington's water quality standards apply to wetlands. The document summarizes the benefits of wetlands and the criteria used in protecting them from degradation. It also details Ecology's legal and regulatory role in regulating wetlands as waters of the state. Ecology applies water quality standards to protect and maintain beneficial wetland uses in setting limits to discharge to surface waters under the National Pollutant Discharge Elimination System (NPDES), conditioning permits

affecting state waters, and reviewing site-specific project proposals. These permits and reviews cover a wide range of activities, including discharging wastewater and storm water, filling wetlands, construction activities requiring short-term standards modifications, aquatic herbicide applications, activities reviewed under SEPA, and activities regulated under the Shoreline Management Act.

Water Quality Standards

The State of Washington has established water quality standards for surface waters (WAC 173-201 A). These standards are established for five different classes of surface waters:

- Class AA (extraordinary)
- Class A (excellent)
- Class B (good)
- Class C (fair)
- Lake Class

Within each class, the following criteria categories dictate the specific water quality standards, using standard accepted scientific methods:

- Fecal coliform organisms
- Dissolved oxygen
- Total dissolved gas
- Temperature
- PH
- Turbidity
- Toxic, radioactive or deleterious material concentrations
- Aesthetic values

The WAC also provides specific classifications for fresh surface waters within the State. (For example, the Dungeness River and the Elwha River are considered a Class AA surface waters. See Chapters 2 and 3 for discussion of the classifications and applicable standards for WRIA 18 streams.)

Class AA (Extraordinary) waters are given the highest level of protection and must meet requirements to support substantially all beneficial uses including water supply (domestic, agricultural and industrial), fish and shellfish, wildlife, and recreation (swimming, boating, fishing and aesthetic enjoyment). Class A (Excellent) waters are required to support substantially the same uses, but some of the individual water quality parameters are held to a less stringent standard. Under Section 303(d) of the Federal Clean Water Act, the State is required to maintain and update a list of water bodies that fail to meet water quality standards set forth by the State. Table 1.3-1 displays the State water quality standards for both freshwater and marine water for Class AA and Class A classifications.

Proposed Revision to State Water Quality Standards[3]

As described in the *Addendum* to Washington's *Guidelines for the Watershed Management Act*, the surface water standards for rivers, lakes, and reservoirs are in the process of being revised. Ecology is proposing to change from the current classification system to a use-based approach. This transition will also require adjustments to monitoring programs, wastewater discharge permits, TMDLs and the 303 (d) listing process. To make this transition Ecology has been coordinating with the U.S. Environmental Protection Agency (EPA) regarding the development of a new anti-degradation policy, changing data needs, and prioritizing goals and tasks to meet the new standards. This will affect the assessment of the degree to which water quality standards are attained and may affect the strategies developed to manage water-quality conditions.

Table 1-A-1. Washington State Water Quality Criteria for Selected Parameters.

Parameter	Class AA (Extraordinary)		Class A (Excellent)	
	Fresh	Marine	Fresh	Marine
Fecal Coliform Bacteria (FC)				
Shall not exceed a geometric mean value of organisms/100mL):	50	14	100	14
With not more than 10% of samples exceeding (organims/100mL):	100	43	200	43
Dissolved Oxygen (DO)				
Shall exceed (mg/L):	9.5	7.0*	8.0	6.0
Total Dissolved Gas				
Shall not exceed (%) of saturation:	110%		100%	
Temperature				
Shall not exceed, due to human activities – degrees Celsius	16	13**	18	16**
pH/Hydrogen Ion				
Shall be within the range of (pH units):	6.5 - 8.5	7.0 - 8.5	6.5 - 8.5	7.0 - 8.5
Human-caused variations shall be within the range of less than (pH units):	0.2		0.5	
Turbidity				
When background turbidity is 50 NTU or less, shall not exceed background turbidity by (NTU):	5		5	
When background turbidity is more than 50 NTU, shall not have more than an increase of:	10%		10%	
Aesthetics	Aesthetic values shall not be impaired by the presence of materials of their effects, excluding those of natural origin, which offend the sense of sight, smell, touch, or taste.			
Ammonia	Ammonia criteria are dependent on the temperature and pH of the water.			

* When natural conditions, such as upwelling occur, causing the DO to be depressed near or below this value, natural DO levels may be degraded by up to 0.2 mg/L.

** Incremental temperature increases resulting from nonpoint source activities shall not exceed 2.8^{o}C (WAC 173-201 A)

[3] This section is extract from the *Addendum* to Washington's Guidelines for the Watershed Management Act.

Use-Based Approach

Under the current classification system surface water is assigned to a class based on characteristic uses with lower classes supporting fewer uses. The uses are grouped together and cannot be dropped or added for a particular waterbody. The use-based standards will be structured to support the same uses as the current standards however, it will focus on more specific standards to support endangered fish species. The use-based system will allow a single use to be dropped or added for a particular waterbody and the most protective criteria will apply. More protective measures including antidegradation standards will be applied in areas of more sensitive uses. Removal of a more protective standard is possible in a situation where a more sensitive use occurs unnaturally and a Use Attainability Analysis is done to determine what standards are appropriate. In addition special consideration will be given to storm water ditches and constructed farm ponds that involve only incidental human contact. In this case the use-based system allows for relaxed bacteria standards where appropriate.

Uses supported in the proposed use-based system, selected from current supported uses include:

- Water Supply – agricultural (irrigation), domestic, and industrial
- Salmonid Spawning
- Salmonid rearing
- Other fish spawning and rearing (non-anadromous rainbow trout)
- Recreation – primary contact, secondary contact, sport fishing, and boating
- Aesthetics

New uses supported by the use-based system include:

- Bull trout and char – Documentation of existing use triggers this new standard. A rule change is required to identify these areas.
- Warm-water aquatics – A Use Attainability Analysis is required to document natural conditions and to remove more sensitive uses. A rule change is required to designate these areas.

Antidegradation

The proposed rule includes an antidegradation policy that sets standards and procedures that will continue to ensure the support and protection of beneficial uses. Three Tiers have been identified for antidegradation protection. These Tiers are required in federal rule and exist in state standards. Specific implementation language is now being added.

- **Tier 1** – Water quality must be maintained to fully protect existing in-stream beneficial uses.
- **Tier 2** – Waters of quality better than the standards can only be degraded when shown to be necessary and in overriding public interest.
- **Tier 3** – Establish a process for setting aside waters that constitute an outstanding national resource from any future degradation.

Proposed Criteria and Monitoring Changes

Existing surface water criteria requirements and monitoring and data collection practices will change regarding bacteria standards, dissolved oxygen and temperature, and ammonia.

Under the new standards criteria will be set and a monitoring program will be established for enterococci in marine waters. The current bacteria standards focus on criteria and monitoring systems for coliform. The standards will begin to focus on enterococci criteria, however marine waters adjacent to shellfish beds will continue to be monitored for coliform.

Water quality standards regarding dissolved oxygen and temperature criteria have been reevaluated and are proposed to be changed. Dissolved oxygen and temperature standards will continue to be monitored, however continuous monitoring for a minimum of seven days will be required for temperature. In addition, consistent sampling approaches will be developed to accurately determine overall conditions of waterbodies.

Water monitoring will occur for the new ammonia criteria as well. The new standards will be slightly less stringent than existing standards after the rule is adopted.

Effect on TMDLs

TMDL strategies and requirements will not differ substantially from existing requirements for most systems. New criteria will be used for evaluating progress and monitoring processes for bacteria standards, dissolved oxygen, temperature, and ammonia.

Bacteria standards will include sampling fecal coliform to monitor progress and establish enteroccoci trends. The implementation of enteroccoci sampling and monitoring will be adapted over time.

There is only one established TMDL in WRIA 18, for Matriotti Creek and the Lower Dungeness River (approved by EPA 2002). This TMDL focused on fecal coliform bacteria as an indicator for bacterial waste. A second TMDL will be developed for Dungeness Bay (due to be completed in 2004). Like the previous one, this TMDL is focused on fecal coliform bacteria as an indicator for bacterial waste.

Effect on Point Source Discharge Permits

Wastewater discharge permits will also be changed to reflect the use-based requirements. Enteroccoci water quality effluent limits will be set and tested as fecal coliform levels are currently set and tested. Selected permits will be required to test both coliform and enteroccoci to establish technology-based limits for the new indicator. Dissolved oxygen and temperature modeling and monitoring requirements will need to be implemented in the permit procedure. Ammonia standards will also be altered depending on the presence or absence of salmonid or other fish habitat.

Effect on 303(d) List

Waters with existing uses not currently protected according to the new standards will receive greater protection with the antidegradation policy. The new standards may also

recognize waterbodies that have less sensitive uses and less stringent requirements. However protection cannot be reduced for a water body without a Use Attainability Analysis and subsequent rulemaking. The next listing cycle following rulemaking would then reflect application of the changed criteria.

Proposed Temperature Criteria for Freshwaters

In the process of revising surface water quality standards to protect and set minimum requirements for lakes, streams, rivers, and marine waters, Ecology reevaluated the existing criteria for temperature and dissolved oxygen. Ecology's current water temperature criterion has been criticized for being both too stringent and not stringent enough to protect fish habitat. With the new fisheries research and federal Endangered Species Act requirements Ecology has reviewed new technical literature to bring temperature standards up to date. A work-group was formed to make recommendations for water temperature criteria to fully protect freshwater aquatic species. The temperature requirements specific to each species life stages were accounted for when developing the temperature requirements.

It was determined that the existing state water temperature standards do not fully protect char and sensitive stream dwelling amphibians and allow temperatures that that cause slight to moderate impairment of Pacific salmon, steelhead, and cutthroat trout. Current standards were also criticized for their inability to recognize waters that have naturally occurring higher than average temperatures.

The existing water quality standards sets three temperature criteria that can be applied to rivers including 16ºC, 18ºC and 21ºC. These criteria are a one-day maximum limit not including a long-term assessment of temperature. The revised standards set six temperature criteria and include one-day maximum limits and seven-day average maximum limits. The revised criteria and testing methods are more biologically accurate and reflect specific seasonal and life stage species requirements.

EPA Alternative Approach to Setting Temperature Criteria

EPA is currently working with Northwest states to develop new regional guidance for temperature criteria. The intent is to ensure that temperature criteria adequately protect salmonids. The resulting guidance will supplement existing national water quality criteria, with specific reference to the needs of salmonids in Pacific Northwest rivers and streams.

Clean Water Act Total Maximum Daily Load (TMDL) Program

The Federal Clean Water Act of 1972 Section 303(d) requires that states develop plans to identify and correct polluted waters. Ecology has created water quality standards and has identified water bodies that do not meet these standards (the 303(d) list). If a water body fails to meet the water quality standards, Water Cleanup Plans (Total Maximum Daily Loads, or TMDLs) need to be developed to address the pollutants.

A TMDL is a scientific study to determine the levels of pollution present in a waterbody and to set targets (load allocations) to reduce pollution so that the waterbody will meet standards. Most pollution today is contributed from non-point sources. To develop TMDLs which address them requires watershed scale involvement of local landowners, governments, tribes and business and industry to develop economically feasible

approaches. In October of 1997 a Memorandum of Agreement was signed between EPA and Ecology regarding implementation of Section 303(d), and in January of 1998 a cleanup schedule was developed to improve the health of nearly 700 water segments in Washington.

Each year Ecology identifies waterbodies for which it will begin developing Water Cleanup Plans based on severity of pollution, potential harm to human and aquatic health and barriers posed to swimming, boating, fish habitat and other uses. Ecology has proposed a method for identifying priority waterbodies by choosing three or four water basins in the state each year and addressing all problems in the basin rather than working on individual creeks.

The Watershed Management Act includes several provisions that address TMDLs (90.82.090 RCW), focusing on TMDLs which are already adopted. Planning Units are directed to examine any TMDL established for non-marine water bodies in the management area and recommend an approach for implementing and monitoring the TMDL, unless a TMDL process is begun when the watershed planning process is initiated.

1-A.3 REGIONAL PLANNING FRAMEWORK

Salmon Recovery Plans

Four salmonid stocks that occur on the North Olympic Peninsula have been listed as Threatened under the Endangered Species Act (ESA). Three of these are found in the waters of WRIA 18: Puget Sound Chinook salmon, eastern Strait of Juan de Fuca/Hood Canal summer chum, and bull trout. Due to significant decreases in productivity in the Dungeness, Elwha, and Morse basins, the North Olympic Peninsula Lead Entity states in the 2001 *Strategy* document that these basins "must have a well designed 'Watershed Recovery Strategy'." A host of documents and processes address this need, including some which have been completed and others which are underway. Among these are:

- Shared Strategy for Recovery of Salmon in Puget Sound
- North Olympic Peninsula Lead Entity *Strategy*
- Agreements and plans for limitations on the prohibition of "take" under the ESA, such as Clallam County Salmon Habitat and Ecosystem Conservation Plan
- Recommended Restoration Projects for the Dungeness River (Dungeness River Restoration Work Group)
- Comprehensive Irrigation District Management Plan (WUA)

Puget Sound Chinook Recovery Planning

Recovery planning for Puget Sound Chinook recovery is proceeding through the Shared Strategy process. Recovery goals are being developed at present, using the Ecosystem Diagnosis and Treatment (EDT).

Summer Chum Conservation Plan

The Washington Department of Fish and Wildlife and Point No Point Treaty Tribes have developed a *Summer Chum Conservation Plan* (2000) with the goal of "protecting, restoring and enhancing the productivity, production and diversity of Hood Canal

summer chum salmon and their ecosystems to provide surplus production sufficient to allow future directed and incidental harvests." The Conservation Plan is consistent with the Wild Salmonid Policy (described above) and Section 13 of the *Puget Sound Salmon Management* Plan, which calls for development of comprehensive regional resource management plans for Puget Sound salmon stocks. The Dungeness is the westernmost drainage within the Hood Canal summer chum ESU.

The Conservation Plan provides a review of summer chum life history and stock assessment, a discussion of region-wide factors for decline (including climate, ecological interactions, habitat and harvest), and an evaluation and mitigation of factors for decline (addressing artificial production, ecological interactions, habitat, harvest management, and program integration and adaptive management). The Conservation Plan has been submitted to NMFS, which has adopted the harvest and hatchery portions of the Plan, but not the habitat portion. The Conservation Plan states that the habitat element is intended to guide the Salmon Recovery Funding Board and Lead Entity Groups in their decision-making and strategies. Cumulative habitat impacts and freshwater conditions are identified as major factors in the decline of summer chum in the Strait, with Canadian pre-terminal catch having moderate influence as well.

North Olympic Peninsula Lead Entity Salmon Recovery Strategy

The North Olympic Peninsula Lead Entity Group (NOPLE) has developed a regional strategy for salmon habitat recovery (NOPLE 2001). The strategy covers part of WRIA 17 (Sequim Bay) and all of WRIAs 18, 19 and 20. The NOPLE mission statement is to "achieve genetically diverse, self-sustaining salmon populations that support healthy ecosystems and ceremonial, subsistence, recreational, and commercial fisheries." The strategy aims to both protect strong stocks and restore weak stocks. The NOPLE Technical Review Group (TRG) adopted a tier approach, in which watersheds and nearshore were evaluated according to scientific and socio-political criteria and ranked according to priority. Criteria included stock status and trends (including the number of critical, extirpated and listed stocks), several measures of productivity, diversity, hatchery impacts, drainage area and land use factors. Four tiers were established, with Tier 1 geographical units having highest priority. WRIA 18 Tier 1 streams include the Dungeness and Elwha rivers, and Morse Creek. Tier 2 includes JimmyComeLately Creek and Tier 3 includes Sequim Bay in WRIA 17, the eastern and central Clallam County independent drainages (Bell, Gierin, Cassalery, Cooper, Meadowbrook, McDonald, Siebert and Bagley creeks) in East WRIA 18, and Valley and Ennis Creeks in West WRIA 18.

The 2001 *NOPLE Strategy and Process* document provides background on the strategy's development and approach, data and rationale for the 2001 tier assignments and proposed tier assignments for 2002, prioritized lists of activities and concepts for SRFB funding (including DRMT prioritization, but not including results from West WRIA 18), a "shared nearshore framework", and limiting factor action priorities (largely taken from the Limiting Factors Analysis prepared by the Washington Conservation Commission [Haring 1999]).

Shared Strategy for Recovery of Salmon in Puget Sound (ongoing)

The "Shared Strategy" is a regional effort towards recovery of Puget Sound salmon stocks. It intends to integrate individual watershed and local government efforts through common goals and develop a joint plan to achieve them. The Shared Strategy was

initiated following a meeting at Port Ludlow in the fall of 1999 of over 150 salmon leaders from throughout Puget Sound. At the Port Ludlow meeting a group representing tribes, federal, state, and local government agreed to join in a shared strategy to facilitate a coordinated regional approach to salmon recovery. The proposed strategy is to:

- Develop a collaborative Recovery Plan in two and one-half years that is guided by clear goals and meets our broad interests for salmon in Puget Sound.
- Establish an organizational structure to link recovery efforts, complete a recovery plan, and guide its implementation.
- Identify and support important ongoing near-term efforts to protect Puget Sound salmon.

The scope of the Shared Strategy is the Puget Sound basin, including its marine waters and individual watersheds, extending along the Strait of Juan de Fuca and North Olympic Peninsula to the Elwha River and the migratory corridor of the Strait west to Cape Flattery. It includes 19 Puget Sound watersheds and their marine waters. It is initially focusing on the Puget Sound species listed under the ESA (Puget Sound Chinook, Hood Canal summer chum, and bull trout). Thus, the shared strategy encompasses all of WRIA 18, and targets listed species which are found in the waters of WRIA 18.

Like the Governor's Office *Guidance on Watershed Assessment and Watershed Plans for Salmon Recovery*, the Shared Strategy seeks salmon recovery across a broad region in which many levels of government and nongovernmental organizations are launching salmon recovery efforts. Like the *Guidance,* the Shared Strategy seeks to attract and persuade voluntary collaboration among these many actors toward the goals of salmon recovery. It does not diminish (or expand or define) federal, tribal, or state authorities to establish recovery goals and carry out recovery plans, but hopes to achieve the affirmative commitment of these parties and local governments to specific recovery goals and actions. The federal Services (NMFS and USFWS) have agreed to use its product if it meets the requirements of the Endangered Species Act (ESA).

The Shared Strategy is more action-oriented in that it goes beyond providing guidelines for assessment and planning, to provide a forum that is intended to achieve regional agreement on recovery goals and implementation of recovery actions. The Shared Strategy asks its participants to commit to these actions, monitor their effects, and adapt management as necessary. It seeks a regional outcome in the recovery of its target species. It now has an institutional structure in the form of the recently created Puget Sound Salmon Forum, which will receive funding and provide staff to organize and carry forward the Shared Strategy.

The Shared Strategy comprises a five-step process to be implemented over three years. The process is geared to define a baseline, establish recovery goals, identify actions that will meet those goals, develop a recovery plan, and secure regional commitment to implement it:

- **Step 1:** Identify the content of a Recovery Plan, inventory existing efforts and determine gaps (completed summer 2001).
- **Step 2:** Identify interim recovery goals for each watershed
- **Step 3:** Identify the actions necessary to achieve recovery goals

- **Step 4:** Identify regional recovery options
- **Step 5:** Finalize interim watershed and regional recovery goals and the actions necessary to achieve them, and develop a monitoring approach.

The regional Recovery Plan will be written to meet the requirements of the Endangered Species Act section 4(f). It is intended that the NMFS Puget Sound Technical Review Team will produce sections addressing the scientific elements of recovery. The Recovery Plan is intended to be "comprehensive, multi-species, and ecosystem-based", having much in common with a comprehensive Habitat Conservation Plan under the Endangered Species Act. Puget Sound-wide goals and criteria will be broken down into discrete goals and criteria for each watershed. The Recovery Plan will discuss the relationship between watershed conditions and salmon populations; review limiting factors; propose recovery actions; and establish monitoring and evaluation. It will provide biological and status information for each species, recovery goals, and delisting criteria. The detailed elements of the proposed Plan appear to have much in common with the JNRC *Guidance.* However, the Recovery Plan goes beyond meeting the requirements of the ESA, to recovery of self-sustaining populations of naturally-spawning salmon at harvestable levels, restoring broad distribution of naturally-spawning salmon across Puget Sound, and achieving genetic diversity "consistent with natural evolutionary patterns."

As with the *Guidance*, the Shared Strategy focuses on salmon recovery, not the broader aspects of watershed planning (although it is recognized that salmon recovery is a major goal of watershed planning, and the primary goal of some participants). Integration with WRIA 18 watershed planning began during Step 2, when recovery goals were set for each watershed in Puget Sound. These "interim" goals are intended to be refined in the course of recovery planning. The Shared Strategy states that "the primary and complementary goal-setting efforts in the Puget Sound region – those being conducted by the state and tribes and those by the TRTs and the USFWS – will contribute to a single set of goals for each watershed." No reference is made to goal-setting efforts at local levels. However, local watershed groups are expected to provide input to the state, tribes, and the Services, as goals are refined. This goal-setting exercise is intended to include a technical estimate of historic and current characteristics of salmon populations and of the abundance, productivity, diversity and spatial distribution necessary to achieve self-sustaining, naturally spawning salmon. The effect of this approach is provide WRIA 18 an opportunity to participate in a larger goal-setting exercise; it also requires WRIA 18 to accommodate to a regional process of evaluating and setting goals, and to the primary roles of federal, state, and tribal players in ultimately setting those goals.

At the next stage, Step 3, local governments, watershed groups, and marine groups are to work with the state, tribes, and the Services to identify scientific or policy issues raised by the interim recovery goals and collaborate to identify the actions necessary to attain them. This suggests that WRIA 18 watershed planning should occur not only in reference to goals set by its Planning Units, but also to the larger Shared Strategy goals. The effect is to tailor the 2514 Watershed Plan to identify and include restoration actions that will serve Shared Strategy recovery goals. An objective is to specifically link numbers of fish to specific actions. Guidelines for recovery planning are scheduled to be published, but the complete watershed review of goals and actions will not be completed until near or after the end of the WRIA 18 planning process. Nowhere does

the Shared Strategy statement acknowledge the existence of the JNRC *Guidelines* nor address the relationship between the two.

The final steps in the Shared Strategy process (Steps 4 and 5) will occur after 2514 planning is completed in WRIA 18, and will be directed toward a more regional integration. In these steps regional scale recovery planning will be built from individual watershed options, and decisions will be made as to the level of assistance the Puget Sound region is willing to provide individual watersheds. This is also the stage at which the integration of habitat, hatchery and harvest management is envisioned. As the process regionalizes, the Shared Strategy expects to provide a forum for debate and discussion, issuing in a regional consensus.

In Step 5, a recovery strategy will be chosen, and the primary players (tribes, state, NMFS and USFWS) will settle on final recovery goals, both at individual watershed levels and across Puget Sound. This may have the effect of redirecting some work that is now or will be ongoing at the time in East and West WRIA 18. This stage will also see the implementation of monitoring, evaluation, and adaptive management programs. A firm timeline will be set for formal adoption of the Recovery Plan.

Near Term Actions

The Shared Strategy recognizes that actions to restore habitat and recovery fish can and should be ongoing while its five-step process is being pursued. Recommended actions include:

- Habitat protection and restoration
- Improvements in harvest management
- Hatchery reform
- Enforcement
- Federal rules implementing the ESA

Actions are most detailed for habitat, and include land use planning, provision of adequate flows for fish, clean water for fish, reexamination of dam operations, and habitat restoration projects. As with the JNRC *Guidance*, participants in the Shared Strategy are expected to stand a better chance of being funded.

Puget Sound Salmon Forum

The new Puget Sound Salmon Forum is a nonprofit organization created to help implement the Shared Strategy. It represents the diversity of groups working on salmon recovery and has these key functions:

- Link existing federal, state and tribal programs at the regional level (local programs are not mentioned here, but are the object of the second “key function”), to provide access to data and assure that common watershed assessment tools and monitoring protocols are used, and that a synchronized effort is made toward recovery planning.
- Foster participation of watershed groups and local jurisdictions to “provide support for recovery activities.” These are expected to provide the “building blocks” for regional recovery, but are not in the lead in developing recovery plans. The Shared Strategy states “few if any [local] groups have the full capacity or mission to be a focal point for all recovery in their area and provide a forum to facilitate discussions on habitat, harvest and hatcheries.”

- Provide coordination to the regional effort. The Forum will orchestrate the five steps, keep the effort focused and oversee the regional effort.

A Board of Directors governs the Forum and has a Plan Development Committee comprised of leaders from government, business, environmental and local watershed interests. This committee will direct the development of the recovery plan and promote immediate actions. Broad-based interests across Puget Sound are represented on a Forum Council, which advises the Development Committee and reviews the recovery plan. The Shared Strategy states that "watershed groups will be part of the Council and also provide critical information."

Restoration and Recovery Plans

Dungeness River Restoration Restoration Work Group *Recommended Restoration Projects for the Dungeness River* (1997)

In 1994, the Dungeness River Restoration Work Group (DRRWG) was asked to develop for DRMT a comprehensive habitat management plan taking into account the natural, historical processes occurring on the river system. The DRRWG, consisting of federal, tribal, state and county fisheries biologists and engineers, was created based on DQ Plan recommendations (C.7.1) and was given the task of making recommendations to DRMT on river restoration. The formation of a technical group to assess habitat and make recommendations responded to agreements with the Water Users Association that all factors affecting fish, not just irrigation diversions, be addressed. In addition to qualified biologists, the DRRWG also included a representative of local property owners. The Work Group met from 1994 to 1997 to develop a scientifically credible habitat restoration strategy for salmonids in the Dungeness watershed, focusing on pink and Chinook stocks because of their "Critical" status. River, riparian, and floodplain functions were all considered.

The resulting report was the *Recommended Restoration Projects for the Dungeness River*, sometimes called the "Blue Book." The Blue Book begins with an introduction that describes how altered river processes cause flooding and fisheries declines, and provides goals and objectives for river restoration (Box 5, next page).

The DRRWG recognized that restoring self-sustaining salmon stocks in the Dungeness requires an approach that restores important river functions in transporting water and sediment. Proper functioning of the Dungeness River floodplain has been altered by human activities such as diking, bridge and road constrictions, removal of log jams and large woody debris, forestry and agricultural practices, gravel mining, and water withdrawals. The Work Group further recognized that restoration would be complicated by the private ownership of the riverbed in the lower Dungeness River.

These same lower stretches of the river were considered to be the most degraded, providing unstable spawning habitat, low quality rearing habitat, and poor migratory routes for movements upriver. Habitat restoration required cooperation and permission from property owners, and public involvement and support was considered critical to success.

Box 5: Goals and Objectives from Recommended Restoration Projects for the Dungeness River (Blue Book)

Goal: Restore conditions in the Dungeness watershed that promote self-sustaining populations of river-dependent species within a diverse and resilient environment.

Objectives

Restore river, riparian and floodplain functions that are self-sustaining and resilient to natural disturbances.

Correct problems that inhibit the migration of adults and juveniles to traditional spawning grounds and rearing habitat.

Correct problems that inhibit the ability of juveniles to emigrate out of the river at optimum times.

Improve the stability of spawning habitat in areas that are detrimental to the egg-to-fry survival of stocks/species at risk.

Improve the quantity of productive spawning habitat.

Ensure adequate water quality and quantity during adult migration, spawning, incubation, juvenile rearing and fry emigration.

Improve the quality, quantity and stability of rearing habitat in areas that are limiting to stocks/species at risk.

Create a wide range of spawning conditions including refuge spawning, e.g., side channels.

Decrease sediment input occurring above acceptable natural levels that has the potential to create unstable bed and channel conditions in the lower river.

The lower 10.8 miles of the river were the primary focus of restoration recommendations due to their high habitat value and sensitivity to disturbance. Virtually all of the bank hardening, diking, water withdrawals, gravel mining, bed aggradation, floodplain development, riparian clearing and removal of large woody debris occurred in the lower river. While upriver habitat has been altered by bridge crossings and sediment input associated with timber harvest, road failures and chronic landslides, the overall effects have been less persistent than in the lower river. The DRRWG identified three key limiting factors that have contributed to the decline of critical stocks of pink and Chinook salmon:

- Absence of stable mainstem spawning habitat.
- Lack of high flow refugia and good quality pool habitat for juvenile rearing, adult holding and stream energy dissipation.
- Low stream flow conditions.

Based on this analysis, the DRRWG articulated “seven pillars of river restoration” and a set of criteria for evaluating and selecting restoration projects (Box 6). The criteria stress risk assessment with regard to project failures. The seven pillars of restoration were founded on the history of stream corridor research addressing fish habitat quality and identifying limiting factors contributing to the decline of pink and Chinook salmon (outlined above). The Blue Book provides an overview of this research, summarizes how human activities have affected habitat and flooding, and articulates a restoration strategy based on sub-reach analysis of sediment transport and deposition, pink and Chinook life history strategies, and habitat functions. Reach-by-reach recommendations for river restoration are provided for the lower 10.8 river miles.

Habitat Conservation Plans

No formal Habitat Conservation Plans (HCP) have been negotiated with the Services under the Endangered Species Act. The WUA is in process of completing a pilot Comprehensive Irrigation District Management Plan, which is intended to result in Implementation Agreements with the federal agencies (NMFS, USFWS, and EPA, as appropriate). The Implementation Agreement is not yet prepared, but may result in a Section 10 conservation plan contract, similar to an HCP.

Puget Sound Water Quality Management Plan

In 1985 the Washington State Legislature responded to growing threats to water quality throughout Puget Sound by establishing the Puget Sound Water Quality Authority (PSWQA) and authorizing preparation of a Puget Sound Water Quality Management Plan (first submitted in 1987) (90.70 RCW). Although the PSWQA was originally set to sunset in 1991, legislation in 1990 extended the Authority until 1996. The Puget Sound Water Quality Action Team, lodged in the Governor's Office, was created in 1996 to take over the work of the Authority plus develop and adopt a biennial Work Plan. The Action Team continues to amend the Puget Sound Water Quality Management Plan as needed. The Puget Sound Council, also created in 1996, provides recommendations to the Action Team on the contents of the Work Plan and Management Plan and reviews implementation.

The initial Puget Sound Water Quality Management Plan strategy was to protect and enhance water quality, fish and shellfish, and wetlands. The 1987 Plan set forth a series of actions to be taken by local governments and State and federal agencies. For nonpoint pollution, the Plan adopted a basin-wide strategy to develop local, site-specific watershed management plans rather than rely on uniform, state-wide regulations. Local governments are authorized to adopt ordinances, rules and regulations to implement local watershed management plans. The Plan also directs every city and county to develop and implement a comprehensive stormwater management program. Some elements that are to be included in these programs are:

- Adoption of local ordinances that require the use of Best Management Practices (BMPs) to control stormwater flows, provide treatment, and prevent erosion and sedimentation from all new development and redevelopment projects.
- Adoption and use of Ecology's Stormwater Technical Manual (or an approved equivalent manual) to meet their ordinance objectives.
- Participation in watershed or basin planning processes, such as under the Watershed Management Act

The Plan also calls on local governments to participate in watershed or basin planning processes as part of the habitat program. Local governments can implement watershed plans through habitat protection and enhancement activities.

Regional Road Maintenance ESA Program

In response to the 1999 ESA salmonid listings in the Puget Sound Region, a "TriCounty" ESA response effort was undertaken. One element of that effort has been to develop a Regional Road Maintenance ESA Program, intended to serve as a model program for take limits under the 4(d) Rule. The Regional Road Program was

negotiated with NMFS and USFWS formally submitted to the Services in December 2000 and remains in draft. Local agencies may join the program to obtain 4(d) coverage for their road maintenance activities. The program consists of 10 elements which must be implemented to obtain coverage, a set of Best Management Practices (BMPs) for road maintenance, and an application form which local agencies may use to join the program. Program elements include regional and local components, and cover regional coordination, BMPs, training, compliance monitoring, research, adaptive management, emergency response, biological data collection, and reporting.

The Regional Road Program applies only to maintenance activities, and not new construction or major expansion. “Maintenance” is defined to include activities conducted on currently serviceable structures, facilities and equipment. It may not involve expansion or change in use and may not result in significant negative hydrologic impacts. It may include replacement to current engineering standards and existing function. The Regional Road Program also provides an exemption from development or redevelopment regulations adopted pursuant to land use or stormwater operational programs. Examples of the kinds of structures and systems to which the program applies include roadway drainage, sediment containment, retention and detention of water and sediment, and work on water, sewer, gas, electrical, street lighting and traffic systems in road rights-of-way.

1-A.4 LOCAL PLANNING FRAMEWORK

Water System Comprehensive Plans

The Washington Department of Health requires that Water System Comprehensive Plans be prepared by Group A water systems. Water System Plans are required to be updated every six years. They describe water system ownership and management, related water plans (e.g., adjacent water systems), the service area, water system policies and conditions of service. Water System Plans inventory existing facilities and provide guidance for implementing capital improvements. These plans describe the planning criteria used for assessing the capacity and condition of the system, including population, future water use, water resources, water quality, water treatment, storage, and distribution. They include recommended system improvements and an in-depth financial evaluation. They disclose water rights, system reliability, and interties to other systems. They provide an operation and maintenance program, a source protection plan, and information on construction and design standards. A water conservation element is required for such systems. Although these plans are required of all 78 WRIA 18 Group A systems, only the larger Group A’s (City of Port Angeles, City of Sequim, and Clallam PUD) and a few smaller Group A plans were available to review for this Watershed Plan. Department of Health does not have current copies of plans for the other, smaller Group A systems.

City of Port Angeles

The City of Port Angeles issued its new draft Water System Comprehensive Plan in November 2001, updating its 1995 Plan for the period 2001-2007. The Plan covers nearly all of the area within City limits and identifies potential future service areas outside, generally corresponding to the boundaries of the Urban Growth Area and largely to the south and east. The 2001 draft Plan recognizes modest growth at a rate of about 0.4 percent per year since 1990, and projects growth at about the same rate, 0.5 percent per year, through 2020. Including the East UGA Annexation Area, the

population served is projected to grow from nearly 21,000 persons today to a combined City and East UGA Annexation Area total of 23,194 in 2020. Due to these slow growth projections, the Plan does not contain detailed evaluation of how land use might affect growth. The Plan defines an “equivalent residential unit” (ERU) as consumption of 204 gpd per single family residence, and calculates a total of 14,949 ERUs served across all types of end use (including multi-family, commercial and industrial). The City’s commercial sector consumes nearly as much water (5,246 ERUs) as its single family residential sector (6,344 ERUs). More detail on water use is presented in Chapter 2.

The City's water system is supplied primarily from the Elwha River Ranney collector, and serves three pressure zones. The low zone serves the downtown area and most of the commercial and industrial accounts, as well as residential customers. The medium zone serves the majority of the City and includes commercial as well as residential accounts. Growth south of the airport has added customers in this zone. The high zone is the most southerly of the three main service zones and serves mainly residential customers. The City also has two existing interties enabling it to wholesale to Clallam County PUD No. 1, and serves the PUD’s “Port Angeles Composite” system located east of the City. The Plan states that the City has been approached informally by the Dry Creek Water Association and Black Diamond Water District regarding potential future interties. On an emergency basis only, the City water system also may be supplied from Morse Creek.

The Plan states that the major challenges to City’s water system are related to compliance with treatment regulations, including compliance agreements with the Washington Department of Health to reduce copper corrosion and install filtration treatment on its Elwha River supply (classified as “groundwater under the influence of surface water”). The City is coordinating with the U.S. Department of Interior to assure that adequate treatment is provided as part of the Elwha dam removal project.

Clallam County Public Utility District No. 1

Clallam County PUD issued its new draft Water System Comprehensive Plan in March 2003, updating its 1994 Plan. The Plan covers six Group A public water systems within the incorporated and unicorporated areas of Clallam County; four of these lie within WRIA 18 and two are to the west:

- Port Angeles Composite Water System (eastern Port Angeles and unincorporated areas to the east and southeast; includes several formerly separate systems: Gales Addition, Monroe Road [LUD #2], Mount Angeles [LUD #3], Four Seasons Park [LUD #6], Fairview [LUD #1], and Bluffs [LUD#11])
- Clallam Bay/Sekiu Water System (communities of Clallam Bay and Sekiu along the Strait of Juan de Fuca in western Clallam County; includes service to Department of Corrections) *This system is not in WRIA 18.*
- Island View Water System (serving a small community in western Clallam County west of Sekiu) *This system is not in WRIA 18.*
- Carlsborg Water System (located between the cities of Sequim and Port Angeles in eastern Clallam County [LUDs #10, 12, 13, 14])
- Evergreen Water System (adjacent to the southwest boundary of the City of Sequim in eastern Clallam County, serving the Bell Hill area)
- Panoramic Heights Water System (serving a small development south of the City of Port Angeles [LUD #15])

Callam PUD is seeking approval from DOH to provide satellite system services under WAC 246-295, and has provided satellite system management as owner of several several physically separated systems. Approval would allow the PUD to provide services to any new systems that might be created in the future.

The PUD has signed agreements with both cities (Port Angeles and Sequim) as to water service area boundaries. An intertie has connected the Port Angeles Composite Water System with the City of Port Angeles water system since the early 1970s. The most recent wholesale water contract amendment provides for delivery of up to 500 gallons per minute from the City of Port Angeles to the Gales Addition reservoir. A second intertie point was established in 1999 for delivery to the Gales Addition area.

The 2003 draft Plan recognizes the potential for service area expansion if UGA boundaries are adjusted or if non-UGA locations request water service (when economically feasible). Historically, new service areas have been added through the local utility district (LUD) process, which can be initiated if 10 percent of affected property owners petition the board for of commissioners for water service. The potential for expansion is greatest in the Port Angeles Composite, Carlsbog, and Evergreen systems. The Plan notes significant controversy surrounding the Carlsborg UGA over the past few years. The Carlsborg system currently serves only a portion of the Carlsborg UGA, but the service area could be expanded to serve more of the UGA.

Port Angeles Composite System

Growth in water demand at a modest rate of about 1.0 percent per year through 2021 is projected. The system served a population of 5,990 in the year 2000, but no projection of population to be served in future years is given. A total of 2549 residential and 149 commercial connections are served. The Plan defines an “equivalent residential unit” (ERU) as consumption of 212 gpd per single family residence (however actual data reported for ERUs and ADD yields a rate of 246 gpd per ERU). A total of 3,079 ERUs were served across all types of end use (including multi-family, commercial and industrial) in 2000 and this is projected to grow to 3,795 in 2021. Water sources include intertie with Port Angeles (500 gpm), Morse Creek (580 gpm or 1.5 cfs), the Bluffs well (350 gpm), and two Township Line Roda wells (totaling 20 gpm). System capacity based on source is 4,422 ERUs, or 116% of projected 2021 ERUs. Based on water rights, system capacity would be 4,983 or 131% of projected 2021 ERUs.

Carlsborg System

Significant population growth has occurred in the Carlsborg area over the past 20 years, however the Plan does not state a simple growth rate. The system served a population of 216 in the year 2000, but no projection of population to be served in future years is given. A total of 92 residential and 48 commercial connections are served. The Plan defines an “equivalent residential unit” (ERU) as consumption of 189 gpd per single family residence in 2000, increasing to 282 gpd per ERU in 2021. A total of 294 ERUs were served across all types of end use (including multi-family, commercial and industrial) in 2000 and this is projected to grow to 609 in 2021. Water sources include the Carlsborg well (320 gpm), and two Sequim Valley Tracts wells (totaling 110 gpm). System capacity based on source is 404 ERUs, or 66% of projected 2021 ERUs. Based on water rights, system capacity would be 555 or 91% of projected 2021 ERUs. A water deficiency is projected by 2021; the deficiency exceeds 234,000 gpd based on source

adequacy or exceeds 61,000 gpd based on water rights adequacy. Existing sources would be inadequate to serve projected maximum day demand (MDD) by 2013 and existing water rights will be inadequate to serve projected MDD by 2018. An additional 200 gpm source is required to satisfy projected MDD through 2021. The Plan states that alternative supply options such as an intertie, water right changes, enhanced conservation, recharge, and water reuse and reclamation do not appear to be feasible for Carlsborg.

Evergreen System

Growth in water demand at a modest rate of about 1.0 percent per year through 2021 is projected. The system served a population of 872 in the year 2000, but no projection of population to be served in future years is given. A total of 371 residential and 0 commercial connections are served. The Plan defines an “equivalent residential unit” (ERU) as consumption of 287 gpd per single family residence. A total of 371 ERUs were served across all types of end use (including multi-family) in 2000 and this is projected to grow to 610 in 2021. Water sources include six wells totaling 617 gpm). System capacity based on source is 651 ERUs, or 106% of projected 2021 ERUs. Based on water rights, system capacity would be 672 or 109% of projected 2021 ERUs.

Panoramic Heights System

Growth is limited by the number of available lots, which could add at most 2 additional connections. The system served a population of 40 in the year 2000. A total of 17 residential and 0 commercial connections are served. The Plan defines an “equivalent residential unit” (ERU) as consumption of 139 gpd per single family residence. A total of 17 ERUs were served in 2000 and this is projected to grow to 19 in 2021. Water sources include two wells totaling 30 gpm. System capacity based on source is 88 ERUs; based on water rights, system capacity would be 52 ERUs.

City of Sequim

The City of Sequim issued its new draft Water System Comprehensive Plan in November 2000, updating its 1993 Plan for the period 1999-2005, with long-term planning to 2018. The Plan covers the majority of the area within City limits and identifies City policy to extend water service outside City limits but within the boundaries of the Urban Growth Area (where density and other development characteristics are consistent with the City’s land use policies and Comprehensive Plan, and only where directly connected to the City’s water system). Clallam County PUD No. 1, the Marina Water System and other small water systems also serve areas within City limits. The 2000 Plan notes that the City may eventually acquire all private water systems within the City’s service area in the future and plans to serve the entire UGA where service is not provided by another purveyor. A coordination agreement with the PUD provides for review and adjustment of service boundaries and decisions on service as land is annexed. A Service Extension Review Process (SERP) agreement between the County and the City provides for extension of sewer and water service in the unincorporated areas of the Sequim UGA in an orderly manner. The Plan states that “the City is also investigating the feasibility of a regional water supply system planning effort to better manage limited water resources.”

The 2000 Plan defines an “equivalent residential unit” (ERU) as consumption of 170 gpd per single family residence, and calculates a total of 3,255 ERUs served across all

types of end use (including multi-family, commercial and industrial). The City's commercial sector consumes more water (1,046 ERUs) than does its single or multi-family residential sectors (990 and 904 ERUs, respectively). The Plan notes that the City has a relatively large component of non-residential water use (42 percent) compared to other communities. The Plan identifies 1,362 connections, and projects growth at a greater rate than does the City of Port Angeles, at 2.7 percent per year through 2020. The population served is projected to grow from 4,510 persons in 2001 to a combined City and UGA total of 7,094 (5,550 ERUs) in 2018. More detail on water use is presented in Chapter 3.

The City's water system is capable of supplying water for the projected 20-year growth period. Water is supplied primarily from the Port Williams wellfield, backed up by the City's Silberhorn wellfield, and Dungeness River infiltration gallery and surface water right. Future use of the Dungeness River infiltration gallery is discussed in the 2000 Plan. The City's Port Williams wellfield water right permit provides that the infiltration gallery should gradually become a backup source used for emergency supply. The City water system serves three pressure zones.

Water Conservation and Reuse Plans

New legislation in 2001 provided tax incentives for conservation and reuse. Utilities may now deduct 75 percent of the money they invest in conservation measures. For water re-use, 75 percent of the income from selling reclaimed water will not be taxed. The law also requires that funds equal to one-third of the tax savings on a new account for leasing and purchasing water rights be used to improve instream flows for fish.

Sequim-Dungeness Valley Agricultural Water Users Association Comprehensive Water Conservation Plan (1999)

The Sequim-Dungeness Valley Agricultural Water Users Association (WUA) was established in 1988 and comprises nine irrigation districts and companies that divert or use water from the Dungeness River. The WUA completed the *Comprehensive Water Conservation Plan* in 1999 for the nine members to increase water conservation and efficiency, both Association-wide and for each entity. If fully implemented, the Plan could reduce Dungeness River diversions by as much as 28 cfs.

The Plan includes a forecast of future water demand, a review of irrigation operations, extensive field mapping of irrigation facilities, compilation of flow data that describes the diversion and distribution of water throughout each of the WUA members, preparation of a water system balance to determine efficiencies of water use in each district or company, and analysis of opportunities for improvement and expected costs and water savings. Detailed groundwater analysis was undertaken to determine the extent of current groundwater use and the effect of Plan implementation on groundwater resources and users. It was concluded that water levels would likely decrease in the shallow aquifer. Wetlands effects were also reviewed. Changes in the hydrologic regime of wetlands fed by canal seepage or groundwater discharge were identified, leading to projected reductions in wetland acreage, and shifts in biodiversity. Small streams would also be affected by reduced spills and reduced baseflows attributable to decreased groundwater recharge to the shallow aquifer.

Structural projects recommended in the *Comprehensive Water Conservation Plan* include piping 69 miles of open canal and laterals, constructing small reregulating

reservoirs to reduce tailwater discharges, installing additional measuring weirs and control boxes to control flow into laterals and turnouts, combining several canals, abandoning one reach of ditch and converting the users it serves to groundwater, and using treated wastewater in one location. The estimated cost of the recommended projects is $9 million. The current CIDMP is updating the maps of facilities and new pipeline projects.

Nonstructural recommendations are also included in the Plan, including combining the nine districts and companies into three irrigation districts, preparing drought response plans, increased maintenance on open canals and laterals, education, and water measurement.

Water conservation efforts by the Water Users Association to date have included leak detection and ditch lining, piping and construction activities to improve conveyance efficiency; elimination of illegal, leaking ponds; construction of measurement weirs, flumes and control structures for monitoring; consolidation of management for more efficient operation; crop selection and on-farm irrigation management for water use efficiency; and weed control to lower evapotranspiration water loss. SRFB funding applications submitted in 2000 state that “water conservation projects have increased late summer lower [Dungeness] River flows by at least 30 percent, with a 15 percent increase in lower river flows year round.”

An EIS has been drafted on the Water Conservation Plan; the FEIS is expected in mid-2003. A new ground water model accompanies the EIS.

City of Port Angeles

The City of Port Angeles completed its updated Water System Comprehensive Plan in 2001. The Plan devotes a chapter to conservation strategies, satisfying the requirements set forth in the Department of Health’s 1994 *Conservation Planning Requirements.* The objective of the City’s plan is “to reduce per capita water use to minimize water waste and preserve supply for future growth.” The City plans to achieve this goal by focusing efforts and funding towards measures that result in the greatest water savings per unit cost, implementing an equitable program of primarily volunteer and assistance oriented measures, and by exploring cost-effective measures that would result in a net conservation. Section 2.1.3 provides further detail on the Port Angeles Water Conservation Plan.

City of Sequim

The City of Sequim issued its new Water System Comprehensive Plan in November of 2000, updating its 1992 Plan for the period 1999-2005, with long-term planning to 2018. The Plan’s conservation chapter is based on requirements of WAC 246-290, guidelines in the 1994 Department of Health Publication Conservation Planning Requirements, and the conservation program outlined in its 1995 Water Comprehensive Plan. Implementation of the 1995 Plan’s Conservation program is a requirement of the City’s water right permit for the Port Williams Wellfiled. The 1995 plan indicated that the 20-year conservation goal is a 15 percent reduction in average yearly demand and a 20 percent reduction in peak day demand. Section 2.1.3 provides further detail on the Sequim Water Conservation Plan. The City’s entire wastewater effluent stream will be treated at its Class A water reuse plant (see Chapter 2).

Clallam County Plans, Policies and Ordinances

Salmon Habitat and Ecosystem Conservation Plan

Clallam County's response to ESA listings in County waters, *Toward Recovery* was prepared in 1999, predating the Shared Strategy, the current NOPLE strategy and this Watershed Plan. The document is framed as a 4(d) Rule proposal, and has been presented to NMFS. However, no formal response has been received from NMFS to date.

The County's proposal is targeted to limits 8, 10 and 12 published in the NMFS 4(d) Rule, and is organized as follows:

- Watershed conservation planning
- Municipal, rural, commercial and industrial development
- Road maintenance

In each of these areas, the 4(d) proposal restates the provisions of NMFS and USFWS 4(d) rules and provides tables listing ongoing conservation measures and future conservation measures. These lists are broadly inclusive of salmon recovery and habitat restoration actions taken in the county as of late 1999. The proposal does not list or prioritize project proposals at the level of detail achieved in the NOPLE strategy and prioritized project list, and has not been coordinated with that process. The document does emphasize watershed planning, both anticipating 2514 watershed planning which was then in the organization phase and also affirming the importance of the County's strong history of ongoing watershed planning and management activities. It includes a separate guidance document for habitat management plans for salmonids, which in turn relies on the County's Critical Areas Ordinance (see below).

Comprehensive Plan

The Clallam County Comprehensive Plan and its ordinances are intended to guide "orderly growth and development of the land and physical improvements in the unincorporated areas of Clallam County, including state lands." The Plan is based on Washington's Growth Management Act, which establishes a framework for planning within the unique features and circumstances of Clallam County. The GMA enlarged the scope of comprehensive planning by requiring that comprehensive plans include ways to encourage growth near existing urban areas and thus reduce sprawl . It is important to recognize that Comprehensive Plans are intended to change and evolve as new information and issues arise. The County will be reviewing and updating its Comprehensive Plan in late 2004, as required by law. The County also has developed a series of Regional Plans, including:

- Sequim Dungeness Regional Plan
- Port Angeles Regional Plan
- Straits Regional Plan
- Western Regional Plan

It should be noted, as well, that the GMA is also implemented through the permitting and subdivision approval process. Applications for various land use actions require a review of the project relative to the GMA, including building permits, subdivision applications and findings of water availabilility.

The following documents more specifically deal with watershed planning issues, policies, and regulations.

Clallam County Shoreline Management Program

The purpose of the Shoreline Master Plan is to provide guidelines and for shoreline development. The accepted definition of shoreline is found in the RCW. This Master Plan is a stand-alone ordinance, as provided by state law. The County's Program is based on a categorical system of environments, which include Natural, Conservancy, Rural, Suburban, and Urban. Each environment is defined and objectives and related land use policies are identified. In addition, various types of shoreline features are addressed, including marine beaches, spits and bars, dunes, islands, estuaries, reefs, bays, coves and headlands, marshes, bogs and swamps, lakes, rivers, stream and creeks, floodplains, sub tidal shorelines and shoreline cliffs.

Critical Areas Ordinance

Clallam County's Critical Areas Ordinance is mandated by Washington's Growth Management Act, which establishes general requirements and regulations. The Critical Areas Ordinance supplements the County's Code to specifically address additional controls and measures that are necessary to protect critical areas. The document contains overall policy goals and also classifies and designates critical areas in the County and establishes controls for their protection. The classifications established in the Ordinance include wetlands, areas with a critical recharging effect on aquifers used for potable water, aquatic and wildlife habitat conservation areas, frequently flooded areas, and geologically hazardous areas. The Ordinance applies to all alterations of the natural environment and all development activity within the County's jurisdictional area.

The Critical Areas Ordinance provides certain exemptions, such as for normal repair and routine maintenance of residences, landscaping ponds, pre-existing uses, and enforcement guidelines. The Ordinance also sets forth required buffers in four classes of wetland critical areas and five types of waters. For wetlands, these range from 50 to 200 feet for major new developments, and half that buffer for minor new development. For Aquatic Habitat Conservation Areas, buffer widths range from 0 to 150 feet.

This document is of particular relevance to watershed planning within Clallam County as it most thoroughly establishes the goals, policies and development performance standards for the Critical Areas of the county. While the overall goal of the ordinance is to avoid wetland disturbance, it also includes general requirements for mitigation. Mitigation requires greater than 1:1 replacement to assure no net loss of wetlands. The Ordinance has significant requirements for minimizing impacts and enhancing habitat.

In 2000, the County published *Equity in Stewardship: Strategies for Protecting Critical Areas in Clallam County*. This document describes strategies by which the County may acquire critical areas, including critical habitat for listed salmonids. The actions described in this report would implement the critical area protection and open space goals expressed in the County Comprehensive Plan, and could also serve as an element of the County's 4(d) Rule strategy. Among the elements considered in developing a framework for protection of critical areas were:

- High fish and wildlife values
- Floodplain protection and flood hazard reduction

- Water quality protection
- Open space and recreation values
- Geologic hazard protection

The *Equity in Stewardship* report describes tools and strategies for assessing the needs of both the County and landowners. It provides options that include easements and tax policies to promote conservation management while leaving property in private hands; options to promote conservation in the context of new development; and various funding programs for property acquisition or protection.

Stormwater Management

As Clallam County developed, ditches were first constructed to carry storm flow, and later paving, curbs, catch basins and pipes were added together with sewers carrying wastewater. The initial sewers also carried storm water that discharged through outfall pipes directly to salt water or freshwater streams. Although this was accepted practice at the time, increased runoff from development, paved roads, vehicles, and pesticides have combined with sewer flows to greatly increase the transport and concentration of pollutants entering streams and fresh waters. Lack of attention to stormwater quality over the years allowed sediments and pollutants to enter and build up in wetlands, ponds and lakes, rivers and streams, harbors, estuaries and other marine waters. These have affected water quality for human consumption and for fish and other aquatic life.

Clallam County currently implements the protection provisions of the Department of Ecology 2001 *Stormwater Management Manual for Western Washington* (see discussion above) for properties subject to Critical Areas Code jurisdiction only. Although the County has not yet developed a countywide comprehensive stormwater program, most new development permits require drainage plans (engineered or otherwise). Among the CAO protection standards that reference the Manual are those for regulated wetlands, aquatic habitat conservation areas, wildlife habitat conservation areas, landslide and erosion hazards, frequently-flooded areas, and critical aquifer recharge areas. Other CAO standards related to stormwater management affect road and bridge repair or new construction, forest practices, drainage and erosion control plans, geotechnical reports, and mitigation planning. Effective May 1, 2002, stormwater management plans required by the CAO must demonstrate compliance with the 2001 Manual. This requirement affects all land-disturbing activities within areas subject to CAO jurisdiction. The Clallam County Planning Commission is considering updates that may be recommended, including whether to extend stormwater management requirements beyond the CAO. Key issues include:

- Consistent application of County stormwater quantity and quality requirements.
- Water quality impacts outside of Critical Areas jurisdiction.
- Current standards are not equivalent to what the State feels is needed to protect natural resources.
- Consistency between requirements at local, state and federal levels.

Clean Water District/Clean Water Strategy/Shellfish Response Plan

Multiple failures to meet National Marine Shellfish Sanitation Requirements for water quality in commercial shellfish harvesting areas for fecal coliform led the Washington

Department of Health (Health) to reclassify a total of 400 acres of Dungeness Bay from *Approved* to *Prohibited* in 2000 and 2001. Under the 1994 *Puget Sound Water Quality Management Plan*, Health was required to initiate a closure response process following the downgrade of a shellfish area (Clallam County and Clean Water Workgroup 2002).

Following the closure, a response group (formerly called the Response Team and now identified as the Clean Water Workgroup) made up of federal state and local agencies, tribes, shellfish growers, watershed planning groups and private citizens was assembled. Clallam County agreed to act as the lead agency in developing a response plan, in conjunction with the Clean Water Workgroup. The *Clean Water Strategy for Addressing Bacterial Pollution in Dungeness Bay and Watershed* (Clallam County and Response Team 2000) was written by Clallam County with assistance from the Clean Water Workgroup (formerly the Response Team). This document is based on the Dungeness Bay Shellfish Closure Prevention Response Strategy (1997-1998), as well as the Dungeness Bay Watershed Management Plan (1994). The Clean Water Strategy was updated in 2002 and will continue to be reviewed and updated as needed.

The Clean Water Strategy presents an approach to address fecal coliform pollution in the Dungeness Watershed and Bay, attributed to growth in the unincorporated rural areas of the County. The purpose of this strategy is to coordinate and guide actions that will improve water quality over the long term. This strategy identifies sources of bacterial contamination in the fresh water that flows into the bay; it identifies actions to reduce bacteria, as well as tracking and monitoring plans to assess effectiveness. The County's policy is that a Shellfish Response Plan will be developed for any other water body that might require one.

In June 2001, the Sequim Bay – Dungeness Watershed Clean Water District (Clean Water District) was formed by the Board of Clallam County Commissioners (Ordinance CCC.27.16, pursuant to RCW Chapter 90.72 "Shellfish District"). The ordinance defines the legal boundaries of the Clean Water District to include the following areas: the Dungeness Watershed and those waters influenced by it through the irrigation system, and other independent tributaries to the Strait of Juan de Fuca, from Bagley Creek east to and including the Sequim Bay Watershed. This encompasses the Dungeness and Graywolf rivers, the creeks of Bagley, McDonald, Matriotti, Meadowbrook, Cooper, Cassalery, Gierin, Bell, Johnson, Dean, Jimmycomelately, Chicken Coop and their tributaries. Additionally, the *Clean Water Strategy* was adopted by Clallam County Board of Commissioners as a nonpoint pollution plan addressing shellfish bed closures in Dungeness Bay.

The 2002 *Clean Water Strategy* includes updated implementation activities that are included in Ecology's implementation clean-up plan for Matriotti Creek, the lower Dungeness River and its tributaries (see discussion above regarding State TMDL programs). Hempleman and Sargeant (2002) identify implementation activities from the *Clean Water Strategy* to include a combination of investigation, technical assistance, cost sharing, education and outreach, and enforcement. Implementation strategies are discussed in Section 2.6.5.

Six-Year Transportation Improvement Plan

This document serves as the "do list" for the County's Road Department. It lists the projects that have been identified as needing completion within the period 2000-2006. Projects are identified by type, cost, status, funding, length, and priority status. The list

includes both motorized and non-motorized roadways. The Roads and Highways section of the Clallam County's County-Wide Comprehensive Plan includes some goals and policies loosely related to promoting watershed health. Road construction and maintenance intersects watershed planning in several ways: stormwater runoff from roads contributes oil and grease to nearby streams; road culverts can block salmon migration; bridges can become floodplain constrictions; and sediment from road cuts can enter surface water, affecting water quality and salmonid spawning.

Clallam County has joined the Regional Road Maintenance ESA Program (see above), and has committed to implement the program with no exceptions.

City of Port Angeles Plans, Policies and Ordinances

Comprehensive Plan

The 1990 Growth Management Act requires all city and county governments to develop and adopt comprehensive plans to regulate and guide future growth and development. Urban Growth Areas (UGA) were also included as mandatory elements. The *Comprehensive Plan For the City of Port Angeles* (City of Port Angeles 2001a) provides decision-making guidance for City land use. It serves as the core of the land use controls with which all other city plans, ordinances and regulations must be in compliance. The primary documents include a capital facilities plan, zoning ordinance, subdivision regulations and service and facilities plans.

Shoreline Management Program

The City of Port Angeles' Shoreline Management Program is developed under Washington's Shoreline Management Act (RCW 90.58.030 [2]), and applies to shorelines which meet the following criteria:

- All marine waters of the state, together with the lands underlying them;
- Streams and rivers with a mean annual flow of twenty (20) cubic feet per second (cfs) or more;
- Lakes and reservoirs larger than twenty (20) acres in area; and
- Wetlands associated with all of the above, all lands within 200 feet of the ordinary high water mark (OHWM) of any water meeting the criteria of 1,2, or 3 above, and any specifically designated floodplain areas.

As such, the City's Shoreline Master Program is the primary regulatory document dealing with any type of modification to a shoreline area, from boating facilities to dredging to residential development. The Program also contains general policies and regulations for each type of shoreline development activity. *The City of Port Angeles Shoreline Master Program Update* (Makers Architecture and Urban Design 1995) was prepared under the guidance of a citizens advisory committee as well as other project participants.

Zoning Regulations

The City of Port Angeles' zoning regulations, as required by the State Growth Management Act of 1990, define the (mapped) zoning areas and regulations for location, construction, re-construction, alterations and use of buildings and land for the variety of uses within the City (City of Port Angeles 2001b). The City's zoning

designations are intended to reflect and protect the underlying natural features within the City. Zoning regulations are intended to be used in conjunction with other City regulatory and planning documents, including the Comprehensive Plan and the Port Angeles Regional Comprehensive Plan. The Regional Plan was prepared jointly with the County and adopted in 1995; it contains policies and goals directly related to watershed planning.

Environmentally Sensitive Areas Protection

The City of Port Angeles Environmentally Sensitive Areas Protection ordinance is the primary regulatory document addressing development in stream corridors and other environmentally sensitive areas (e.g., geologic hazard areas). Areas designated “environmentally sensitive” by the Comprehensive Plan or by other relevant studies are regulated as to permitted use. The ordinance defines information (baseline documentation) that must be submitted as well as “bonus density transfers”, if any, that may be allowed. It also address instances where mitigation measures to reduce impacts are required. Compensation is required from developers for all approved alterations to streams, beaches, and coastal drift areas (this may be in the form of fees). It also includes provisions for performance standards, individual monitoring standards, and contingency plans.

Stormwater Management Plan (1996)

In the 1950s, the City of Port Angeles storm drain catch basins were fitted with sediment traps and oil separation tees. When properly maintained, these reduced the amount of pollutants transported to streams and marine waters. In 1969, the City constructed a primary wastewater treatment facility, and in 1994 a secondary wastewater treatment facility was added.

The *City of Port Angeles Stormwater Management Plan* (Economic and Engineering Services, Inc. 1996) is implemented by the City's Public Works Department. The Plan's mission is to control flooding, enhance water quality, protect sensitive habitat areas and optimize the recharge of local aquifers. Its first objective is to solve local drainage problems.

One of the largest challenges identified in the Plan is to adequately treat surface runoff before it is discharged to Port Angeles Harbor or the Strait (due to older drainage infrastructure in densely developed areas). During major storms, sewer lines that also carry storm water (combined sewers) are filled beyond capacity and overflow into both fresh and salt water. The 1996 Plan outlined deficiencies and needed improvements at the time it was prepared, and also presents a citywide strategy for stormwater management. The Plan provides a drainage area characterization, water quality assessment and engineering analysis of the drainage system as a basis for program evaluation and regulatory compliance. The recommended stormwater management plan includes annual operations (including staffing and funding plans, and a water quality enhancement plan), and sets forth a capital improvement program. Source controls are stressed over treatment controls. To reduce “combined sewer overflow” events, the City has completed storm drain separation projects in the Francis Street and Lincoln Street areas, and is disconnecting individual storm water catch basins from sewer lines when these are encountered during construction projects. A current pilot project is exploring disconnecting roof downspouts and yard drains from sewer mains, and a project to construct storm drainage facilities at Crown Park has been funded.

A second major challenge identified by the Plan concerns state and federal compliance requirements. The Plan notes that the City does not have adequate legal authority to develop an effective stormwater program and recommends the adoption of a new stormwater ordinance that meets the equivalent requirements of Ecology's Stormwater Management Manual (see discussion above).

An additional important challenge identified in the 1996 Plan is that existing funding for stormwater management by the City is not adequate to address the Program's existing operational needs, comply with regulatory mandates, and fund needed capital improvements.

The City of Port Angeles may become subject to NPDES permitting for stormwater discharge under EPA's Phase II stormwater program (see discussion above). The City is currently evaluating its stormwater management program and considering creating a stormwater utility. The utility would help the City address ESA and NPDES requirements, expand erosion and sediment control, establish water quality guidelines or requirements for new and redevelopment, and respond to many of the challenges identified in the 1996 Plan. This includes solving longstanding local drainage, flooding, and landslide problems; providing an adequate and stable source of revenue to fund the program; qualifying for various grant program funds; encouraging community and economic development; ensuring public health and safety; and achieving compliance with state and federal requirements. It would also create a single responsible entity for stormwater, a function currently spread among several City departments.

Transportation and Facilities Plan

The *City of Port Angeles Transportation Services and Facilities Plan* (TSFP) (Entranco Consulting Engineers 1996) supplements and expands on goals and policies in the 1994 Comprehensive Plan. This plan addresses the City's transportation standards, existing deficiencies, traffic forecasting, future transportation system needs, and funding. The City's Engineering and Public Works staff use the Plan as a working document to direct ongoing roadway improvements (see discussion above under Clallam County regarding the intersection between road construction and maintenance and watershed planning). The City has not joined the Regional Road Maintenance ESA Program.

City of Sequim Plans, Policies and Ordinances

Comprehensive Plan

The *City of Sequim Comprehensive Plan* (City of Sequim 1996) directs growth in a manner that conforms to the community's visions and reinforces the existing character, scale and unique identity of the City. This planning document is intended to proactively address development by directing how and where that growth occurs. A significant element of the Plan is that it attempts to ensure that the costs of future growth are borne by future development.

The Comprehensive Plan includes community profiles containing baseline data for key areas. This data is intended to provide a "snapshot" of Sequim including existing land use patterns, population projections, inventories of historical and cultural resources,

housing supply and critical or environmentally sensitive areas located within the City and its Urban Growth Area (UGA).

Shoreline Management Plan

The *City of Sequim Shoreline Master Program* (City of Sequim 1996) regulates activities on the lands adjacent to the City's approximately 5570 feet of shoreline on Sequim Bay, annexed to the City in 1992. It is the City's first comprehensive shoreline program and contains goals, policies and regulations related to the protection of the valuable natural resources of the City's marine shorelines, while fostering reasonable and appropriate uses.

Land Use and Growth Management Plans

The City of Sequim Zoning Code (City of Sequim 1997) is the official land use control for the city. It contains all the required/mandated elements of a zoning code: definitions, establishments of zoning districts, official zoning maps, and overlay districts. Within each district section, the actual district requirements are found, including prohibitions, height, setback and other site-related requirements and variance regulations. In areas where jurisdiction overlaps, the provisions of the zoning code are subordinate to the policies and performance standards of the Sequim Shoreline Master Program (except where the Zoning Code is more stringent).

Stormwater Management

The City of Sequim has adopted the 1992 Washington Department of Ecology Stormwater Management Manual for Western Washington.

Environmentally Sensitive Areas Protection

Title 18.80 of the City Municipal Code identifies and protects environmentally sensitive areas.

Wetlands Protection Program

The City of Sequim regulates development in wetlands through its zoning code (Title 18). This portion of the zoning code specifically aims to protect the City's wetlands by defining wetlands and limiting uses in their vicinity ("buffer areas"). This code defines the required buffer width according to the type and quality of the affected wetland, as well as the method used to calculate any site-specific density credit. This code also includes provisions for compensating for wetland impacts, wetlands restoration and creation.

Flood Hazard Reduction Plan

The City of Sequim does not participate in FEMA programs. The City considers its wetlands protection program its primary flood hazard reduction document.

Road Plans

The City of Sequim Transportation Element of its Comprehensive Plan is the City's primary planning document for roads and highways. This Comprehensive Plan Element contains no reference to roadway improvements relative to watershed planning (i.e. run-

off provisions, use of permeable surfaces, etc.) and does not require environmental review for road-related projects. The City has not joined the Regional Road Maintenance ESA Program.