

APPENDIX F: REGULATORY AUTHORITY FOR BASIN PLAN MEASURES

This section reviews past and present federal, state, and local policies and regulations guiding flood control and flood plain management, water quality management, stormwater management, and related land use planning and management in Thurston County, Lacey, and Olympia.

F.1 FEDERAL REGULATORY AUTHORITY MANAGEMENT

F.1.1 NATIONAL FLOOD INSURANCE ACT (1968)

The National Flood Insurance Act of 1968 established the National Flood Insurance Program (NFIP), administered at the national level by the Federal Insurance Administration, a division of the Federal Emergency Management Agency (FEMA). The state Department of Ecology (DOE) coordinates the NFIP in Washington State. The purpose of this program is to encourage local land-use management of floodplains and other flood prone areas. The program emphasizes regulating development rather than physically controlling floods, and offers federally subsidized flood insurance for local property owners, to induce local management to participate in the program.

Floodplain management regulations include zoning, subdivision or building requirements, and special-purpose floodplain ordinances. To participate in the NFIP, a community must prohibit new construction within the floodway and require new buildings in the flood hazard area to be floodproofed to the 100-year flood level. These regulations apply to existing buildings only at the time they are substantially improved.

In 1972 and 1973 all cities, towns, and counties were reviewed for their susceptibility to flooding and a flood hazard boundary map was created. This map also serves as a preliminary assessment of the flood hazard boundaries of a community. In Thurston County, the following communities have flood hazard areas within their boundaries: unincorporated Thurston County, Olympia, Lacey, Tumwater, Tenino, and Bucoda. All these jurisdictions now participate in the National Flood Insurance Program.

FEMA issues the community's Flood Insurance Rate Map (FIRM) after conducting a flood insurance study. The FIRM is used to determine the degree of flood hazard and corresponding actuarial flood insurance premium rates for specific properties. Thurston County's FIRM was last updated December 1, 1982. These maps are available for public inspection at Thurston County's Storm and Surface Water Utility or can be ordered from FEMA for a small fee.

F.1.2 FLOOD DISASTER PROTECTION ACT (1973)

The Flood Disaster Protection Act of 1973 mandates the purchase of flood insurance by residents as a condition of federal funding for acquisition or construction of buildings in the floodplain. No federal financial assistance can be provided for the permanent repair or reconstruction of insurable buildings in the floodplain if a presidentially declared flooding

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disaster occurs in a non-participating community. Eligible applicants in these communities may still receive forms of disaster assistance that are not related to permanent repair and reconstruction of buildings.

F.1.3 CLEAN WATER ACT

In March 1988 the Administrator of the Environmental Protection Agency formally designated Puget Sound as an estuary of national significance under Section 320 of the Clean Water Act, as amended by P.L. 100-4 (the Water Quality Act of 1987). This made Puget Sound part of a nationwide program to develop management plans for the protection of the nation's estuaries. The Puget Sound Water Quality Authority, together with EPA Region 10 and the Washington Department of Ecology, co-manage the Puget Sound Estuary Program. Section 320 requires the development of a comprehensive conservation and management plan (CCMP) for each designated estuary. The designation of Puget Sound recognized the 1987 Puget Sound Water Quality Management Plan as a partial CCMP. The 1991 plan, when adopted, will be the CCMP for Puget Sound.

F.1.4 NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM

The 1987 amendment to the Federal Clean Water Act required EPA to write regulations for stormwater discharges associated with industrial activity and municipal storm sewer systems. The ruling became final November 13, 1990 with an effective date of December 17, 1990. National Pollutant Discharge Elimination System (NPDES) permits for discharges from municipal separate storm sewer systems prohibit non-stormwater discharges into the storm sewers; and require measures to reduce the discharge of pollutants to the maximum extent practicable. These measures include management practices; control techniques and system, design and engineering methods; and other provisions appropriate for the control of such pollutants.

The NPDES permits for discharges from municipal separate storm sewer systems are conditioned to specific sites. The permit application requirements provide municipal applicants an opportunity to propose appropriate management programs to control pollutants in discharges from their municipal systems. The proposed management program must include: structural and source control measures to reduce pollutants in runoff from commercial and residential areas; maintenance activities; planning procedures to develop, implement, and enforce controls for new development; and water quality impact assessments for flood management projects. The program also must contain a method to detect and remove illicit discharges, monitor and control pollutants from municipal landfills, and control pollutants in construction site runoff, including non-structural and structural management practices.

F.2 STATE REGULATORY AUTHORITY

F.2.1 FLOOD CONTROL ASSISTANCE ACCOUNT PROGRAM (86.26 RCW)

The Flood Control Assistance Account Program (FCAAP) provides local jurisdictions with assistance to maintain flood control facilities and prepare comprehensive flood control plans. The purpose of the plan (as defined in RCW 86.26.105) is to establish the need for flood control maintenance work; consider alternatives to instream flood control work; identify and consider potential impacts of instream flood control work on the state's resources; and outline the stream's floodway. Thurston County received \$151,700 of FCAAP funds to assist in the development of this plan, which must meet the requirements listed above.

The Washington State DOE administers FCAAP, which has provided approximately four million dollars statewide during each of the last two bienniums. Counties are eligible for up to \$500,000 per biennium in FCAAP grants. The counties are responsible for administering grants to all eligible municipal corporations within the county. No municipal corporation can apply directly to the state for a FCAAP grant.

Under FCAAP guidelines, construction of new facilities is not eligible for FCAAP funding since the program is intended to restore, maintain, and repair natural conditions, works, and structures. The amount of program funding for any non-emergency project cannot exceed 50% of the total cost including planning and design costs. A maximum of 80% for emergency projects and up to 75% of comprehensive flood control management plan preparation costs are allowed by FCAAP.

Funding of emergency projects requires the declaration of an emergency by the appropriate local authority. The maximum amount of money available for emergency projects statewide is \$500,000 per biennium. The maximum amount of emergency funds initially available for any one county is \$150,000 per biennium; however, if the total is not used by other counties and emergency work in a county exceeds \$150,000, that county can request additional emergency funds. Payment from the emergency fund is allocated on a first-come first-serve basis.

F.2.2 STATE FLOODPLAIN MANAGEMENT ACT (86.16 RCW)

Originally named the Flood Control Zone Act of 1935, this regulation gave the state the authority to form flood control zones along streams and rivers, to control stream systems for the protection of life and property, the preservation of public health, and the preservation of the natural resources of the state. The act specifies state regulatory authority over all waters in Washington's designated flood control zones, including the authority to regulate construction and planning within flood plains and floodways.

The statute has been extensively revised since passage of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. In 1987, the statute was renamed

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"Floodplain Management" and the state's permitting responsibility was abolished. Under the new version of the statute, the state Department of Ecology (DOE) is responsible for coordinating the floodplain management regulations required for participation in the National Flood Insurance Program (NFIP).

Generally, the DOE acts in an oversight capacity with respect to local governments. The DOE helps local governments, at their request, to prepare and enforce floodplain management ordinances. In turn, local governments must submit any new floodplain management ordinance or amendment to the DOE for approval within thirty days.

The Floodplain Management Act gives the DOE the authority to supervise all dams and obstructions in streams, and regulate flows to minimize potential downstream flood damages. The DOE accomplishes this through minimum state requirements for floodplain management that exceed the minimum federal requirements for participation in NFIP. Local governments may adopt floodplain management ordinances or requirements that exceed the DOE requirements. The act also gives the DOE the authority to examine and approve or reject future developments and modifications to existing developments located within a floodway, although this power is rarely exercised. Both state and local floodplain management regulations are based on Federal Emergency Management Agency (FEMA) maps that designate special flood hazard areas (100-year floodplains). A community's participation in this program is required for its residents and property owners to be eligible for federally subsidized flood insurance.

F.2.3 PUGET SOUND WATER QUALITY AUTHORITY (90.70 RCW)

The *Puget Sound Water Quality Act of 1985* created the Puget Sound Water Quality Authority (PSWQA) to "develop a comprehensive plan for water quality protection in Puget Sound to be implemented by existing state and local government agencies". PSWQA developed the Puget Sound Water Quality Plan of 1986, which identified urban stormwater as a significant source of pollution in Puget Sound, and recommended watershed action plans to address this and other concerns. The Henderson Inlet Watershed Action Plan was developed under this mandate, and adopted in 1989.

The 1991 Puget Sound Water Quality Management Plan recommends implementing watershed action plans to reduce urban runoff and nonpoint pollution, and improve shellfish protection. The 1991 plan aims to provide long-term protection for the region's aquatic resources. This plan contains fifteen programs for cleaning up and preventing pollution of Puget Sound, including programs to manage nonpoint source pollution and stormwater and combined sewer overflows.

A cooperative watershed management program established committees to prioritize watersheds in each of the 12 Puget Sound counties, including Thurston County. Thurston County's watershed ranking project assigned top priority to the Woodland and Woodard

creek watersheds, and the Henderson Inlet Watershed Action Plan recommended developing basin plans for those two basins.

F.2.4 STATE PLANNING ENABLING ACT (36.70 RCW)

The State Planning Enabling Act authorizes local governments such as Thurston County and the cities of Lacey and Olympia to conduct land use planning and regulation. The act requires local jurisdictions to prepare comprehensive plans that contain land use elements that designate the proposed general distribution, location, and extent of uses of land. Included in this element are standards of population density and building intensity and estimates of future population growth. This element contains provisions for protecting the quality and quantity of groundwater used for public water supplies.

The act was amended in 1984 and 1985 to require the land use elements under the Comprehensive Plan to include a review of drainage, flooding and stormwater runoff, and provide guidance for corrective actions to mitigate or clean discharges that pollute Puget Sound or waters entering Puget Sound.

F.2.5 FOREST PRACTICES ACT (76.09 RCW)

The Forest Practices Act, administered by Department of Natural Resources, governs the conditions under which land may be logged. A Class 4 Forest Practices Act permit is required for converting land from forestry to urban uses and is subject to county review. The county may require the applicant to submit a drainage plan and an erosion control plan under certain conditions.

F.2.6 GROWTH MANAGEMENT ACT (ESHB 2929)

The Growth Management Act of 1990⁷ requires local jurisdictions to plan for growth and allows the charging of impact fees for mitigation of development.

The Growth Management Act of 1990 (House Bill 2929) requires updating existing comprehensive land use plans to reflect a coordinated and consistent effort among jurisdictions. The goals adopted by the act include encouraging urban growth development where adequate public facilities and services exist; reducing urban sprawl; encouraging efficient transportation systems; providing affordable housing to all economic segments of the population; promoting economic opportunity; providing compensation for private property taken for public use; processing of permits in a timely and fair manner; maintaining and enhancing natural resource-based industries; encouraging the retention of open space and conservation of habitat; protecting the environment and quality of life; encouraging the involvement of citizens in planning activities; ensuring public facilities and services are adequate; and encouraging the preservation of historical relics. These goals are the impetus for amendments to the 1988 Thurston County Comprehensive Plan, the City of Olympia Comprehensive Plan, and the City of Lacey Comprehensive Plan.

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F.2.7 WASHINGTON STATE SHORELINE MANAGEMENT ACT

The purpose of the Washington State Shoreline Management Act (SMA) is to protect the public interest in public resources such as water, fish, wildlife, and associated habitat, by regulating public and private development in shoreline areas. The SMA defines state policy and authorizes the implementing regulations adopted as Washington Administrative Code (WAC 90.58). It defines several shoreline designations; provides guidance to DOE and local jurisdictions on procedures, rules, and plans for shoreline activities; establishes time lines for developing local shoreline management plans; and identifies activities exempt from shoreline permits.

The SMA includes significant regulatory requirements for all major shorelines including the ocean coastline, Puget Sound, the Strait of Juan de Fuca, lakes of 20 acres or larger, rivers and streams with mean annual flows of 20 cubic feet per second or greater, and their associated wetlands. The area of jurisdiction includes associated wetlands, floodplains, and all land within 200' of the ordinary high water mark of the shoreline. Thus, any public or private action proposed in floodways and many actions proposed in the flood fringe of most rivers and larger streams in the county are subject to SMA regulations.

The SMA requires cities and counties to adopt local shoreline master programs that include policies and regulations for land use in shoreline areas. Thurston County, Lacey, and Olympia adopted the Shoreline Master Program as mandated by the SMA.

F.2.8 STATE ENVIRONMENTAL POLICY ACT (43.21C RCW)

The Washington State Environmental Policy Act (SEPA) of 1971 provides a process to analyze the environmental impacts of public and private development. Extensive amendments enacted in 1983 apply to all agencies of state and local government. SEPA shapes state and local government decisions on public projects and publicly regulated private projects by requiring consideration of environmental impacts. The most recent implementing rules were adopted by DOE in 1984.

SEPA does not create a permitting process. It gives local jurisdictions the authority to review proposals and evaluate their potential environmental impacts, in conjunction with existing policies, regulations, permits, approvals and/or licenses. Information provided during the SEPA process helps agency decision-makers and the general public understand how a project would affect the environment.

F.2.9 WASHINGTON STATE HYDRAULIC CODE (75.20 RCW)

Washington State Hydraulic Code requires the Department of Fisheries (DOF) and the Department of Fisheries (DOF) to regulate activities within marine and fresh waters of the state. The Hydraulic Code Rules (Chapter 220-11 WAC) describe specific requirements of the regulation. The Hydraulic Code is jointly administered by the DOF and the DOW.

The primary function of the Hydraulic Code is to protect the states fisheries resources, including spawning and rearing habitat. Therefore, any shore protection works, including dikes or instream work such as gravel removal require approval from either the DOF or the DOW. The Hydraulic Code also requires approval for any work within the high water areas of state waters, which often includes wetlands and floodplains. The hydraulic approval requirements apply only to a small portion of the total area of the flood plain.

F.3 LOCAL REGULATORY AUTHORITY

F.3.1 FLOOD CONTROL ZONE DISTRICTS (86.15 RCW)

Local Flood Control Zone Districts (FCZDs) may be established through RCW 86.15 in 1961, for the purpose of "undertaking, operating or maintaining flood control projects or storm water control projects" for the counties of the state. A zone may be formed by a majority vote of the county legislative authority, or by a petition signed by 25 percent of the electors within a proposed zone, based on votes cast in the last county general election. The County Commissioners can establish a county-wide FCZD, which could then be divided into subzones. Establishment of any FCZD is dependent on the approval of all the cities, towns and districts within the proposed zone boundaries.

FCZDs are quasi-municipal corporations, legally separate from counties. The County Commissioners and Executive, working through the county engineers, administer FCZDs. The County Commissioners may also choose to appoint an unpaid advisory committee for each district.

The County Commissioners may authorize improvements within the zone or any participating zones through resolution. The resolution specifies that a comprehensive plan of development for flood control has been prepared, and that the proposed improvements contribute to the goals of that plan; that the plan has been submitted to the state DOE ninety days before initiating the improvement; that engineering plans and studies for the improvement are on file with the county engineer; that estimated costs for the improvement are available; and that the improvement will benefit either a single zone, two or more zones, or the county as a whole.

F.3.2 FLOOD EMERGENCY OPERATIONS PLAN

The Thurston County Emergency Operations Plan provides for management of county emergency operations. Natural and human caused disasters may occur with little or no warning. Natural disasters which pertain to this report are floods and storms. The emergency plan is based on the assumption that the county may be subjected to floods from a number of rivers and/or heavy rainfall, which may occur as often as once a year. Floods have historically affected both people and property, and caused extensive damage to certain areas of the county. Severe storms include wind, rain, snow, or hail, and could be accompanied by cold waves, ice, or flooding. The greatest impact/damage is usually to property.

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The basic emergency plan determines the authorities and references, defines operational situations, identifies the county government emergency organization, assigns emergency responsibilities, and provides a concept of operations, including operations from a county emergency operations center. The annexes amplify the basic plan and outline the direction and control required by county departments to accomplish their emergency responsibilities.

The emergency plan represents the combined planning efforts of Thurston County Emergency Management, the State Division of Emergency Management, and Region 10 of the Federal Emergency Management Agency. It meets the requirements of RCW 38.52, and is compatible with the Washington State Comprehensive Emergency Management Plan and the laws of the State of Washington.

F.3.3 THURSTON COUNTY COMPREHENSIVE PLAN

The Board of Thurston County Commissioners adopted the current Comprehensive Plan by Resolution No. 8932, June 6, 1988, to provide a legally recognized framework for making decisions about land use in Thurston County.

The plan establishes a policy for storm water management, with the objective that "jurisdictions sharing watersheds should coordinate, and development practices should be promoted which do not lead to surface or ground water degradation or chronic flooding from storm water". The plan further outlines actions needed to accomplish this objective, including support for implementing storm water management programs, watershed planning, correction of polluted runoff, stream and wetland assessment, public education, and comprehensive drainage design standards.

The plans also establish general boundaries and development guidelines for growth and rural areas. Guidelines for more detailed land use is provided by geographic area Sub-Area plans. Various ordinances reflect the Comprehensive Plan's components with regards to zoning, building and subdivision standards, and drainage design and erosion control.

The county and cities started a growth management program because of rapid growth in the unincorporated urban area around Lacey, Olympia, and Tumwater. A memorandum of understanding was signed in 1983 which established an Urban Growth Management Area to focus development in a specified "urban area" and provide efficient public services. It emphasized compatible urban development standards and coordinated utility and land use planning. The 1983 memorandum was updated and expanded in 1988, to place more emphasis on phasing of growth. Policies for joint city-county plans through the Thurston County Regional Planning Department were initiated to achieve greater reliability of plans as areas annex to the cities.

F.3.4 OLYMPIA COMPREHENSIVE PLAN

Olympia updated its comprehensive plan on July 12, 1994. The comprehensive plan includes several goals and policies for the unincorporated Urban Growth Management Area that were jointly adopted by the city and Thurston County. The Comprehensive Plan defines the city's vision for the future, and specifies policies for land use, environment, economic development, urban growth management and annexation, utilities and public services, transportation, parks and open space, energy, historic preservation, urban forestry, housing, and public involvement. The plan also includes the city's Capital Facilities Plan as required by the state Growth Management Act.

The comprehensive plan contains several policies that support and authorize the basin plan recommendations. The most relevant policies are summarized in Chapter 1. These policies are used by the city and county to review development proposals and local ordinances. The policies will require changes to several local ordinances, most of which have not been implemented yet.

F.3.5 LACEY COMPREHENSIVE PLAN

Lacey adopted the *Environmental Protection and Resource Conservation Plan* in 1994, as part of its Comprehensive Plan requirements under the state growth management requirements. The plan identifies critical environmentally sensitive areas needing protection, including wetlands and frequently flooded areas. The plan sets the goal "to achieve no net loss of wetlands and to increase the quantity and quality of Lacey's wetland resources."

The section on frequently flooded areas concludes that "flood plains and other areas subject to flooding perform important hydraulic functions and may present a risk to persons and property. It is important to have frequently flooded areas designated and standards for development within such areas to ensure protection of the public's health, safety and welfare."

Lacey adopted the *City of Lacey and Thurston County Land Use Plan for the Lacey Urban Growth Area* in 1994, to meet state growth management requirements for comprehensive planning. The sections of this document that apply to the unincorporated growth area were also adopted by Thurston County. The land use element sets general policies for environmental quality and water resources, utilities and capital facilities. The plan's goals include:

- All residential developments should complement natural resources and environmentally sensitive areas.
- Reduce impacts from flooding, encourage efficient stormwater management, and ensure [that] the quality and quantity of groundwater resources are protected and preserved for all uses.

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- Coordinate with the comprehensive plan's utilities element and capital facilities element to ensure land use policies provide for developments that take full advantage of but do not exceed capabilities of utilities or infrastructure to provide necessary services.

Lacey will continue to develop and adopt other elements of its comprehensive plan in 1995.

F.3.6 THURSTON COUNTY STORM AND SURFACE WATER UTILITY

The Board of Thurston County Commissioners established the Storm and Surface Water Utility by Resolution No. 8069, April 1985, to plan, design, operate, and manage storm and surface water controls.

F.3.7 CITY OF OLYMPIA STORM AND SURFACE WATER UTILITY

The City of Olympia established a Storm and Surface Water Utility in 1990 to operate and maintain storm or surface water drains, channels and facilities or outfalls for such waters and rights and interests.

F.3.8 CITY OF LACEY STORMWATER MANAGEMENT PROGRAM

The City of Lacey has maintained a stormwater management program since January 1987. The Lacey program was initiated because of increasing concerns over water quality and quantity impacts and the recognition of a moral obligation to reduce those impacts.

F.3.9 INTERLOCAL AGREEMENT

An interlocal agreement adopted in 1987 assigns joint responsibility for surface water management in Woodland and Woodard Creeks drainage basins to Thurston County and the cities of Olympia and Lacey. The interlocal agreement establishes joint benefits and obligations for developing a hydrologic model of the basins, developing this basin plan, developing a nonpoint source pollution control program, and other related stormwater planning activities.

Local share of the costs were based on the acreage of each jurisdiction contained in the basins with the county contributing 71%, the City of Lacey 24%, and the City of Olympia 5%. An agreement between the County and the United States Geological Society (USGS) in March of 1988 initiated hydrologic modeling of the basins with USGS funding 50% of the cost.

F.3.10 DRAINAGE DESIGN AND EROSION CONTROL MANUAL

Thurston County (by Resolution #9859) and the cities of Lacey, Olympia and Tumwater adopted nearly identical drainage ordinances in 1991. The ordinances establish standards for construction of drainage facilities including minimum standards for detention/retention and stormwater treatment.

F.3.11 THURSTON COUNTY STORM AND SURFACE WATER ADVISORY BOARD

On May 29, 1990, by Resolution #9514, Thurston County established a Storm and Surface Water Advisory Board (SSWAB) to provide public involvement and accountability for the stormwater utility and to provide recommendations to the Board of County Commissioners regarding the utility.

Thurston County and the cities of Olympia and Lacey began to prepare the Woodland/Woodard Creeks Comprehensive Drainage Basin Plan in July 1989. This plan, when approved by the Washington Department of Ecology and adopted by the cities and county, will fulfill the requirements of the FCAAP and DOE Centennial Clean Water Fund grants. The plan will also achieve the intent of the stormwater utilities through comprehensive planning and development of a facility construction plan to reduce or control erosion, pollution and danger to health, life and property in Thurston County.

F.3.12 ENVIRONMENTALLY SENSITIVE AREAS (CRITICAL AREAS)

Chapter 20.36 of the Thurston County Zoning Ordinance No. 6708 contains the current Environmentally Sensitive Areas (ESA) regulations. In Lacey Title 14.24 covers the ESA, and in Olympia Chapter 18.76 describes the ESA. The purpose of an ESA is to preserve the beneficial functions of these areas, and minimize the potential dangers and public costs caused by inappropriate use of such areas. The ESA accomplishes this purpose through regulation of uses and activities in, near, or directly affecting such areas.

Thurston County, Olympia, and Lacey are in the process of amending existing ESA ordinances to satisfy the requirements of both the *1991 Puget Sound Water Quality Management Plan* and the Growth Management Act guidelines for Critical Areas. Included in the new amendments are sections dealing with: Review Standards, Special Reports, Aquifer Protection Areas, Flood Hazard Areas, Landslide Hazard Area, Significant Wildlife Habitat Areas, Special Plants and Plant Communities, Special Management Areas, Streams, and Wetlands. For the purpose of this plan only the Flood Hazard Areas, Streams, and Wetlands will be discussed.

Flood Hazard Areas. Those lands which can be expected to flood at a frequency of once every 100 years or have a one percent or greater chance of flooding in any one year are designated flood hazard areas. The proposed Critical Areas Ordinance permits most of the uses and activities within a floodway that are currently allowed. Uses allowed within a flood hazard area shall be limited to low intensity land uses which will not create additional hazards to life or property and which maintain the natural functions of floodplains.

Streams. Streams are defined as those areas where surface waters flow sufficiently to produce a defined channel or bed. A defined channel or bed is an area which demonstrates clear evidence of the passage of water and includes but is not limited to bedrock channels, gravel beds, sand and silt beds, and defined-channel swales. The channel or bed need not

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contain water year-round. This does not include irrigation ditches, canals, storm or surface water runoff devices or other artificial watercourses unless they are used by salmon.

The proposed Critical Areas Ordinance limits uses and activities within a stream or its buffer to low intensity land uses which will not degrade the natural functions of the stream. These natural functions include controlling siltation, minimizing turbidity, protecting nutrient reserves, maintaining stream flows, preserving natural flood storage capacity, protecting fish bearing water, providing groundwater recharge, and protecting wildlife habitat associated with this area.

Streams are defined as Type 1 through Type 5 following the criteria established by the Washington Department of Natural Resources, WAC 222-16-020. Associated buffers for these stream types range from 25 feet to 100 feet to retain the natural functions.

Wetlands. Thurston County, Lacey, Olympia and Tumwater define wetlands according to the definition in the National Clean Water Act. Thurston County, Lacey, and Tumwater currently regulate only those wetlands larger than 1 acre, and Olympia regulates wetlands larger than 1/4 acre. The proposed Critical Areas Ordinance would regulate wetlands down to 1/4 acre in Thurston County, Lacey and Tumwater. Regulated wetlands generally include swamps, marshes, bogs, and similar areas.

To assist in the preparation of the Environmentally Sensitive Areas Ordinance, the Thurston Regional Planning Commission developed a pilot project which formulated and documented a process for aerial photograph interpretation, and produced a draft wetland and riparian corridor map which is available in the Regional Planning Department.

Currently, natural wetlands may not be used to control or treat stormwater runoff. Early research results by the Puget Sound Wetlands and Stormwater Management Research Program (Reinelt, et al, 1990) indicates that uncontrolled stormwater discharges have a significant impact on natural wetlands. The trend in protecting wetlands is to require peak rate control and stormwater treatment prior to discharge to a wetland. These requirements probably will not be imposed on all wetlands, but only those wetlands designated for protection by local governments.

F.3.13 VEGETATION PROTECTION AND LAND CLEARING AND GRADING ORDINANCES

Thurston County initiated a vegetation protection ordinance whose purpose is to establish standards and administrative procedures to control clearing and other land-disturbing activities which damage or destroy vegetation. The City of Lacey regulates vegetation removal through the Tree and Vegetation Protection and Preservation Ordinance, LMC Chapter 14.32. Lacey regulates grading through the Land Clearing Ordinance, LMC Chapter 14.03. Chapter 18.76 establishes these guidelines for the City of Olympia.

All land clearing, including the removal or destruction of vegetation, shall require a vegetation removal permit unless the activity is exempted. Categories allowed in the exemption are agriculture, forest practices, mineral extraction, small scale clearing, removal of hazardous trees and noxious weeds, emergencies, utility easements, cemetery maintenance and grave excavation, and soil tests. Standards and procedures for the application of the proposed ordinance include project design and execution; erosion control measures; protection of adjacent property; approval of a vegetation removal permit in conjunction with a building site application or permit; minimizing clearing for roads and utilities; specific requirements for preservation of vegetation; require a plan for clearing on unstable slopes; pre-development protection methods; criteria for replacement of vegetation; and protection of Environmentally Sensitive Areas, buffers, and high risk areas. Specific questions about the Vegetation Protection Ordinance should be referred to the Regional Planning Department or the City of Lacey.

F.4 PERMITS AND REGULATIONS FOR DEVELOPMENT AND LAND USE

The purpose of this section is to provide an overview of existing federal, state, and local regulations that affect resource areas subject to stormwater runoff and flood protection which may limit activities in the flood plain. Recommendations for changes to these existing regulations and ordinances for the three jurisdictions relative to resource protection within the basin are in Chapter 6.

The counties and cities of Washington State are required by state and federal agencies to adopt specific regulations relating to development. These regulations include development of a comprehensive plan, zoning, subdivision code, flood plain management ordinance, building code, and Shoreline Master Program. The discussion below focuses on categories of regulations pertinent to surface water management including flood control and floodplain management, federal permits and requirements, resource and shoreline management, and land use management.

F.4.1 FEDERAL PERMITS AND REQUIREMENTS

Clean Water Act - Section 404(b)(1) Permits The US Army Corps of Engineers (COE) has been regulating navigable waters of the United States for over 100 years. Section 404 of the Clean Water Act of 1972 supplemented the Corps' traditional permitting program regarding activities in navigable waters to require Section 404 permits for the discharge of dredged or fill material into all waters of the United States. The 1970s brought about a new era of COE regulatory jurisdiction that broadened responsibility to water quality in addition to navigation.

Waters of the United States as defined by the Rivers and Harbors Act of 1899 include adjacent wetlands and tributaries to navigable waters of the United States and other waters, the degradation or destruction of which could affect interstate or foreign commerce. As defined by the COE, wetlands are those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal

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circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include marshes, swamps, bogs, and similar areas. Fill material is defined as material used for replacing aquatic areas with dry land or changing the bottom elevation of a water body. Dredged material is material removed from wetlands, stream, or lakes. The COE uses the rules established in section 404 (6)(1) "Guidelines of the US Environmental Protection Agency" to determine if a permit should be issued.

There are two types of permits that may be required from the COE by Section 404 of the Clean Water Act. These are Nationwide Permit 26 and the Individual Permit.

Nationwide Permit. Nationwide Permit 26 applies to fills involving one to ten acres of isolated wetlands or adjacent wetlands located above the headwaters (adjacent to a water body that has an average annual flow of less than 5 cubic feet per second). Applying for the Nationwide Permit involves notifying the COE for a review of the potential environmental impacts. The review also involves notification of the US Environmental Protection Agency (EPA), the US Fish and Wildlife Service, the National Marine Fisheries Service, and the Washington State Department of Ecology (Ecology). The COE uses the feedback provided by the other regulatory agencies to base their decision of acceptance or denial of the Nationwide Permit. If the Nationwide Permit is denied, the applicant can appeal the decision by application for an Individual Permit.

Individual Permit. The COE requires an Individual Permit for the discharge of dredged or fill materials within the previously defined jurisdiction of the COE that does not fit the criteria for a nationwide permit.

In their evaluation of an Individual Permit, the COE must decide whether the benefits of the project outweigh the predicted environmental impacts. The COE evaluation is known as a public interest review and the process includes the following steps:

1. Preapplication meetings with the COE and other resource agencies (optional).
2. Submittal of a permit application to the COE.
3. Distribution of a COE public notice for a 30-day period for review by federal, state, and local permitting agencies, tribes, interest groups and the general public.
4. Consideration of all comments received from notified agencies, tribes, interest groups, and general public.
5. The applicant may be required to submit additional information by the COE for further consideration.
6. The COE decides whether to prepare an Environmental Assessment and Finding of No Significant Impact, or to prepare a Federal Environmental Impact Statement.
7. A public hearing is held, if needed.
8. The COE prepares the appropriate decision documentation.

9. The District Engineer makes the decision to approve or reject the permit application.
10. The permit is issued or denied and the applicant is advised of the decision.

The 10-step procedure outline above for the public interest review is a synopsis of the steps described in an Information Paper published by the COE in January 1989, titled "Permit Requirements for Wetland Fill Projects."

Rivers and Harbors Act - Section 10 Section 10 of the Rivers and Harbors Act prohibits the unauthorized obstruction or alteration of navigable waters of the United States without a permit from the Army Corps of Engineers. The provisions apply to all work below the mean high water mark of navigable tidal waters and the ordinary high water mark of navigable fresh waters, and to proposed actions "in, over or affecting" navigable waters.

Clean Water Act - Section 401 A Water Quality Certification is a statement, similar to a permit, issued by DOE that an activity requiring a federal permit (such as a Section 404 Permit) will comply with water quality standards and discharge limitations for waters of the State of Washington (WAC 173-201). The Certification is required by federal law as a prerequisite to obtaining a federal permit. Usually, the federal agency notifies DOE that application has been made for a federal permit.

Structural flood control measures such as stream bank protection and gravel removal have the potential to create temporary instream turbidity (sedimentation) in excess of state water quality standards during the construction period. Such projects will require a Temporary Modification of Water Quality Criteria (also referred to as a "short-term exception to water quality standards"). For stream bank protection and gravel removal projects, a modification will be required before DOE can issue a water quality certification. Each such certification is reviewed and issued on an individual basis as an administrative order, and includes specific limitations on how and when construction activities may be carried out.

F.4.2 STATE PERMITS AND REQUIREMENTS

State Environmental Policy Act All proposed public or private projects must submit a SEPA Environmental Checklist. These are administered by the Thurston Regional Planning Council in Thurston County. Some projects are categorically exempt from the SEPA process. Most categorical exemptions use size criteria to differentiate between an exempt or nonexempt action. Exempted projects include most single-family homes, commercial buildings under 4,000 square feet, parking lots for 20 cars or less, and any landfill or excavation of 100 cubic yards or less.

The Environmental Checklist is not a permit. It is a tool that the local jurisdictions use to review the environmental impacts of a proposal, and insure that the proposal conforms to existing policies and regulations. The Checklist requires a full disclosure of a proposal's likely environmental impacts, and a description of measures to prevent or mitigate those

Appendix F: Regulatory Authority

impacts. Proposals likely to have a significant adverse impact on the environment are required to prepare an Environmental Impact Statement (EIS).

Agencies or local governments may deny permits or other approvals under SEPA if the proposal is likely to cause significant adverse environmental impacts that cannot be prevented or mitigated. SEPA rules emphasize developing mitigation measures to avoid or reduce environmental impacts. These may be required under SEPA as conditions for receiving related permits.

Shoreline Permits under the Shoreline Management Act Developments on the shores of the ocean, Puget Sound, the Strait of Juan de Fuca, lakes of 20 acres or larger, rivers and streams with mean annual flows of 20 cubic feet per second or greater, and their associated wetlands are all subject to Shoreline Permit requirements. The area of jurisdiction includes associated wetlands, floodplains, and all land within 200' of the ordinary high water mark of the shoreline. In general, any action within such a shoreline area requires a Shorelines Permit.

Shoreline permits are issued by the planning departments of Thurston County, Lacey, and Olympia. The permit requirements are contained in zoning overlays, and they apply in addition to any other local regulations. Any project that has a total cost or fair market value over \$2,500 or that materially interferes with the normal public use of the water or shorelines requires a substantial development permit, with certain exceptions. However, all development and land use must conform to the master program.

Hydraulic Project Approval Permits Any shore protection works, including dikes or instream work such as gravel removal require a Hydraulic Project Approval Permit (HPA) permit from either the Department of Fisheries (DOF) or the Department of Wildlife (DOW). Generally, the DOF takes the lead for the HPA in waters containing salmon. In fresh waters without salmon, the DOW takes the lead. Although not directly aimed at the protection of wetlands or floodplains, the HPA is required for any work within the high water areas of state waters, which often includes wetlands and floodplains.

Hydraulic Code Rules (WAC 220-110) contain technical provisions that may apply to different types of projects. Depending upon the individual proposal and site-specific conditions, these technical provisions may be included in the HPA as permit conditions. Special permit provisions may also be included where site-specific conditions warrant them.

The DOF recently began implementing its own special stormwater requirements whenever a Hydraulics Permit Application is submitted. Although primarily focused towards new developments, the stormwater requirements can be applied to any project where a permit is required.

F.5 LOCAL PERMITS AND REQUIREMENTS

F.5.1 VEGETATION PROTECTION ORDINANCES

Thurston County initiated a vegetation protection ordinance whose purpose is to establish standards and administrative procedures to control clearing and other land-disturbing activities which damage or destroy vegetation. Chapter 14.32 of the City of Lacey was adopted for the purpose of issuing land clearing permits. Chapter 18.76 establishes these guidelines for the City of Olympia.

All land clearing, including the removal or destruction of vegetation, shall require a vegetation removal permit unless the activity is exempted. Categories allowed in the exemption are agriculture, forest practices, mineral extraction, small scale clearing, removal of hazardous trees and noxious weeds, emergencies, utility easements, cemetery maintenance and grave excavation, and soil tests. Standards and procedures for the application of the proposed ordinance include project design and execution; erosion control measures; protection of adjacent property; approval of a vegetation removal permit in conjunction with a building site application or permit; minimizing clearing for roads and utilities; specific requirements for preservation of vegetation; require a plan for clearing on unstable slopes; pre-development protection methods; criteria for replacement of vegetation; and protection of Environmentally Sensitive Areas, buffers, and high risk areas. Specific questions about the Vegetation Protection Ordinance should be referred to the Regional Planning Department or the City of Lacey.

F.5.2 ZONING ORDINANCES

The Thurston County Zoning Ordinance and Comprehensive Plan are used to regulate development in potential hazardous areas such as floodplains and landslide zones. The City of Lacey uses the Buildings and Construction code, Title 14 to define these areas and the City of Olympia defines zoning in Title 12. The regulations take the form of density and construction limitations. Identification of specific hazard zones within the Woodland/Woodard Creek Basins are recorded on the Thurston County wetlands and 100-year floodplain maps available in the Thurston County Regional Planning Office.

F.5.3 DRAINAGE DESIGN AND EROSION CONTROL MANUAL

The Drainage Design and Erosion Control Manual for Thurston County and the Cities of Lacey, Olympia, and Tumwater contains specific design standards and requirements for drainage and erosion control on new developments and remodels. This is available from the Thurston County Public Works Storm and Surface Water Utility, the Lacey Public Works Water Resources Program, and the Olympia Public Works Water Resources Program.

APPENDIX G: REGIONAL NONSTRUCTURAL MANAGEMENT PROGRAM

Several basin plans are currently underway for watersheds within the north Thurston County area. In the future, additional basin plans are anticipated to be completed. Each current and future plan contains basin-specific capital recommendations that focus on problems that occur and that can be solved within the context of an individual drainage basin. In addition, the plans contain recommendations that address noncapital issues existing in every drainage basin throughout the region. Jurisdictions within the north Thurston County area have worked together to create a package of regional noncapital recommendations to be included in each basin plan. Until this package is implemented, all current and future basin plans will include identical recommendations for a regional noncapital program.

IMPLEMENTATION STRATEGIES FOR REGIONAL RECOMMENDATIONS

Two strategies have been developed to streamline implementation of regional recommendations. Both are described briefly below:

Coordinate and Implement Regionally: The scope of the recommendations under this strategy go beyond basin and jurisdictional boundaries and require regional participation to succeed. All jurisdictions will coordinate and contribute financially to one lead agency for each program recommendation, which will coordinate activities throughout the region.

Total recommendations under this strategy: 14

Examples: Multijurisdictional plan coordination, community grants.

Coordinate Regionally, Implement Locally: The scope of the recommendations under this strategy also go beyond basin and jurisdictional boundaries, but the recommendations would be implemented by individual jurisdictions. Each jurisdiction would have programs and staff in place to support these recommendations. Coordination would occur through existing processes.

Total recommendations under this strategy: 22

Examples: Public information and outreach, drainage manual revisions.

STORMWATER FACILITIES

While most stormwater facilities serve a particular basin, the jurisdictions can work together to Achieve enhanced operation of existing facilities and construction of new ones.

RECOMMENDATION R-1: **Maintain public and private stormwater management facilities on a scheduled basis.**

Discussion: Sediment accumulations, excessive plant growth, and incidental structural failures periodically impair the design capacity of stormwater systems. To a large extent, maintenance has historically been conducted only in response to a problem. With the implementation of this recommendation, pipe systems would be cleaned every two to three years, ditches dredged every two to three years, and ponds dredged every eight to ten years. High maintenance systems would be identified and given more frequent attention. Vegetation management would be conducted yearly. New and existing private facilities would be required to enter into legally binding maintenance agreements with the respective jurisdictions.

Benefit: Elimination of many existing flooding problems within the basins.

Project lead: All jurisdictions.

Implementation strategy: Coordinate regionally, implement locally.

RECOMMENDATION R-2: **Identify public and private stormwater facilities that can be upgraded, and improve them as an alternative to building new facilities.**

Discussion: Construction of new stormwater facilities is extremely costly. Often it is often much more cost-effective to do minor improvements to ponds that already exist, but not functioning at full capacity. These improvements vary depending on the pond, but can be as easy as replacing an existing orifice with a smaller one, dredging, deepening, or widening the facility. If enough retrofits of existing ponds are accomplished, the need for new storage facilities can be reduced. Although retrofitting can reduce the need for construction of small storage facilities, usually it does not substantially reduce the need for regional storage facilities.

Benefit: Increased efficiency of existing ponds and reduced need for new ones.

Project lead: All jurisdictions.

Implementation strategy: Coordinate regionally, implement locally.

HABITAT ENHANCEMENT/CRITICAL AREAS PROTECTION

Habitat and wetlands can be protected efficiently using consistent management policies throughout the region. Critical habitat areas often cross jurisdictional boundaries and cannot be protected adequately using existing approaches.

RECOMMENDATION R-3: **Protect critical areas including streams, wetlands, buffer areas, and lands adjacent to these areas through regulation. Purchase of wetlands and other critical areas for the purposes of outdoor recreation, stormwater management, and education should continue to be considered as an option.**

Discussion: Because outright purchase of critical areas such as stream corridors and wetlands is often prohibitively expensive, regulations can be used to ensure the continuation of their beneficial functions. Existing regulations addressing critical areas within the jurisdictions are currently being modified to meet the requirements of the state's Growth Management Act.

Critical areas can be adequately protected by prohibiting certain detrimental uses and activities. Use of existing or enhanced regulations can protect the areas relatively well without additional municipal costs. When possible, purchase of important wetlands will be used to preserve these resources for outdoor recreation, educational purposes, research, and to further protect their natural functions and values.

Benefit: Cost-effective protection of wetlands and other critical areas.

Project lead: All jurisdictions.

Implementation strategy: Coordinate regionally, implement locally.

RECOMMENDATION R-4: **Provide technical and financial assistance to private parties pursuing open space preservation through programs such as conservation easements.**

Discussion: In order to place private property into permanent preservation, property owners must go through a lengthy and relatively expensive process. Preservation of open space is extremely important and should be made as easy as possible for anyone who is interested in pursuing these options. This includes the availability of technical advice and financial assistance to cover the potential costs of the process. This program would complement the work of the Capital Land Trust.

Appendix G: Regional Nonstructural Management Program

Benefit: Protection and preservation of critical areas currently in private ownership.

Project lead: To be determined.

Implementation strategy: Coordinate and implement regionally.

RECOMMENDATION R-5: Support and coordinate with parks and planning departments in the protection and acquisition of land offering unique open space attributes.

Discussion: The potential to lose valuable open space is extremely high due to the rapid rate of development in north Thurston County. Preservation of open space is an important component of protecting water resources. By supporting and coordinating with parks and planning on the protection and acquisition of lands that offer especially valuable open space traits, these areas will not be lost.

Benefit: Protection of lands providing exceptional visual and wildlife amenities. Preservation of the natural beauty and character of the north Thurston County area.

Project lead: All jurisdictions.

Implementation strategy: Coordinate regionally, implement locally.

RECOMMENDATION R-6: Minimize the number of street and utility crossings through critical areas. When crossing creeks, encourage necessary street crossings to use bridges or arch culverts that maintain the natural creek substrate. Encourage new utilities to use existing utility corridors.

Discussion: Streams and wetlands are severely impacted by the construction and use of road and utility crossings. Minimization of the number of crossings would diminish resource impacts and hydrologic changes to the stream system. When no other reasonable alternative to creating a stream crossing exists, the use of arched culverts would maintain the natural stream substrate which is a critical component of stream habitat. Existing frameworks could be utilized to implement this recommendation, the most appropriate is probably through the development review process.

Benefit: Reduced degradation of water quality and habitat.

Project lead: All jurisdictions.

Implementation strategy: Coordinate regionally, implement locally.

REGULATIONS/DEVELOPMENT CONTROLS

The jurisdictions can more effectively regulate development to protect natural resources if they work cooperatively.

RECOMMENDATION R-7: Amend the *Drainage Design and Erosion Control Manual for the Thurston Region, Washington* (Regional Drainage Manual) to require half the current stormwater release rate for new development located on poorly drained soils, including all hydrologic Class C and D soils and many Class B soils as defined by the Regional Drainage Manual and the 1990 Soil Survey of Thurston County.

Discussion: The Regional Drainage Manual established stormwater facility storage needs and release rates based on the best available information at the time. Section 1.3 of the manual supports the establishment of storage requirements and release rates by the basin planning process. Many jurisdictions in the Puget Sound area are evaluating the need to increase storage requirements. The recommendation is supported by recent Washington Department of Ecology (WDOE) proposals in the *Stormwater Management Manual for the Puget Sound Basin*.

The computer modeling efforts of the basin planning process have provided state-of-the-art analysis of the Indian/Moxlie, Percival, Woodard, and Woodland basins. These analyses provide far greater accuracy than past evaluations made possible.

These basins encompass approximately 49 square miles in the urban area. Much of the basins are within the Urban Growth Management Area (UGMA). The portions of the urban area not included in the basin planning areas include Ellis, Mission, Schneider, Green Cove, and Chambers Basins. These basins and creek systems have been evaluated through a WDOE Centennial Clean Water Basin Reconnaissance grant (TAX90202). Through these various planning efforts, all basins and associated creek systems in the urban area have been investigated. The infiltration standards for these basins will be reevaluated and adjusted if necessary, when basin plans for them are developed.

The need to increase the drainage regulations is a function of the tendency of many local soil types to become saturated during storm events. Subsequently, rainfall creates runoff rather than being infiltrated. Although portions of the urban area have not been evaluated by the

Appendix G: Regional Nonstructural Management Program

basin planning process, the soils in these areas are typically as prone to saturation as the soils in the evaluated basins.

The proposed drainage requirements are critical to the success of the basin plans. Failure to adopt this proposal would result in the continuation of existing management problems or a reliance on the local jurisdictions to provide appreciable quantities of stormwater storage.

In addition to the costs associated with the jurisdictions providing regional storage, numerous conveyance systems upgrades would be necessary to accommodate future high flows. The implications of appreciably higher future flows is readily apparent in the Indian Creek Basin. Prior to its confluence with Moxlie Creek, Indian Creek is conveyed in pipe at 19 locations. Many of these pipes are currently at capacity. Without increased storage requirements, potential development could result in the need to replace many of the high cost pipe systems.

The recommendation to increase the storage requirements is being pursued with several qualifiers. These are as follows:

- Areas with highly permeable soils would not be required to comply with the proposed storage requirement. These soils may be capable of infiltrating stormwater and meeting the proposed release rate requirement without increasing storage volume. Numerous areas in the southern portion of the urban area typically have highly permeable soils.
- The proposed requirements provide an impetus for developers to minimize impervious surfaces and effectively infiltrate runoff within a development. Developments designed to accomplish these goals could expect an appreciable reduction in stormwater management requirements. Innovative design techniques are numerous and may include narrower road widths, porous pavement, yard infiltration, depressional landscaping, and cluster development.
- With the necessary jurisdictional fee-in-lieu policies in place, stormwater management requirements for a proposed development could possibly be reduced. The reduction would be contingent upon a jurisdictional need to correct an existing stormwater problem. Fee-in-lieu contributions could be used only in the same drainage area as the proposed development.
- The goal of this recommendation is to maintain existing, pre-development stream flows through consistent design standards that do not place unnecessary complications on developers and engineers. For specific development sites, other methods may be considered to meet this goal.

The cost savings associated with more stringent standards are substantial when considered against potential necessary infrastructure upgrades.

Benefit: Stormwater runoff is often the primary detrimental influence on urban creek systems. Often, artificially high flood flows often have a greater impact on the integrity of urban creeks than does water quality contamination. The effects of stormwater flows are apparent in the creeks in the urban area. More stringent storage requirements than those currently provided by the Regional Drainage Manual are justifiable for the protection of natural resources and the minimization of future flooding problems in developed areas.

The recommendation would also provide substantial saving in public infrastructure needs. While the proposed storage requirement continues to allow increased flows to be released from a site following development, the recommendation does effectively reduce peak flows.

Project lead: All jurisdictions.

Implementation strategy: Coordinate regionally, implement locally.

RECOMMENDATION R-8: Amend the Drainage Manual to require adequate treatment of stormwater prior to infiltration in highly permeable, Class A soils in industrial/high risk areas, as specified in the North Thurston County Ground Water Management Plan.

Discussion: Groundwater recharge is important to the health of creeks, water supplies, and the minimization of stormwater management costs. Stormwater infiltration is supported by current drainage design regulations. However, infiltrating contaminated waters through highly porous soils may provide inadequate treatment thereby threatening groundwater quality. A recent study conducted in the Puget Sound area supports the need for treatment prior to infiltration (Brown and Caldwell, 1990).

Benefit: Minimization of threats to groundwater quality.

Project lead: All jurisdictions.

Implementation strategy: Coordinate regionally, implement locally.

RECOMMENDATION R-9: **Require new homes and remodels which increase impervious area to install stormwater management systems capable of managing the volume of runoff generated by the new development.**

Discussion: While large development projects are required to install stormwater management facilities, single-family home construction is not required to do so. This type of development, called in-fill, can have considerable cumulative effects on stormwater. There are several low cost, effective techniques that can be used for single-family in-fill development that effectively reduce the quantity of runoff generated from the site. This recommendation does not propose that systems with sufficient capacity to accommodate the additional runoff should be upgraded.

Benefit: Reduced quantity of stormwater runoff from in-fill development.

Project lead: All jurisdictions.

Implementation strategy: Coordinate regionally, implement locally.

RECOMMENDATION R-10: **Evaluate current staffing levels and employ adequate staff to fully implement and enforce key elements of the Regional Drainage Manual.**

Discussion: Many requirements of the Regional Drainage Manual require considerable staff time to implement and enforce effectively. Key elements such as analysis of upstream and downstream impacts caused by new development are critical to the protection of water resources. However, the jurisdictions cannot adequately meet these requirements due to current staffing and budgetary restraints.

Benefit: Minimization of future flooding and natural resource problems.

Project lead: All jurisdictions.

Implementation strategy: Coordinate regionally, implement locally.

RECOMMENDATION R-11: **Restrict development in flood hazard area so that existing flood elevations are not increased under build-out conditions.**

Discussion: New development within the 100-year flood plains of all north Thurston County creeks would be limited. Existing structures would be reduced over time. Flood plain filling and construction that results in loss of local stream capacity and increased downstream flows would be eliminated.

The intent of this recommendation is to restrict development in the flood plain, not to prohibit compatible uses such as agriculture, or parks and trails. The basin plans place many new require developers and new homeowners to meet higher standards to prevent increases in flooding. Common sense dictates that the capacity of existing natural drainage should be maintained. Developments in the flood plain reduce natural drainage capacities and force flood waters further out into surrounding areas.

Benefit: The natural ability of streams to control floods would be protected.

Project lead: All jurisdictions.

Implementation strategy: Coordinate regionally, implement locally.

RECOMMENDATION R-12: Consider development standards to minimize future impervious surfaces by such measures as narrower streets, porous pavements, reduced parking requirements, and revised landscaping requirements. Encourage common standards throughout the jurisdictions.

Discussion: Streets generate approximately 25 percent of total urban stormwater. Parking lots and driveways contribute lesser but appreciable quantities of runoff. Landscaping requirements can be incompatible with the efficient management of stormwater. Elimination of conflicting regulatory objectives and minimization of impervious surfaces reduces stormwater management costs and promotes groundwater recharge. Local planning departments are currently conducting preliminary investigations of these issues. The implementation of improved standards is important to effective long-term water resource management.

Benefit: Surface water management problems would be minimized by reducing the generation of runoff.

Project lead: Olympia.

Implementation strategy: Coordinate regionally, implement locally.

RECOMMENDATION R-13: Encourage innovative land use planning techniques (such as cluster housing) that preserve undisturbed open space and natural stormwater functions where appropriate throughout the region.

Discussion: Innovative development techniques such as cluster housing are effective means of reducing runoff, improving runoff quality, enhancing groundwater recharge, and protecting critical areas. Because cluster housing maintains a substantial amount of undisturbed vegetation, the natural functions and characteristics of an area may continue after development. The areas most appropriate for cluster development and other creative development techniques will be identified on a basin-specific level.

Benefit: Reduction of runoff quantity and improved runoff quality, groundwater recharge, and critical area protection.

Project lead: All jurisdictions.

Implementation strategy: Coordinate regionally, implement locally.

RECOMMENDATION R-14: Establish uniform standards for land clearing and grading within the Urban Growth Management area that minimize removal of native vegetation, improve water quality, and reduce stormwater runoff quantity.

Discussion: The single largest impact on stormwater is the conversion of land from natural vegetation (including trees and shrubs) to grass or development. Olympia, Lacey, Tumwater, and Thurston County all regulate vegetation removal and grading through ordinances. A detailed clearing and grading plan is required for all new development. The plan must specifically identify vegetation to be removed, a schedule for vegetation removal and replanting, and the method of vegetation removal. Thurston County is developing a vegetation protection ordinance that will require a permit for all land clearing.

Uniform standards are an effective method to ensure that vegetation is properly managed during preparation of new development sites. Because the Urban Growth Management Area (UGMA) is intended to be developed at similar densities across the jurisdictions, uniform clearing and grading standards throughout the area are appropriate.

Benefit: Preservation of soil infiltration capacities, reduction of erosion, protection of creek channels, and protection of wildlife habitat.

Project lead: All jurisdictions.

Implementation strategy: Coordinate regionally, implement locally.

ENFORCEMENT/COMPLAINT RESPONSE

Historically, jurisdictions in northern Thurston County have not supported a sufficient level of regulation enforcement and complaint response. Regulations would be more effective if consistently enforced throughout the region.

RECOMMENDATION R-15: Evaluate current staffing levels and employ adequate staff to fully enforce development and environmental protection regulations which impact water resources. Improve coordination, management, and effectiveness of complaint response to water quality, habitat, and flooding issues regionally.

Discussion: The jurisdictions in north Thurston County have limited staff available for the enforcement of existing local regulations. Mechanisms aimed at protecting water resources (such as maintenance agreements between homeowners associations and the jurisdictions) are not well enforced. Improving enforcement would help protect the important functions of wetlands, creeks, and other critical areas within the basins.

Cooperation among the jurisdictions would improve public access to complaint systems, increase technical assistance staff, and increase public awareness of complaint system availability. More highly publicized complaint phone numbers and staff for response would increase the efficiency and effectiveness of existing complaint response efforts. Complaint response would be coordinated with Stream Team database and monitoring.

Benefit: Protection of creek channels, preservation of soil infiltration capacities, and reduction of illegal land grading and alterations which will decrease flooding, habitat degradation, erosion, and sedimentation. Better field inspection and analysis, public access and involvement, and remedial action.

Project lead: All jurisdictions.

Implementation strategy: Coordinate regionally, implement locally.

POLLUTION SOURCE CONTROL PROGRAMS

Programs aimed at reducing pollution at its source are especially adaptable to regional implementation. The use of a diverse set of programs to stop the release of contaminants into the environment would improve the quality of water resources throughout the region.

RECOMMENDATION R-16: Support the adoption of a nonpoint pollution source control ordinance that defines practices and procedures to protect the public health and water quality of the Thurston region from polluted surface water runoff. Define penalties for infractions, responsibilities for clean-up, and train enforcement staff.

Discussion: The state has limited resources to enforce nonpoint source regulations. A nonpoint pollution source control ordinance will enable local jurisdictions within northern Thurston County to regulate nonpoint sources when state agencies are unable to enforce their regulations. Such an ordinance does not replace state regulations, but rather complements them. Thurston County adopted such an ordinance in September 1992.

Benefit: Protection of water quality and public health.

Project lead: Thurston County Health Department

Implementation strategy: Coordinate regionally, implement locally.

SYSTEM MONITORING

System monitoring is a crucial element of water resource protection. While many monitoring efforts will be specific to each individual basin, it is also important to establish a regional monitoring program to oversee all water resources in the north Thurston region.

RECOMMENDATION R-17: Establish a long-term regional water quality, stream gaging, and stream assessment program for key streams throughout the north Thurston region.

Discussion: Monitoring environmental trends permits staff to evaluate the effectiveness of corrective measures, and provides an early warning system for problems. This program could utilize both volunteers and professional staff.

Benefit: Protection of aquatic resources within the north Thurston region, remedial measures will be evaluated and improved, and impacts related to specific projects will be identified.

Lead jurisdiction: Thurston County.

Implementation strategy: Coordinate and implement regionally.

RECOMMENDATION R-18: **Monitor stormwater facilities to assess the performance of best management practices (BMPs) and promote improved management techniques.**

Discussion: The performance of stormwater treatment techniques is rarely evaluated. A degree of uncertainty exists regarding the long-term level of treatment provided by the best available, and current required, techniques.

Benefit: Accurate evaluations of performance would provide the basis for improvements in currently used techniques.

Project lead: To be determined.

Implementation strategy: Coordinate and implement regionally.

J.8 PUBLIC INVOLVEMENT AND EDUCATION

The following recommendations are identified as either high or medium priority. Recommendations of high priority represent the minimum level of service required to fulfill the centennial grant stipulations relating to public involvement and education (PIE). Medium priority recommendations would provide the optimum level of service for PIE activities.

Recommendations are organized by the general categories of PIE activities discussed in Chapter 7: community grants, education and training, public information and outreach, coordination and evaluation, and data management.

COMMUNITY GRANTS

RECOMMENDATION R-19: **Establish a regional community grants program to support volunteer action projects, school projects, and community education.**

Discussion: A permanent funding source will provide community groups and businesses with the means to participate in solving local storm and surface water problems. Some of the grants will target high priority projects and activities in each basin. There are no existing community grant programs devoted to water resources issues.

Benefit: Community initiated projects to address local storm and surface water problems, and additional funding for school projects focusing on water resources.

Project lead: Thurston County.

Implementation strategy: Coordinate and implement regionally.

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EDUCATION AND TRAINING

RECOMMENDATION R-20: Present Stream Team activities for volunteers including: networking meetings, regional Stream Team workshops and action projects, and advanced training seminars. Involve school and community groups, and lake and streamside property owners in Stream Team activities and provide technical assistance for volunteers.

Discussion: Volunteer projects increase the sense of responsibility for water resources among local residents. The Stream Team program will result in hundreds of skilled volunteers who are actively protecting and restoring water resources, training other volunteers, and educating their friends and neighbors. This measure will extend and expand the existing Stream Team program which currently relies partly on grant funding.

Benefit: Increased awareness and protection of water resources throughout the north Thurston region.

Project lead: Olympia and Thurston County.

Implementation strategy: Coordinate and implement regionally.

RECOMMENDATION R-21: Establish Public Involvement and Education (PIE) internships or work-study positions in local stormwater programs, and encourage local colleges to offer graduate and undergraduate projects and classes on water resources public involvement and education.

Discussion: College interns and projects will help to produce educational materials, interpret natural resources, coordinate volunteers, evaluate programs, and manage data. This will create a pool of trained, experienced resource people who can assist community water resources PIE programs in Thurston County.

Benefit: Inexpensive assistance for local stormwater programs, and development of qualified public involvement professionals.

Project lead: All jurisdictions.

Implementation strategy: Coordinate regionally, implement locally.

RECOMMENDATION R-22: Create a Stream Team naturalist program.

Discussion: The Stream Team Naturalist program will present interpretive programs on the natural resources of the watersheds to schools, community groups, and the general public. Stream Team volunteers will also be trained to present information. The Stream Team program will coordinate training and field activities. No such program currently exists.

Benefit: Support for public involvement and outreach activities, and improved environmental awareness in the community.

Project lead: Olympia and Thurston County.

Implementation strategy: Coordinate and implement regionally.

RECOMMENDATION R-23: Provide business and industry with education and training opportunities.

Discussion: Business education activities will help forge a partnership between businesses and local government, with the common goal of protecting and improving water resources. Activities associated with this recommendation would include: workshops with Thurston Conservation District to implement conservation plans; workshops on implementing the new drainage manual and basin plan requirements; technical support on waste management and water resource issues (source control and BMPs through Operation: Water Works); and coordination with business organizations and public agencies.

The improved relationship between public and private sectors will eventually reduce the need for enforcement. Operation: Water Works is a temporary, grant-funded project to encourage best management practices for businesses; the other parts of this recommendation, such as drainage manual training and technical support would constitute a new program.

Benefit: Heightened awareness and understanding of water resources within the business community. Potential reduced need for enforcement of environmental codes.

Project lead: All jurisdictions.

Implementation strategy: Coordinate regionally, implement locally.

RECOMMENDATION R-24: Present water resource training workshops for school teachers, and provide water resource education kits that include predesigned curricula and teaching aids.

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Discussion: Water resource education for young people is a long-term investment in developing public values that support environmental protection and stewardship. Because environmental education is currently required in all Washington public schools, local governments have an opportunity to work cooperatively with school districts. Three educator workshops were presented in 1990 through a centennial grant that will expired in June, 1991.

Benefit: Increased environmental education within public schools focusing on water resources.

Project lead: Thurston County.

Implementation strategy: Coordinate and implement regionally.

RECOMMENDATION R-25: **Train jurisdictional staff to implement and enforce basin plan recommendations such as new drainage standards and land use regulations.**

Discussion: Adoption of the basin plan will result in a variety of new practices and regulations. Effective plan implementation will require retraining local government employees because they have the primary responsibility for enforcement and technical assistance. This recommendation would apply in Percival, Indian/Moxlie, Woodard/Woodland and McAllister/Eaton basins.

Benefit: Heightened awareness and enforcement of basin plan recommendations by jurisdictional staff.

Project lead: Lead jurisdiction for basin plan.

Implementation strategy: Coordinate and implement regionally.

RECOMMENDATION R-26: **Provide opportunities to involve youth, families, teachers, and schools in special, water-related community activities.**

Discussion: A program of special community activities will include Family Fun Days, children's Stream Team day camp, "hands-on" displays for schools, field trips to areas of special interest, cold water aquaria for classrooms, and classroom water quality presentations by staff. This program will involve residents who have not been reached by existing Stream Team programs, and will encourage active participation among entire family groups.

Benefit: Helps local schools meet Washington's environmental education requirements, and creates long-term improvements in water resources management.

Project lead: Olympia and Thurston County.

Implementation strategy: Coordinate and implement regionally.

PUBLIC INFORMATION AND OUTREACH

RECOMMENDATION R-27: Create a storm and surface water public information program to provide consistent, accurate information to the media and increase educational outreach to the public.

Discussion: The public information program will supply the primary communication between local water resource management agencies, the media, and the public. The program will manage all media contacts by arranging interviews and filming sessions, producing accurate news releases and briefings, publishing frequent articles in newspapers and periodicals, and mounting high profile media campaigns. Outreach activities will include publishing educational brochures, posters, and publicity materials for local events that highlight the national significance of local issues. This program will improve the public perception of local water resource protection efforts, and prevent damaging misinformation from reaching the public through the media.

Currently, numerous local agencies provide bits and pieces of public information on water resource issues, with little consistency between information sources. This measure would consolidate these scattered sources of information and provide reliable funding. Most existing outreach relies on temporary project funds.

Benefit: More accurate and consistent public information, improved public perception of resource protection programs, and increased public participation in water resources programs.

Project lead: All jurisdictions.

Implementation strategy: Coordinate regionally, implement locally.

RECOMMENDATION R-28: Investigate incentives that encourage schools to incorporate water resources curriculum and meet established criteria.

Appendix G: Regional Nonstructural Management Program

Discussion: Utility rates will offer a financial incentive for schools to develop and maintain water resources education programs. The City of Olympia currently offers grants to schools for stormwater projects.

Benefit: Helps schools meet state environmental education requirements, and creates long-term improvements in water resources management.

Project lead: All jurisdictions.

Implementation strategy: Coordinate regionally, implement locally.

RECOMMENDATION R-29: Create a Citizen Stream Patrol program.

Discussion: The Citizen Stream Patrol program will train local citizens to identify destructive practices such as illegal dumping, land clearing and grading, inadequate erosion controls, grazing in streams, and other violations. The Stream Team program will coordinate training and field activities. Stream-specific teams will work closely with existing enforcement and complaint-response programs. No such program currently exists.

Benefit: Increased personal responsibility for protection and stewardship of local stream basins, and improved regulations enforcement.

Project lead: Olympia and Thurston County.

Implementation strategy: Coordinate and implement regionally.

RECOMMENDATION R-30: Develop new water resource exhibits for fairs and local events.

Discussion: Public exhibits will include portable, free-standing display boards as well as permanent interpretive signs for critical resource sites. Portable displays will be updated regularly to show progress on current projects. Exhibit topics will include stream systems, volunteer projects, impacts of runoff, and suggestions for homeowners. Exhibits will be displayed at all major local events including Harbor Days, Wooden Boat Festival, Capitol Lakefair, Earth Day, Lacey Fun Fair, County Fair, Community Awareness Days, etc. Exhibits will also be displayed at schools, libraries, and community centers. Currently, exhibits often include out-of-date information.

Benefit: Improved outreach to audiences which have not received other types of public information, and increased public participation in volunteer projects

Project lead: All jurisdictions.

Implementation strategy: Coordinate regionally, implement locally.

RECOMMENDATION R-31: Manufacture and install watershed boundary signs for each major drainage in Thurston County using a region-wide design.

Discussion: The most important challenge for public water resource education is making residents aware of the existing natural resources in their local areas. Stream crossing signs have already helped improve public awareness, and watershed boundary signs will increase awareness by identifying drainage boundaries. Existing signs on Interstate-5 in the Nisqually watershed provide a good example.

Benefit: Increased public awareness of water resources.

Project lead: Thurston County.

Implementation strategy: Coordinate and implement regionally.

COORDINATION AND EVALUATION

RECOMMENDATION R-32: Devote staff to a regional Education Technical Advisory Committee (ETAC).

Discussion: Water resources education demands regional coordination because water resources transcend local boundaries. Each basin jurisdiction needs to devote ongoing staff to the regional PIE program, so as to avoid duplication with other programs and provide a consistent method for evaluating public involvement and education activities. The ETAC would be responsible for coordination and evaluation of plan PIE elements, implementation of the public education guidelines in the Puget Sound Water Quality Management Plan, creation of a database to help monitor and evaluate plan implementation, and organization of a regional citizen advisory committee to monitor public education and involvement.

Benefit: Enhanced interjurisdictional coordination on public education issues.

Project lead: All jurisdictions.

Appendix G: Regional Nonstructural Management Program

Implementation strategy: Coordinate regionally, implement locally.

DATA MANAGEMENT

RECOMMENDATION R-33: Create a computerized data management system to organize and analyze data collected by Stream Teams, public workshops, and volunteer projects. Publish results biannually, including photos, monitoring data, and volunteer participation.

Discussion: The data management system will help managers to coordinate and evaluate the effectiveness of PIE activities, provide quick access and consistent information to all stormwater programs, and could be expanded to improve existing complaint response programs. Currently, data management is haphazard and inconsistent between jurisdictions.

Benefit: Improved PIE coordination and public assistance.

Project lead: Olympia.

Implementation strategy: Coordinate and implement regionally.

REGIONAL PROGRAM MANAGEMENT

Several basins in north Thurston County are the subject of basin plans. Because drainage basins do not recognize jurisdictional boundaries, it is imperative that the governments work cooperatively to implement the plans.

RECOMMENDATION R-34: Support multijurisdictional basin plan coordination and implementation.

Discussion: Although basin plan implementation would necessitate increased levels of interjurisdictional coordination and decision making, existing administrative practices could be utilized depending upon the funding approach chosen to facilitate these needs.

Benefit: More comprehensive approach to coordinating the implementation of current and future basin plans.

Project lead: All jurisdictions.

Implementation strategy: Coordinate regionally, implement locally.

RECOMMENDATION R-35: **Establish a technical support position to assist jurisdictions in identifying appropriate funding sources and preparing grant applications for implementation of basin plan recommendations.**

Discussion: Due to budgetary constraints, many of the recommendations within the basin plans will have to be implemented using outside financial assistance. Current staffing levels do not allow adequate time to be dedicated to searching for potential funding sources and preparing numerous grant applications.

Benefit: Heightened awareness of potential funding sources and competitiveness in the grant awarding process.

Project lead: Thurston County.

Implementation strategy: Coordinate and implement regionally.

RECOMMENDATION R-36: **Establish a five-year implementation strategy for increased cooperation in water resource management within the Urban Growth Management Area.**

Discussion: Stormwater issues are most effectively managed on a regional basis. As the UGMA becomes increasingly developed it will be necessary for expanded regional management of stormwater issues. Interjurisdictional management is the most cost-effective and least duplicative method of handling stormwater concerns.

Benefit: Increased effectiveness and comprehensiveness of stormwater management programs.

Project lead: To be determined.

Implementation strategy: Coordinate and implement regionally.