

CHAPTER 1

INTRODUCTION

For many years stormwater management has meant controlling water quantity and the inundating effects of large storm events. However, more recently, the cumulative effects of smaller storms have been recognized as a major contributor to water quality degradation.

Stormwater runoff carries excessive amounts of sediment from exposed construction sites and pollutants from residential, commercial, and industrial developments. Pollutants in stormwater runoff include metals such as lead, cadmium, and copper; oil and grease; pesticides and fertilizers; and harmful bacteria. In addition, urbanization increases the amount of impervious surfaces such as rooftops, streets, and parking areas. Impervious surfaces directly relate to an increase in runoff volumes and peak rate flows. The pollutant loads and increased volumes of stormwater runoff result in negative impacts to downstream properties and water bodies such as local streams and Puget Sound and reduced infiltration to groundwater. Due to regulations required under the Clean Water Act and the listing of anadromous (salmon, trout, char) species under the Endangered Species Act, it has become increasingly important for municipalities to implement stormwater control measures.

PURPOSE

The Irondale & Port Hadlock Urban Growth Area (UGA) Stormwater Management Plan is a planning document that provides guidance to minimize adverse effects of stormwater runoff on ground and surface water, including aquatic resources and habitats, water quantity. It identifies water quality and quantity problems associated with stormwater runoff that may adversely affect the environment and community and provides recommendations for improvements and programs including a cost analysis and an implementation schedule.

The Plan identifies specific structural and non-structural solutions to conveyance and water quality problems within the UGA. Structural solutions include constructing detention and infiltration ponds, pipes, and treatment facilities. Non-structural solutions include stormwater management facility inspection and maintenance, public education and outreach, water quality monitoring, and encouraging low impact development.

The Plan was developed in conformance with Jefferson County Comprehensive Plan Appendix G: Review of Drainage, Flooding, Stormwater Management Issues and Polluted Discharges. It meets the stormwater management recommendations of the Puget Sound Water Quality Action Plan and the technical standards of the 2001 Washington Department of Ecology *Stormwater Management Manual for Western Washington*. The

Plan discusses the Federal Clean Water Act National Pollutant Discharge Elimination Systems (NPDES) Phase II stormwater requirements. Although Jefferson County is not required to meet the Phase II requirements, they provide a good basis for developing an effective stormwater management program.

Meeting the County' stormwater management goals in conjunction with development of the UGA may requirement stormwater management measures for projects that fall below the thresholds in the DOE Manual. The Plan includes are best management practices (BMPs) for projects that create less than 5,000 square feet of impervious surface. They are included in Appendix B.

WATER QUALITY AND QUANTITY GOALS

The primary goal of the UGA Stormwater Management Plan is to preserve and protect water quality and the hydraulic regime within the UGA's drainage basins and the receiving waters of Chimacum Creek and Port Townsend Bay.

Irondale and Port Hadlock currently experience minor isolated flooding during moderate to large storm events. During the wet season, the UGA experiences minor nuisance flooding due to streets and lot development that do not have adequate drainage facilities. As additional development occurs within the UGA limits, the amount of impervious surfaces will increase which will ultimately increase peak surface-water runoff rates.

To this end, the County intends to manage stormwater to minimize contact with contaminants, mitigate the impacts of increased runoff due to development within the UGA's drainage areas, provide management of runoff from large and small construction sites, and to preserve fish and wildlife habitat. These efforts would meet County goals to protect the health, safety, and welfare of the local citizenry and to preserve surface water resources within the UGA.

PLANNING PERIOD

The planning period for this document has a 20-year planning horizon from 2005 through 2024. However, runoff modeling was conducted for completely built-out conditions within the UGA.

SCOPE OF WORK

Development of the Stormwater Management Plan included the following tasks:

TASK 1: PROJECT MANAGEMENT

Communication, task assignment and scheduling, budget tracking and billings, project reports, and project documentation.

TASK 2: PROJECT START-UP / REVIEW OF EXISTING INFORMATION AND PLANNING ASSUMPTIONS

The Stormwater Management Plan will be based on the UGA boundary and land uses depicted in the proposed Tri-Area Urban Growth Area – Zoning Districts Overlay (2003), the UGA population projections adopted by the Board of County Commissioners, and draft land use designations and zoning regulations developed by the Jefferson County Department of Community Development.

Review background information compiled by County staff from prior Jefferson County planning and Growth Management Act (GMA) studies and decisions related to the Tri-Area UGA. This material will include the:

- Jefferson County Comprehensive Plan (1998), including Appendix G: Review of Drainage, Flooding, Stormwater Management Issues, and Polluted Discharges,
- Tri-Area UGA designation in the 2002 County Comprehensive Plan amendments,
- County population projections,
- Tri-Area/Glen Cove Special Study and FSEIS (1999),
- Jefferson County Unified Development Code,
- Jefferson County Road map,
- Jefferson County 6-Year Transportation Improvement Plan,
- Western Washington Growth Management Hearings Board (GMHB), including an appeal of the County's Tri-Area UGA designation that is currently before the GMHB, and
- Other documents as appropriate in order to assess current and proposed land use and growth management requirements for the area.

Jefferson County is currently developing a County-wide Comprehensive Surface Water Management Plan. Information from this study that is relevant to the Tri-Area UGA will include an inventory of existing public and private stormwater management facilities, analysis of impervious surface based on high resolution aerial ortho-photos, and the WRIA 17 Watershed Assessment. There may also be water quality monitoring available for direct discharges to Port Townsend Bay.

TASK 3: STORMWATER MANAGEMENT ANALYSIS

Analyze the impacts of stormwater runoff and the need for stormwater management capital facilities and programs for the six-year and 20-year planning periods. The analysis will consider existing conditions, facilities, and programs; existing and projected facility and program deficiencies and stormwater management problem areas; and the six-year and twenty-year Tri-Area UGA build-out forecast developed by the Department of Community Development. The analysis will include:

- A discussion of probable adverse impacts related to stormwater runoff from the UGA, including drainage, flooding, water quality, stream channel stability, and fish habitat;
- A discussion of measures to avoid identified impacts, including:
 - Facilities to collect, convey, treat, detain, discharge, and infiltrate stormwater runoff;
 - Stormwater management program activities, including facility inspection, maintenance, repair, and retrofit; program administration, data management, billing, and planning; and water quality and stream monitoring;
 - Land use and zoning policies and regulations;
 - Purchases of land and conservation easements;
- A discussion of options for using on-site facilities, low impact development facilities and site design, and regional facilities for stormwater management;
- Criteria for prioritizing development of stormwater management facilities and programs.

Prepare a water quality monitoring Quality Assurance Project Plan that meets the criteria of the Washington Department of Ecology Guidelines for Preparing Quality Assurance project Plans for Environmental Studies, February 2001. Conduct sampling for basic water quality parameters on Chimacum Creek upstream and downstream from the UGA, and at the outfalls of the storm sewer systems that serve the Port Hadlock commercial area and East Moore Street in Irondale. Sampling parameters will be fully developed in the QAPP. Minimum parameters will include temperature, dissolved oxygen, pH, conductivity, turbidity, and fecal coliform.

TASK 4: FINANCIAL ANALYSIS AND CAPITAL FACILITY PLANNING

Funding for stormwater management facilities and programs will require diverse public and private revenue sources. It is anticipated that the private sector will finance stormwater management facilities for new private development and to retrofit existing private developments that do not have adequate stormwater management facilities. It is also anticipated that the County will provide facilities that serve County roads and other County facilities and urban stormwater management programs such as facility inspection, maintenance, repair, and retrofit; program administration, data management, billing, and planning, and water quality monitoring. There may be public/private partnerships to provide facilities that jointly serve County roads and private developments. There may also be improvement districts to fund regional facilities.

Perform planning level cost analysis of stormwater management facilities necessary to meet the County's adopted stormwater management LOSS for public and private facilities in the Tri-Area UGA. The analysis will provide appropriate detail depending on whether the facilities will be included in the Six-Year Capital Facilities Plan or they will be provided in the 20-year planning period. The information will be prepared in a standardized format provided by the County for consistency with the other elements of the Capital Facility Plan.

Perform cost analysis of stormwater management program costs.

Analyze the County's capacity to fund recommended County-owned facilities and programs. The analysis will include existing and potential revenue sources, including grants and loans, stormwater management facility charges, bonds, real estate excise taxes, and local improvement district and special district assessments. As part of this work, prepare an analysis of stormwater facility charges, including rate options for Equivalent Residential Service Units. Based on this analysis develop revenue options adequate to fund County stormwater management facilities and programs.

TASK 5: GOALS, POLICIES, AND STRATEGIES

Review Growth Management Act requirements and existing County Comprehensive Plan goals, policies, and strategies related to stormwater management in un-incorporated urban growth areas. Prepare a discussion of issues and draft goals, policies, and strategies for County staff review. Based on County staff comments, develop goals, policies, and strategies for inclusion in the Stormwater Management Plan.

TASK 6: DEVELOP DRAFT UGA STORMWATER MANAGEMENT PLAN

Compile the work performed under Tasks 2-5 and develop a draft Tri-Area UGA Stormwater Management Plan and Stormwater Management section of the Tri-Area UGA Capital Facilities Element for review by County staff. The Plan will be in a format that is consistent with the format of the Jefferson County Comprehensive Plan.

Meet with Public Works staff to ensure that project requirements are met within the project schedule, that project recommendations are logical and effective, and that the Plan is of high quality, readable, and free of errors. Materials will be provided to Public Works staff with sufficient time for review prior to meetings. Meetings will be held approximately monthly based on the needs of the project. When possible, meetings will be scheduled in conjunction with other UGA Planning Team meetings in order to reduce travel and minimize the project budget.

TASK 7: MEETINGS / PUBLIC INVOLVEMENT

Urban Growth Area Planning Team Meetings

Meet twice with the Urban Growth Area Planning Team to ensure project coordination with County Departments and other consultants. The first meeting will be during project initiation to review project assumptions (See Task 2). The second meeting will be prior to project completion to review products.

Public Open House Meetings

Participate in one public open house meeting. Provide handouts, displays, and maps depicting the stormwater management component of the project. The County will schedule the meetings and arrange for a meeting place.

County Commissioners Meetings

Make one presentation to the Board of County Commissioners regarding the UGA Stormwater Management Plan.