

CHAPTER EIGHT

SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT

FACT SHEET

Final Supplemental Environmental Impact Statement (FSEIS)

Title & Description of Proposed Action *Hylebos Browns-Dash Point Basin Plan.* Pierce County proposes to update its *1991 Storm Drainage and Surface Water Management Plan and Capital Improvement Program* (1991 Plan) by adopting and implementing a basin-specific update for the Hylebos and Browns-Dash Point Basins. The 1991 Plan has served as a guide for the identification, design, and construction of surface water management facilities and for the implementation of surface water policies and programs throughout unincorporated Pierce County. The proposed Hylebos Browns-Dash Point Basin Plan (Basin Plan) would provide specific strategic direction for solving flooding and drainage problems associated with stormwater runoff within the Hylebos and Browns-Dash Point Basins. The No Action Alternative would continue capital project selection based on the 1991 Plan list as annually modified.

This Final Supplemental Environmental Impact Statement (FSEIS) adds information to the 1991 *Draft & Final Environmental Impact Statements* for the 1991 Plan to reflect changes to regulations and policies since 1991; stormwater facilities constructed since 1991; new development and other changes to existing conditions; and new information.

Location of Proposal Unincorporated Pierce County, in the Hylebos and Browns-Dash Point Basins.

Proponent Pierce County Department of Public Works & Utilities, Water Programs Division

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List of Permits & Approvals Required	<p>Pierce County Storm Drainage and Surface Water Management Advisory Board review (completed January, 2006), and Pierce County Planning Commission review and recommendation (completed May, 2006). County Council approval of an ordinance adopting the Hylebos Browns-Dash Point Basin Plan as an update of the 1991 Storm Drainage and Surface Water Management Plan.</p> <p>After approval and adoption of the Basin Plan, construction of specific capital projects in and adjacent to water may require Hydraulic Project Approvals, Shoreline Substantial Development Permits, Section 404 Permits, Critical Areas Approvals, SEPA review, and/or other approvals at the time the projects are proposed.</p>
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Date of DSEIS Issuance	April 3, 2006
End of DSEIS Comment Period	May 2, 2006
End of Appeal Period for FSEIS	June 14, 2006
Public Meeting(s)	<p>Two meetings were held to provide information about the proposed Basin Plan. One was on April 18, 2006 at the Fife Community Center. A second was on April 19, 2006 at the Browns Point Improvement Club.</p> <p>The Pierce County Planning Commission also conducted a public hearing on May 23, 2006 to review the Plan.</p> <p>Prior to Basin Plan adoption the County Council will schedule public hearings.</p>
Date of Final Action	Action by the Pierce County Council is anticipated in late 2006.
Subsequent Environmental Review	Project-specific environmental review for various construction projects and programmatic actions will be performed when site and implementation alternatives are identified. Individual environmental review will precede issuance of applicable development permits or construction.
Location of Original EIS for the 1991 Plan	<p>Pierce County Planning and Land Services 2401 South 35th Street Tacoma, WA 98409 253-798-7210</p> <p>Pierce County Public Works and Utilities Environmental Services Building 9850 64th Street West University Place, WA 98467-1078 253-798-2725</p>

Cost of FSEIS

The Basin Plan and FSEIS may be purchased for the cost of printing at:

Pierce County Public Works and Utilities
Environmental Services Building
9850 64th Street West
University Place, WA 98467-1078
253-798-2725

Information about the Basin Plan and FSEIS are also available at the following internet address: www.piercecountywa.org/hylebos

FINAL SEIS

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8.1 SUMMARY

Pierce County Public Works and Utilities, Water Programs Division, is proposing to adopt and implement the Hylebos Browns-Dash Point Basin Plan (Basin Plan or Plan). If adopted, the Basin Plan would update the County's 1991 *Storm Drainage and Surface Water Management Plan* (1991 Plan) for the Hylebos and Browns-Dash Point Basins.

The *State Environmental Policy Act* (SEPA), Chapter 43.21C RCW, requires that an Environmental Impact Statement (EIS) be prepared for proposed actions that could result in probable significant adverse environmental impacts. Decisions on plans, policies, and programs are "nonproject actions." Nonproject EISs provide a general discussion of significant adverse environmental impacts. A nonproject EIS was prepared for the original 1991 Plan to provide full disclosure of potential impacts. That EIS compared a No Action Alternative against the measures recommended in the 1991 Plan. This Final Supplemental EIS (FSEIS) has been prepared to determine whether substantial changes in the County programs from implementing the Basin Plan would result in "significant adverse environmental impacts" and to take into account any "significant new information" that has been developed over the past 15 years (WAC 197-11-405(4)). The FSEIS compares the implementation of the Hylebos Browns-Dash Point Basin Plan (Proposed Action) with a No Action Alternative. The No Action Alternative would be the continued implementation of the 1991 Plan.

Because the Basin Plan consists of recommendations for actions and Pierce County will not implement a particular recommendation until it is included in a Capital Improvement Program (CIP) or other approved program, this Basin Plan is considered a non-project proposal, per WAC 197-11-704 and WAC 197-11-774. Environmental review in this FSEIS is programmatic. Future project-specific environmental review, pursuant to the SEPA, will be required as specific recommendations are implemented and adverse effects can be known.

This Basin Plan is one of 10 basin plans that Pierce County is preparing to update the 1991 Plan. The 1991 Plan was adopted to provide a surface water management program for non-federal land in unincorporated Pierce County. It evaluated 26 drainage basins and identified stormwater and surface water management measures in light of the law and policies existing at the time. The basins were evaluated at different levels, depending upon whether they were considered to be urban or rural. Eight urban and urbanizing areas were studied in more detail. The Hylebos and Browns-Dash Point Basins were studied as urban areas.

Since the original 1991 Plan was prepared, surface water management has increased in complexity. Growth in Pierce County has made development impacts more widespread and obvious. In the early 1990s, the State Growth Management Act (GMA) required the designation of environmentally sensitive areas, such as wetlands and streams, the protection of adjacent buffer areas, and the adoption of an updated Pierce County Comprehensive Plan.

There has been a growing emphasis on the protection of water quality, streams, wetlands, and other environmentally sensitive areas. In the mid-1990's, jurisdictions with populations over 100,000, including Pierce County, were required to create stormwater programs under the federal Clean Water Act's National Pollutant Discharge Elimination System (NPDES) program. In the late 1990's the federal government listed Chinook salmon as endangered and bull trout found in Pierce County waters as threatened under the *Endangered Species Act* (ESA). Any adverse impact on a listed species is considered to be significant.

These factors lead Pierce County to propose the Hylebos Browns-Dash Point Basin Plan. The Basin Plan evaluates current stormwater and related surface water conditions and problems. It identifies and prioritizes recommended projects. It addresses changes in programs needed to meet the requirements of the *Clean Water Act*, the *Endangered Species Act*, and the *Growth Management Act*.

Citizens within the Basins provided input to the Basin Plan at public meetings. Their concerns regarding habitat, water quality and quantity in the basins were addressed within the Basin Plan.

The Basin Plan proposes several projects that would reduce flooding and drainage problems within the basin, improve water quality, and improve fish habitat. Some projects would become part of CIP for Water Programs, while others may be completed as part of a maintenance program or recommended to other agencies.

Several of the measures address existing flooding and drainage problems in the Basins while others address fish habitat and water quality needs of the streams. In addition, recommendations for programmatic measures (non-structural) are presented. Future basin land uses and growth, according to existing planning documents, are reviewed and determined to be compatible with the maintenance of stream hydrologic conditions. There are recommendations for more detailed studies to address needs identified in this Plan. The proposed components of the Basin Plan are described in detail in *Chapter 7*.

8.1.1 Comparison of Impacts

Table 8-1 summarizes and compares potential impacts on elements of the environment under the alternatives. Environmental impacts are discussed in the Affected Environment, Significant Impacts, and Mitigation Measures Section of this FSEIS. It is assumed that any activities that occur would be conducted in accordance with applicable land use, development and environmental regulations.

**Table 8-1
Comparison of Impacts**

Element	Proposed Action Basin Plan	Probable Significant Adverse Environmental Impact?	No Action Alternative	Probable Significant Adverse Environmental Impact?
Water Resources	<ul style="list-style-type: none"> • Temporary reductions in water quality associated with conveyance upgrade projects during construction. Mitigation measures include BMPs during construction. • Net improvement in flooding and drainage conditions on roadways and private property. • Water quality would improve because of reduced channel erosion and sedimentation. • Water quality would improve because active efforts to identify and reduce pollutant discharges would be undertaken. 	<ul style="list-style-type: none"> • No 	<ul style="list-style-type: none"> • Temporary reductions in water quality associated with conveyance upgrade projects during construction. • Many flooding and drainage problems would continue to occur. • Channel erosion and sedimentation would continue, which would adversely affect water quality. • Water Quality improvement activities would not be undertaken as part of a basin-specific program. 	<ul style="list-style-type: none"> • Potential
Fishery Resources	<ul style="list-style-type: none"> • Potential for short-term increase in stream sediment during construction of culvert and/or pipe replacements projects. Mitigation measures include BMPs during construction. • Reduced channel erosion and sedimentation would improve water quality, which would improve fish habitat. Erosion of beaches would be reduced, which would improve nearshore habitat. 	<ul style="list-style-type: none"> • No 	<ul style="list-style-type: none"> • Potential for short-term increase in stream sediment during construction of culvert and/or pipe replacements projects • Habitat restoration would continue to be carried out mainly by others, with limited coordination. • Problems with channel erosion and sedimentation would continue. 	<ul style="list-style-type: none"> • Potential

**Table 8-1
Comparison of Impacts**

Element	Proposed Action Basin Plan	Probable Significant Adverse Environmental Impact?	No Action Alternative	Probable Significant Adverse Environmental Impact?
	<ul style="list-style-type: none"> • A coordinated effort and increased resources toward stream restoration would ensure successful restoration efforts. • Restoration of up to 1,000 linear feet of riparian area and flood plain along Hylebos Creek. 			
Vegetation	<ul style="list-style-type: none"> • Coordinated stream restoration projects would revegetate stream banks to improve habitat, reduce water temperatures, and improve water quality. • Restoration of up to 1,000 linear feet of riparian area along Hylebos Creek. • Removal of invasive species would be a positive benefit. • Minor impacts on vegetation may temporarily occur during construction activities. Any disturbed areas would be restored after construction. 	<ul style="list-style-type: none"> • No 	<ul style="list-style-type: none"> • Stream restoration and revegetation would not be coordinated. Less riparian vegetation would be actively restored. • Minor impacts on vegetation may temporarily occur during construction activities. • The invasive species program would not be implemented in the basins 	<ul style="list-style-type: none"> • Potential
Wildlife	<ul style="list-style-type: none"> • Coordinated stream restoration projects would improve wildlife habitat. • During construction activities wildlife may be temporarily displaced. Habitat would be restored after construction. • Restoration of up to 1,000 linear feet of riparian habitat along Hylebos Creek. 	<ul style="list-style-type: none"> • No 	<ul style="list-style-type: none"> • Stream restoration and wildlife habitat improvements would not be coordinated, at a lower level of restoration. • During construction activities wildlife may be temporarily displaced. 	<ul style="list-style-type: none"> • Potential

**Table 8-1
Comparison of Impacts**

Element	Proposed Action Basin Plan	Probable Significant Adverse Environmental Impact?	No Action Alternative	Probable Significant Adverse Environmental Impact?
	<ul style="list-style-type: none"> Removal of invasive plant species during restoration projects could displace wildlife in the short term, but would positively improve wildlife habitat in the long-term. 			
Land and Shoreline Use	<ul style="list-style-type: none"> Development would be directed away from floodplains and valuable habitat resources towards areas with fewer constraints. Development of stormwater facilities would be consistent with adopted policies and regulations. The Basin Plan information would guide and/or support development of land use plans that reduce impacts on water resources and public safety. 	<ul style="list-style-type: none"> No 	<ul style="list-style-type: none"> Stormwater facility development would be consistent with adopted policies and regulations. Continued implementation of the 1991 Plan, which predates the County Comprehensive Plan. 	<ul style="list-style-type: none"> Potential
Aesthetic, Historic and Cultural Resources	<ul style="list-style-type: none"> Temporary aesthetic impacts associated with vegetation removal and construction activities of individual projects. Disturbed areas would be restored after construction. If any cultural resources were discovered during construction of individual projects, the County would immediately consult with appropriate officials regarding appropriate measures. 	<ul style="list-style-type: none"> No 	<ul style="list-style-type: none"> Temporary aesthetic impacts associated with vegetation removal and construction activities of individual projects. Disturbed areas would be restored after construction If any cultural resources were discovered during construction of individual projects, the County would immediately 	<ul style="list-style-type: none"> No

**Table 8-1
Comparison of Impacts**

Element	Proposed Action Basin Plan	Probable Significant Adverse Environmental Impact?	No Action Alternative	Probable Significant Adverse Environmental Impact?
Public Services and Utilities	<ul style="list-style-type: none"> • During facility construction, local roadways and service providers could be temporarily disrupted. Pierce County would coordinate mitigation measures with local service providers and utilities to avoid or reduce impacts during construction. • Implementation of the proposed projects and programs would improve long-term public safety and reduce the need for some public services. 	<ul style="list-style-type: none"> • No 	<p>consult with appropriate officials regarding appropriate measures.</p> <ul style="list-style-type: none"> • Construction of individual projects could result in short-term impacts that could temporarily delay emergency vehicles and disrupt service providers. • Limited upgrades would reduce some of the existing flooding and drainage problems, although at a lesser extent than the Proposed Action. • Public safety and the need for some public services would be minimally improved. 	<ul style="list-style-type: none"> • No

8.2 ALTERNATIVES, INCLUDING THE PROPOSED ACTION

8.2.1 Introduction and Background

This section describes alternatives to achieve the long-term goals of the 1991 Plan. The alternatives evaluated are the **Proposed Action**, which is the adoption of the Hylebos Browns-Dash Point Basin Plan, and the **No Action Alternative**, which is the continued use of the Capital Improvements Program element of the 1991 Plan. This section of the FSEIS also provides background on the 1991 Plan.

8.2.2 Pierce County Storm Drainage and Surface Water Management Plan (1991 Plan)

The Pierce County Council established the County's Surface Water Management Utility in March 1988 by Ordinance 87-205. In 1991, the County adopted the original Stormwater Drainage and Surface Water Management Plan (1991 Plan). The 1991 Plan was intended to provide a comprehensive program for surface water management operations, funded by service charges. The 1991 Plan also was prepared to satisfy Washington State Department of Ecology (Ecology) requirements for a *Comprehensive Flood Control Management Plan* (WAC 173-145).

The 1991 Plan addressed all 26 of the drainage basins in Pierce County, to varying degrees. Urban areas were studied in more detail than rural basins. Computer models were prepared for most of the basins, for use as analytical tools. The hydrology and flood management of the major rivers were not addressed; that area is the subject of other plans. Eight urban and urbanizing basins were studied in detail: Gig Harbor, Hylebos Creek, Clear/Clarks Creek, Clover/Steilacoom Creek, Chambers Bay, Tacoma West/Browns-Dash Point, Muck Creek, and American Lake. The rural study areas were comprised of small groups of basins: 1) Key Peninsula, Burley/Minter Creek, and Islands; 2) South Prairie Creek, Upper Carbon River, and Lower Carbon River; 3) Lower White River, Upper White River, and Mud Mountain; 4) Upper Puyallup River and Mid Puyallup River; 5) Ohop Creek, Mashel River, and Upper Nisqually River; and 6) Lower Nisqually River and Mid-Nisqually River. Surface water management objectives were developed for each basin.

The 1991 Plan included recommendations for both structural and non-structural means of accomplishing goals and objectives. The non-structural recommendations tend to be broad and countywide rather than basin or study-area specific. The 1991 Plan focused primarily on projects aimed at addressing the then-existing flooding problems. Specific flooding projects were recommended in the 1991 Plan for a Capital Improvement Program (CIP).

Four short-term and six long-term goals were developed as part of the 1991 Plan. The short-term goals were to have been implemented within two years of Plan development. They included: 1) adoption of the Plan; 2) establishment of a permanent Storm Drainage and Surface Water Management Utility; 3) provision of a funding mechanism to implement the entire plan; and 4) implementation of all the non-structural recommendations. A fifth goal, listed separately, was to adopt a drainage manual. To date, all the short-term goals have been implemented, at least in part.

The long-term goals in the 1991 Plan are goals for the life of the County's program. The goals of the 1991 Plan are listed in *Table 8-2*.

**Table 8.2
1991 Plan Goals**

Goal	Description	Objectives
1.) Loss Prevent the Loss of Life, the Creation of Public Health or Safety Problems and the Loss or Damage of Public and Private Property.	Prevent the loss of life or property due to flooding events.	<p>Nonstructural measures should be preferred over structural measures. Protection of existing facilities and structures should take preference over the protection of undeveloped lands.</p> <p>Land use and related regulations and zoning should reflect the natural constraints of the streams, floodplains, meander zones, and riparian habitat zones. Together, this plan, program and codes should present consistent goals and objectives.</p>
2.) Establish and Adopt a Systematic and Comprehensive Approach	Storm water management should occur in the context of an ongoing, systematic and comprehensive approach to solving existing problems and preventing future problems.	<p>Continue the role of the Citizens Advisory Committee or similar body in an advisory role to the Utility. The body should represent the entire County and citizens with a variety or [sic] reasons for their interest in surface water management.</p> <p>Strategies for surface water management should balance engineering, economic, environmental, and social factors in relationship to stated comprehensive planning goals and objective.</p> <p>Public understanding of the various capabilities and limitation associated with storm water management should be improved through a variety of educational efforts.</p> <p>The goals and objective of the Master Plan should be evaluated at regular intervals (i.e., every 5 years) to maintain consistency with other related programs affecting the environment.</p>
3) Minimize Expenditure of Public Funds	The need for emergency measures should be reduced or prevented through planning, and the use of structural and nonstructural measures.	A stable, adequate, and publicly acceptable long-term source of financing should be established and maintained for the Utility and the comprehensive management program.

**Table 8.2
1991 Plan Goals**

Goal	Description	Objectives
<p>4) Maintain the Varied Uses of the Existing Natural Drainage System Within the County</p>	<p>Storm water management in Pierce County should occur in the context of the varied uses associated with the natural drainage systems within the County. These include agricultural, commercial, industrial and residential, fish and wildlife habitat, water supply, open space, and recreation.</p> <p>Preserve to the fullest extent possible, the scenic, and ecological qualities of the natural drainage system in harmony with those uses which are deemed essential to the life of its citizens, and wherever possible, enhance the instream and riparian uses of the streams, wetland and lakes of Pierce County.</p>	<p>Storm water management measures should preserve to the fullest extent possible opportunities for other uses.</p> <p>Structural flood control measures should not obstruct fish passage.</p> <p>Structural flood control measures should preserve or enhance existing flow characteristics for fisheries, and other uses of the riparian zone.</p> <p>Flood control activities should not result in a net loss of, or damage to fish and wildlife resources, but wherever possible develop or improve the diversity of habitat.</p> <p>Changes in land use should try to restore the lands natural character to the natural state whenever possible.</p>
<p>5) Prevent the degradation of the quality of both surface water and the water entering the regions aquifers.</p>	<p>Urbanization normally leads to a degradation in the quality of storm water runoff. This can become a problem both for the wildlife which depend on the stream system and the local populace.</p>	<p>The use of the natural drainage system is preferred over the use of pipelines or enclosed detention systems. The preservation of natural wetland, floodplains and streams is to be actively pursued.</p> <p>The County will apply for a NPDES permit and will strive to be in compliance with the requirements for the preservation of water quality.</p> <p>All storm water runoff from impervious surfaces should be treated before it is allowed to enter the natural drainage system, infiltrate into the ground or enter Puget Sound.</p>

**Table 8.2
1991 Plan Goals**

Goal	Description	Objectives
6) Coordinate with Public and Private Sectors	Storm water management measures should be compatible with the various public and private sectors affected.	<p>Planning and design/construction of stormwater management measures should include opportunity for comment by the general public and interested agencies. The Master Plan and its updates shall provide opportunity for identification of acceptable storm water management measures.</p> <p>The SWM Advisory Board should provide information about existing and pending regulations that are incompatible with the goals of the 1991 Plan. Efforts should be made to work with the Cities towards standardization of regulations which impact stormwater management.</p>

Pursuit of these goals is still ongoing, although many of the objectives have been met. Most of the goals were strongly related to the planning, construction, operation, and maintenance of storm drainage facilities. In the 1991 Plan, the surface water management objectives for the Tacoma West-Browns/Dash Point study area included:

- Preventing existing flooding problems from becoming worse,
- Preventing stormwater problems before they occur,
- Coordinating with the City of Tacoma and King County,
- Eliminating existing flooding and erosion problems, and
- Improving water quality.

The objectives within the 1991 Plan for the Tacoma West-Browns/Dash Point study area were to reduce the potential for loss of life and property damage that currently existed and to prevent additional stormwater problems from being created by additional development within the basin. These objectives could be accomplished with the proposed CIP in conjunction with a good land use management program and stringent development standards.

For the Hylebos study area, the surface water management objectives in the 1991 Plan included:

- Preventing existing flooding problems from becoming worse,
- Preventing stormwater problems before they occur,
- Coordinating with the Cities of Fife, Milton, Federal Way, Tacoma, Puyallup, and King County, and
- Eliminating existing flooding problems.

The objective within the 1991 Plan for the Hylebos study area was to implement a program to reduce the potential for loss of life and property damage caused by increased development and surface water runoff. This objective could be accomplished with a coordinated and cooperative approach to land use and storm water management among several entities that control development within the Hylebos study area.

8.2.3 Use of the 1991 Plan As Principal Focus of CIP Has Evolved

The 1991 Plan has been used as a basis for Capital Improvement Program proposals since 1991. Projects have been selected every year and adopted by the County Council as part of the County's six-year Capital Facilities Plan under the County's Comprehensive Plan. Although many of the projects still come from the original 1991 Plan, other projects not in the 1991 Plan also have been developed as the result of more recent information. Additionally, since the 1991 Plan was developed, the cities of University Place, Lakewood, and Edgewood have incorporated and thus the County's responsibility for capital projects in those areas has been eliminated. Other cities such as Roy, Bonney Lake, and Fife have annexed adjoining areas as well, also

reducing the County's responsibilities in those areas. Project funding, planning, construction, and maintenance activities have been affected by these changes.

The 1991 Plan was developed before adoption of the Pierce County Comprehensive Plan, which was developed pursuant to the *Growth Management Act*. Zoning and other land use regulations have changed development patterns in some areas of the County, and the future growth estimates used to develop the 1991 CIP list are no longer valid.

Many of the projects proposed as part of the 1991 Plan have been constructed, while others could not be constructed because development patterns made acquisition of construction sites prohibitively expensive. Several of the smaller projects, such as culvert replacement or maintenance activities within road rights-of-way, were completed by the Transportation Services Section of Public Works and Utilities. (A determination has been made that Transportation Services is responsible for stormwater facilities located within road rights-of-way, and that Water Programs is responsible for all others.)

The 1991 Plan has been amended once, in 1995, to add several area-specific engineering studies as attachments and to incorporate other pre-existing drainage-basin analysis documents by reference. The amendment to the 1991 Plan went through public hearings before the Planning Commission and the County Council, as have changes to the annual Capital Improvement Program. Many of those studies now are no longer relevant to the Surface Water Utility program because of the changes mentioned above.

8.2.4 Proposed Action - Hylebos Browns-Dash Point Basin Plan

The Proposed Action is the adoption and implementation of the Basin Plan for surface water management for the Hylebos Browns-Dash Point Basin within unincorporated Pierce County. The proposed Basin Plan documents the existing conditions of the basin's water resources, identifies water resource problems and issues, and recommends a plan to improve conditions in the basin. The proposed Basin Plan also includes recommendations for capital projects and programmatic activities designed to remedy existing problems and to prevent future water resource problems.

Basin conditions are analyzed against the County's Basin Plan goals, engineering principles, and best management practices (BMPs) to formulate a comprehensive list of basin needs and action recommendations. Recommendations include projects, programs, and policies to address the water quality, flooding, and habitat problems identified in the proposed Basin Plan.

The potential projects included in the proposed Basin Plan would append and update the 1991 Plan and its Capital Improvement Plan. Programmatic recommendations would augment the nonstructural recommendations contained in the 1991 Plan. The proposed Basin Plan would provide guidance for Pierce County's future capital improvement projects, capital expenditures,

water resource protection policies, and public education programs in the Hylebos/Browns-Dash Point Basin.

The proposed Basin Plan has been developed to address water quantity, water quality and stream habitat concerns for the portions of the Browns-Dash Point and Hylebos Basins within unincorporated Pierce County. Through a process of investigation and analysis, specific-site improvement projects and programmatic measures have been identified for the Proposed Action.

To identify basin problems and develop potential opportunities for the Proposed Action, Pierce County collected a variety of information on the basins. The County and its planning team reviewed existing documents and the County's Service Response System (SRS), conducted field reconnaissance, prepared a citizen questionnaire, interviewed basin residents and County staff, and contacted a variety of other organizations. The County held two public meetings in the Spring of 2005 to present identified problems and potential solutions, and to solicit public input. The information collection and stakeholder involvement process is discussed in detail in Chapter 3 of the Basin Plan.

Site visits were conducted in July 2004 to identify problem sites and concerns. The identified stormwater drainage problems then were screened by the County to determine which problems should receive further analysis. The problem investigation and screening process are described in *Chapter 5* of the Basin Plan.

Storm drainage problems selected for further analyses primarily were conveyance problems, where existing facilities lacked adequate capacity to pass high flows. The planning team performed hydrologic and hydraulic analyses to better define the problems and then to evaluate potential structural solutions. This involved engineering analyses and computer simulations to replicate observed conditions and to identify improvements that would provide conveyance capacity equivalent to the County's current design flow standard. The Pierce County design flow requirements used in these analyses are outlined in the Pierce County Stormwater Management and Site Development Manual (Pierce County Stormwater Manual) (1999). *Chapter 6* and *Appendix E* of the proposed Basin Plan summarize the engineering and computer analyses used in the planning process.

After identifying the proposed infrastructure projects, the planning team developed capital project cost estimates based on unit costs provided by the County. *Appendix F* of the proposed Basin Plan provides further information about the cost estimation process.

8.2.5 No Action Alternative

The No Action Alternative would be to continue Water Programs activities as they currently exist, using the 1991 CIP as the basis for considering the County annual capital public works and work plan. As the list of high-priority projects gets completed, and as the CIP becomes more dated, the County would increasingly rely on more opportunistic means of identifying and prioritizing capital projects, such as citizen complaints and judgment of County staff. *Table 8-3* lists the original high-priority projects in the 1991 Plan for the Hylebos and Browns-Dash Point Basins. *Table 8-4* lists additional projects that have been completed in the Basins.

**Table 8-3
Recommended Projects in the 1991 Pierce County Storm Drainage and Surface Water Management Plan**

High Priority Projects	Estimated Cost	Project Number	Status	Notes	Basin Plan ID Code
<i>Hylebos Study Area</i>					
Replace 3 County-owned Culverts (because culverts did not meet 25-yr design standard)	\$131,000	<i>HY-CULV-H (HY-HY-5, HY-WP-9, HY-WP-9A)</i>	Confirmed HY-HY-5 is a problem, but it is now outside County jurisdiction (located in Fife). Status on others not known		H-5
NE of I/S of 16th St. E. and 108th Ave. E. Floodplain Zoning	0 CIP cost	<i>HY-aDET</i>	Outside County jurisdiction (located in Edgewood)		
4 ponds N of 24th St. E. & W of 108th Ave. E. Floodplain Zoning	0 CIP cost	<i>HY-dDET</i>	Outside County jurisdiction (located in Edgewood)		
S of 36th St. E. & 119 Ave. extended Floodplain Zoning	0 CIP cost	<i>HY-eDET</i>	Outside County jurisdiction (located in Edgewood)		
N of 40th St. and east of 122 Ave. E. Floodplain Zoning	0 CIP cost	<i>HY-gDET</i>	Outside County jurisdiction (located in Edgewood)		
S of 24th St. E. & E of 112th Ave. E. Floodplain Zoning	0 CIP cost	<i>HY-hDET</i>	Outside County jurisdiction (located in Edgewood)		
Near 32nd St. and E of 110th Ave. E. Floodplain Zoning	0 CIP cost	<i>HY-iDET</i>	Outside County jurisdiction (located in Edgewood)		
Near I/S of 36th St. E. & 108th Ave. E. Floodplain Zoning	0 CIP cost	<i>HY-jDET</i>	Outside County jurisdiction (located in Edgewood)		
Immediately downstream of Milton Floodplain Zoning	0 CIP cost	<i>HY-IDET</i>	County has acquired some of properties. WSDOT SR 167 work would address flooding in this area.	P-4-CIP-D333	
Surprise Lake Outlet on valley floor, Flood storage/floodproof	\$848,000	<i>HY-oDET</i>	Outside County jurisdiction (located in Fife)		
In Milton at confluence of forks, flood storage	\$320,000	<i>HY-Milton</i>	Outside County jurisdiction (located in Milton)		

**Table 8-3
Recommended Projects in the 1991 Pierce County Storm Drainage and Surface Water Management Plan**

High Priority Projects	Estimated Cost	Project Number	Status	Notes	Basin Plan ID Code
Floodproof existing structures on Hylebos, floodproofing	\$200,000	<i>HY-floodcontrol</i>	WSDOT SR 167 work would address flooding in this area.	WSDOT plans to acquire some properties	
Improve water quality from pipelines, Improve 2 pipeline outlets	\$93,000	<i>HY-WQ-H</i>	Status not known		
Allowance for undefined projects, Misc. Projects	\$600,000	<i>HY-misc</i>	Status not known		
<i>Browns-Dash Point Study Area</i>					
Erosion Control - Dash Point (priv)/HDPP on a steep slope	\$158,000	<i>TW-proj(k)</i>	Constructed.	D801 - Markham Ave. Pipeline	

**Table 8-4
Other Projects Completed in the Basins**

Project Number	Project Name	Year Completed
<i>Hylebos Basin</i>		
CIP-5552	Caldwell Road - Pipeline	1990
CIP-5407	32nd St. E. - Pond	1990
D140	4th & 66th - Pipeline	2002
D328	1st St. & 65th - Detention Pond	1997
<i>Browns-Dash Point Basin</i>		
D176	Beach Dr. - Pumpstation	2005

8.2.6 Comparison of Alternatives

Table 8-5 summarizes the major characteristics of the Proposed Action and the No Action Alternative.

**Table 8-5
Comparison of the Alternatives**

Feature	Proposed Action (Basin Plan)	No Action Alternative
Flooding Solutions	X	X
Water Quality Solutions	X	
Habitat Solutions	X	
Annual Capital Facilities Element	X	X
Comprehensive And Strategic Planning	X	
Primary Focus On Specific Projects		X
Focus On Basin Problems	X	
County-wide Programmatic Or Non-Structural Solutions	X	X
Basin-Specific Programmatic Or Non-Structural Solutions	X	
Prioritizes Projects Within Basin	X	
Prioritizes County-wide		X

8.3 AFFECTED ENVIRONMENT, SIGNIFICANT IMPACTS, AND MITIGATION MEASURES

Both the Browns-Dash Point and Hylebos Basins are located in the northeast corner of Pierce County and are within the Puyallup Water Resource Inventory Area (WRIA) 10. Despite the inclusion in WRIA 10, both Basins release water directly into Puget Sound rather than into the Puyallup River. The Hylebos Basin covers 29 sq. mi (18,625 acres) and the Browns-Dash Point Basin covers 15 sq. mi. (9,589 acres). Both Basins straddle the Pierce/King County boundary. Because of incorporations or annexations by the Cities of Tacoma, Fife, and Edgewood, relatively little area of each basin is within unincorporated Pierce County. The entire basin planning area is within the urban service areas of the adjoining jurisdictions. Unincorporated Pierce County contains 950 acres or 5.1% of the Hylebos Basin, and 758 acres or 7.9% of the Browns-Dash Point Basin.

8.3.1 Water Resources

Affected Environment

The Browns-Dash Point and Hylebos Basins are typical of developing and urbanized areas and are experiencing drainage problems generally associated with development. The primary water quantity problems are insufficient conveyance capacity and channel erosion. The conveyance issues are the result of undersized system components (e.g., inlets, pipes, etc.), while the channel erosion has resulted from the increased runoff from upstream basin development. The identified problems include flooding caused by the absence of critical drainage facilities, undersized facilities, inadequate maintenance of existing facilities, and erosion of natural drainage channels by increased stormwater flows. The identified problems are discussed in detail in *Section 5.1* of the Basin Plan.

The Browns-Dash Point Basin is comprised of multiple smaller drainages. The majority of these drainages begin near the top of the bluffs, drain to ravines, and discharge directly into Puget Sound. Most of the problem sites in the unincorporated Pierce County portions of the Browns-Dash Point Basin are in residential areas with steep slopes. In general, flooding occurs at several of the outfall locations within Browns-Dash Point area. Existing water resources concerns for the Browns-Dash Point Basin include beach erosion from stormwater discharge, erosion of natural channels within steep slopes, high downstream levels of total suspended solids and sedimentation during storm events, and flooding of private property.

The unincorporated areas of Pierce County within the Browns-Dash Point Basin are primarily residential. Although no stormwater monitoring data exist for this area, urban runoff from the Browns-Dash Point neighborhoods can be expected to contain pollutants and concentrations similar to those observed in runoff from other Northwest communities. The Dash Point area is largely unsewered, and the septic systems contribute to water quality concerns. Septic failures have occurred, which are a common source of fecal coliform bacteria and nutrients, among other

pollutants. Moreover, outer Commencement Bay is on the Washington 303(d) list for fecal coliform, with a total maximum daily load (TMDL) recommended. In the Hylebos Creek Basin, existing problems from drainage, flooding, and erosion in unincorporated Pierce County typically are related to increased runoff from development in the Fife Heights area or to floodplain filling along the lower Hylebos. The most substantial flooding on the lower Hylebos occurs where it crosses under Interstate 5 and Hwy 99. Existing water resources concerns within the Hylebos Basin include floodwater encroaching into Interstate 5, flooding of residences, and eroding side slopes and downcutting of channels.

In 1983, the U.S. Environmental Protection Agency (EPA) declared the Commencement Bay Nearshore Tidelands to be a Superfund clean-up site. The Hylebos waterway also is designated for environmental cleanup under the Superfund law. The Superfund designations are related to historic industrial uses, rather than to urban stormwater runoff from unincorporated Pierce County. In addition, segments of the Hylebos Creek mainstem and the West Fork, just upstream of the Pierce County line, are listed for fecal coliform violations on the Washington 303(d) list, with TMDLs potentially pending.

Little additional information is available regarding water quality in the basin planning area. The 1991-1993 study conducted by the Tacoma-Pierce County Health Department (TPCHD) found that about 57% of the samples exceeded "action limits," primarily for copper, zinc, lead, and arsenic. A few samples exceeded the action limits for oil & grease (TPCHD, 1993). Only two samples were analyzed for fecal coliform bacteria, and both exceeded the state standards. The observed concentrations for these parameters are within the range typically observed in runoff from residential and commercial areas in the Northwest. However, the elevated arsenic may reflect aerial deposition from the former ASARCO smelter on Ruston Way in Tacoma.

Significant Impacts and Mitigation Measures

Proposed Action (Basin Plan)

The proposed Basin Plan identifies a series of CIP projects and programmatic measures to relieve flooding and drainage problems. The CIP projects include eight projects in the Browns-Dash Point Basin and three projects in the Hylebos Basin (*Table 7-2*). These projects consist mainly of improving conveyance capacity by increasing channel, inlet, and/or pipe capacity. The long-term effects of these projects would be a net improvement in the flooding and drainage conditions in the Hylebos and Browns-Dash Point Basins. The proposed projects also would reduce channel erosion and sedimentation, which would improve water quality. Many of the proposed CIP improvements are site-specific in nature, and are designed to deal with existing site-specific flooding issues.

The local drainage improvement projects generally would involve the installation of short lengths of storm pipes and other facilities to improve local drainage. None of these CIP projects would have a significant long-term adverse impacts on streams in the Basins.

Construction of many of the CIP projects would have the potential for short-term impacts on water quality, particularly those constructed within or adjacent to the streams. Sediment would be mobilized and quickly carried downstream, temporarily reducing water quality. Subsequent deposition of sediment also could harm fish habitat. As mitigation measures during construction of individual projects, standard erosion control measures and BMPs would be implemented to avoid serious sedimentation problems. Standard erosion control measures such as silt fencing, coverage of exposed earth, and permanent seeding of disturbed areas following construction would further reduce temporary sediment and water quality impacts. Construction work adjacent to or within streams would be limited to low-flow periods, typically the summertime.

Construction of each project would be required to meet Pierce County construction and erosion control requirements, as well as applicable state and federal requirements. For instance, those projects taking place within a stream would require a Hydraulic Project Approval (HPA) from the Washington State Department of Fish and Wildlife. The standard requirements for control of erosion and other construction-related pollutants, such as fuels and lubricants, would assure that the water quality impacts would be short term and not significant.

The CIP projects would improve the existing flooding and drainage conditions in the Hylebos and Browns-Dash Point Basins. Future growth and land uses within some areas, however, could exacerbate existing problems or create new problems. The primary area of concern in this regard is Fife Heights, where additional development is anticipated, and future flow increases could result in additional downstream flooding and erosion impacts. The proposed Basin Plan includes programmatic measures to address potential impacts from future development. Implementation of the runoff control measures included in the updated Pierce County Stormwater Management and Site Development Manual would address stormwater impacts from future development.

The Dash Point area is largely unsewered, and the septic systems have contributed to water quality concerns. The proposed Basin Plan includes a programmatic measure to prioritize the septic systems in these areas for higher scrutiny and inspections, in coordination with the Tacoma-Pierce County Health Department. Improved septic systems in the Browns-Dash Point Basin would reduce the concerns over fecal coliform in basin receiving waters.

Overall, implementation of the proposed Hylebos Browns-Dash Point Basin Plan is expected to result in a major long-term benefit to the water resource and water quality conditions within the Basins. No significant adverse environmental impacts on water resources are likely under the Proposed Action.

No Action Alternative

Under the No Action Alternative, stormwater would continue to be managed in the Hylebos and Browns-Dash Point Basins as it is today. County efforts would continue to focus on serious drainage complaints rather than assuming a more proactive, comprehensive approach. Periodic

maintenance of ditches, culverts, and other County drainage facilities by County crews would continue.

During construction of any individual project, the short-term impacts and mitigation measures would be similar to those discussed under the Proposed Action. However, the identified flooding and drainage problems would continue to occur. As further development occurs, drainage problems are expected to intensify. Further development in accordance with the current Comprehensive Plan could increase flood flows and erosion in much of the system.

Implementation of the No Action Alternative would not address many of the flooding and drainage problems identified in the Hylebos and Browns-Dash Point Basins, and would not result in the major long-term benefits to water resources and water quality compared with the Proposed Action. Many flooding and drainage problems would continue to occur, particularly at locations not covered by the 1991 Plan. Channel erosion and sedimentation would continue, which would adversely affect water quality. Because of the lower focus on water resources, potential significant environmental impacts to water resources have been identified as resulting from the No Action Alternative.

8.3.2 Fishery Resources

Affected Environment

The streams of the Hylebos and Browns-Dash Point Basins support several species of salmonids. *Table 4-4* of the Basin Plan lists the fish species documented in the streams of the Hylebos and Browns-Dash Point Basins. In the Browns-Dash Point Basin, coho salmon have been documented in Reach 1, while salmon are assumed to be absent in the remaining reaches. In the Hylebos Basin, documented species include coho salmon, fall Chinook, fall chum salmon, pink salmon, and winter steelhead.

In the late 1990's the federal government listed Chinook salmon as endangered and bull trout found in Pierce County waters as threatened under the *Endangered Species Act* (ESA).

Available stream habitat information was evaluated within the context of the Pre-Field Classification phase of the Urban Stream Baseline Evaluation Method (USBEM) developed under the *Tri-County Urban Issues ESA Study* (R2 Resource Consultants, 2000). This technique does not involve field visits or stream walks, but instead is based on review of aerial photos, blockage databases, and GIS data. The intent of the Pre-Field phase is to identify whether potential stream reaches provide highly suitable, secondary, or negligible fish habitat. Those reaches that provide highly suitable or secondary habitat would then be considered for more detailed field surveys to better ascertain existing habitat quality and identify potential conservation or restoration opportunities.

As a result of the Pre-Field work, most of the stream reaches in the Browns-Dash Point study area (with the exception of BDP1-R1, R3 and R5) were categorized as of negligible suitability for habitat due to steep channel gradients and lack of adequate base flows (King County, 1990). Another factor in habitat suitability is the degree of watershed and channel alteration. In general, due to extensive development and channel alterations, including straightening and confinement from the floodplain, the reaches in the Hylebos Creek study area were determined to have a “high” level of alteration. Therefore, Hylebos Creek study area reaches known to have presumed or documented salmonid presence were categorized as being of “secondary” suitability. Although the lower Hylebos may have provided excellent habitat historically, these reaches are now primarily used by salmonids migrating to spawning grounds in the upper reaches of the West and East Branches (King County, 1990).

Significant Impacts and Mitigation Measures

Proposed Action (Basin Plan)

The Basin Plan includes a series of proposed CIP projects and programmatic measures that would relieve flooding and drainage problems, which would indirectly benefit the fishery resources of the Hylebos and Browns-Dash Point Basins. The Proposed Action would reduce channel erosion and sedimentation, and would lower downstream levels of total suspended solids and sedimentation during storm events. Improvements in water quality would benefit the fisheries resources of the basins. Erosion of beaches would be reduced, which would improve nearshore habitat. One CIP project would restore up to 1,000 linear feet of riparian area and flood plain along Hylebos Creek. None of the CIP projects would have a significant long-term adverse impact on the fisheries resources within the streams of the Basins. Construction of many of the CIP projects would have the potential for short-term impacts on fishery resources, primarily from temporary erosion and sedimentation. As mitigation measures during construction of individual projects, standard erosion control measures and BMPs would be implemented to avoid serious erosion and sedimentation problems. Using properly implemented and appropriate erosion controls and BMPs, short-term impacts on fish habitat would be minor. As discussed previously under Water Resources, construction of each project would be required to meet Pierce County and state erosion control requirements.

The proposed Basin Plan includes programmatic measures to restore stream habitat in the Hylebos Basin. The potential for habitat restoration exists up and downstream along I-5 and in the lower reaches of the Hylebos Mainstem. The Proposed Action would coordinate stream restoration and acquisition activities with appropriate jurisdictions and organizations, such as the Friends of the Hylebos and the Washington State Department of Transportation (WSDOT). A coordinated effort toward stream restoration would help ensure successful restoration efforts. Stream restoration activities would improve fish resources by creating complex habitat with adequate pools and riffles, providing overhead cover, increasing shade to reduce peak water temperatures, stabilizing banks to reduce sedimentation, and planting a vegetative buffer. Stream restoration would indirectly benefit riparian vegetation and wildlife.

Implementation of the proposed Hylebos Browns-Dash Point Basin Plan would result in long-term benefits to the fishery resources within the Basins. Short-term impacts during construction would be minor and would last for only a short period, and would be mitigated with BMPs. No significant adverse environmental impacts on fishery resources would occur under the Proposed Action.

No Action Alternative

Improvements to fish habitat would continue in the basins, but at a lower level compared to the Proposed Action. Under the No Action Alternative, County resources and coordination would be limited.

Under the No Action Alternative, stormwater would continue to be managed in the Hylebos and Browns-Dash Point Basins as under the 1991 Plan. Short-term impacts and mitigation measures associated with construction of capital facilities projects listed in the 1991 CIP would be similar to those discussed under the Proposed Action.

The No Action Alternative would not address many of the water quality and fish habitat problems identified in the Hylebos and Browns-Dash Point Basins. Problems with channel erosion and associated water quality impacts would continue at locations not covered by the 1991 Plan. Implementation of the No Action Alternative would not result in the major long-term benefits to fishery resources compared with the Proposed Action. Given the lesser focus on fishery resources under the No Action Alternative, the No Action Alternative would pose a potential for significant impacts on fishery resources.

8.3.3 Vegetation

Affected Environment

The unincorporated areas of Pierce County within the Browns-Dash Point Basin are primarily residential. The residential development has altered much of the vegetation, and the remaining upland habitat in the Basin is not considered significant. Most of the uplands in the Basin have been disturbed, leaving fragmented patches of forestland and grassland in a matrix of suburban development. Existing vegetation includes coniferous and deciduous trees and landscaped residential areas. With the changes in land use, several invasive species have established themselves throughout the Basin.

The Hylebos Basin is relatively less developed. The upper parts of Hylebos Creek include forested areas, wetlands, and riparian habitats. Habitat conditions in the lower Hylebos are degraded generally because of the confinement of the channel and encroachment by adjacent land uses. The best habitat in the system currently exists in the Spring Valley area on the West Fork, in the jurisdiction of Federal Way. The potential for habitat restoration exists up and downstream along Interstate 5 and in the lower reaches of the Hylebos Mainstem. Hylebos

Creek and its tributaries support several salmonid species (see *Section 8.3.2, Fishery Resources*, above).

Pierce County has mapped wetlands as Critical Area Resource Lands. The Brown-Dash Point Basin study area has few mapped wetlands (*Figure 4-1* of the Basin Plan). The wetland categories represented on the figure were assigned pursuant to Pierce County Critical Area regulations that were effective until March 1, 2005. If the wetlands are re-evaluated under current rating criteria those categories may change. Current rating criteria for wetlands are contained within Section 18E.30.70, *Appendix A* of Pierce County Code Title 18E and the Washington State Wetland Rating System for Western Washington, revised April 2004 (Ecology Publication #04-06-025).

In the Browns-Dash Point Basin, the wetlands shown on the *Figure 4-1* have been rated as Category 3 wetlands (under the pre-2005 County rating system). The Hylebos Basin study area has one large Category 2 wetland (~ 64 acres), which correlates to the floodplain area, and eight uncategorized wetlands (~15 acres) (*Figure 4-8* of the Basin Plan).

Proposed Action (Basin Plan)

Most of the proposed CIP projects would result in minimal impacts on vegetation within the Hylebos and Browns-Dash Point Basins. Vegetation adjacent to the proposed projects, where present, could be disturbed by construction activities. Any disturbed areas would be restored and revegetated after construction. As a mitigation measure, revegetation would use native vegetation where possible. None of the CIP projects would have a significant long-term adverse impact on the vegetation within the Basins. One CIP project would restore up to 1,000 linear feet of riparian area along Hylebos Creek, which would be a positive benefit. The Basin Plan includes proposed programmatic measures to restore stream habitat in the Hylebos Basin. Coordinate stream restoration projects could increase riparian area vegetation and provide vegetative buffers. Native vegetation would be planted where possible. Restoration of riparian vegetation would improve fish and wildlife habitat. One programmatic measure would be the implementation of an Invasive Species Management Program. Removal of invasive species would be a positive benefit for vegetation and an indirect benefit for wildlife.

No significant adverse environmental impacts on vegetation would occur under the Proposed Action.

No Action Alternative

Improvements to vegetation would continue in the basins, but at a lower level of coordination and resources compared to the Proposed Action. Less riparian vegetation would be actively restored under this alternative, because of the lack of a coordinated restoration program.

The No Action Alternative would not address many of the vegetation and habitat issues identified in the Hylebos and Browns-Dash Point Basins. The invasive species program would not be implemented in the basins. Given the lesser focus on vegetation and riparian habitat under the No Action Alternative, the No Action Alternative would pose a potential for significant impacts on Vegetation.

No significant impacts on vegetation have been identified as resulting from the No Action Alternative.

8.3.4 Wildlife

Affected Environment

The Browns-Dash Point and Hylebos Basins contain a variety of habitat types that are the result of the marine influence off Puget Sound, the glacial plains (soils) and associated vegetation, and the various hydrological and topographical features of the Basins. Wildlife found in the project area consists of native wildlife associated with the lowlands of Puget Sound, and with wildlife found in suburbanized human environments that can tolerate or benefit from close association with humans and habitat fragmentation.

A wide variety of wildlife occurs or potentially occurs in the Browns-Dash Point and Hylebos Basins. Blacktail deer, raccoon, beaver, coyote, and a variety of bats and rodent species commonly inhabit the remaining forest areas. The wetlands and riparian areas provide habitat for native wildlife such as raptors, small mammals, and waterfowl. The developed residential areas, with limited landscaping, provide habitat for songbirds and small mammals.

A number of species are in decline and have special state or federal designation, which also is referred to as Species of Concern. These include the peregrine falcon, bald eagle, and marbled murrelet, which are federally listed threatened species.

The Basin Plan area contains documented raptor habitat and active nests, including Bald eagle nest areas. Lower portions of the larger Basins contain nesting and feeding habitat for seabirds and marine mammals.

Significant Impacts and Mitigation Measures

Proposed Action (Basin Plan)

Construction activities within the Plan area will be subject to additional reviews under applicable regulations. These reviews could include environmental review (SEPA, NEPA), Shoreline Management Act compliance, Critical Areas compliance, ESA assessment, NPDES compliance, water quality (Army Corps of Engineers 404 Permit and Department of Ecology 401 Certification) and Hydraulic Project Approval. All activities would occur in a manner consistent with temporal and physical conditioning of approvals received from the regulatory agencies.

Most of the proposed CIP projects would result in minimal impacts on wildlife and wildlife habitat within the Hylebos and Browns-Dash Point Basins. Construction activities could disturb riparian vegetation, which could temporarily affect local wildlife. As a mitigation measure, any disturbed areas would be revegetated after construction with native vegetation. None of the CIP projects would have a significant long-term adverse impact on the wildlife within the Basins. Restoration of up to 1,000 linear feet of riparian area along Hylebos Creek would be a positive impact on wildlife.

The Basin Plan includes proposed measures to restore stream habitat in the Hylebos Basin. Coordinate stream restoration projects could increase riparian area vegetation, which would improve wildlife habitat. Removal of invasive plant species during restoration projects could displace wildlife in the short term, but would positively improve wildlife habitat in the long-term. No significant adverse environmental impacts on wildlife would occur under the Proposed Action.

No Action Alternative

Development would generally continue at the varied densities currently seen within the Hylebos and Browns-Dash-Point Basins. Major changes in the wildlife habitat resulting from long-term development in the basins would not likely occur, except in areas with the greatest potential for growth. Less riparian vegetation and wildlife habitat would be actively restored under this alternative, because of the lack of a coordinated restoration program. Given the lesser focus on riparian habitat and invasive species under the No Action Alternative, the No Action Alternative would pose a potential for significant impacts on Wildlife.

No significant impacts on wildlife have been identified as resulting from the No Action Alternative.

8.3.5 Land and Shoreline Use

Affected Environment

The land and shoreline uses of the Browns-Dash Point and Hylebos Basin are characteristic of an urbanizing area. Land and shoreline uses in the Browns-Dash Point Basin are generally more developed than in the Hylebos Basin. Land use and buildable lands are discussed in greater detail in *Chapter 4* of the Basin Plan.

Land use in the Browns-Dash Point Basin study area has long been residential. The Browns-Dash Point Basin study area is located within the County Urban Growth Area. The study area is primarily zoned moderate density, single-family residential, with a small area of mixed use for a neighborhood center (*Figure 4-3* of the Basin Plan). Actual land use is approximately 56 percent residential (*Figure 4-4*). The Basin is approaching full build-out with the highest levels of development along the shorelines. Inland, there are larger tracts of land that may ultimately be developed. However, these parcels tend to include steep slopes, streams and other environmental constraints that will delay or possibly preclude their development.

Figure 4-5 of the Basin Plan is a map of buildable lands in the Browns-Dash Point Basin study area. As can be seen from the map, large areas (approximately 57 percent of the study area) of the basin are developed (see *Table 4.2* of the Basin Plan). The undeveloped area includes a large area abutting the King County border that is designated as vacant, but is likely part of the Dash Point State park. This area accounts for approximately 17 percent of the study area. If this area were to remain vacant, the amount of developable land is much less than 57 percent. In addition, using the assumptions developed for the 2002 Buildable Lands Report (*Tables 6 - Pierce County and Table 8 - Pierce County* of the report), of the remaining developable land area (approximately 40 percent of the study area), less than half (approximately 40 percent) is actually available for development. The rest is unavailable due to constraints such as critical areas, road and right of way construction, and public facilities.

The Hylebos Basin study area also is located within the County Urban Growth Area. The study area is zoned primarily single-family residential, with small areas of mixed-use and commercial activity (*Figure 4-10* of the Basin Plan). Actual land use is approximately 57 percent residential (*Figure 4-11*). The Fife Heights area has a number of larger tracts of land that are not yet developed to full zoning density. Portions of the undeveloped area include steep slopes, streams, and other environmental constraints that could preclude their development.

Figure 4-12 of the Basin Plan is a map of buildable lands in the Hylebos study area (Pierce County Buildable Lands Report, 2002). As can be seen from the map, approximately 58 percent of the study area is vacant or underdeveloped (see also *Table 4-2* of the Basin Plan). Using the assumptions developed for the 2002 Buildable Lands Report, of the remaining developable land area, less than half is actually available for development (approximately 40%). The rest is unavailable because of constraints such as critical areas, road and right-of-way construction, and

public facilities. The County expects to see continued residential construction activity in the Five Heights area as the study area builds out.

Land use activities in Pierce County are guided by the Pierce County Comprehensive Plan (Comprehensive Plan). The Comprehensive Plan was developed and adopted in 1995 pursuant to the requirements of the Washington State Growth Management Act (GMA) (Revised Code of Washington Chapter 36.70A). The GMA requires consistency between other planning documents, such as basin plans, and the Comprehensive Plan prepared under RCW 36.70A.

Significant Impacts and Mitigation Measures

Proposed Action (Basin Plan)

Implementation of the Basin Plan would not be expected to significantly affect land or shoreline use in the Browns-Dash Point and Hylebos Basins. No unavoidable significant adverse impacts or cumulative impact on land use are expected to result from implementation of the Basin Plan. The Proposed Action would address many of the identified flooding, drainage, and water quality problems, which would result on long-term indirect benefits on associated land and shoreline uses, compared with the No Action Alternative.

Land use decisions drive stormwater management infrastructure needs. The Basin Plan has used adopted Pierce County land use/zoning and current development regulations to model future hydrological conditions and to determine the type, size, and location of proposed facilities that would be needed to support planned growth. Critical areas designations also have been used to identify potential sites for stormwater facilities and habitat restoration.

The Basin Plan would provide facilities and services that are supportive of land use activities and that are consistent with adopted Pierce County policies and regulations for land use, public facilities, and resource protection. In addition to recommendations for facility construction, the Basin Plan includes recommendations for program development and policy and regulatory changes that would serve to further consistency with the Comprehensive Plan.

Development of stormwater facilities would be consistent with adopted policies and regulations. The Basin Plan therefore would be consistent with of the Pierce County Comprehensive Plan and its policies. Development would be directed away from floodplains and valuable habitat resources towards areas with fewer constraints.

In addition, information contained within the Basin Plan and its supporting documentation provides the “science” needed to support decisions made with regard to land use regulation or policy. The Basin Plan information would guide and/or support development of land use plans that reduce impacts on water resources and public safety.

No Action Alternative

The No Action Alternative has been developed from the 1991 Plan and is a continuation of the existing program. Project recommendations within the 1991 Plan were based upon the needs foreseen in 1991 and upon the land use designations and comprehensive plan policies in effect at that time.

Stormwater facility development would be consistent with adopted policies and regulations and with the 1991 Plan. Because the 1991 Plan was prepared before the Pierce County Comprehensive Plan, stormwater facilities under the 1991 Plan (No Action) would be inherently inconsistent with the currently adopted Comprehensive Plan. The No Action Alternative would continue that inconsistency.

The No Action Alternative would not address many of the identified flooding, drainage, and water quality problems, and would not result in the associated long-term land use and shoreline benefits compared with the Proposed Action. Because of the continued impacts on water quality and the inconsistencies with the Comprehensive Plan, potential significant impacts on land and shoreline use could occur under the No Action Alternative.

8.3.6 Aesthetic, Historic, and Cultural Resources

Affected Environment

The Browns-Dash Point and Hylebos Basins contain several aesthetic views of both natural and manmade features, particularly those properties that overlook the Puget Sound and other water bodies. Several areas of the bluffs overlooking the Sound are designated as Open Space Corridors by Pierce County. The Basins also include several parks and natural areas, which provide views and open space. The major parks and natural areas include the Browns Point Lighthouse Park, Browns Point Playfield, Dash Point Park and Beach, Dash Point State Park, North Shore Golf Club, and the Hylebos Creek wetlands.

The Browns-Dash Point and Hylebos Basins contain relatively new, urbanizing development, with limited potential for historic properties. The Pierce County Register of Historic Places was searched, and no historic resources are identified in the Basins. In addition, the Pierce County Cultural Resources Inventory was searched for properties within the Browns-Dash Point and Hylebos Basins. The two cultural resources identified in the Basins are the Golden Rule Hotel and a house, both of which are located in Fife.

Significant Impacts and Mitigation Measures

Proposed Action (Basin Plan)

The Basin Plan includes a collection of recommendations to manage stormwater within the Browns-Dash Point and Hylebos Basins. Many of these programmatic recommendations include regulatory action, stormwater BMPs, studies, and public education programs, which would likely not affect aesthetic, historic, or cultural resources in the Browns-Dash Point and Hylebos Basins. None of the CIP projects would adversely affect the identified cultural and historic resources. The CIP projects and programmatic recommendations would not result in significant long-term impacts on aesthetic, historic, or cultural resources.

The proposed CIPs include a list of specific projects that would involve some type of construction activity. Construction activity could result in temporary aesthetic impacts associated with tree/vegetation removal. Any short-term construction impacts would be minimal. Disturbed areas would be restored and revegetated after construction. Stream and riparian habitat restoration would add vegetation alongside water bodies and would improve the aesthetic views of those areas. As a mitigation measure, revegetation would use native vegetation where possible. No impacts on park views are expected.

The potential exists to encounter cultural resources during construction of individual projects. If any cultural resources were discovered during construction activities, Pierce County would immediately consult with the Washington State Office of Archaeology and Historic Preservation (OAHP) in Olympia and other appropriate officials regarding mitigation measures. Potential mitigation measures would include conduction investigations of cultural resources that could be affected on each project site, and identifying appropriate mitigation prior to proceeding with any work that could adversely affect cultural resources.

No Action Alternative

Under the No Action Alternative, stormwater would continue to be managed in Browns-Dash Point and Hylebos Basins as it is today. If any cultural resources were discovered during construction of projects within the 1991 Plan, the County would immediately consult with OAHP and other officials regarding appropriate measures. No long-term impacts on aesthetic, historic, or cultural resources would be expected under No Action. Construction activity could result in temporary aesthetic impacts from removing vegetation, while disturbed areas would be restored after construction.

8.3.7 Public Services and Utilities

Affected Environment

All typical public services and facilities are available within the Browns-Dash Point and Hylebos Basins. Portions of the Basins are connected to the Pierce County sanitary sewer system, and are within the Tacoma Treatment Plant Sewer Service Planning Area. The Dash Point area is largely unsewered, however, and the septic systems contribute to water quality concerns (see *Section 8.3.1, Water Resources*, above).

Stormwater facilities are constructed and maintained by Pierce County Water Programs. Facilities such as culverts within County road rights-of-way are maintained by the Transportation Services Division of Public Works and Utilities. County roads are maintained by the County. Major State roads in the area are State Routes 509 and 99, and Interstate 5. Pierce Transit provides bus service. Regional recreational facilities include the Browns Point Lighthouse Park, Browns Point Playfield, Dash Point Park and Beach, North Shore Golf Club, and the Dash Point State Park. Public schools are provided by the Tacoma, Fife, and Puyallup School Districts. Law enforcement services are provided by the Pierce County Sheriff's Department.

Significant Impacts and Mitigation Measures

Proposed Action (Basin Plan)

The Basin Plan includes a series of CIP projects and programmatic measures to reduce flooding and drainage problems. Implementation of the proposed projects and programs would improve long-term public safety and reduce the need for some public services, compared to the No Action Alternative. The decreases in flooding of roadways and properties, landslides, and demand for emergency services would be a positive benefit. The Basin Plan would have no impact upon solid waste collection or landfills, electrical power, natural gas, or telecommunications facilities. Long-term impacts on public services and utilities are not expected under the Proposed Action.

Construction of some of the CIP projects could have short-term impacts upon public safety. Construction of individual CIP projects may temporarily affect local roadways and disrupt local services and utilities. Pierce County would coordinate mitigation measures with local service providers and utilities to avoid or reduce impacts during construction.

No Action Alternative

Public safety and the need for some public services would be minimally improved. Limited upgrades under the 1991 Plan would reduce some of the existing flooding and drainage problems, although at a lesser extent than the Proposed Action. Areas within the Basins would continue to experience localized flooding, which could cause road closures and potentially reduce access for emergency vehicles. Under the No Action Alternative, construction of individual projects under the 1991 Plan could result in short-term construction impacts that could temporarily delay emergency vehicles and disrupt service providers.

No other impacts to Public Services and Utilities are expected.

Written Comments

Leslie Ann Rose
Senior Policy Analyst
Citizens for a Healthy Bay
May 2, 2006



CITIZENS FOR A HEALTHY BAY

917 Pacific Avenue
Suite 100
Tacoma, WA 98402
Phone (253) 383-2429
Fax (253) 383-2446
chb@healthybay.org
www.healthybay.org

May 2, 2006

Adonais Clark, Senior Planner
Environmental Designee
Pierce County Planning and Land Services
2401 South 35th Street
Tacoma WA 98409-7490

Re: Hylebos – Browns Point – Dash Point Basin Plan

This letter presents remarks from Citizens for a Healthy Bay (CHB) to the document referenced above.

Board of Directors

Linda Farmer
Cheryl Greengrove
Scott Hansen
Bruce Kilen
Dave McEntee
Peter Porietis
Lua Pritchard
Lee Roussel
Robert Stivers
Sheri Tonn
Allen Zulauf

In general, CHB supports the plan and believes its implementation will improve the overall environmental quality of the Hylebos-Browns Point-Dash Point basin. CHB does note a serious omission in the Supplemental EIS, specifically Section 8.3.4 Wildlife - Significant Impacts and Mitigation Measures.

The Supplemental EIS does not adequately acknowledge raptor habitat and active raptor nests documented within the basin, most seriously fails to address the potential adverse impacts to two active and successful Bald eagle nests. Eagles and other raptors rely on the basin habitats for foraging year round. Additionally, lower Hylebos Creek provides nesting habitat for migrating seabirds including Merganser and Harlequin duck. Construction and basin improvements must protect these nesting, roosting and foraging habitats without displacing the raptors and seabirds dependent upon them, especially during sensitive nesting and rearing seasons.

Thank you for your consideration of our remarks.

Sincerely:

Leslie Ann Rose

Leslie Ann Rose
Senior Policy Analyst

A tax-exempt
Nonprofit organization with
501(c)(3) status

Leslie Ann Rose
Senior Policy Analyst
Citizens for a Healthy Bay
May 2, 2006

RESPONSE: Thank you for your letter and comments. The FSEIS text has been amended to address your comments.

Please note that any projects that are undertaken pursuant to the adopted Plan will be subject to additional review. The review for specific projects may vary, but is likely to include SEPA review, Shoreline Management Act review, and Critical Area review under Pierce County Code Chapter 18E in addition to review for compliance with state and federal regulations.

Sheri J. Tonn
May 1, 2006

7311 East Side Drive NE
Tacoma, WA 98422
May 1, 2006

Adonais Clark
Environmental Designee
Pierce County Planning and Land Use Services
2401 South 35th Street, Suite 175
Tacoma, WA 98409

Dear Mr. Clark:

Re: Draft Supplemental Environmental Impact Statement for the Proposed Hylebos Browns-Dash Point Basin Plan

I have reviewed the Basin Plan and associated DEIS, and have two concerns related to the proposed projects, during and after construction. They are:

1. The plan briefly identifies wild life species, but does not address concerns related to raptors. Active raptor nests should be identified, and construction should not take place while raptor nests are active. There are at least two mapped bald eagle nests in the identified project area. One is very close to Site BDP-4, the Dry Gulch and Varco project, probably within a few hundred feet of the Dry Gulch. Federal standards regarding tree trimming and removal should be identified in the FIES and applied to this and other construction projects.
2. Surface water is vital to the survival of wildlife. Historically, small seasonal streams drained the basin. Where possible, ditches should be opened and habitat quality improved, rather than increasing the length of culverts. From individual project descriptions, it is not clear where culverts will be extended, or how wildlife habitat will be improved. The FEIS should specify this for all high and medium priority projects.

Thank you for the opportunity to provide comments on these projects.

Sincerely,



Sheri J. Tonn

Sheri J. Tonn
May 1, 2006

RESPONSE: Thank you for your letter and comments. Please see also response to comments from Citizens for a Healthy Bay. Project descriptions within the Basin Plan are at a conceptual level for planning purposes. Whether a culvert will be lengthened or a ditch opened is a matter that will be subject of additional consideration when actual project scoping and design commence. Habitat and mitigation factors are also investigated more fully at those stages of project development.

Department of Ecology
Southwest Regional Office
April 29, 2006



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300

April 26, 2006

Mr. Adonais Clark, Environmental Designee
Planning and Land Services Department
Pierce County
2401 South 35th Street, Room 175
Tacoma, WA 98409

Dear Mr. Clark:

Thank you for the opportunity to comment on the Draft Environmental Impact Statement for the Hylebos Browns-Dash Point Basin Plan, as proposed by Pierce County Public Works and Utilities, Water Programs Division. The Department of Ecology (Ecology) reviewed the environmental checklist and has the following comment(s):

TOXIC CLEANUP: Marv Coleman (360) 407-6259

This area may have been contaminated with heavy metals due to the smokestack plume originating from the old Asarco Smelter in North Tacoma. Ecology recommends that the soils be sampled and analyzed for lead and arsenic. Erosion control measures must be in place prior to any clearing, grading, or construction. These control measures must be effective to prevent soil from being carried into surface water by stormwater runoff. Sand, silt, and soil will damage aquatic habitat and are considered pollutants. Any discharge of sediment-laden runoff or other pollutants to waters of the state is in violation of Chapter 90.48, Water Pollution Control, and WAC 173-201A, Water Quality Standards for Surface Waters of the State of Washington, and is subject to enforcement action.

Proper erosion and sediment control practices must be used on the construction site and adjacent areas to prevent upland sediments from entering a stream channel, water body or natural stormwater drainage system. If these contaminants and/or others are found at concentrations above the Model Toxics Control Act (MTCA) cleanup levels, Ecology recommends that current owners, potential buyers, construction workers, and others be notified of their occurrence and that you contact the Environmental Report Tracking System Coordinator at the Southwest Regional Office at (360) 407-6300.

For assistance and information about subsequent cleanup and to identify the type of testing that will be required contact Marv Coleman at (360) 407-6259 or Joyce Mercuri at (360) 407-6260.

Ecology's comments are based upon the information provided with the SEPA checklist. As such, they do not constitute an exhaustive list of the various authorizations that must be obtained or legal requirements that must be fulfilled in order to carry out the proposed action.

If you have any questions or would like to respond to these comments please contact the appropriate reviewing staff listed above.

Department of Ecology
Southwest Regional Office

(DN: 06-2483)

cc: Marv Coleman, TCP
Joyce Mercuri, TCP
Dan Wrye, Pierce County Water Programs

Department of Ecology
Southwest Regional Office
April 29, 2006

RESPONSE: The potential presence of contaminants is addressed in Chapter 4 of the Basin Plan. Your comments have been noted. Thank you.

Dan and Jill Barkley
April 27, 2006

April 27, 2006

PIERCE COUNTY PLANNING
& LAND SERVICES

MAY -1 2006

To: Mr. Adonais Clark, Environmental Designee
Pierce County Planning and Land Services Department
2401 South 35th St.
Tacoma, WA 98409

Re: Draft Hylebos Browns-DASH POINT Basin Plan and Draft Supplemental
Environmental Impact Statement

We live at 6602 Spring Street, and we do not remember receiving a comment survey in 2004, nor does it appear that our street is in the comment area mapped in the recent EIS Draft. It may be that we just missed it during the busy summer month of July.

We would like to comment on Spring Street in Dash Point. The remedy proposed to prevent further erosion is welcomed, but does not address the floods of water that flow from above Dogwood Street and down 21st Street and Dash Point Boulevard ending up under the road culvert on Spring Street. There is so much water at times, that we have been mudded inside our house a few times, when we fail to check all of the catch basins prior to the downpours! One time plastic newspaper tubes blocked a culvert, and eroded our banks, spewed mud into our home and filled our neighbor's garage! Another time a neighbor left his laurel clippings in the open ditch, they floated to the culvert opening, and again, we were mudded! There is also a problem of rogue water not making it into the ditch, it flows over our driveway bump, and erodes the underneath of our driveway on Dogwood Street. Our rock walls crumble from the excess water! We get all of the uphill runoff down here on the inside corner of Spring Street. We look forward to dry summer!

The only family now putting yard waste across the road live at 8633 East Side Drive NE. They do not own the property, nor do they have permission to dispose onto the property. Since the dawn of recycle bins for yard waste in our area, dumping has nearly ceased. There is one washing machine in the gully under the debris that was too heavy to pull out.

The open ditch on the south side of Spring Street abutting our land, has overgrown with bamboo grass, blackberry, and other weeds, and continues to deepen yearly. There is no riprap at the culvert entrance and our fence and sport court is suffering from under the bank erosion. Our overgrown ivy holds it all together, and we try to keep it back from the ditch.

Please address the issue of water runoff from up-hill, prior to its finding its way down to the Spring Street culvert. Thank you for listening!

Jill Barkley
Dan Barkley
6602 Spring St NE
Tacoma, WA 98422

Jill Barkley 4/27/06
Dan Barkley 4/27/06

Dan and Jill Barkley
April 27, 2006

RESPONSE: Thank you for your comments. Your concerns are noted. Some of them appear to be related to maintenance issues. Those comments will be forwarded to our maintenance section for investigation. Our proposed project “CIP01-BDP1-CP01” will also address some of your concerns. At this time the design is conceptual for planning purposes. When the project scoping and actual design for construction are undertaken, the project will be designed to more specifically address known problems.

Comments Received at Public Meetings

Two public presentations were conducted for the Draft Basin Plan. Notice of the presentations was included in the published Plan document, and was sent to all parties who had attended previous public meetings or were on the interested parties mailing list. Notice was also posted on the Water Programs website.

April 18, 2006
Fife Community Center
2:00 p.m.

One interested party, a commissioner for Drainage District 23, attended the open house/meeting. The locations of some drainage ditches within the District were not shown. He also expressed concern about the increase in water that enters the District systems. The increase appears to be related to increased development in the area. The system is at the downstream end of the drainage basin, and receives water from outside district boundaries. The District is responsible under NPDES for discharges from the system, but has little control over what is coming into it.

The commissioner also noted that some of the priority ratings in the project tables did not match those in some of the project descriptions.

Response: The hydrology shown on the figures was based upon GIS coverages for water resources that were available during Plan preparation. A figure has been created that reflects more recent GIS coverages for drainage features within the District area. Please see “Figure 8a.”

We acknowledge your concerns about drainage from outside the District boundaries. New development within unincorporated Pierce County is subject to the provisions of the Pierce County Stormwater Management and Site Development Manual which contains standards developed to reduce municipal liability related to control of stormwater runoff.

We have corrected the inconsistencies in the ratings between the tables and the Plan text.

Thank you for providing comment.

April 19, 2006
Browns Point Improvement Club
7:00 p.m.

Three citizens attended this meeting. Part of their interest was because there is a proposed community plan underway in the Browns-Dash Point area. A question was raised about the population projections within the Basin Plan—did they represent just the unincorporated area? (Staff confirmed later that they did, and provided the information to interested parties.)

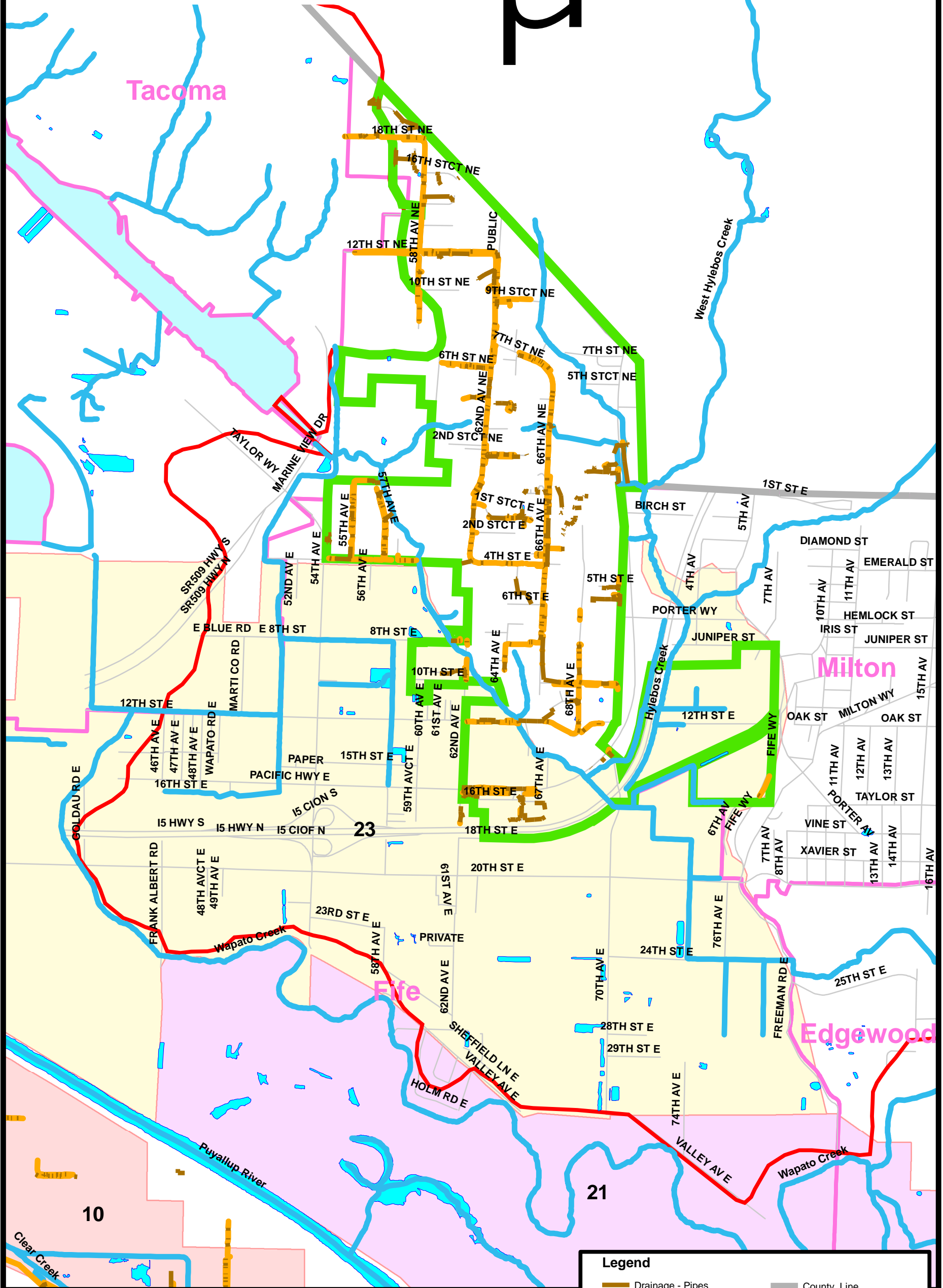
There was support for the area-specific proposed programmatic measures to address water quality concerns. Attendees were familiar with the problems sites contained within the Plan and expressed that the Plan seemed to address area concerns regarding storm drainage and surface water management problems. They asked that Water Programs coordinate with Planning and Land Services for development of the community plan.

Response: Thank you for your interest in our Basin Plan. We will add language to the Basin Plan text to clarify that the projections are specific to the unincorporated area of Pierce County.

We will coordinate with Planning and Land Services as appropriate during development of the community plan.

Hylebos Creek Basin

Figure 8a Current Water Course Data in Hylebos Study Area



Legend

Drainage - Pipes	County_Line
Drainage - Channels/Ditches	Hylebos_Streets_Pierce
Water Course (Streams)	Cities in Pierce County
Water body	Puget Sound
Study Area	Drainage Districts - 1996
Hylebos Creek Basin	DISTRICT 10, 21 and 23



D. Grinstead GISP May 2006
 /dgrinst/hylebos_bpt/hylebos_cd/projects/fig8a.mxd

DISTRIBUTION LIST

BASIN PLAN RECIPIENTS

Kobetich Branch, Tacoma Public Library

Fife Community Center

Puyallup Tribe of Indians

Puyallup Indian Tribal Fisheries

Browns Point Improvement Club c/o Jason Water, President

Puyallup River Watershed Council c/o Linda Burgess, Chair

Drainage District 23

Washington State Department of Ecology

Pierce County Library Headquarters

Dan and Jill Barkley

Sheri Tonn

Citizens for a Healthy Bay

NOTICE OF AVAILABILITY RECIPIENTS

City of Tacoma

City of Fife

City of Federal Way

City of Milton

City of Edgewood

Tacoma Public Library Headquarters

Friends of the Hylebos

Washington State Department of Transportation

Drainage District 21

Washington State Department of Fish and Wildlife