

MID-PUYALLUP BASIN PLAN

EXECUTIVE SUMMARY

ES.1 Introduction and Purpose

The 2005 Mid-Puyallup Basin Plan (Basin Plan) serves as a comprehensive guide to surface water management in unincorporated areas of the Mid-Puyallup Basin. The Basin Plan focuses on multiple aspects of surface water management with an emphasis on flooding, water quality, and habitat issues.

This Basin Plan was developed as part of Pierce County's basin planning program that takes a focused approach to watershed management in each of the County's major drainage basins. Previously, the Pierce County Storm Drainage and Surface Water Management Plan (1991 Plan) addressed surface water management countywide for over a decade. Under the 1991 Plan, Mid-Puyallup was combined with several other rural basins and given only minor consideration. Mid-Puyallup is one of 26 Pierce County basins (see *Figure ES-1*).

The purpose of the Mid-Puyallup Basin Plan is to establish the actions Pierce County will take that are needed to reduce flood hazards, to protect water quality, and to protect fish and wildlife habitat in the Mid-Puyallup drainage basin given the physical characteristics of the basin; the laws, policies and regulations that apply to surface water management in Pierce County; the preferences of citizens in the County and in the Mid-Puyallup Basin; and the character of existing land use and planned growth as set out in the [Comprehensive Plan for Pierce County, Washington](#).

The Basin Plan supports or furthers Pierce County's:

- Compliance with its federal "Clean Water Act" National Pollution Discharge Elimination System (NPDES) municipal stormwater permit
- Compliance with the "Endangered Species Act" (ESA) by eliminating or reducing existing potential habitat issues that could cause "jeopardy" for listed species
- Upgrade to a "Class 4," rating or better, under the Federal Emergency Management Agency's (FEMA) "Community Rating System" (CRS)

ES.2 Goals of the Mid-Puyallup Basin Plan

Specific goals and objectives of the Mid-Puyallup Basin Plan are:

Reduce Flood Hazards

- Incidents of property loss and repeat damage are reduced
- Streams will not be adversely affected by flood events
- Pierce County's standing under the FEMA Community Rating System is improved
- New development is located outside of flood prone areas

FIGURE ES-1

Improve Water Quality

- State Surface Water Quality Standards (WAC 173-201a) are met or exceeded
- Number of impaired (303d listed) water bodies is reduced
- Pierce County is in compliance with its NPDES permit for stormwater by meeting permit terms and conditions to the maximum extent practicable
- Risk of groundwater contamination is reduced
- Rates of erosion are reduced

Improve Associated Habitat

- Number of stream miles available for wild, native fish populations is increased
- Population numbers of species listed as "endangered" or "threatened" under the Federal Endangered Species Act are maintained or increased
- Quality and quantity of available wetland, riparian, and upland habitat is improved

ES.3 Basin Description

The Mid-Puyallup Basin comprises the drainage areas of tributaries to the Puyallup River between river mile (RM) 7 and RM 26.5. It excludes the Carbon River and White River drainages and the main stem of the Puyallup River (see *Figure ES-2*). The main stem of the Puyallup River is covered in other plans. The entire Mid-Puyallup planning area encompasses 57.6 square miles (36,333 acres), of which 41.8 square miles (74%) is within unincorporated Pierce County. The remaining 15.8 square miles (26%) are within areas incorporated by various cities; Bonney Lake, Fife, Orting, Puyallup, and Sumner. For a description of the roles of the cities and the Puyallup Tribe, refer to [Chapter 3, Stakeholder Involvement](#).

The Mid-Puyallup Basin is part of "Washington State Water Resource Inventory Area"(WRIA) 10, the Puyallup-White River Basin. Mid-Puyallup Basin contains six primary tributaries:

- **Alderton Creek**, tributary 0399, confluence at Puyallup RM 12.2
- **Van Ogles Creek**, tributary 0400, confluence at Puyallup RM 13.1
- **Ball Creek**, tributary 0405, confluence at Puyallup RM 14.9
- **Fennel Creek**, tributary 0406, confluence at Puyallup RM 15.5
- **Canyon Falls Creek**, tributary 0410, confluence at Puyallup RM 16.2
- **Horsehaven Creek**, tributary 0589, confluence at Puyallup RM 20.2

In addition, 18 square miles (11,560 acres) drain directly to the river and are not associated with the creeks. Descriptions of the tributary drainage basins are located in [Chapter 4, Current Conditions](#).

**Figure ES-1
Study Area**

repeat of County figure 1-2 from Chapter 1

ES.4 Problems, Proposed Solutions and the Prioritization Process

Problems identified in the Basin Plan are from flooding caused by surface water or groundwater, surface water impairment, stream degradation, and riparian habitat degradation due to stormwater. The Basin Plan also addresses the impacts associated with these problems and issues, such as: property damage from flooding; inadequate drainage; violations of federal, state and local regulations; and threats to public health and safety.

Each potential Capital Improvement Project (CIP) and programmatic recommendation was evaluated for its net natural resource management benefit and then prioritized based on cost-to-benefit considerations.

In determining net benefit, each project and program was scored using a system that assigned points for the project or program's potential for various aspects of flood reduction, water quality protection or improvement, natural resource improvement, and other factors such as economic development, multiple use, education, and recreation. Each project and program was reviewed and scored using approximately 40 specific criteria. Recommended CIPs and programs were then put in rank order, based on their numeric benefit score, and grouped by "High," "Medium," and "Low" priority order. In total, the Basin Plan recommends \$16,488,700 of projects and programs for the Mid-Puyallup Basin. This includes \$1,091,000 "High Priority"; \$14,317,200 "Medium Priority"; and \$1,080,500 "Low Priority" projects.

ES.4.1 Recommended Actions

Capital Improvement Projects

For the Mid-Puyallup Basin, 23 CIPs have been recommended to improve drainage, solve flooding problems, protect floodplain, and protect water quality. These CIPs are summarized in *Table ES-1* and grouped by "High," "Medium," and "Low" priority.

CIPs include a variety of culvert replacements, stormwater pond enhancements, channel capacity improvements, storm drain construction, riparian corridor restoration and protection, maintenance activities, and property acquisitions. Detailed descriptions of each CIP and its associated links are provided in [Chapter 9 - Basin Plan](#).

The recommended CIPs total is \$14,851,200. Of that amount:

- \$205,000 is identified as "High Priority"
- \$13,733,200 is identified as "Medium Priority"
- \$913,000 is identified as "Low Priority"

ES.4.2 Programmatic Recommendations

Most of the recommended programs apply countywide. Cost estimates for implementing the programs in the Mid-Puyallup Basin have been calculated based on a 10.2% share of the overall countywide costs over a 10-year period. A period of 10 years was chosen for estimating costs although most programs are expected to continue indefinitely. Programmatic recommendations total \$1,637,500 over this 10-year period and are prioritized as follows: \$886,000 "High Priority"; \$726,000 "Medium Priority"; and \$25,500 "Low Priority".

Specific programmatic activities are:

- Low Impact Development (LID) Pilot Study
- Update Stormwater Quality Standards
- Inspection Increases for Stormwater Compliance and NPDES permit
- Land Acquisition Program
- Restoration and Enhancement Program
- Education, Outreach, and Technical Assistance Program
- Monitoring Program
- Best Management Practices (BMPs) for Maintenance Manual
- Invasive Species Management Program
- Flood Disclosure Statements in Property Titles
- Enhanced cooperative arrangement with cities and other jurisdictions

Table ES-1 summarizes Capital Improvement Projects (CIP) and Programmatic recommendations. Detailed descriptions of each CIP and Programmatic recommendation are provided in [Chapter 9 - Basin Plan](#).

Table ES-1 Summary Recommendations			
"HIGH-PRIORITY" RECOMMENDATIONS			
Project Name	Project No	Score	Estimated Cost
Update Stormwater Management Standards	PRG-00-02	380	\$3,000
BMP Maintenance Manual	PRG-00-08	427	\$21,000
Invasive Species Management Program	PRG-00-09	437	\$21,000
Develop Land Acquisition Program	PRG-00-04	389	\$27,000
Jansky Road Channel Stabilization	CIP-23-HH8-RST02	331	\$99,000
LID Pilot Study	PRG-23-01	346	\$100,000
Education, Outreach, and Technical Assistance	PRG-00-06	397	\$102,000
106th Street E Culvert Replacement	CIP-23-BC1-C07	332	\$106,000
Inspection Increases for Stormwater Compliance Requirements and NPDES Permit	PRG-00-03	398	\$612,000
Total estimated cost of "High-Priority" Projects			\$1,091,000

Table ES-1 Summary Recommendations - continued

"MEDIUM-PRIORITY" RECOMMENDATIONS			
Project Name	Project No	Score	Estimated Cost
Ball Creek Fish Barrier Culvert Replacements	CIP-23-BC2-C01-C06	234	\$39,000
Horsehaven Riparian Property Acquisition	CIP-23-HH1-AC02	297	\$79,200
188th Street E Culvert Replacement	CIP-23-HH5-C07	302	\$87,000
Mouth of Ball Creek Fish Passage	CIP-23-BC2-RST01	198	\$131,000
Enhanced cooperative arrangement with cities and other jurisdictions	RRG-00-11	315	\$150,000
150th Avenue Culvert Replacement	CIP-23-HH4-C05	206	\$151,000
Fir Ridge Infiltration Pond	CIP-23-FC5-DP01	274	\$205,000
Mouth of Horsehaven Creek Property Acquisition	CIP-23-HH1-AC01	300	\$264,000
Mouth of Ball Creek Property Acquisition	CIP-23-BC2-AC01	220	\$264,000
Restoration and Enhancement Program	PRG-00-05	325	\$102,000
McCutcheon Road Bridge Replacement	CIP-23-FC1-BRG01	197	\$345,000
Monitoring Program	PRG-00-07	265	\$474,000
Van Ogles Creek Replacement	CIP-23-V01-RST01	262	\$2,362,000*
Fennel Creek Restoration	CIP-23-FC1-RST01	294	\$2,494,000*
Ball Creek Restoration	CIP-23-BC2-RST02	272	\$2,494,000*
Horsehaven Creek Restoration	CIP-23-HH1-RST01	289	\$4,676,000*
Total estimated cost of Medium-Priority Projects			\$14,317,200

LOW-PRIORITY RECOMMENDATIONS			
Project Name	Project No	Score	Estimated Cost
Flood Disclosure Statements in Property Titles	PRG-00-10	85	\$25,500
Military Road Culvert Replacement	CIP-23-BC1-C11	120	\$44,000
Pioneer Way Conveyance Improvements	CIP-23-A1-RF01	132	\$53,000
Freeman Road Conveyance Improvements	CIP-23-D17-RF03	62	\$86,000
Railroad Culvert Replacement	CIP-23-BC1-C09	132	\$96,000
Pioneer Way Culvert Replacement	CIP-23-BC1-C08	142	\$142,000
Riverside Drive E Culvert Replacement	CIP-23-V01-C01	75	\$148,000
Flooded Property Acquisition	CIP-23-D1-AC01	72	\$197,000
Kelly Lake Road Bridge Replacement	CIP-23-FC3-BRG02	80	\$289,000
Total estimated cost of Low-Priority Projects			\$1,080,500

* These costs are total cost of multiphase projects; see CIP descriptions in 9.3.2 for breakdown.

ES.4.3 Implementation Strategy

Implementation of the recommended actions will generally follow the prioritization groupings of high, medium, and low and a logical order of sequencing. To ensure that the full benefits of all projects are realized, implementation will not follow the exact sequence of the first project to the last project in the High category, followed by the first action in the Medium category, and so forth. Several factors exist that will result in implementation of actions that are not in the exact sequence as depicted in the projects and programs prioritized by the benefit and ranked by cost table. These factors include the following:

- Available funds
- Contingent projects¹
- Available staff and professional service needs
- Cooperation from private landowners
- The best implementer may be an agency other than Pierce County Public Works and Utilities
- New information, regulations or emerging issues

Economic Development Criteria

Implementing projects and programs recommended in the Basin Plan is expected to reduce flood hazards, and preserve or protect water quality and floodplain habitat. Collectively and individually, these projects are aimed at protecting Pierce County's quality of life. Projects and programs in the Basin Plan will:

- Afford resource protection as the community develops
- Preserve, enhance or protect natural floodplain functions
- Balance structural and nonstructural approaches
- Reduce potential County environmental liabilities
- Help achieve environmental compliance and long term sustainability

Collectively, these attributes help make Pierce County a livable community where quality of life issues will provide indirect, passive economic development benefits to businesses and individuals looking to locate or stay in Pierce County.

In addition to the above, Water Programs will consider the following criteria in developing its annual proposed capital facilities plan updates:

¹ Contingent projects include projects such as stream restoration projects intended to reduce flood hazards and improve aquatic habitat, and culvert replacement projects intended to improve fish passage. These projects will provide their full benefit after all downstream fish passage barriers are removed, and should be sequenced accordingly.

- Is the project located in an employment center zone (or handle flow from those zones)?
- Is the project located in another type of commercial zone (or handle flow from those zones)?
- Will the project reduce permitting timelines for industrial/commercial projects?
- Will the project assure access to an employment center via road and /or rail?
- Will the project increase the supply of developable property?
- Will the project reduce overall development costs?
- Are there partners willing to contribute to the development costs of the project?
- Does the project allow / provide for land development?

In light of these and other factors, following action on the Basin Plan, Pierce County will develop an implementation strategy designed to sequence, schedule and assign resources for the various recommended actions. This implementation strategy will be developed in collaboration and coordination with other potential implementers and in consideration with available financial and staff resources. The implementation strategy will include performance measurements and provide for periodic evaluation of progress. A potential implementation sequence that primarily considers contingent projects is shown in Chapter 10 - Environmental Impact Statement.

