

TABLE OF CONTENTS

CHAPTER ONE: INTRODUCTION

1.1	Basin Planning Program	1-1
1.2	Hylebos Browns-Dash Point Basin Plan.....	1-3
1.2.1	Study Area	1-3
1.3	Statement of Purpose	1-4
1.4	Basin Planning Program Goals and Objectives	1-4
1.4.1	Reduce Flood Hazards	1-4
1.4.2	Improve Fish and Wildlife Habitat	1-4
1.4.3	Improve Water Quality	1-5
1.4.4	Coordinated and Responsible Use of Public Resources	1-5
1.4.5	Influence Location and Methods for New Development.....	1-5
1.5	Plan Organization.....	1-6

CHAPTER TWO: APPLICABLE PROGRAMS, POLICIES, AND REGULATIONS

2.1	Federal Regulations, Policies and Programs.....	2-1
2.1.1	Clean Water Act.....	2-1
2.1.2	Endangered Species Act	2-4
2.1.3	National Flood Insurance Program	2-5
2.1.4	Settlement Agreement with the Puyallup Tribe.....	2-7
2.2	State Regulations, Plans and Permits.....	2-7
2.2.1	State Water Quality Standards	2-7
2.2.2	Aquifer and Wellhead Protection.....	2-8
2.2.3	The Growth Management Act and the Comprehensive Plan for Pierce County, Washington	2-8
2.2.4	Shoreline Management Act.....	2-10
2.2.5	State Hydraulic Code	2-10
2.2.6	The Nonpoint Rule.....	2-11
2.3	Pierce County Regulations, Policies and Programs	2-12
2.3.1	Pierce County Storm Drainage and Surface Water Management Master Plan	2-12
2.3.2	Studies and Reports.....	2-12

CHAPTER THREE: INFORMATION COLLECTION AND STAKEHOLDER INVOLVEMENT

3.1	SRS Database Review and Field Reconnaissance	3-1
3.2	Citizen Questionnaire.....	3-1
3.3	Contacts.....	3-2
3.4	Public Meetings	3-3
3.5	Other Meetings.....	3-4

CHAPTER FOUR: BASIN CHARACTERISTICS

4.1	Browns-Dash Point Basin	4-1
	4.1.1 Drainage.....	4-1
	4.1.2 Floodplains and Wetlands.....	4-2
	4.1.3 Geology and Soils.....	4-2
	4.1.4 Zoning and Land Use.....	4-4
4.2	Hylebos Basin	4-5
	4.2.1 Drainage.....	4-5
	4.2.2 Floodplains and Wetlands.....	4-7
	4.2.3 Geology and Soils.....	4-7
	4.2.4 Zoning and Land Use.....	4-8
4.3	Sub-Basin Boundaries.....	4-10
4.4	Stream Habitat	4-10
	4.4.1 Stream Characteristics	4-10
	4.4.2 Stream Reach Classification	4-14
	4.4.3 Urban Stream Baseline Evaluation Method (USBEM) Habitat Suitability	4-18
4.5	Water Quality Characteristics	4-19

CHAPTER FIVE: PROBLEM INVESTIGATION, CHARACTERIZATION, AND SCREENING

5.1	Stormwater Drainage, Erosion, and Flooding Problems	5-1
	5.1.1 Browns-Dash Point Basin.....	5-2
	5.1.2 Hylebos Creek Basin.....	5-7
	5.1.3 Stormwater Drainage Problem Screening.....	5-10
5.2	Stream Habitat and Water Quality Issues	5-13
	5.2.1 Stream Habitat Issues.....	5-13
	5.2.2 Water Quality Issues	5-14

**CHAPTER SIX:
PROBLEM ANALYSIS**

6.1 Stormwater Drainage, Erosion, and Flooding Analysis..... 6-1
 6.1.1 Engineering Analyses 6-1
 6.1.2 Potential Drainage, Erosion, and Flooding CIP Solutions..... 6-2
 6.1.3 Cost Estimation..... 6-4
 6.1.4 Potential Programmatic Measures for Drainage, Erosion and Flooding Problems 6-4
 6.2 Water Quality Analysis..... 6-5
 6.2.1 Water Quality Treatment Screening and CIP 6-5
 6.2.2 Water Quality Programmatic Measures..... 6-6
 6.3 Stream Habitat 6-7

**CHAPTER SEVEN:
BASIN PLAN**

7.1 Summary of Plan Recommendations..... 7-1
 7.1.1 Capital Improvement Projects..... 7-4
 7.1.2 Programmatic Measures..... 7-4
 7.1.3 Additional Studies..... 7-6
 7.2 Plan Approach to Basin Needs 7-6
 7.2.1 Preference for Non-Structural Solutions..... 7-6
 7.2.2 Low Impact Development..... 7-6
 7.2.3 Economic Development..... 7-7
 7.2.4 Public Involvement and Education 7-8
 7.2.5 Compliance with Storm Drainage and Flood Hazard Regulations..... 7-8
 7.2.6 Drainage and Flood Hazard Management 7-9
 7.2.7 Water Quality..... 7-10
 7.2.8 Aquatic (Floodplain) Habitat Protection..... 7-11
 7.3 Recommended Capital Improvement Projects..... 7-11
 7.4 Programmatic Recommendations 7-25
 7.5 Additional Studies..... 7-34
 7.6 Implementation 7-34
 7.6.1 Capital Facilities Element of Pierce County Comprehensive Plan..... 7-34
 7.6.2 Annual Budget for Pierce County Water Programs..... 7-34
 7.6.3 Order of Implementation..... 7-35
 7.6.4 Economic Development Criteria..... 7-35
 7.6.5 Voluntary Actions by Other Interested Parties 7-36

**CHAPTER EIGHT:
SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT**

Fact Sheet..... 8-1

8.1 Summary 8-5

 8.1.1 Comparison of Impacts 8-6

8.2 Alternatives, Including the Proposed Action 8-10

 8.2.1 Introduction and Background 8-10

 8.2.2 Pierce County Storm Drainage and Surface Water Management
 Plan (1991 Plan) 8-11

 8.2.3 Use of the 1991 Plan As Principal Focus of CIP Has Evolved 8-15

 8.2.4 Proposed Action – Draft Hylebos Browns-Dash Point Basin Plan 8-16

 8.2.5 No Action Alternative 8-18

 8.2.6 Comparison of Alternatives 8-21

8.3 Affected Environment, Significant Impacts, and Mitigation Measures 8-22

 8.3.1 Water Resources 8-22

 8.3.2 Fishery Resources 8-25

 8.3.3 Vegetation 8-27

 8.3.4 Wildlife 8-29

 8.3.5 Land and Shoreline Use 8-30

 8.3.6 Aesthetic, Historic, and Cultural Resources 8-33

 8.3.7 Public Services and Utilities 8-34

APPENDICES

A Glossary

B 1991 Pierce County Storm Drainage And Surface Water Management Plan Projects And
Completion Status

C Public Involvement – Questionnaire And Responses And Public Meeting Agenda

D Excerpt From Pierce County Buildable Lands Report September 2002

E Hydrologic and Hydraulic Calculations

F Prioritization and Cost Estimates For Recommended Capital Projects