

CHAMBERS/WARD/HEWITT COMPREHENSIVE DRAINAGE BASIN PLAN

Prepared by:
Thurston County Storm and Surface Water Program
July 1995

Adopted by the City of Olympia October 31, 1995
Adopted by Thurston County March 4, 1996

Partially funded by the Washington State Department of Ecology
Centennial Clean Water Fund Grant #TAX91127

RESOLUTION NO. M-1415

A RESOLUTION adopting the Chambers/Ward/Hewitt Comprehensive Drainage Basin Plan.

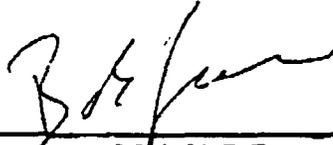
WHEREAS, the City of Olympia is committed to protecting and improving water resources within the Chambers/Ward/Hewitt drainage basin; and

WHEREAS, the Chambers/Ward/Hewitt Comprehensive Drainage Basin Plan has been prepared with substantial public involvement in cooperation with Thurston County and the City of Lacey; and

WHEREAS, the Plan proposes and sets priorities for actions to correct existing problems in the drainage basin related to flooding, water quality, and fish habitat.

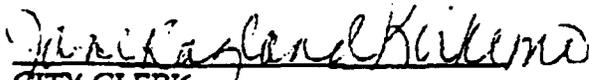
NOW, THEREFORE, BE IT RESOLVED that the Olympia City Council hereby adopts the plan entitled "Chambers/Ward/Hewitt Comprehensive Drainage Basin Plan."

APPROVED AND PASSED this 31st day of October, 1995.



MAYOR

ATTEST:



CITY CLERK

r146
10/26/95

RESOLUTION NO. 11133

A RESOLUTION to adopt the Chambers/Ward/Hewitt comprehensive drainage basin plan.

WHEREAS, prevention of problems regarding water quality and flooding, and preservation of habitat are important goals of the Thurston County Comprehensive Plan and the Puget Sound Water Quality Management Plan; and

WHEREAS, the County entered into Interlocal Cooperation Agreements pursuant to chapter 39.34 RCW regarding joint Storm and Surface Water Management within the Cities of Lacey, Olympia, and Tumwater to provide a means by which existing and potential pollution, erosion, and flood damage to property and aquatic resources could be more effectively managed; and

WHEREAS, uncontrolled stormwater runoff in Chambers/Ward/Hewitt basin is presently causing flooding problems and surface water contamination that may threaten public health and safety and damage natural habitat; and

WHEREAS, actions to minimize these problems can result in significantly decreased flooding and improved water quality in the future; and

WHEREAS, the Chambers/Ward/Hewitt Comprehensive Drainage Basin Plan contains policies and recommendations that accomplish these goals over time and, therefore, serve the public health and safety;

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF THURSTON COUNTY that the Chambers/Ward/Hewitt Comprehensive Drainage Basin Plan is hereby adopted; and

BE IT FURTHER RESOLVED that Thurston County shall prioritize these recommendations in relation to all other drainage basin recommendations for the Stormwater Utility area; and

BE IT FURTHER RESOLVED that Thurston County may implement these recommendations in prioritized order, to the extent that funding is available.

ADOPTED March 4, 1996

ATTEST:

BOARD OF COUNTY COMMISSIONERS
Thurston County, Washington

Bernardean Broadous
Clerk of the Board

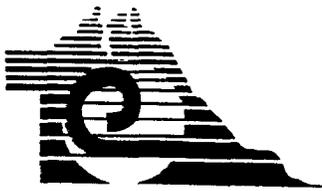
Absent
Chairman

APPROVED AS TO FORM:
BERNARDEAN BROADOUS
PROSECUTING ATTORNEY

Shane O'Connell
Commissioner

By: Austin Belbach
Deputy Prosecuting Attorney

Richard W. Nichols
Commissioner



**Thurston
Conservation District**

Local solutions to local problems

Conservation Planning • Habitat Restoration • Bio-engineering • Soils Analysis • Conservation Education • Project GREEN • Nutrient Management

August 8, 1995

Bruce Briggs & Ann Mataczynski, co-chairs
Chambers Basin Citizens Advisory Committee
c/o Thurston County Storm and Surface Water Program
921 Lakeridge SW
Olympia, WA 98502-6052

SUBJECT: Chambers/Ward/Hewitt Comprehensive Drainage Basin Plan

Dear Mr. Briggs & Ms. Mataczynski,

The Thurston Conservation District supports adoption and implementation of the Chambers/Ward/Hewitt Comprehensive Drainage Basin Plan. The coordinated effort proposed to address stormwater runoff and nonpoint sources of pollution will benefit both basin residents and downstream interests.

Thank you and your hard working committee for all the tremendous effort that went into this document. This gives everyone a clear vision of what is needed and who the stakeholders are. The Conservation District stands ready to fulfill its obligations to protect natural resources in the basin.

Sincerely,

Jaclyn Reid, Chair
Board of Supervisors

To the Residents of the Chambers-Ward-Hewitt Drainage Basin

As committee members, we have been well pleased with staff working on this project. It has been very difficult with many regulations already in force to insure that we are keeping in mind present and long range survival of animals, plants, and water in this area. As a committee, we supported in priority, the Chamber's ditch as number one for drainage purpose. We support the maintenance and improvement of wildlife and our environment. We are very concerned that we can maintain an ecosystem that will have a long lasting survival to the ever-increasing population that's going to come in this area. We are concerned that most jurisdictions that are involved have a limited amount of money to complete these projects. As a group, we favor the direction of people correcting water-related problems at the lowest level and impact on the financial burdens of others. We strongly recommend public direction and involvement as a way of attaining water quality to reduce the need for expensive facilities. Up there in high priority is the maintenance of clean water both in rivers and lakes. Our main goals are to;

1. Control flooding.
2. Concern of maintenance of environment.
3. Work towards cleaner water.

We attempted to give directions to the county and two cities in their long range planning to secure and keep our objectives intact.

Sincerely,

Bruce Briggs
Ann Marie Mataczynski

ACKNOWLEDGEMENTS

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TABLE OF CONTENTS

CHAPTER 1: INTRODUCTION	1-1
1.1 STRUCTURE OF THE BASIN PLAN	1-2
1.2 GOALS AND OBJECTIVES	1-2
1.3 USE OF THE PLAN	1-5
1.4 AUTHORITY OF THE BASIN PLAN	1-5
CHAPTER 2: COMMUNITY PERSPECTIVES ON CHAMBERS BASIN	2-1
2.1 HISTORICAL PERSPECTIVE	2-1
2.2 LOCAL CONCERNS	2-3
2.3 PARTICIPATING BASIN RESIDENTS	2-5
CHAPTER 3: BASIN CHARACTERIZATION	3-1
3.1 BASIN OVERVIEW	3-1
3.2 SURFACE WATER FEATURES	3-2
3.3 SOILS	3-7
3.4 VEGETATION	3-11
3.5 FISH AND FISH HABITAT	3-15
3.6 WILDLIFE AND WILDLIFE HABITAT	3-20
3.7 CLIMATE	3-21
3.8 TOPOGRAPHY	3-23
3.9 POPULATION	3-24
3.10 LAND USE AND ZONING	3-26
3.11 RECREATIONAL RESOURCES	3-32
CHAPTER 4: BASIN HYDROLOGY AND WATER QUALITY	4-1
4.1 BASIN HYDROLOGY	4-1
4.2 WATER QUALITY	4-12
CHAPTER 5: PROBLEM IDENTIFICATION AND ANALYSIS	5-1
5.1 FLOODING	5-1
5.2 WATER QUALITY PROBLEMS	5-28
5.3 FISH HABITAT PROBLEMS	5-45
CHAPTER 6: RECOMMENDED PLAN	6-1
6.1 FLOODING RECOMMENDATIONS	6-1
6.2 WATER QUALITY RECOMMENDATIONS	6-13
6.3 FISH HABITAT RECOMMENDATIONS	6-29
CHAPTER 7: RECOMMENDED PLAN IMPLEMENTATION	7-1
7.1. PLAN ADOPTION AND REVISION	7-1
7.2 IMPLEMENTATION PHASES	7-3
7.3 FUNDING	7-12

REFERENCES CITED

APPENDICES

Appendix A: Regulatory Authority for Basin Plan Measures

Appendix B: Geologic Glacial Sediments

Appendix C: Birds of Chambers Lake

Appendix D: Basin Hydrologic Model

Appendix E: Water Quality Study Data

Appendix F: Correspondence Regarding Petition to Re-Type Chambers Ditch

Appendix G: Regional Nonstructural Management Program

CHAPTER 1: INTRODUCTION

The Chambers/Ward/Hewitt Comprehensive Drainage Basin Plan has been developed by Thurston County, Olympia and Lacey working closely with a citizen task force made up of basin residents. The plan responds to growing concerns over the impacts of urban development on natural resources of the basin. The plan provides direction for resolving current and potential surface water problems in the lakes, creeks, ditches and surrounding drainage area. These problems include flooding, erosion, and diminishing water quality and aquatic and wildlife habitat. The citizen task force played a critical role in setting the plan's priorities and overall approach to problem solving.

Regional basin planning for this area began in 1990 as part of an investigation of flood flows in the drainage ditch and stream system that drains from Chambers Lake to the Deschutes River. The plan includes detailed studies of the basin's hydrology and water quality. Precipitation and stream flow were measured and water samples from storm drain outfalls, streams, ditches and lakes were analyzed. Sediment samples from storm drains and lakes were analyzed, and aquatic insects and algae were collected from streams and lakes.

The Chambers/Ward/Hewitt basin planning effort was partially funded by a Centennial Clean Water Fund Grant (TAX90102) from the Washington State Department of Ecology (DOE). The basin plan is one element of comprehensive stormwater management in the Thurston County area.

The Chambers/Ward/Hewitt basin (hereafter called the "Chambers basin" for the sake of brevity) encompasses urban portions of Olympia and Lacey and developing areas of Thurston County. Chambers and Little Chambers Lakes are separate halves of a shallow lake that drains through Chambers Ditch, a partly artificial ditch, into Chambers Creek just east of Rich Road. Ground water feeds Chambers Creek from the southeast, upstream from its confluence with Chambers Ditch. Ward and Hewitt Lakes occupy two deep, closed depressions separated by Yelm Highway, near the Deschutes River on the far western edge of the basin. These lakes have no outlets to surface water, but drain slowly through the ground toward the Deschutes River. The map at the front of the plan illustrates the location of the basin.

The basin covers about 13.2 square miles or 8,434 acres, including the rapidly developing southeast Olympia area. Approximately 9% of the land in the basin is currently developed. A substantial amount of new commercial and high density residential development is being planned and constructed within the basin.

Several public involvement and education (PIE) activities occurred during the plan's development, including convening the Chambers Basin Citizen Advisory Task Force, meeting with homeowner associations, and offering Stream Team training and field activities. Public involvement is a continuing aspect of plan development and adoption.

1.3 USE OF THE PLAN

Government entities are expected to use the Chambers basin plan through:

- Including the plan's recommendations in programs and services that affect the basin.
- Reviewing other plans and policies that affect the basin for consistency with the basin plan.
- Coordinating with other governments and groups interested in the Chambers basin.
- Prioritizing plan recommendations into city and county capital improvement project lists and annual operation and maintenance budgets, as funding is available.
- Reviewing development proposals in the Chambers basin for consistency with the plan.
- Adding the plan recommendations to future public involvement and education opportunities in the Chambers basin.

Others interested in the plan or proposing new development in the basin are anticipated to use the plan by:

- Understanding the community's vision and hopes for the Chambers basin.
- Designing projects to be consistent with the recommendations and visions outlined in the plan.
- Initiating projects and activities that protect or enhance the Chambers basin's natural and developed systems.

1.4 AUTHORITY OF THE BASIN PLAN

This section summarizes federal, state and local laws which authorize some or all aspects of basin planning. Appendix A describes them in more detail.

1.4.1 FEDERAL AUTHORITY

Clean Water Act

The Clean Water Act authorizes the federal government to regulate stormwater discharges and protect the beneficial uses of streams, lakes and wetlands. The basin plan recommends measures that will help comply with Clean Water Act requirements.

Introduction

GOALS

- Chambers Ditch should be managed primarily for flood control to protect property, but protecting water quality and preventing impacts to downstream habitat are also important goals.
- Water quality should be the overriding habitat concern in Chambers Ditch and Chambers Creek.
- Solutions to water quality problems should focus on eliminating pollution sources, and costly treatment facilities should only be considered as a last resort, if monitoring shows that other measures have been ineffective.
- Stream and ditch habitat should be managed to preserve the existing habitat, improve water quality, and prevent future downstream impacts to the habitat in Chambers Creek below Rich Road.
- Lake habitat should be managed to protect and enhance existing lakeshore vegetation and improve appreciation of lakes.

OBJECTIVES

- Local government's primary flood control responsibility should be preventing roads and structures from flooding in order to protect public health and safety.
- Chambers Ditch should be managed to meet county and city flood protection standards for new development, and new development should not add runoff to the ditch.
- The Chambers Drainage District should be responsible for maintaining Chambers Ditch.
- The Chambers Drainage District should not be responsible for funding increased maintenance necessitated by development outside of the district's boundaries.
- Direct, uncontrolled stormwater discharges into the basin's lakes, streams and ditches should be eliminated when feasible.
- Where elimination of direct discharge is not feasible, alternatives including source reduction, source controls, structural best management practices or treatment should be applied.
- The water quality and quantity of stormwater discharges should be monitored on an ongoing basis.

Introduction

1.1 STRUCTURE OF THE BASIN PLAN

The plan is arranged into 7 chapters:

1. Introduction summarizes the plan's background, purpose and legal authority.
2. Community Perspectives summarizes the oral history and current concerns provided by basin residents at task force meetings.
3. Basin Characterization provides a description of the topography, soils, water bodies, vegetation and other physical traits of the basin.
4. Basin Hydrology and Water Quality details the hydrology of the basin's lakes, streams and ditches, and summarizes the existing water quality conditions.
5. Problem Identification and Analysis examines the specific surface water problems in the basin and describes alternative solutions.
6. Recommended Plan presents a detailed description of the plan recommendations, benefits, and costs.
7. Plan Implementation describes implementation costs, funding alternatives, and an implementation strategy for the basin plan.

1.2 GOALS AND OBJECTIVES

The original goals for basin planning in Thurston County were developed in 1990 by public works staff from Olympia, Tumwater, Lacey, and Thurston County. The Chambers Basin Citizen Advisory Task Force revised the original goals and developed basin specific goals that provide additional guidance for the plan's recommendations.

1.2.1 GENERAL GOALS AND OBJECTIVES FOR BASIN PLANNING

The citizen committee revised the original 1990 goals and objectives statement to develop general goals for basin planning:

GOALS

- Establish long-term solutions to existing and future water quality and quantity problems.
- Preserve and/or enhance water quality, stream morphology, wetlands, groundwater, fisheries/wildlife habitat, and aesthetic amenities.

- Promote sustainable development within each basin.
- Promote public interest and involvement in Chambers Creek watershed and its water resources.
- Promote a regional approach for financing, ownership, and operation/maintenance of regional facilities and programs.

OBJECTIVES

- Drainage basin plans will provide a basis for making decisions about capital expenditures, financing options, land use regulation, source reductions, and stormwater facility location, design, and maintenance. Decision-making information and tools generated by the basin plan will include:
 - Data base on water quality, hydrology, and habitat.
 - Data base on existing and potential pollution sources.
 - Predictive model for testing effects of alternate decisions.
 - Recommended development controls (regulations/incentives).
 - Recommended program for continued monitoring of facility performance and resource conditions.
- Ongoing public involvement in stream restoration, enhancement, and education activities addressing problems identified in the plan.
- Understanding and support of the basin plan recommendations by the public.
- A common implementation and financing strategy by jurisdictions responsible for the drainage basin including:
 - Schedule for implementing recommended projects.
 - Revenue sources and methods of financing.
 - Cost allocations.
 - Responsibility for owning and operating capital facilities.
 - Enforcement of development controls and other regulations.
 - Ongoing coordination of plan implementation.
 - Ongoing coordination of public involvement and education activities.

1.2.2 GOALS AND OBJECTIVES FOR CHAMBERS BASIN

Several specific goals for managing stormwater in the basin evolved out of discussions between staff and the citizen committee. The specific goals for the basin reflect the examination of water quality, flooding and habitat problems conducted during the plan's development.

Introduction

In 1987, the Clean Water Act that authorized the National Pollutant Discharge Elimination System (NPDES) program was amended to address stormwater discharges. Administered in Washington by the Department of Ecology, NPDES currently regulates large and medium sized municipal stormwater systems that discharge stormwater to receiving waters. Permit requirements include prohibiting non-stormwater discharges into the storm drain system and instituting controls to reduce pollutants. Local jurisdictions in Thurston County currently do not have to obtain NPDES stormwater permits because they are too small, but EPA plans to implement NPDES permits for smaller jurisdictions in the near future. The stormwater basin plans will be critical in the future permitting process because they will form the basis for the comprehensive stormwater management plans required by NPDES.

1.4.2 STATE AUTHORITY

Growth Management Act (RCW 36.70A)

The Growth Management Act (GMA) requires local governments to develop plans for accommodating future population growth while minimizing environmental impacts. The basin plan recommendations will help comply with GMA requirements.

The GMA is intended to promote comprehensive land use planning in order to protect the environment, enhance economic development, and protect the quality of life in Washington State. The GMA requires each jurisdiction in Washington to prepare a comprehensive plan, to facilitate orderly development. Comprehensive plans must contain a land use element that provides for:

- Review of drainage, flooding, and stormwater runoff in the area and nearby jurisdictions (RCW 36.70.330).
- Guidance for corrective actions to mitigate or cleanse those discharges that pollute Puget Sound or waters entering Puget Sound (RCW 36.70.330).
- Protection of the quality and quantity of ground water used for public water supplies (RCW 36.70.330).

The GMA requires each jurisdiction to adopt regulations to protect critical areas including wetlands, frequently flooded areas, aquifer recharge areas, and fish and wildlife habitat.

The GMA allows key aspects of the comprehensive plan to be "amplified and augmented in scope by progressively including more completely planned areas consisting of distinctive geographic areas or other types of districts having unified interests within the total area of the county" (RCW 36.70.340).

The GMA further authorizes basin planning with a comprehensive plan option to include "a conservation element for the conservation, development, and utilization of natural resources,

including water and its hydraulic force, forests, watersheds, soils, rivers and other waters, harbors, fisheries, wildlife, and other natural resources" (RCW 36.70.350).

The GMA focuses on the interjurisdictional character of natural resources. A number of the requirements placed upon jurisdictions by the GMA can be effectively met through the basin planning process. These requirements include, but are not limited to:

- Working cooperatively to achieve cohesive land use policies on issues such as stormwater that do not recognize jurisdictional boundaries.
- Identifying capital stormwater facilities and planning for future capital improvements.
- Identifying innovative land use solutions for land management problems.

1.4.3 LOCAL AUTHORITY

Adoption (or concurrence to implement as funding allows) of the *Chambers/Ward/Hewitt Comprehensive Drainage Basin Plan* by the Olympia and Lacey City Councils and Thurston County Commissioners would implement policies of the comprehensive plans of each jurisdiction.

Thurston County Comprehensive Plan

The *Thurston County Comprehensive Plan*, revised in 1995, contains policies regarding the natural environment in general and stormwater management specifically. The plan states that "Thurston County is committed to protecting its water resources by insuring that ground water is drinkable; that streams, lakes and rivers are fishable, and that shellfish can be harvested in its marine waters (page 9-10)." County policies to achieve this goal include:

- "The county should manage water resources by recognizing the hydrologic continuity between ground and surface water."
- "The county should address water resource concerns by relevant geographic area such as watershed or sub-basin for surface waters and by aquifers for ground waters."
- "The county should use the 'watershed approach' when addressing water resource concerns. . ."
- "The county should continue to support grass root solutions to local problems by undertaking ground water, watershed or stormwater basin plans which include affected stakeholders."
- "The county should support and strive to implement the county-adopted water resource plans addressing watersheds (and) stormwater. . ."
- "The county should include common elements which can reduce the duplication of efforts in new watershed, ground water or stormwater basin plans."

Introduction

- "The county should protect ground water aquifers, natural drainage, fish and wildlife habitat, public health and recreational functions of rivers, streams, lakes, wetlands, Puget Sound and their shorelines."
- "The county should manage water resources for multiple beneficial uses. Use for one purpose should preserve opportunities for other uses, while maintaining overall water quality. When conflicts arise, the natural system should be given priority."
- "The county should retain substantially in their natural condition: ponds, wetlands, rivers, lakes and streams, and their corridors."
- "The county should not allow uses and activities to degrade lakes, streams and commercial shellfish areas, recreational shellfish harvesting on public lands, or result in loss of the natural functions of waterbodies, wetlands, and ground water aquifers."
- "The county should protect streams from adverse impacts of activities occurring adjacent to their waters or within their watersheds. This protection should be achieved by avoiding stream channel damage from excessive flows, by protecting riparian vegetation and streambank integrity, and by avoiding degradation of water quality."
- "Land use activities and septic tank effluent should not result in polluted stormwater runoff that results in degraded surface or groundwater."
- "The quantity and quality of water entering wetlands, streams and ponds should be maintained."
- "The county should take steps to ensure that stormwater systems are adequately maintained in order to ensure high quality surface and ground water."
- " Education and technical assistance should be provided in a comprehensive, regional manner to promote understanding the connections between ground and surface waters, and the watershed boundary transcendence over jurisdictional boundaries."

Elements of the latest comprehensive plan revisions that apply to the Lacey and Olympia unincorporated Urban Growth Management Areas were adopted jointly by the county commission and city councils in 1994, and are described below.

Comprehensive Plan for Olympia and the Olympia Growth Area

The *Comprehensive Plan for Olympia and the Olympia Growth Area*, updated in 1994, contains goals and policies for housing, the environment and stormwater. The goals and policies that support the basin plan are summarized below. An asterisk denotes the goals and policies for the unincorporated Olympia urban growth area, which were jointly adopted by the city and the county.

The Olympia Comprehensive plan sets the following policies in order to "preserve environmental quality*":

- LU 6.1 Establish regulations which ensure that development is accomplished in a manner that protects environmentally-critical areas.

- LU 6.3* Establish development densities and requirements for impervious surface coverage that limit stormwater generation to levels not likely to cause flooding, significant streambank erosion, or significant degradation of aquatic habitat or water quality.
- LU 6.4 Require clustering of development to promote ground and surface water protection
- LU 6.6* Provide incentives for restoring degraded wetlands, stream corridors, and other important natural systems . . .

The plan sets the following policies in order to "protect and improve local and regional water resources*" and to "monitor progress toward sustainability":

- ENV 3.1* Support cooperative surface water and groundwater management efforts among the three cities (and) the County . . .
- ENV 3.3* Continue to cooperate with the other metropolitan jurisdictions in planning and implementing drainage basin plans . . .
- ENV 3.4* Ensure that stormwater runoff from new developments meets the quality and quantity control requirements contained within the Regional Drainage Design Manual.
- ENV 3.7 Regularly review the effectiveness and adequacy of ordinances and requirements which address such factors as erosion control, management of stormwater discharge, pollution source control activities, stream restoration work, and habitat protection measures
- ENV 3.9* Protect areas with high potential for aquaculture activities . . .
- ENV 3.12* Protect fish-bearing waters from damage due to excessive flows, dredging, and water quality degradation due to siltation or other pollutants. Dominant flows and water levels should be maintained in streams.
- ENV 7.3 Support groundwater and surface water monitoring efforts to achieve surface water and groundwater protection goals.

The plan sets the following policies in order to "eliminate chronic flooding, surface and groundwater degradation, and habitat loss caused by stormwater,*" to "maintain an effective stormwater management program*" and to "meet the requirements of the Puget Sound Water Quality Management Plan*":

- PF 14.1 Existing and new development should minimize increases in total runoff quantity, should not increase peak stormwater runoff, and should avoid altering natural drainage systems so that flooding and water quality degradation result.
- PF 14.3* Land uses and activities should not result in polluted stormwater runoff that results in degraded surface or groundwater.
- PF 14.4* Streams and other natural waterways which convey runoff to major rivers or Puget Sound should be protected for their wildlife, fisheries and aesthetic values.
- PF 15.1* Local governments within the same drainage basins should . . . plan together for major regional stormwater facilities . . .

Introduction

Lacey Comprehensive Plan

The city of Lacey adopted the environment and land use elements of its comprehensive plan in 1994, to satisfy state growth management requirements. The land use element identifies "water quality and regional drainage basin planning" as important land use issues, and incorporates by reference several basin plans, ground water plans and watershed action plans. The issues analysis recognizes the need for the plan to "help provide coordination for implementation of these plans . . ." (City of Lacey and Thurston County 1994).

The plan's water resources goal is to "reduce impacts from flooding, encourage efficient stormwater management, and ensure the quality and quantity of groundwater resources are protected and preserved for all uses." The plan sets a policy of ensuring that land use is coordinated specifically with the *Woodland and Woodard Creek Comprehensive Drainage Basin Plan*, as well as with several other basin plans.

The *City of Lacey Environmental Protection and Resource Conservation Plan* is the environmental element of its comprehensive plan. The plan identifies and protects critical environmentally sensitive areas and valuable natural resource lands. The plan was prepared in association with development of a new comprehensive land use plan and is an element of that plan, which was adopted in November 1994.

Drainage Design and Erosion Control Manual for the Thurston Region, Washington

The drainage design manual for the region authorizes basin plans to set higher design standards. Basin plan recommendations addressing stormwater management requirements would supersede any overlapping regulations included in the drainage manual.

1.4.4 RELATED PLANS AND PROGRAMS

Regional Nonstructural Stormwater Management Program

The Regional Nonstructural Stormwater Management Program was developed by local citizens and stormwater managers, and was first adopted by Thurston County and the cities of Olympia, Lacey, and Tumwater as part of the Percival and Indian/Moxlie basin plans in 1992. The program recommendations are incorporated into all basin plans in Thurston County. The program consolidates several "nonstructural" stormwater management recommendations that extend beyond the boundaries of individual basins. The "nonstructural" recommendations refer to management measures other than capital construction, including education, monitoring, maintenance, regulations and compliance. Each recommendation identifies one or more lead jurisdictions, and includes a strategy for regional implementation. Many of the recommendations have already been implemented over the past three years. Appendix G contains the complete text of the Regional Nonstructural Stormwater Management Program.

Washington Department of Ecology (DOE) Stormwater Management Guidelines

Minimum stormwater management guidelines are developed by DOE with the aim of protecting the Puget Sound basin from stormwater contamination. The stormwater programs recommended for local governments include measures to address stormwater treatment and volume control, maintenance, development regulations, and erosion control.

A stormwater management manual presenting minimum guidelines is available to local entities for adoption. The manual establishes requirements for the components of urban stormwater programs within the Puget Sound basin. It is expected that jurisdictions will adopt the DOE manual or develop a similar one. The Thurston region drainage manual is currently the only manual in the state that fully complies with DOE requirements.

Washington Department of Fish and Wildlife

Guidelines for the protection of streams and fish habitat have been developed by the Washington Department of Fish and Wildlife. A specific set of guidelines focusing on stormwater issues and fisheries protection were developed in 1990.

North Thurston County Groundwater Management Plan (GWMP)

The GWMP, adopted in September 1992, provides a mechanism for comprehensive management of groundwater in north Thurston County. The GWMP recognizes the potential impacts of stormwater on groundwater and supports the current management efforts of the jurisdictions. However, because of the importance of stormwater management on groundwater quality, the plan includes numerous recommendations in support of existing programs as well as for additional work. Specific recommendations address public education, technical assistance, increased enforcement, facility maintenance, modification of the regional drainage manual, and other recommendations that have been addressed within this plan.

Chambers Lake Stormwater Management Plan

This plan, adopted in March 1992, is a management plan for Lacey's stormwater discharges into Chambers Lake. The plan includes structural and non structural recommendations. The study analyzed a number of structural alternatives and proposes constructing artificial wetlands to treat the stormwater from two major outfalls into Chambers Lake.

Grant and Loan Programs

Various grant and loan programs require or encourage the completion of a basin plan or flood management plan before a jurisdiction is eligible for funding assistance. The programs include the following:

Introduction

- DOE Flood Control Assistance Account Program (FCAAP)
- Centennial Clean Water Fund
- Department of Community Development Public Works Trust Fund

The grant program requirements lend authority to the plan by enabling the Cities of Olympia and Lacey, and Thurston County to pursue additional outside funding sources. Further descriptions of established regulations, policies, and plans are summarized in appendix A.

Shoreline Master Program for the Thurston Region

The shoreline master program regulates shoreline development under the authority of the state's Shoreline Management Act. The Thurston Shoreline Master Program classifies shorelines as urban, rural, conservancy, or natural. Most of the county's Chambers/Little Chambers Lake shoreline is designated conservancy (see map 9), which limits the amount of development on the shores and encourages public access to the recreational resources. The developed shoreline from the fishing access southeast to 32nd Lane is designated urban. Ward and Hewitt Lakes are designated rural, which is intended to protect the shorelines from intensive development. Because of its small size, the Smith Lake is not subject to protection under Thurston County's Shoreline Management Program.

Stream Corridor Management Plan for the Deschutes River

This plan was prepared by the Thurston Conservation District as a part of the *Capitol Lake Restoration Analysis*. The document details the sedimentation and erosion issues within the drainage basin. The report concludes that stormwater runoff from new development must be addressed to reduce negative impacts to the stream system.

Critical Areas Ordinances

Lacey, Olympia, and Thurston County have enacted Critical Areas Ordinances to regulate land use activities in sensitive environments, including wetlands, streams, floodplains and aquifer recharge areas, as mandated by the state Growth Management Act. Maps 4-6 illustrate the location of Critical Areas within the basin.

CHAPTER 2: COMMUNITY PERSPECTIVES ON CHAMBERS BASIN

Development of the basin plan involved several basin residents who served on the citizen advisory task force, attended public meetings, and wrote to staff and the commissioners. Long-time residents of the basin offered a wealth of stories, observations and concerns about the area. Families that have lived in the basin for generations wrote letters, attended citizen committee meetings, uncovered old documents and commented on various drafts of the plan. Staff conducted oral interviews with some of the basin residents. Many anecdotes and observations presented here rely on personal recollections of times long past that can no longer be confirmed or refuted. Some of them conflict with other documented reports, but they all help to illuminate the history of Chambers basin and clarify the current concerns.

2.1 HISTORICAL PERSPECTIVE

2.1.1 CHAMBERS LAKE/DITCH/CREEK

When settlers first arrived in the area, Chambers Lake was much larger. The extensive wetlands that now lie northwest of the lake's westernmost point were open water, part of the lake. The modern Chambers and Little Chambers Lakes were part of a single connected lake (U.S. Department of the Interior 1853).

Historically, Chambers Prairie was settled by pioneers because the land had tall grass and no timber. The indians at times set fire to the grass, which burned to the edge of the timber, clearing a hunting area for game (Bruce Briggs, personal communication, 1994).

Years ago, the shores of Chambers Lake were lined with shrubby native berries such as gooseberries and currants, which grew right down to the water's edge (Bruce Briggs, personal communication, 1994). Chambers Lake had no real outlet prior to digging the Chambers Drainage Ditch. When the water level got high enough, excess water would meander across Chambers Prairie in the general vicinity of the present ditch (Bill Case et al, public meeting, 1993). A "natural run" in the location of the current ditch drained water from Chambers Lake toward Chambers Creek when it rained hard, before the ditch was dug (Ed Kramer, personal interview, 1995). Some residents indicated that the ditch was originally dug to facilitate the movement of saw logs from Chambers lake to a sawmill by the falls at the mouth of the Deschutes River (Bill Case et al, public meeting, 1993). However, Chambers Drainage District records clearly state that the ditch was proposed and constructed to drain the surrounding area for agricultural use (Ernest Nelson, personal communication, 1994).

The Chambers Ditch was constructed to drain farmland south of Chambers Lake, which flooded frequently (Ed Kramer, personal interview, 1995). The landowners formed the drainage district to enlarge and extend the ditch, which followed the natural drainage from Chambers Lake to south of Yelm Highway (Ed Kramer, personal interview, 1995). Each enlargement of the ditch shifted the flooding problem a little farther downstream, until the

Community Perspectives

ditch was eventually extended to a wet, farmed lowland between Yelm Highway and Rich Road (Ed Kramer, personal interview, 1995). The wet area had several springs that fed into the natural Chambers Creek to the east of Rich Road (then called "East Olympia Road"), and ran year-round with a low ebb in the summer (Bruce Briggs, personal communication, 1994).

Independently from the drainage district, landowners around the wet area enlarged the channels feeding west into Chambers Creek to drain the saturated area and make the land usable for agriculture (Ed Kramer, personal interview, 1995; R.E. Newby, personal interview, 1995). The Cameron family farmed most of the lowland since the 1870's, and raised potatoes and cabbages before the chambers ditch was dug (Jim Zahn, letter to Director, Thurston County Storm and Surface Water, 1995). The Briggs and other area landowners periodically used backhoes and other machinery to dig out drainage ditches from the wet lowland east of Rich Road to the Rich Road culvert (R.E. Newby, Chambers Task Force meeting, 1994; Bruce Briggs, Chambers Task Force meeting, 1995), and along the west property line of the Zahn property (Jim Zahn, letter to Director, Thurston County Storm and Surface Water, 1995). The ditches were operating and the land was under cultivation as early as 1944 (Jim Zahn, letter to Director, Thurston County Storm and Surface Water, 1995). These activities drained some of the land, and the lowland was farmed until the 1960s, but the wet area has expanded again since maintenance stopped in the late 60s (Ed Kramer, personal interview, 1995). A gate was used to raise the water level in the peat bog and provide a source for irrigation water. Spring water continued to run through other ditches and into the creek even when the gate was raised (Bruce Briggs, personal communication, 1994).

The earthquake of 1949 slowed down or stopped the springs that fed Chambers and Smith Lakes. Chambers Lake fell to low levels in the 1950s and 60s (Bill Case et al, public meeting, 1993). The springs that feed into Chambers Creek also seem to have slowed down or stopped (Bruce Briggs, personal communications, 1994; Jim Zahn, personal communication, 1994).

There were no salmon or sea-run cutthroat trout in Chambers Creek or the Deschutes River before the fish ladder was built at the Deschutes Falls, but there was trout throughout the area. After the fish ladder was constructed, the Game Department slowed down planting trout in the Deschutes River because the trout ate the salmon fry (Bruce Briggs, personal communication, 1994). Since that time, residents reported that there have not been any trout in the drainage ditches (Briggs 1994). Crappie show up in the ditch from Yelm Highway to Chambers Lake in the early spring, but the ditch dries up in the summer (Bruce Briggs, personal communication, 1994).

2.1.2 WARD LAKE

Ward Lake had a sawmill on the north end in the 1900s, which dumped much sawdust into the lake up until the time Holiday Hills was developed in the 1950s. In the early 1900s skid rows

constructed of closely spaced, greased logs were installed around the lake to help horse teams drag logs to the lake and sawmill. Skid rows were still present on the west side of the lake as late as 1925. When Holiday Hills was developed, the lake was cleaned and a lake-access area was installed for the development (Bruce Briggs, personal communication, 1994).

For years, the lake served as the main supply of drinking water for almost all the residents on the lake's west side, where fine sandy soils prevented successful well drilling. A public water system was set up and financed by the Wards Lake Water District. The Briggs family owns water rights to the lake, but decided to drill a well to supply the nursery with water, rather than continuing to pump from the lake. Water in the Briggs well rises up to 85' elevation and appears to correspond to the water table level that also controls the lake levels (Bruce Briggs, personal communication, 1994).

In the 1900s, the only fish in Ward Lake were stickleback. Later on bass were planted in the lake and survived very well, feeding on the native fish. No stickleback have been seen in the past 15 years. Silver trout fishing in the lake was excellent until twenty years ago. The Washington State Game Department used to plant up to 250,000 trout in the lake and there were 5 boat resorts on the lake (Bruce Briggs, personal communication, 1994).

2.2 LOCAL CONCERNS

Public interest in the basin plan was very high, and many residents attended planning meetings, visited with staff, called and wrote letters to express their concerns. The major topics of interest included:

2.2.1 CHAMBERS DITCH

Residents attended meetings and wrote letters to express concerns about Chambers Ditch. Several issues were raised, which related to two prevailing concerns: ditch maintenance and land development. Some residents expressed significant worries that regulatory obstacles would prevent the ditch from being maintained, resulting in flooding and property damage. Others objected to the 100' buffer beside the ditch where no new houses may be built.

Ditch vs. Creek

Many people objected to calling the segment from Chambers Lake to Rich Road a creek, saying instead that it was a ditch (Jim Zahn, personal communication, 1994; Frank Imlig, public meeting, 1994; Jerry Sandberg, public meeting, 1994). Some people expressed the belief that the county had "changed the ditch to a creek" when the "Little Chambers Creek" sign was installed on Yelm Highway. The task force and county staff decided to refer to this segment as a ditch and the county removed the creek sign. Several residents believed that calling the ditch a creek would prevent people from being able to clean and maintain the ditch,

Community Perspectives

and would create new restrictions on land use. Others stated a desire to leave the ditch alone below Yelm Highway and allow the water to spread across the wetland (Grant Fiscus, public meeting, 1994; Steve Fransen, public meeting, 1994).

Fish in Chambers Ditch

The topic of fish in the ditch provided an ongoing controversy. Reports from the Department of Fisheries documenting fish upstream of Rich Road (Jim Fraser, letter to the Department of Natural Resources, 1993) began the debate. Several residents claimed never to have seen a fish in the ditch (Jerry Sandberg, public meeting, 1994; Ed Schilter, public meeting, 1994; Gordon Boe, public meeting, 1994). Other residents came forward to state that they have observed fish in the ditch more than once in recent years (Grant Fiscus, public meeting, 1994; Linda Kirkland, telephone communication, 1995).

Stream Classification

Chambers Creek and Chambers Ditch were categorized as "type 3 waterbodies" by the state Department of Natural Resources in the 1970s, and the county adopted the classification system in the Critical Area Ordinance in 1994. The type 3 definition includes "significant use" by fish, which the DNR and tribes have interpreted to include any water bodies with documented fish use. Many residents objected to the stream typing, because they felt that the ditch was not used by fish (Jerry Sandberg et al, letter to Thurston County, 1994). The citizen committee petitioned the DNR to downgrade the classification (Chambers Citizen Advisory Task Force, letter to Department of Natural Resources, 1994). The DNR rejected the request, citing documented fish use (Howard Thronson and Kris Knutzen, letter to Chambers Basin Citizen Advisory Task Force, 1994). See appendix F for copies of the letters.

Debris in the Ditch

Several residents complained that debris frequently clogs up the ditch and causes flooding (Jim Zahn, personal communication, 1994; Frank Imlig, public meeting, 1994; Jerry Sandberg, public meeting, 1994; Wilma Groeschell, public meeting, 1994). Residents cited brush and grass clippings from Drainage District maintenance and yard waste from homeowners in the Chambers Creek Apartments and other housing developments upstream as the cause of clogging (Frank Imlig, public meeting, 1994; Jerry Sandberg, personal interview, 1992).

2.2.2 HEWITT LAKE

Hewitt Lake Algae Blooms

Many residents around Hewitt Lake wrote and attended meetings to express concern over severe algae blooms in the lake during the summer and fall of 1994 (Robert Robison, letter to Thurston County Commissioners, 1994; Chris Coleman, public meeting, 1994; Ron Chapman,

public meeting, 1994). Residents felt that unfiltered stormwater discharges to the lake from Yelm Highway, Laura Street and Brassfield Court were causing the problem. One resident complained of erosion from a stormwater outfall. Several residents requested increased maintenance and monitoring of the stormwater discharges. One resident pointed out that the stormwater ponds in new developments around the lake are rarely maintained and overflow frequently. Residents urged the county to act soon to solve these problems, and not wait for additional studies (Ron Chapman, public meeting, 1994).

2.3 PARTICIPATING BASIN RESIDENTS

Residents who served on the Chambers Basin Citizen Advisory Task Force during some or all of the planning included:

C. Ernest Nelson
Cedar Wells
Al Zahn
Frank Higgins
Steve Dilley

Daryl Neal
Jim Zahn
Bruce Briggs (Co-chair)
Ann Mataczynski (Co-chair)
Gary Longmire

Other residents who attended task force meetings included:

Ken Balsley
Jackie Lee
Wayne Beckwith
Ed Schilter
Barbara Dayton
DuWayne Krieger
Betty Robison
Elizabeth Schilter
Stanley Gruessing
Cliff Reichel
Gordon Boe
R.E. Newby
Jeff McMillan
Bill Morse
Wilma Groeschell
Earl Finn
Steve Fransen
John Setina
Jim Muirhead

Julie Woods
Janet Teague
Frank Imlig
Jay Dayton
Jerry Sandberg
Bob Robison
Mr. & Mrs. W. E. Swanson
Ken Bates
Myron Struck
Betty Reichel
Bill Case
Del McMillan
Chris Chapman
Bob Groeschell
Ron Coleman
Grant Fiscus
Kris Fransen
Terry Setina