Photo on front:
Flooding of 32nd Avenue in unincorporated Thurston County, in Lacey's UGA.

The flooding in this picture was caused by a failure of a culvert under 32nd Avenue to handle the volume of water from the head waters of eagle Creek during a severe storm event. The cumulative impacts of urbanization upland of 32nd Avenue has created this problem by creating impervious surfaces covering area that historically served as storage during storm events (typically low grade wetland areas). The flooding is not only a concern for functioning of road infrastructure, as the road closure sign demonstrates, but also for less obvious environmental impacts. Eagle Creek is a tributary to Woodland Creek (that supports salmon) and uncontrolled runoff will carry pollutants and sediment that can have serious impacts to salmon rearing stream beds.

Photograph taken by Doug Christenson, a Water Resources Engineer for the City of Lacey.
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Tom Nelson, Mayor
Virgil Clarkson, Deputy Mayor
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Andy Ryder

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Acknowledgments

The City of Lacey would like to acknowledge the many public and private agencies that have developed information on the shorelines of Lacey that was used in this update.

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Many thanks to the Thurston Regional Planning staff that worked to secure and administer the grant from the Department of Ecology and who also crafted the framework and prepared a generic document that has served as the starting point for Lacey's update. Thurston Regional planning staff that worked on the first draft includes:

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Toni Tringolo, Office Specialist II

Many thanks to the Advanced Planners from the Cities of Olympia, Tumwater and Thurston County who participated in many work-sessions to provide technical input and direction on development of the first draft prepared by Regional Planning:

Tim Smith, Senior Planner for Tumwater
Jan Weydemeyer, Senior Planner for Olympia
Cindy Wilson, Senior Planner for Thurston County
Molly Levitt, Associate Planner Thurston County

Photographs taken by David R. Burns, AICP, Principal Planner, unless noted otherwise.
# Table of Contents

## I. INTRODUCTION

- A. Background .................................................................................................................. 1
- B. Timeline ......................................................................................................................... 2
- C. Methods and Sources of Information ........................................................................ 3
- D. Regulatory Framework ................................................................................................. 4
- E. Shorelines ....................................................................................................................... 5

## II. CURRENT CIRCUMSTANCES AND ECOLOGICAL FUNCTIONS ........................................ 6

## III. PROPOSED REGULATIONS ................................................................................................ 29

- A. New Shorelines Regulated under SMP ........................................................................ 29
- B. Environmental Designations .......................................................................................... 29
- C. Residential Setbacks ...................................................................................................... 31
- D. Shoreline Vegetation Landscaping and Restoration.................................................... 33
- E. Docks and Piers .............................................................................................................. 36
- F. Bulkheads and Shoreline Stabilization ........................................................................ 36
- G. Other Goals for Shoreline Use ..................................................................................... 37

## IV. FORESEEABLE DEVELOPMENT IN SHORELINE ENVIRONMENTS ....................................... 38

## V. ASSESSMENT OF CUMULATIVE IMPACTS ......................................................................... 43

- A. Marine Reaches ............................................................................................................ 43
  1. Nisqually Reach ........................................................................................................ 43
- B. Rivers and Streams ...................................................................................................... 43
  1. Woodland Creek ......................................................................................................... 43
- C. Lakes ........................................................................................................................... 43

## VI. SUMMARY .................................................................................................................. 45

## VII. RESOURCES ................................................................................................................ 46
List of Tables

TABLE 1: TIMELINE FOR THE SHORELINE MASTER PROGRAM UPDATE FOR THE CITY OF LACEY AND ITS UGA................................................................................................................................. 2
TABLE 2: SMA SHORELINES AND FUNCTIONAL SYSTEMS FOR LACEY................................................................. 5
TABLE 3: PROCESSES, FUNCTIONS, AND LEVEL OF ALTERATION FOR THE NEARSHORE/MARINE ENVIRONMENT. ........................................................................................................................................... 7
TABLE 4: PROCESSES, FUNCTIONS, AND LEVEL OF ALTERATION FOR THE WOODLAND CREEK SYSTEM ...... 17
TABLE 5: PROCESSES, FUNCTIONS AND LEVEL OF ALTERATION FOR OTHER FRESHWATER LAKES........... 25
TABLE 6: EXISTING AND PROPOSED RESIDENTIAL SETBACKS, AND NUMBER OF NON-CONFORMING STRUCTURES ANTICIPATED........................................................................................................... 32
TABLE 7: SLIDING SCALE FOR VEGETATION REQUIREMENTS................................................................................. 34
TABLE 8: FORESEEABLE DEVELOPMENT FOR SHORELINES – MARINE REACHES ............................................. 39
TABLE 9: FORESEEABLE DEVELOPMENT FOR SHORELINES – RIVERS AND STREAMS ..................................... 40
TABLE 10: FORESEEABLE DEVELOPMENT FOR SHORELINES – LAKES............................................................... 41
I. Introduction

A. Background

This report is the final proposed cumulative impacts analysis for the City of Lacey and its urban growth area (UGA). The report has been created as part of the Shoreline Master Program for the City and added to Lacey Master Program as Appendix 5.

Local master programs are required to evaluate and consider cumulative impacts of reasonably foreseeable future development on shoreline ecological functions. While some impacts are immediate and can be directly addressed through avoidance and mitigation, other impacts are cumulative in nature. Individually, the action may not result in a significant impact, but the composite of many similar actions over time may lead to a significant cumulative impact to the ecosystem. Examples of this may be shoreline bulkheads or docks.

Under shoreline guidelines, the evaluation of cumulative impacts should consider (WAC 173-26-186(8)(d)):

- Current circumstances affecting the shorelines and relevant natural processes
- Reasonably foreseeable future development and use of the shoreline
- Beneficial effects of any established regulatory programs under other local, state, and federal laws

A cumulative impacts analysis is required to assess the effects of actions allowed under the proposed policies and regulations. The guidelines state that: “To comply with the general obligation to assure no net loss of shoreline ecological function, the process of developing the policies and regulations of a shoreline master program requires assessment of how proposed policies and regulations cause and avoid such cumulative impacts.”

Note:

This Cumulative Impacts Analysis is based on the Proposed SMP Regulations and Environmental Designations as of June 2010.
### B. Timeline

A timeline for the complete Shoreline Master Program update (a multi-year program) is below:

**TABLE 1: TIMELINE FOR THE SHORELINE MASTER PROGRAM UPDATE FOR THE CITY OF LACEY**

<table>
<thead>
<tr>
<th>Phase</th>
<th>Update Schedule</th>
<th>Timeline</th>
</tr>
</thead>
</table>
| 1     | A. Determine what shorelines are regulated under the act  
      | B. Conduct an inventory of all existing and available data  
      | for shorelines  
      | C. Public Open Houses | Winter 2008. Accomplished under Regional contract with DOE |
| 2     | A. Analyze and characterize shoreline conditions | Spring 2008. Accomplished under Regional contract with DOE |
| 3     | A. Categorize each shoreline segment into a designation such as urban, suburban, or rural. Each will have a different set of rules.  
      | B. Develop draft rules and policies  
      | C. Public meetings | Fall 2008 Winter-Spring 2009. Draft accomplished under Regional contract with DOE |
| 4     | A. Analyze the cumulative impacts of expected shoreline development or redevelopment  
      | B. Develop a restoration (and preservation) plan, including public access | Winter-Spring 2009. Accomplished under Regional contract with DOE and refined by Lacey early 2010 |
| 5     | A. Public hearings  
      | B. Planning Commission recommendations  
      | C. City Council approval  
      | D. State approval | In process. Expected completion date is late 2010 |
C. Methods and Sources of Information

This cumulative impacts analysis is built upon the assessment of current circumstances affecting the shorelines and relevant natural processes as identified in the Shoreline Inventory and Analysis (Phase 1).

In Lacey, the assessment of reasonable foreseeable future development and use of the shoreline can be described as a comprehensive process involving both consideration and a focus on micro (site or project specific type issues) as well as macro or bigger picture concerns. The micro focus includes a project specific level for things, such as impacts from a typical development project and details of how the mechanics would work with administration of permits and customer service at the counter. Basically, where the rubber meets the road and where you have to figure out how your strategies for environmental protection, restoration, etc. will actually work on the ground.

Macro (bigger picture) considerations will involve concepts that are harder to define and predict, but are nevertheless important because they will have an impact on the context the community will find itself in at some future point. These considerations include such things as expected community demographics, market conditions, and the expected likely development scenarios and land use expectations given these other considerations and the requirements of GMA. An attempt to describe this process and its results is summarized in the following bulleted discussion points:

- This review necessarily requires a project level analysis, not only of known projects but a consideration of “typical” site specific projects and impacts that have historically occurred and could be expected to occur given market conditions, demographics and different regulatory scenarios under GMA. It includes consideration of real projects listed in Lacey’s Capital Facilities Plan and imagined plans and projects that could occur.

- After Regional Planning’s original development of the first cumulative impacts draft, this analysis was coordinated by Lacey staff as a regular part of agenda discussions during the Planning Commission’s update of the SMP.

- Major conclusions of the cumulative impacts assessment and strategy to deal with the issues it presents was largely identified, developed and refined through extensive discussion and examination of issues, problems, solutions and expectations during the nine months the Planning Commission spent on the SMP update effort.

- Planning Commission agendas included participation and the specialized knowledge base and values brought to the table by state resource agencies, interested citizens, land owners and members of the development community.

- As a result of this project level review, specific projects with known impact and situations considered “typical” and “most likely to occur” based upon historical application and counter experience were emphasized and given priority for development of protection and restoration strategies.

- To craft strategies for protection and restoration of shoreline resources, staff and the Planning Commission discussed identified issues and ideas with resource agencies and utilized material provided by resource agencies. This discussion and analysis
resulted in development of goals, policies and standards for sections of the SMP dealing with the respective topic areas.

- This effort took place in the context of the bigger picture the Planning Commission and staff are always required to work within. Considering a big picture assessment of past development activity and trends, expectations for the City’s future and the overall vision for the Lacey community that gets articulated in the Comprehensive Land Use Plan and its many specialized elements.

- The SMP update and consideration of expected outcomes (cumulative impacts) is folded within this scope of work as the specialized element that requires the protection, wise management and utilization of Lacey’s shoreline resources to meet the needs of state law as well as its local citizens. All of this is part of the visioning process that will guide the City as it develops and evolves under GMA.

- As part of the bigger picture assessment and cumulative impacts, consideration is given to environmental legislation Lacey currently has on the books to implement GMA concepts and requirements as well as new policy and standards for regulating shoreline development.

- To assess likely long term impacts to shoreline resources, this level of analysis necessarily includes the beneficial results from implementation of new strategies identified at the project level considering the emphasis and expectation of no net loss of function and value.

- Beneficial effects of any established regulatory programs under other local, state, and federal laws is also derived from an evaluation of the proposed regulations and policies to ensure *no net loss of ecological function*.

### D. Regulatory Framework

As discussed above considering the context of the “bigger picture,” the Shoreline Master Program is one element under the City’s GMA Comprehensive Land Use Plan. Development activity in Lacey and the unincorporated urban growth area in Thurston County is regulated under a joint Comprehensive Land Use Plan and Zoning Code and separate critical area regulations. The SMP is the element that regulates activity within shorelines jurisdiction.

There are other state and federal regulations that also may apply to shoreline development activities.
E. Shorelines

Table 2 lists the shorelines identified in the Shoreline Inventory for Lacey and its Urban Growth Area (UGA), classified into functional systems.

**TABLE 2: SMA SHORELINES AND FUNCTIONAL SYSTEMS FOR LACEY, OLYMPIA, TUMWATER AND UGAS.**

<table>
<thead>
<tr>
<th>Type</th>
<th>Area</th>
<th>System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marine Waters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nisqually Reach</td>
<td>Lacey &amp; UGA</td>
<td>Nearshore/Marine</td>
</tr>
<tr>
<td>Rivers/Streams</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woodland Creek</td>
<td>Lacey &amp; UGA</td>
<td>Woodland Creek System</td>
</tr>
<tr>
<td>Lakes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chambers Lake</td>
<td>Lacey &amp; Olympia</td>
<td>Freshwater Lake</td>
</tr>
<tr>
<td>Hicks Lake</td>
<td>Lacey</td>
<td>Woodland Creek System</td>
</tr>
<tr>
<td>Long Lake</td>
<td>Lacey &amp; UGA</td>
<td>Woodland Creek System</td>
</tr>
<tr>
<td>Pattison Lake</td>
<td>Lacey &amp; UGA</td>
<td>Woodland Creek System</td>
</tr>
<tr>
<td>Southwick Lake</td>
<td>Lacey &amp; UGA</td>
<td>Freshwater Lake</td>
</tr>
</tbody>
</table>
II. Current Circumstances and Ecological Functions

Current shoreline circumstances and relevant natural processes were documented in Phase 1 of the Shoreline Master Program update in the: Shoreline Inventory for the Cities of Lacey, Olympia, and Tumwater and their Urban Growth Areas and the Lacey, Olympia, and Tumwater Shoreline Analysis and Characterization Report.

These evaluations led to the development of draft Shoreline Environment Designations (SEDs) for each shoreline reach. This evaluation was continued as part of Lacey’s review during the Planning Commission’s consideration of specific projects and specific sites considered priority for environmental protection. At this state, reach conditions, restoration issues and potential opportunities associated with various scenarios were discussed to determine the best strategies and techniques for protection and achieving the objective of no net loss.

For Lacey, ecological functions expected to be at risk from increased urbanization were initially evaluated by consultants during the analysis and characterization phase and later by the Lacey staff and Planning Commission during Lacey’s SMP update process. The Planning Commission’s involvement focused on development activity expected under the City’s Comprehensive Land Use Plan and expectations of the Growth Management Act (GMA) and the best land use strategies to achieve no net loss of the functions and values of Lacey’s shoreline resources. Scenarios, land use strategies and likely outcomes were considered and discussed and specific land use goals, policies and standards were developed for the SMP dealing with the following shoreline systems:

- Nearshore/Marine Environment – Nisqually Reach
- Woodland Creek System – Woodland Creek, Long Lake, Pattison Lake, and Hicks Lake
- Other Freshwater Lakes – Southwick and Chambers Lake

Key processes and functions identified for Lacey’s shorelines and their current level of alteration are summarized in Table 3 below. Discussion of alteration, impact and potential restoration opportunities is also included for portions of the urban growth area (UGA) that is in unincorporated Thurston County. Discussion of areas in the County is considered important, particularly where designations and anticipated development could impact areas within Lacey. However, it should be noted that area within Lacey’s UGA, in unincorporated Thurston County, is not under the regulatory preview of this SMP. Discussion of the UGA is included here only for the purposes of joint planning and interagency coordination of restoration activity.
# Table 3: Processes, Functions, and Level of Alteration for the Nearshore/Marine Environment.

<table>
<thead>
<tr>
<th>Nearshore/Marine Environment – Nisqually Reach</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Process:</strong> Function</td>
</tr>
<tr>
<td><strong>Habitat:</strong> Pocket estuarine habitat; subtidal and intertidal provide transition habitat between fresh and salt water environments.</td>
</tr>
<tr>
<td>The Butterball Cove area and the marine shoreline within Lacey to the east of Butterball Cove are substantially unaltered. The only alteration is a historical pier (Powder Wharf) that exists east of Butterball Cove. The pier was associated with DuPont dynamite operations in the 1940s. However, it is nonfunctional today.</td>
</tr>
<tr>
<td>An existing access to this area is provided by the Hawks Prairie Planned Community. It includes an outlook overlooking the beach. The access has had little impact to the overall shoreline structure or processes.</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
## Nearshore/Marine Environment – Nisqually Reach

|-------------------|-----------------------------|---------------------------------------------|---------------------------------------------------------------------------------|-------------------------|
| Nisqually 2A and B - Moderate | Low | Modifications in this area are expected to continue over the long term. Maintenance activities will continue and need to be properly designed. Opportunities may come available for restoration as maintenance takes place. | Nisqually 2A and B – SMP Policy Policy and incentives focused on restoration are expected to incrementally move improvements in a positive direction to achieve restoration objectives. An example is the recent salmon recovery project that will improve habitat and reverse a trend existing for the proceeding 50+ year period. Specific provisions that apply are as follows:  
- New SMP provisions – discussion Section 17.49.010.  
- Policies Section 17.49.010, policies 2 and 4 under policies for marinas.  
- Standards Section 17.49.021, Beachcrest marina standards 2 and 3. | Nisqually 2A and B Work with the Beachcrest HOA to craft incentives for restoration. |
| Nisqually 1 – Extremely Low | No modifications have been made to this area of shoreline under Lacey jurisdiction. See discussion above dealing with existing conditions. | The proposed designation of Natural and restrictions on development are expected to protect this reach. New modifications would be subject to marine habitat criteria and no net loss. There are no structures on this shoreline that would justify a modification. Improvement of the one historical modification (pier) would require | Nisqually 1 – The following provisions are applicable:  
1. **Designation as Natural**: The proposed SMA designation of Natural and its associated restrictions on the types of use and development would not permit new modifications; shoreline map designation, Tables 3, 4 and 5. | |

**Hydrology:**
---
**Attenuation of wave energy.**
### Nearshore/Marine Environment – Nisqually Reach

|----------------------------|------------------------------|---------------------------------------------|---------------------------------------------------------------------------------------------------|--------------------------|
| Nisqually 2A and B – Moderate to High | Armoring of marina area and access road has changed tidal and wave energy dynamics in this area. | City ownership and compliance with no net loss policy. | 2. **Marine Riparian Habitat Requirements:** Associated criteria for development are designed to protect the Natural designation; Sections 17.35.030 – 17.35.035.  
3. **Master Plan and Plat Requirements:** Designation of the area as open space in the Hawks Prairie Master Planned Community restricts use to activity appropriate to this reach; Master Plan Approval HPPC and subdivision requirements of LMC 15. | Nisqually 2A and B  
Work with the Beachcrest HOA and County in joint planning to craft incentives for restoration. |
| Sediment Generation and    | Nisqually 1 – Extremely Low  
Natural processes have been | Nisqually 1 – Extremely Low  
No new activities in shorelines | Nisqually 1 – The following provisions are applicable: | |
<table>
<thead>
<tr>
<th>Nearshore/Marine Environment – Nisqually Reach</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Process:</strong> Function</td>
</tr>
</tbody>
</table>
| **Transport:** Sediment delivery from coastal bluffs and streams. | maintained in this area. The current open space designation and plat limitation have protected this area. | jurisdiction expected. New upland development is limited to areas outside critical area buffers, requires tree protection and must meet new drainage manual requirements. | 1. **Designation as Natural:** The proposed SMA designation of Natural and its associated restrictions on the types of use and development would protect this area; shoreline map designation, Tables 3, 4 and 5.  
2. **Marine Riparian Habitat Requirements:** Associated criteria for development are designed to protect the Natural designation; Sections 17.35.030 – 17.35.035.  
3. **Master Plan and Plat Requirements:** Designation of the area as open space in the Hawks Prairie Master Planned Community restricts use to activity appropriate to this reach. Upland development is restricted to areas outside critical area and buffers and outside area designated as open space in the planned community (which includes the bluff areas); Master Plan Approval HPPC and subdivision requirements of LMC 15. | |
## Nearshore/Marine Environment – Nisqually Reach

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>Nisqually 2A and B – Moderate</td>
<td>Armoring of shoreline for the marina and success road would be expected to have changed longshore drift dynamics</td>
<td>Nisqually 2A and B – Low Maintenance will continue for existing modifications. No net loss standards will be required for any maintenance and repair. Incentives will be offered to the HOA to further restoration objectives.</td>
<td>Nisqually 2A and B Policy and incentives focused on restoration are expected to incrementally move improvements in a positive direction to achieve restoration. The existing situation will not be permitted to get worse. Improvement will likely be incremental and will take time. See discussion above regarding references to SMP criteria and standards and other applicable environmental legislation.</td>
<td>Nisqually 2A and B See discussion above. Work with the HOA is crafting incentive ideas and partnering in restoration opportunity will be ongoing.</td>
</tr>
<tr>
<td>Water Quality: Wetland removal of pollutants through sedimentation and adsorption.</td>
<td>Nisqually 1 – Extremely Low Lacey’s wetland protection regulations and tree protection regulations that predated GMA requirements have effectively preserved and protected associated upland wetlands.</td>
<td>Nisqually 1 – Extremely Low Wetlands primarily associated with the marine shoreline have not experienced pressure for urbanization until recently. Upland property in the HPPC was “reserved” for future development in the early Master Planned Community and was never developed. After Lacey annexed the area and became responsible for regulation of development, wetland regulations have been applied in planning undeveloped portions of the Planned Community. Regulations essentially prohibit development in these critical areas.</td>
<td>Nisqually 1 The proposed designation of Natural and restrictions on upland development and preservation of wetland areas and buffers are expected to protect this function; see SMP sections cited above and requirements of LMC Chapter 14.28 Wetland Protection and 14.32 Tree Protection.</td>
<td></td>
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<tr>
<td><strong>Nearshore/Marine Environment – Nisqually Reach</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Nisqually 2A and B – Moderate</strong></td>
<td>Wetland areas would not have had protection when the majority of upland area development took place in this area and natural functions that existed are lost. Upland development dating back from the late 1940s throughout 1990s has had impact to this area. Streams running to pocket estuaries and Mallard Cove have likely resulted in nutrient loading from Beachcrest septic tank drainfield systems and residential activities and drainage.</td>
<td>This situation will continue into the future resulting in protection of wetland functions. <strong>Nisqually 2A and B – Low</strong></td>
<td>Wetland restoration in this area is not available as an option. Uses contributing to the impact are expected to continue over the long term. Major public investment would be needed to provide sewer services to this area. Major work would be required to mitigate drainage impacts from existing homes. While the situation is not expected to be allowed to get worse, restoration and mitigation for lost wetland and stream function is expected to be problematic.</td>
<td>Potential to work with HOAs to improve vegetation management through education.</td>
</tr>
<tr>
<td><strong>Nisqually 1 – Extremely Low</strong></td>
<td>See description above under water quality.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Nisqually 2A and B – Moderate</strong></td>
<td>Impacts from existing upland development have occurred; see discussion under water</td>
<td></td>
<td>New drainage manual requirements applied to new upland development and repair and improvement of existing septic systems should incrementally move this area is a</td>
<td></td>
</tr>
</tbody>
</table>
## Nearshore/Marine Environment – Nisqually Reach

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>adsorption.</td>
<td>quality above.</td>
<td>wetlands. See discussion above. Maintenance and replacement of drainage facilities and septic systems may present opportunity for new mitigation in water quality. This would be expected to result in an incremental improvement in water quality over the long term.</td>
<td>positive direction for water quality. See discussion above and discussion and provisions in Section 17.70 (Water Quality) of the SMP.</td>
<td></td>
</tr>
</tbody>
</table>

### Habitat:
Shoreline habitat for wildlife; vegetation provides structure for invertebrates, birds, amphibians, reptiles, and mammals.

### Nisqually 1 – Extremely Low
See descriptions of existing conditions above. Overall both the shoreline area and immediately adjacent upland area is substantially unaltered.

### Nisqually 1 – Extremely Low
See description of expectations above.

### Nisqually 1
See descriptions of protection requirements and existing conditions above. The following sections are applicable:

1. **Natural Designation**: SMP map and criteria and standards of Sections 17.35.030 – 17.35.035.
2. **Planned Community Restrictions**: Designation of open space and Master Planned Community conditions; LMC Chapter 15 (Plat requirements for open space).
3. **Wetland Protection**: LMC Chapter 14.28
4. **Tree Protection Regulations**: LMC Chapter 14.32.
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Nisqually 2A – Moderate</td>
<td>Some change with development of the marina and upland development to the southeast.</td>
<td>Nisqually 2A – Low Impacts are expected to continue from existing upland development. See discussion above under habitat.</td>
<td>Nisqually 2A Policy and incentives focused on restoration are expected to incrementally move improvements in a positive direction to achieve restoration objectives in that area subject to Lacey jurisdiction.</td>
<td></td>
</tr>
<tr>
<td>Nisqually 2B – High</td>
<td>Salmon habitat was modified by placement of the access road to the marina and a culvert system that restricted tidal exchange and salmon access to a pocket estuary. Upland tree removal for residential development.</td>
<td>Nisqually 2B – Low New environmental legislation adopted by the County would be expected to reduce impact from new development.</td>
<td>Nisqually 2B This area was recently a site for a salmon restoration project that was supported and permitted by the Beachcrest HOA. The HOA has demonstrated a willingness to pursue restoration actions. Lacey is proposing incentives to encourage the continuation of this trend; Section 17.49.010 policies 2 and 4, Section 17.49.021 Beachcrest standards 2 and 3.</td>
<td></td>
</tr>
</tbody>
</table>

**Habitat:**

**Source and delivery of LWD.**

| Nisqually 1 – Extremely Low | Nisqually 1 – Extremely Low | Nisqually 1 – Extremely Low | Nisqually 1 No change expected in Lacey regulations for the SMP Natural designation, plat restrictions, wetland protection or tree protection. This should continue to have positive impacts on habitat and LWD delivery. The following provisions are | |
| Lacey has had an Urban Forest Management Plan and tree protection regulations for over four decades that have controlled the cutting of trees and prohibited cutting within sensitive areas and their buffers. Regulations have been | No new impacts are expected. | No new impacts are expected. | |
|-------------------|-------------------------------|------------------------------------------|------------------------------------------------------------------------------------------|------------------------|
| Nisqually 2A and B – Moderate | Upland residential development in Beachcrest may have impacted natural LWD. | Nisqually 2A and B – Low Upland development is established and expected to continue over the long term. This would be expected to make the restoration of processes necessary to LMD problematic. | applicable:  
1. **Natural Designation:** SMP map and criteria and standards of Sections 17.35.030 – 17.35.035.  
2. **Buffers:** SMP standards for buffers in Section 17.41.020.  
3. **Vegetation:** SMP standards for vegetation in Section 17.41.020.  
4. **Tree Protection:**  
   - Goals and policies of Lacey Urban Forest Management Plan (Chapter 1, Section 2 of the Environmental Protection and Resource Conservation Plan).  
   - Tree protection requirements in LMC 14.32. | Nisqually 2A and B Work with the HOAs on tree protection and environmental issues is expected to improve the existing situation. |
## Nearshore/Marine Environment – Nisqually Reach

|-------------------|-----------------------------|-------------------------------------------|------------------------------------------------------------------------------------------------|-----------------------|
|                   |                             |                                           | the Environmental Protection and Resource Conservation Plan).  
|                   |                             |                                           | • Tree protection requirements in LMC 14.32.                                                 |                       |
Table 4: Processes, functions, and level of alteration for the Woodland Creek System.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrology: Channel and floodplain connection.</td>
<td>Moderate to Low</td>
<td>New roads, road extensions for connections or widening could have impacts if not properly planned and mitigated. However, transportation policies require consideration of ecological function and mitigation of identified impacts. No development will be allowed in Woodland Creek floodplain area and the creek has sensitive area buffers of 200 feet prohibiting development within protected area. Wetland regulations prohibiting development in associated wetlands will ensure these areas are protected.</td>
<td>The following provisions are applicable:</td>
<td>N/A</td>
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<td></td>
<td>1. SMP Transportation Section 17.68: Requires consideration of ecological function, mitigation sequencing, and design for least impact to shoreline resources.</td>
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<td>2. SMP Minimum Setbacks Section 17.24.015 Table 4: Requires minimum setbacks and location outside shoreline jurisdiction where feasible.</td>
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<td>4. Woodland Creek Sensitive Area Buffers: 200 foot buffer requirement for all development LMC 14.33.117.</td>
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<td></td>
<td>5. Wetland Ordinance LMC 14.28: Prohibits development in wetlands or associated buffers.</td>
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</table>
## Woodland Creek System - Woodland Creek, Long Lake, Pattison Lake, and Hicks Lake

|-------------------|-----------------------------|------------------------------------------|------------------------------------------------------------------------------------------------|------------------------|
| Hydrology: Summer low flows. | Moderate to Low Generally, upstream land uses and development in urbanized areas have resulted in less water flowing in urban streams. Woodland Creek is no exception during the summer low-flow periods. | Low Preservation of wetlands and headwater lakes will maintain base flows to Woodland Creek. New drainage manual requirements and ongoing mitigation for potable water rights is designed to mitigate impacts to hydrology. Impacts will not be allowed to increase and mitigation is expected to result in no net loss for this function. Use of stormwater management practices that encourage low impact development may minimize impervious surfaces in the basin over the long term. New SMP standards for buffers and vegetation/restoration requirements shall apply along lakefront lots. This will promote capturing runoff. A long time tree protection ordinance applicable throughout the City has protected overstory vegetation and the City’s tree canopy which has significant positive impacts for drainage city wide. It should be noted, that established uses that have contributed to the existing impacts are expected to be there over the long term and retrofitting developments will be problematic and incremental under the best of conditions. | The following provisions are applicable:  
1. **Stormwater Manual LMC**: Requires infiltration on site and promotes low impact development techniques.  
2. **SMP Buffer/Vegetation Requirements SMP 17.40.020 (2) and 17.41.020 (1)**: New requirements for buffers and vegetation with native species along lakefront lots.  
3. **Wetland Protection Requirements of LMC 14.28**: Prohibit development in wetlands and buffers maintaining the hydolic functions of these areas.  
4. **Tree Protection Ordinance LMC 14.32**: Tree retention and minimum tree requirements for each developed lot promotes retention of drainage on site throughout the City. | The following provisions are applicable:  
1. **Drainage Manual Design**: Incentives built into the new drainage manual that encourage and enable the development community to use low impact development techniques.  
2. **Public Education, SMP new goals and policies Section 17.41.015 goal 2 and 3 and associated policies**: Use of public education to inform lakefront lot owners of proper vegetation management techniques. |
### Woodland Creek System - Woodland Creek, Long Lake, Pattison Lake, and Hicks Lake

|-------------------|-----------------------------|---------------------------------------------|------------------------------------------------------------------------------------------------|------------------------|
| Hydrology: Flood flow retention. | Extremely Low  
As noted above, wetland systems have been preserved providing natural storage capacity.  
Tree protection city wide has promoted drainage control functions as a product of Lacey’s urban forest management. | Extremely Low  
Wetland systems have been preserved providing natural storage capacity. This will continue to provide a level of natural function.  
New drainage manual requirements will promote the concept of low impact development and will result in design of new systems expected to maintain functions that exist today.  
City wide tree protection and vegetation and buffer requirements for lakeshore lots will ease drainage impacts by storage and retention of stormwater onsite. | The following provisions are applicable:  
1. **Stormwater Manual LMC**: Requires infiltration on site and promotes low impact development techniques.  
2. **SMP Buffer/Vegetation Requirements SMP 17.40.020 (2) and 1741.020 (1)**: New requirements for buffers and vegetation with native species along lakefront lots.  
3. **Wetland Protection Requirements of LMC 14.28**: Prohibit development in wetlands and buffers maintaining the hydolic functions of these areas.  
4. **Tree Protection Ordinance LMC 14.32**: Tree retention and minimum tree requirements for each developed lot promotes retention of drainage on site throughout the City. |
## Woodland Creek System - Woodland Creek, Long Lake, Pattison Lake, and Hicks Lake

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<tbody>
<tr>
<td>Sediment Generation and Transport: Upland sediment generation.</td>
<td>Moderate</td>
<td>Low</td>
<td>The following provisions are applicable: 1. <strong>Stormwater Manual LMC</strong>: Requires infiltration on site and promotes low impact development techniques. 2. <strong>SMP Buffer/Vegetation Requirements SMP 17.40.020 (2) and 17.41.020 (1)</strong>: New requirements for buffers and vegetation with native species along lakefront lots. 3. <strong>Wetland Protection Requirements of LMC 14.28</strong>: Prohibit development in wetlands and buffers maintaining the hydolic functions of these areas. 4. <strong>Tree Protection Ordinance LMC 14.32</strong>: Tree retention and minimum tree requirements for each developed lot promotes retention of drainage on site throughout the City. 5. <strong>Best Management Practice (BMP) Applied to Retrofits for Existing Drainage Systems</strong>: Implementation and retrofit of water quality BMPs to the existing stormwater systems can reduce fine sediment loading.</td>
<td></td>
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<tr>
<td>Fine sediment loading has increased due to build-up and wash-off from urban land uses.</td>
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<tr>
<td>New drainage manual requirements will promote the concept of low impact development and will result in design of new systems expected to maintain functions that exist today. This will eliminate the potential for new uses contributing additional flow or sediment generation from development. City wide tree protection and vegetation and buffer requirements for lakeshore lots will ease drainage impacts and eliminate runoff from new uses or development. Application of vegetation restoration along lakeshore lots with new permits for expansion will improve mitigation of impacts from existing uses. Buffer requirements for Woodland Creek eliminate runoff impacts and provide area for cleansing stormwater. Existing City stormwater systems are retrofitting utilizing Best Management Practice (BMP) as part of normal maintenance and repair.</td>
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<tr>
<td>Water Quality: Wetland removal of pollutants through sedimentation and adsorption.</td>
<td>Extremely Low Protection of wetland areas and trees under Lacey’s sensitive area ordinances has maintained this function in Lacey.</td>
<td>Extremely Low Protection of wetland areas and trees under Lacey’s sensitive area ordinances has maintained this function in Lacey. This situation is expected to protect wetland functions over the long term.</td>
<td>The following provisions are applicable: 1. Wetland Protection Requirements of LMC 14.28: Prohibit development in wetlands and buffers maintaining wetland functions. 2. Tree Protection Ordinance LMC 14.32: Tree protection within wetland buffer areas protects and promotes the natural functions of these wetland resources.</td>
<td>Resident Education, Wetland Protection Ordinance LMC 14.28: Protective covenants applied to HOAs informing residents adjacent to wetlands of proper vegetation and fertilization practices to protect wetland functions. Resident Education, SMP 17.41.015 (2) and (3): Educational programs and information for residents within shoreline jurisdiction regarding vegetation requirements that will promote the health of shoreline areas and promote natural functions.</td>
</tr>
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### Woodland Creek System - Woodland Creek, Long Lake, Pattison Lake, and Hicks Lake

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<tbody>
<tr>
<td><strong>Water Quality:</strong> Delivery, movement, and loss or removal of nutrients, pathogens and toxicants; storage of phosphorus and removal of nitrogen and toxins through sedimentation and adsorption.</td>
<td>High to Moderate</td>
<td>Moderate to Low</td>
<td>The following provisions are applicable:</td>
<td></td>
</tr>
</tbody>
</table>
|                   | The delivery, transport, and disposition of nutrients, pathogens and toxins have been significantly altered from the pre-disturbance condition. Upland sources of these pollutants have increased significantly as a result of urban land uses within and near the shoreline. Contaminants from adjacent residential uses, septic tanks, fertilization, etc. have contributed to water quality issues. Potential storage has decreased through installation of impervious surfaces. | The development of the TDML for Woodland Creek has highlighted potential sources of point-source pollution and flow reduction. Significant source control and remediation efforts are currently underway to remove and avoid pollutant discharge to the riverine environment. Significant opportunity exists to reduce septic tank drainfield contamination by sewer or corrective actions for failing septic tank systems. The new SMP has an emphasis upon water quality and strategies to improve this including:  
  - Phase out and prohibition on new septic tank systems;  
  - Requirements for lake buffers to help clean runoff;  
  - Requirements for vegetation cover in lake buffers;  
  - Citizen education on proper shoreline property management and use of fertilizer and potential nutrient loading activities. | **1.** Stormwater Manual LMC: Requires infiltration on site and promotes low impact development techniques.  
**2.** SMP Buffer/Vegetation Requirements SMP 17.40.020 (2) and 17.41.020 (1): New requirements for buffers and vegetation with native species along lakefront lots will promote cleansing of stormwater before it enters the lakes.  
**3.** SMP Water Quality Standards Section 17.70.010: Includes sewering of shoreline areas to reduce impact from septic tanks, BMPs for stormwater management, establishment of buffers and vegetation requirements.  
**4.** Wetland Protection Requirements of LMC 14.28: Prohibit development in wetlands and buffers maintaining the functions of these areas including natural cleansing action through absorption and nutrient uptake.  
**5.** Tree Protection Ordinance LMC 14.32: Tree retention and minimum tree requirements for each developed lot promotes retention and cleansing of stormwater on site throughout the City. |  |
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<tbody>
<tr>
<td>Habitat:</td>
<td></td>
<td></td>
<td>The following provisions are applicable:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1. <strong>Wetland Protection Requirements of LMC 14.28:</strong> Prohibit development in wetlands and buffers maintaining wetland habitat functions.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>Woodland Creek – Low Buffers and critical area legislation is expected to continue protection of this Woodland Creek corridor.</td>
<td>2. <strong>Tree Protection Ordinance LMC 14.32:</strong> Tree protection within wetland buffer areas, along lakefronts and within designated stream corridor buffers protects and promotes the natural functions of these shoreline resources.</td>
<td></td>
</tr>
<tr>
<td>Habitat:</td>
<td></td>
<td>Lake Areas – Low New proposed requirements for buffers along lakefronts, restoration of lakefront buffers with native vegetation and tree protection landscaping requirements are expected to incrementally improve habitat along lakeshores over the long term.</td>
<td>3. <strong>Habitat Protection Ordinance LMC 14.33:</strong> Protection of Woodland Creek riparian habitat by application of 200 foot buffer that prohibits development within that area.</td>
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<td></td>
<td>Low</td>
<td>Areas of associated wetlands will continue to be protected under Lacey’s wetland protection ordinance.</td>
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<tr>
<td>Lake Areas –</td>
<td>Moderate</td>
<td>Area surrounding lakes that have sensitive areas have been well protected under Lacey’s sensitive areas ordinances and the tree and vegetation protection ordinance. However, area not associated with wetlands or habitat has generally developed with impacts typical of residential development.</td>
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<td>Woodland Creek – Low Native riparian vegetation has been protected under Lacey’s sensitive area requirements. The portion of the Woodland Creek corridor in Lacey retains natural riparian vegetation.</td>
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<td>Lake Areas – Low New proposed requirements for buffers along lakefronts, restoration of lakefront buffers with native vegetation and tree protection landscaping requirements are expected to incrementally improve habitat along lakeshores over the long term.</td>
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<tr>
<td>Habitat: Source and delivery of LWD.</td>
<td>Woodland Creek – Low Tree protection regulations in Lacey along with prohibition on tree removal within a 200 foot buffer of the creek have maintained this function.</td>
<td>Low Tree protection regulations in Lacey along with prohibition on tree removal within a 200 foot buffer of Woodland Creek and within associated wetlands and their buffers will continue to promote this function. New SMP standards for lakeshore buffers and vegetation requirements will increase native vegetated area including overstory vegetation and will increase the opportunity for introduction and delivery of LWD over the long term.</td>
<td>The following provisions are applicable: 1. Tree Protection Ordinance LMC 14.32: Tree protection within wetland buffer areas, along lakefronts and within designated stream corridor buffers protects and promotes the natural functions of these shoreline resources and the introduction and delivery of LMD. 2. Habitat Protection Ordinance LMC 14.33: Protection of Woodland Creek riparian habitat by application of 200 foot buffer. The buffer prohibits development and preserves natural vegetation. This will continue to promote introduction and delivery of LWD.</td>
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<tr>
<td>Lake Areas – Moderate to Low Tree protection regulations in Lacey along with prohibition on tree removal in designated sensitive areas along major portions of the lakes has maintained this function; note is made of the example in the picture on the front cover of the SMP.</td>
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### TABLE 5: PROCESSES, FUNCTIONS, AND LEVEL OF ALTERATION FOR OTHER FRESHWATER LAKES.

<table>
<thead>
<tr>
<th>Other Freshwater Lakes</th>
<th>Process: Function</th>
<th>Level of Existing Alteration</th>
<th>Potential Future Alteration Impacts and Potential Risk</th>
<th>Proposed Restoration/Protection Measures; Draft SMP Policies/Regulations and other Environmental Codes</th>
<th>Non-Regulatory Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrology: Groundwater recharge.</td>
<td>Low Overall lake water levels have not been significantly altered, thereby allowing typical volumes of groundwater discharge.</td>
<td>Low See discussion above under Woodland Creek and Lacey’s main lakes.</td>
<td>The following provisions are applicable: 1. Stormwater Manual LMC: Requires infiltration on site and promotes low impact development techniques. 2. SMP Buffer/Vegetation Requirements SMP 17.40.020 (2) and 17.41.020 (1): New requirements for buffers and vegetation with native species along lakefront lots. 3. Wetland Protection Requirements of LMC 14.28: Prohibit development in wetlands and buffers maintaining the hydolic functions of these areas. 4. Tree Protection Ordinance LMC 14.32: Tree retention and minimum tree requirements for each developed lot promotes retention of drainage on site throughout the City.</td>
<td>The following provisions are applicable: 1. Drainage Manual Design: Incentives built into the new drainage manual that encourage and enable the development community to use low impact development techniques. This will promote year round onsite infiltration for more natural ground water recharge. 2. Public Education, SMP New Goals and Policies Section 17.41.015 Goal 2 and 3 and Associated Policies: Use of public education to inform lakefront lot owners of proper vegetation management techniques. This will encourage onsite retention and infiltration leading to more natural recharge.</td>
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## Other Freshwater Lakes

|-------------------|-----------------------------|-----------------------------------------------------|--------------------------------------------------------------------------------------------------|------------------------|
| **Hydrology:** Flood flow retention. | Low | Low *As noted above, lake volumes and water levels are generally similar to pre-disturbance conditions.* | The following provisions are applicable:  
1. **Stormwater Manual LMC:** Requires infiltration on site and promotes low impact development techniques.  
2. **SMP Buffer/Vegetation Requirements SMP 17.40.020 (2) and 17.41.020 (1):** New requirements for buffers and vegetation with native species along lakefront lots.  
3. **Wetland Protection Requirements of LMC 14.28:** Prohibit development in wetlands and buffers maintaining the hydolic functions of these areas.  
4. **Tree Protection Ordinance LMC 14.32:** Tree retention and minimum tree requirements for each developed lot promotes retention of drainage on site throughout the City. | |
|----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-------------------------|
| Sediment Generation and Transport: Upland sediment generation.                   | Moderate to High
Anthropogenic fine sediment loading to the lakes has increased as a result of build-up and wash off of sediments from impervious surfaces. | Low
Implementation and retrofit of water quality BMPs to the existing stormwater systems can reduce fine sediment loading.          | The following provisions are applicable:
1. **Stormwater Manual LMC:** Requires infiltration on site and promotes low impact development techniques.
2. **SMP Buffer/Vegetation Requirements SMP 17.40.020 (2) and 17.41.020 (1):** New requirements for buffers and vegetation with native species along lakefront lots.
3. **Wetland Protection Requirements of LMC 14.28:** Prohibit development in wetlands and buffers maintaining the hydolic functions of these areas.
4. **Tree Protection Ordinance LMC 14.32:** Tree retention and minimum tree requirements for each developed lot promotes retention of drainage on site throughout the City.
5. **Best Management Practice (BMP) Applied to Retrofits for Existing Drainage Systems:** Implementation and retrofit of water quality BMPs to the existing stormwater systems can reduce fine sediment loading. | Non-Regulatory Measures |
### Other Freshwater Lakes

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<tr>
<td>Water Quality: Lake trophic status/overall water quality.</td>
<td>High</td>
<td>The delivery, transport, and deposition of nutrients, pathogens, and toxins have been significantly altered from the pre-disturbance condition. Upland sources of these pollutants have increased significantly as a result of urban land uses within and near the shoreline. Contaminants from adjacent residential uses, septic tanks, fertilization, etc. have contributed to water quality issues. Potential storage has decreased through installation of impervious surfaces. The presence of relatively high permeability surficial geology deposits can increase the potential for upland land uses to influence lake water quality.</td>
<td>The following provisions are applicable: 1. <strong>Stormwater Manual LMC</strong>: Requires infiltration on site and promotes low impact development techniques. 2. <strong>SMP Buffer/Vegetation Requirements SMP 17.40.020 (2) and 17.41.020 (1)</strong>: New requirements for buffers and vegetation with native species along lakefront lots. 3. <strong>SMP Water Quality Standards 17.70.010</strong>: Includes sewering of shoreline areas to reduce impact from septic tanks, BMPs for stormwater management, establishment of buffers and vegetation requirements. 4. <strong>Wetland Protection Requirements of LMC 14.28</strong>: Prohibit development in wetlands and buffers maintaining the functions of these areas including natural cleansing action through absorption and nutrient uptake. 5. <strong>Tree Protection Ordinance LMC 14.32</strong>: Tree retention and minimum tree requirements for each developed lot promotes retention of drainage on site throughout the City.</td>
<td>Resident Education Wetland Protection Ordinance LMC 14.28: Protective covenants applied to HOAs informing residents adjacent to wetlands of proper vegetation and fertilization practices to protect wetland functions. Resident Education SMP 17.41.015 (2) and (3): Educational programs and information for residents within shoreline jurisdiction regarding vegetation requirements that will promote the health of shoreline areas and promote natural functions.</td>
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III. Proposed Regulations

An evaluation of the proposed update to the Shoreline Master Program shows that it will have beneficial effects on the shoreline to promote no net loss of ecological function. The following are some of the major elements:

A. New Shorelines Regulated under SMP

The following shorelines are proposed to be added to shoreline jurisdiction based on meeting the criteria:

- A portion of Woodlake Creek starting just north of Martin Way.

B. Environmental Designations

Environmental designations in the proposed Shoreline Master Program are based upon the inventory and characterization report and identified ecological functions and values. With implementation of this SMP all of Lacey’s reaches will have new and enhanced protection strategies designed to achieve no net loss of function or value for these important resources. New designations are discussed below.

Natural:

New Natural designations are being applied to those areas with wetlands currently designated Open Space Institutional (OSI) in Lacey’s zoning code. It should be noted that the OSI zone has rigorous standards prohibiting development within designated sensitive areas. It has been used by Lacey for nearly two decades to protect and preserve sensitive areas like wetlands.

The designation of OSI zoned areas as Natural compliments the emphasis on protection and preservation Lacey’s GMA Plan and zoning code has required for these areas. This designation is a long overdue improvement to the SMP that will finally bring its environmental protection requirements for sensitive areas into consistency with Lacey’s existing GMA Plans and implementing environmental legislation.

The Natural designation is also being applied to all of Lacey’s marine shoreline, with the exception of portions of Mallard Cove that have been developed and used for a private marina since the late 1940s. The Planning Commission determined that portion of Mallard Cove used for a marina does not meet the classification criteria for a Natural designation given its existing development and long term use as a marina.

Of note here is that the environmentally sensitive estuary with significant ecological function and value that wraps around the Beachcrest marina has remained untouched and retains its same form it had before establishment of the marina nearly 60 years ago. This area was included in the Natural designation.
Shoreline along the Beachcrest development within the unincorporated UGA was excluded from the Natural designation for similar reasons as the marina. It has experienced extensive development with permanent modification of its natural functions.

Those areas that meet the classification criteria for the Natural designation and have been assigned this designation include:

- The wetland systems linking Hicks, Long, and Pattison Lake and Woodland Creek.
- That portion of Woodland Creek north of Martin Way north to the previous shoreline jurisdiction boundary.
- All of the Nisqually Reach shoreline within the incorporated Lacey city limits with the exception of the area occupied by the Beachcrest private marine in Mallard Cove.

**Urban Conservancy:**

All existing Conservancy designations that were not changed to a Natural designation have migrated to the new Urban Conservancy designation. A Conservancy designation is proposed to be retained at the north end of Long Lake. This area is within unincorporated Thurston County and is not subject to this SMP.

**Shoreline Residential:**

The Shoreline Residential designation replaced the previous residential designations. Those areas designated under this classification meet the criteria outlined for this designation and can generally be described as urbanized with typical low density residential impacts resulting from human disturbance. Impacts have typically included removal of a portion of the native vegetation, construction of residential structures, impervious surfacing with associated stormwater concerns, installation of septic tank drain field systems for areas without sewer with associated impacts to water quality, and modifications permitted under the old SMP such as bulkheads, docks and floats.

While much of the lakeshore areas are urbanized and have experienced impacts to the shoreline’s natural function and values, it should be noted that urbanization of Lacey’s lake areas has generally been less intense than that experienced by adjacent jurisdictions with similar lake shoreline resources.

Several factors play into the particular style and character of urbanization we find along Lacey’s lakefront lots. In addition to having preserved all of the associated wetland and floodplain areas as described above under the discussion of areas being designated Natural, Lacey has also had long standing environmental legislation for the protection of trees which has included trees on lakefront lots.

In Lacey, lakefront areas have also been designated under Lacey’s most restrictive residential classification of LD 0-4 and a comparable shoreline designation promoting larger urban lot sizes. Historically, under these classifications, subdivisions along lakefronts have had lot sizes of a generous proportion considering standards of today, exceeding a quarter of an acre or more.

While the larger lots have an aesthetic appeal, historically, the lot size was often in necessity of accommodating onsite septic tank and drain fields. This is considered the most damaging
consequence of existing residential development along Lacey’s lakes. Many old drain fields are located within 25 feet of the adjacent water body. This is expected to have contributed to the nutrient loading of local lakes and associated water quality issues.

Tree protection in Lacey is another factor in the quality of Lacey’s shoreline lots. Tree protection in Lacey dates back into the 1970s. Tree protection has resulted in larger lots maintaining indigenous evergreen trees such as Douglas Fir throughout the City and including lakefront lots. This provides some appearance of naturalized shorelines even with residential development having occurred on the majority of the shoreline. An example of this is the picture on the front cover of this SMP. From across Hicks Lake (the only lake exclusively in Lacey and subject to Lacey’s jurisdiction) the lake views are more of tree canopy than residential development.

Being heavily treed provides a good start for enhanced vegetation and buffering this residential designation will require as one strategy to achieve no net loss of existing function and value.

C. Residential Setbacks

In Lacey, proposed residential setbacks have increased in all reaches, see Table 6. In addition, the updated SMP establishes buffers within designated setback areas and has native vegetation requirements for the buffers.
The increase in residential setbacks is a major strategy to protect identified functions and values of our shoreline resources. Setbacks are used in association with complementary buffers and residential design standards that are expected to achieve objectives described in the SMP. Setbacks are proportionate to the need identified in this environment designation. They provide area to accommodate buffers that protect habitat functions, help mitigate...
stormwater problems and provide area for vegetation management that supports these functions. In addition, design requirements will be applied to development that requires layout of land divisions to design with nature to make protective modifications unnecessary. In summary, these changes are expected to have the following effects:

- New homes will be placed further back from the shoreline and “designed with nature.” This means the design does not work against nature but with it. Design must show respect and protect identified natural processes and functions. This negates the need for protective structures like bulkheads to prevent erosion. Instead design allows the natural processes to occur.

- Any existing structures within the setback will become nonconforming. While they can still be altered, such as adding an addition, an increase in the degree of nonconformity will not be allowed maintaining the distance to accommodate some buffer area.

- The setback will provide an area to practice protective vegetation management within the buffer area, with the benefits discussed below.

D. Shoreline Vegetation Landscaping and Restoration

The proposed update to the Shoreline Master Program includes new requirements for vegetation conservation. The idea is to incrementally restore shorelines with native vegetation as shoreline properties develop or redevelop.

The proposed new standards are required on parcels with waterfront access when:

- A new structure is constructed.
- Increases in impervious surface.
- An existing structure is remodeled and square footage is added.
- An accessory structure (such as a garage, deck, or patio) is added.
- Any development action requiring a shoreline permit is taken.

In order to move toward the goal of restoring native vegetation to shorelines incrementally, the proposal includes a sliding scale for how much vegetation, mitigation and restoration is required proportionate to the impact of the project triggering the permit.

New structures, additions to existing structures or accessory structures will all require compliance with landscaping provisions. To address proportionality, tiers of requirements ranging from minor to major are displayed in Table 1 of Section 17.41.021 of this SMP and are duplicated here for convenience as Table 7.
TABLE 7: SLIDING SCALE FOR VEGETATION REQUIREMENTS.

Guideline for Shoreline Vegetation Improvements Intended to Achieve Landscaping and Restoration Enhancement goals Comparable to Illustrated/Photographic Examples Provided in Appendix 2

Landscaping, Re-vegetation and Restoration Improvement Guidelines

1. Table 7 is considered a guideline for improvements with specific standards for threshold of development and performance:

   The following table is referred to as guidelines because use of vegetation management for mitigation and restoration may involve a myriad of activities and landscaping designs that can meet public objectives. However, the following table should be considered the benchmark for performance and the thresholds provided for level of improvements shall be considered specific standards when preparing a Vegetation Management Plan and developing mitigation/restoration strategies.

2. Expectations for focus of Vegetation Management Plan:

   While a Vegetation Management Plan may not be the only requirement to meet objectives of no net loss, it will typically be a major component when dealing with improvements on individual lots. As such, it should have an emphasis on use and management of vegetation to achieve mitigation/restoration objectives of this SMP. This will include the following:

   A. No net loss of function and value related to the proposed expansion;

   B. Mitigation/restoration to address impacts currently present from existing use of the property.

3. Expectations for mitigation and restoration:

   A. Mitigation is required for all new impacts attributed to expansion activities to meet no net loss requirements. This may also include restoration activity where mitigation options fall short of achieving objectives of no net loss.

   B. Mitigation/restoration to address existing impacts is designed to be proportionate to the level of expansion and identified existing impacts. This is intended to provide a fair and equitable way of improving the health of the shoreline incrementally over the long term as properties develop and redevelop. This strategy also allows choice of tool box strategies that meet the landowner’s/applicant’s needs and personal objectives.

4. When both a Vegetation and Habitat Management Plan are required:

   If the property involves a critical area with a requirement for a Habitat Management Plan, the Vegetation Management Plan and its necessary components can typically be consolidated as part of the Habitat Management Plan.
# Landscaping, Re-vegetation and Restoration Improvement Guidelines

<table>
<thead>
<tr>
<th>Level of Expansion/Action</th>
<th>Type of Requirement Applied *</th>
<th>Description of Improvement Requirements* **</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minor permit – Permit associated with residential structure and no expansion; Electrical, plumbing, roofing permit, etc.</td>
<td>No landscaping requirement.</td>
<td>No landscaping, mitigation or restoration requirement.</td>
</tr>
</tbody>
</table>
| Low Impact Expansion – Expansion with no increase in impervious surface (vertical) | Comply with Tree and Tier One (Basic landscaping) requirements | • Basic Tree Requirements - Meet minimum tree requirements of Chapter 14.32. Minimum number of required trees must be placed within buffer area between shoreline and structure.  
• Tier One Requirement – Provide a 10 foot strip of landscaped area of native plants, or species with comparable function and value, between shoreline and structure. |
| Minor Expansion - Expansion of building footprint by up to 500 square feet or up to 10% of structure (whichever is less)  
Or  
Expansion of impervious surface by up to 1,000 square feet or up to 10% (whichever is less) | • Comply with Tier Two mitigation/restoration vegetative requirements  
• Structure and Use Requirements:  
  • Remove over water structures that do not provide public access, or do not serve a water dependant use | Tier Two Requirements - Vegetation of a native community, or species with equivalent value and function, of at least 50% of the area within the buffer between the shoreline and structure (generally 25’ of a 50 foot buffer). Priority given to overstory vegetation along the shoreline. |
| Moderate Expansion- Expansion of the building footprint by more than 500 square feet or between 10.1 to 25% (whichever is less)  
Or  
Expansion of impervious surface by more than 1,000 square feet, or between 10.1 to 25% (whichever is less) | • Comply with Tier Three mitigation/restoration vegetative improvements  
• Structure and Use Requirements:  
  • Piers and docks are required to replace any solid surfaces with light penetrating surfacing materials.  
  • If applicable do one of the following:  
    • Remove over water structures that do not provide public access, or do not serve a water dependant use  
    • Shoreline stabilization structures not conforming to, or otherwise permitted by, the provisions of the code shall be removed or replaced with conforming shoreline stabilization structures. | Tier Three Requirements - Vegetation of a native community of at least 80% of the area within the buffer between the shoreline and structure. Priority given to overstory vegetation along the shoreline. |
<p>| Major expansion of a conforming use and structure or all new construction – Expansion of the building footprint by more than 25%, or redevelopment (replacement/teardown) of existing | Full compliance required with development standards. Applies to all structures including, but not limited to, the residence, accessory buildings, docks, covered moorage and shoreline stabilization structures if such | Tier Four Requirements - Vegetation of a native community for full 100% of the area within the buffer between the shoreline and structure. |</p>
<table>
<thead>
<tr>
<th>Structures involving more than 25% of the square footage of the existing structure, or all new construction on an undeveloped lot.</th>
<th>Structures are not otherwise permitted by the provisions of LMC 17 or Shoreline Master Program.</th>
<th>Expansion of a nonconforming structure – Nonconforming structures will only be permitted to expand if the expansion will not adversely impact the public interest in shorelines and the expansion comes with some aspect to provide a better ecological or community benefit. In some cases this may be accomplished through mitigation of identified impacts and provision of additional vegetation, removal of accessory nonconforming structures or providing special value to the public, such as provision of a shoreline public access.</th>
</tr>
</thead>
</table>
| Or Expansion of impervious surface by more than 25% | • Compliance with vegetation requirements for the applicable category of expansion identified in this chart related to level of expansion. | • Structure and Use Requirements:  
  • Remove over water structures that do not provide public access, or do not serve a water dependant use  
  • Piers and docks are required to replace any solid surfaces with light penetrating surfacing materials.  
  • Shoreline stabilization structures not conforming to, or otherwise permitted by, the provisions of the code shall be removed or replaced with conforming shoreline stabilization structures. |
| | • Additional mitigation and restoration in the amount of 10% based upon the non conforming aspect and policies and standards of Sections 17.40, 17.41 and 17.42. | • Criteria:  
  • The Administrator must be able to make the following findings that:  
    • The expansion does not result in a net loss of ecological function or value, and  
    • That the expansion will result in some increased public benefit compared to the existing situation.  
  Compliance with Tier One, Two or Three requirements as applicable, with an additional 10% as a nonconforming use expansion. |

* Requirements may vary according to the following considerations:  
  • A nonconforming structure, or a residence designated conforming limited expansion, will follow the same basic guidelines shown in the table, but will be required to have a threshold for improvements at 10% of the project cost and will include special mitigation conditions related to specific public interests impacted.  
  • Where a property has been fully landscaped with qualifying vegetation and meets all other requirements of the SMP, no additional landscaping will be required.  
  • Credit will be given for participation in weed control provided the property also practices landscaping strategies that do not contribute to weed growth. Credit will be proportionate to the investment made in weed control and the relative priority that should be given to weed control considering the existing condition of property being developed; restoration funding must follow the adopted priorities.**  

** Material should be from approved landscaping varieties or approved alternatives. For trees, select from the Lacey General Tree List in Lacey’s Urban Forest Management Plan or a comparable tree listed in Appendix 2. For shrub and ground cover types, select from Appendix 2. Alternative varieties may be approved by the City Arborist.
Other Shoreline Development Actions

Other development actions that require a shoreline permit, such as new docks or bulkheads, will require meeting shoreline vegetation standards. In order to encourage removal of hard armored bulkheads to soft shorelines, development leading to an increase in restoration of shoreline ecological function can qualify for reduced vegetation requirements proportionate to the environmental benefit expected. In addition, lots where an existing buffer or qualified vegetation exists can be considered exempt from additional vegetative requirements.

E. Docks and Piers

Docks and piers have been permissible on many lakes where the shoreline is already altered. Under the proposed regulations, altered shorelines are assigned an environmental designation of Shoreline Residential or High Intensity, depending on the nature of the upland alteration.

In the Shoreline Residential designation, docks and piers that are shared (between two or more adjacent land owners) will require a less stringent permit than docks that only support one home. This is to encourage fewer docks on the shorelines. The key is creating a balance between alterations to the shoreline and protecting ecological functions.

F. Bulkheads, Shoreline Stabilization and Other Modifications

Bulkheads to protect single family residences from damage from erosion are still allowed.

For other types of shoreline armoring, the permitting requirements will change under the proposed regulations. A conditional use permit will be required for consideration of more environmentally friendly alternatives that can achieve the same objective.

The intent is to encourage shoreline bank stabilization with non-structural alternatives where it is feasible.

Changes to the treatment of exemptions is also designed to create incremental improvement in shoreline function over the long term by building in a transition from old modifications to newer more preferred methods as the need for maintenance increases and old structures need to be replaced. Modifications are allowed an exemption for normal repair and maintenance until the cost exceeds a threshold of 50% of the cost of replacement. At this point the repair becomes defined as replacement and will require a conditional use permit. The CUP process will necessarily require an analysis of the need and environmentally sensitive alternatives that can result in the same objectives.

This process is expected to improve the overall functions of the lake ecology over the long term by a continual evaluation of existing modifications as they require major repair efforts and the requirement for moving to acceptable more naturalized concepts for beach stabilization.

As a general requirement, mitigation sequencing is required for all modifications to ensure it is needed, there are no other alternatives to achieve the intended objective and mitigation is applied to ensure no net loss.
The CUP process is also used as a process of review for unidentified uses that might be proposed. This process gives Lacey the flexibility to review unforeseen uses and activities and apply appropriate conditions to ensure no net loss or deny the use if necessary.

G. Other Goals for Shoreline Use

The updated SMP includes sections or provisions that address the full range of public use and interest of shoreline resources. This includes such topics as recreation, access, navigation, historical and archeological, scientific and educational. Each of these uses has particular needs related to design and location for functionality. Each also has particular demands on shoreline areas. At the same time, each reach of shoreline has specific functions and values with particular needs for protection. Generally a reach is not compatible with every use and careful attention is needed to successfully match a reach with a category of uses it can successfully accommodate without impact to its natural processes and functions.

The SMP addresses the status, function and values associated with each shoreline reach and the types of use that are appropriate considering its specific needs for protection. The protection needs of a reach will generally be reflected by the reaches’ environmental designation.

In addition, the SMP identifies the public use and interest needs associated with shoreline resources and specific conditions necessary for each use to be successfully integrated into the shoreline without a net loss of the shoreline functions and value.

Of particular note is public access. A whole new public access plan has been developed as Appendix 1 of the SMP. This plan identifies public interest and need for shoreline areas, identifies existing public access opportunities and provides an analysis of unmet need. The plan also identifies specific sites likely to develop and specific strategies for providing public access to the benefit of developing properties and future residents as well as the public at large. The plan outlines specific steps and processes Lacey will implement to achieve these objectives. These include both regulatory and incentive tools.

Finally, specific standards related to the functionality of the use and protection of the shoreline natural processes and functions are provided. The plan is expected to be a guidepost for Lacey’s public access efforts that will balance public need for access with shoreline protection strategies. The plan will help Lacey define and achieve public access goals with no net loss of shoreline resources, functions or values over the long term.

Similar methodology was used for other uses by creating separate sections in the SMP dealing with specific topic areas. These sections provide a goal and policy basis for the use/activity and a set of standards to ensure functionality of the use and no net loss of ecological function or value for the shoreline resources; see Part 3 of the SMP.
IV. Foreseeable Development in Shoreline Environments

The following foreseeable types of development listed in Table 8 (Foreseeable Development of Shorelines) have been derived from the following sources:

- Anticipated population forecasts developed as a function of work required under the state Growth Management Act (GMA).
- Buildable land studies accomplished as a requirement of GMA analyzing the probably distribution of population forecasts, given vacant land resources available to the City.
- Goals and policies of the Comprehensive Land Use Plan prepared under GMA.
- Local Capital Facilities Plan.
- Comprehensive Plan for Outdoor Recreation.
- Thurston Regional Trails Plan.
- Known development plans for shoreline parcels.
- Past trends in development.
- Planning Commission discussion, including real estate, Master Builders and other members of the development community related to trends, development expectations and market issues.
## Table 8: Foreseeable Development for Shorelines – Marine Reaches.

<table>
<thead>
<tr>
<th>Marine Reach</th>
<th>Proposed Designation</th>
<th>Existing Designation</th>
<th>Foreseeable Development</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NISQUALLY REACH</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>NIS-1</strong> Butterball Cove</td>
<td>Natural</td>
<td>Rural</td>
<td>None anticipated. The only improvements we might expect in this area would be City improvement of the existing historic pier in association with public access. Any project associated with this structure would require compliance with goals of the City Comprehensive Plan for Outdoor Recreation, the City Restoration Plan and requirements for no net loss.</td>
</tr>
<tr>
<td>&amp; Jubilee Beach</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>NIS-2A</strong> Mallard Cove</td>
<td>Natural for estuary</td>
<td>Conservancy</td>
<td>Bulkhead repairs and replacement at the marina. Lacey will apply mitigation to ensure no net loss conditions to any replacement of a modification in this area. In addition, incentives are being offered for efforts to upgrade existing modifications with improved naturalized concepts or preferred options. Residential repairs and remodels are also expected in the upland Beachcrest development. This area is under jurisdiction of Thurston County.</td>
</tr>
<tr>
<td>mini-marina</td>
<td>south of marina;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&amp; Beachcrest</td>
<td>Conservancy</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A5-40
TABLE 9: FORESEEABLE DEVELOPMENT FOR SHORELINES – RIVERS AND STREAMS.

<table>
<thead>
<tr>
<th>River/Stream Reach</th>
<th>Proposed Designation</th>
<th>Existing Designation</th>
<th>Foreseeable Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>WOODLAND CREEK</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WOOD-1A</td>
<td>Natural</td>
<td>Conservancy</td>
<td>Interstate 5 widening project (State)</td>
</tr>
</tbody>
</table>
| WOOD-1B            | Urban Conservancy    | Conservancy          | Interstate 5 widening project (State)  
|                    |                      |                      | Draham Road widening and improvement project (Thurston County)  
|                    |                      |                      | Residential repairs and remodels |
| WOOD-2             | Natural              | Conservancy          | None anticipated        |
### TABLE 10: FORESEEABLE DEVELOPMENT FOR SHORELINES – LAKES.

<table>
<thead>
<tr>
<th>Lake Reach</th>
<th>Proposed Designation</th>
<th>Existing Designation</th>
<th>Foreseeable Development</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CHAMBERS LAKE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| CHAM-1A  
*NE Basin (Lcy)* | Shoreline Residential | Urban                | Residential repairs and remodels |
| CHAM-1B  
*SE Basin (Lcy)* | Urban Conservancy     | Conservancy          | None anticipated         |
| CHAM-2  
*South (Oly/Lacey)* | Urban Conservancy     | Conservancy          | Recreation/park development including trails, trailheads, parking |
| CHAM-3  
*W Basin (Lcy)* | Shoreline Residential | Urban                | Residential repairs and remodels  
Possibly some residential vacant buildable lots |
| **HICKS LAKE** |                       |                      |                         |
| HICKS-1   | Natural Conservancy   | Conservancy          | Potential water line connection around 37th to 33rd Avenues |
| HICKS-2A  | Urban Conservancy     | Urban                | Residential repairs and remodels  
Recreation/park activities |
| HICKS-2B  | Shoreline Residential | Urban                | Residential repairs and remodels |
| **LONG LAKE** |                       |                      |                         |
| LONG-1    | Shoreline Residential | Rural                | Residential repairs and remodels |
| LONG-2    | Shoreline Residential | Rural                | Residential repairs and remodels |
| LONG-3A   | Natural              | Conservancy          | None anticipated         |
| LONG-3B   | Shoreline Residential | Conservancy          | None anticipated         |
| LONG-3C   | Natural              | Conservancy          | None anticipated         |
| LONG-4    | Shoreline Residential | Rural                | Residential repairs and remodels |
| LONG-5    | Shoreline Residential | Rural                | Residential repairs and remodels |
| LONG-6    | Urban Conservancy    | Conservancy          | 14th Avenue extension/connection to Union Mills Road  
(City of Lacey and Thurston County) |
| **PATTISON LAKE** |                       |                      |                         |
| PAT-1     | Shoreline Residential | Rural                | Mullen Road widening project (Thurston County)  
Residential repairs and remodels |
<table>
<thead>
<tr>
<th>Lake Reach</th>
<th>Proposed Designation</th>
<th>Existing Designation</th>
<th>Foreseeable Development</th>
</tr>
</thead>
</table>
| PAT-2      | Shoreline Residential| Rural                | Residential repairs and remodels  
Possibly some residential vacant buildable lots |
| PAT-3A     | Natural              | Conservancy          | None anticipated         |
| PAT-3B     | Shoreline Residential| Rural                | Residential repairs and remodels  
Possibly some residential vacant buildable lots |
| PAT-4A     | Shoreline Residential| Rural                | Residential repairs and remodels |
| PAT-4B     | Natural              | Conservancy          | None anticipated         |
| PAT-4C     | Shoreline Residential| Rural                | Residential repairs and remodels |

**SOUTHWICK LAKE**

| SOUTH-1    | Urban Conservancy | Urban Conservancy | Residential repairs and remodels |

A5-43
V. Assessment of Cumulative Impacts

C. Marine Reaches

1. Nisqually Reach

Along Nisqually Reach and within the urban growth area, little development or redevelopment is expected. In general, ecological functions will improve through:

- Restoration projects such as the culvert replacement in Ellis Cove.
- Designation of properties meeting qualifying criteria as Natural under the environment designation for shoreline areas.
- Application of buffers and standards supporting each environmental designation’s specific needs. Requiring soft armoring as opposed to bulkheads where it can obtain the same objectives.
- Stormwater management in uplands.
- Continuation of tree protection strategies of Lacey’s Urban Forest Management Plan in upland areas.

D. Rivers and Streams

1. Woodland Creek

Very little development is anticipated along this shoreline. It is expected that there will be general improvement of ecological function through the following:

- Stormwater management in uplands.
- Prohibiting development in riparian buffer areas.
- Revegetation of shoreline if redevelopment occurs.
- Dealing with existing septic tank drainfield systems.

E. Lakes

It is anticipated that there will be general improvement in the ecological function of the lakes for the following reasons:

- Critical wetland systems linking lakes in the Woodland Creek system will have increased protected by application of the Natural designation in addition to the wetland protection ordinance.
- There are very few undeveloped single-family residential lake shoreline lots in Lacey. If any lots do develop, new development will be placed further back from the shoreline and therefore will not require a bulkhead or other modifications for protection. Shoreline vegetation conservation or replanting will also be required.
• New standards for buffers and vegetation management are expected to slowly improve the existing situation.

• Any new residential redevelopment, replacement or expansion will have to meet the same requirements for a vegetation plan and proper vegetation management.

• New residential land divisions with five or more new lots may include a wide range of design and form to best integrate with the shoreline environment and meet development objectives. This is expected to include specific conditions for each individual land division necessary to best meet the concept of no net loss and achieve other community objectives.

• Residential setbacks have generally increased and this is expected to result in better buffering. More buffer area with more vegetation can provide enhanced habitat and more effective drainage treatment.

• Any development actions requiring a shoreline permit will require vegetation of the buffer area proportionate to the action. This will result in incremental improvement across the full range of activity expected within shorelines jurisdiction.

• Stormwater management according to the new drainage manual requirements is expected to improve stormwater runoff impacts from upland areas. This should continue to improve water quality issues associated with stormwater runoff.

• As sewer service is extended to the growth area, hookup of homes currently served by aging septic tank systems should reduce potential impacts to ground water and water quality impacts to the drainage basin and associated water bodies.
VI. Summary

When considering current conditions, the regulatory framework, and the foreseeable development along shorelines, it is anticipated that there will be no net loss of ecological function under the proposed Shoreline Master Program for Lacey. Shoreline ecological functions and conditions are expected to make a general improvement, as a result of both the proposed regulations, and other regulations such as those pertaining to stormwater management, wetland protection and tree protection in the upland areas. Other policies, such as extending sewer service to urbanized areas on septic tank drainfields should also have a positive effect on shoreline functions and conditions.
VII. Resources

City of Lacey, 2008. *Lacey Comprehensive Plan, (including Capital Facilities Chapter).*


City of Olympia, 2008. *Olympia Comprehensive Plan (including Capital Facilities Chapter).*


City of Tumwater, 2008. *Tumwater Comprehensive Plan (including Capital Facilities Chapter).*

City of Tumwater, 2007. *City of Tumwater Parks, Recreation and Open Space Plan, Draft.*

Thurston Regional Planning Council, 2008. *Draft Shoreline Inventory for the Cities of Lacey, Olympia, and Tumwater and their UGAs.*


Thurston County, 2008. *Thurston County Comprehensive Plan (including Capital Facilities Chapter).*
