

City of Mountlake Terrace Shoreline Master Program Update Final Cumulative Impacts Analysis

**Ecology Grant No. G1000006
Deliverable for Task 3.6
September 2012**



TABLE OF CONTENTS

Chapter 1	INTRODUCTION	1
	1.1 Background.....	1
	1.2 Planning Versus Project Level Assessments	2
	1.3 Area of Shoreline Analysis	2
Chapter 2	CURRENT SHORELINE CONDITION	3
	2.1 Watershed and WRIA Context.....	3
	2.2 Nearshore Physical Conditions	3
	2.3 Habitat and Species Use	4
	2.4 Shoreline Modification	5
	2.5 Land Use and Public Access.....	5
Chapter 3	REASONABLY FORESEEABLE FUTURE DEVELOPMENT AND USE.....	7
	3.1 Shoreline Development Trends.....	7
	3.2 Anticipated Future Development and Use and Potential Impacts.....	7
Chapter 4	CHANGES TO SHORELINE ENVIRONMENT DESIGNATIONS AND REGULATIONS.....	9
	4.1 Changes to Shoreline Environment Designations	9
	4.2 Changes to Development Standards and Use Regulations	10
	4.3 Changes to the Treatment of Non-Conforming Uses and Structures	10
Chapter 5	RESTORATION PLANNING.....	11
Chapter 6	BENEFICIAL EFFECTS OF ANY ESTABLISHED REGULATORY PROGRAMS UNDER OTHER LOCAL, STATE, AND FEDERAL LAWS	13
	6.1 City Plans and Regulations	13
	6.2 State and Federal Programs	14
Chapter 7	CURRENT AND FUTURE PERFORMANCE OF SHORELINE ECOLOGICAL FUNCTIONS	17
Chapter 8	SUMMARY OF CUMULATIVE IMPACTS	25
Chapter 9	REFERENCES	27

LIST OF TABLES

Table 2-1. Shoreline Modification Patterns on the Lake Ballinger Shoreline	6
Table 7-1. Assessment of Shoreline Functions – City of Mountlake Terrace.....	18

Chapter 1 INTRODUCTION

1.1 Background

The City of Mountlake Terrace (City) is conducting a comprehensive Shoreline Master Program (SMP) update with the assistance of a grant administered by the Washington State Department of Ecology (Ecology) (SMA Grant No. G1000006). According to Substitute Senate Bill (SSB) 6012, passed by the 2003 Washington State Legislature, cities and counties are required to update their SMPs consistent with the state Shoreline Management Act (SMA), Revised Code of Washington (RCW) 90.58 and its implementing guidelines, Washington Administrative Code (WAC) 173-26. The City has recently prepared a first draft of its updated Shoreline Master Program (SMP). The next step in the SMP update process is to evaluate the new program in light of the requirements of the 2003 shoreline guidelines for cumulative impacts.

The SMA requires that a “cumulative impacts analysis” be prepared in compliance with the WAC:

Local master programs shall evaluate and consider cumulative impacts of reasonably foreseeable future development on shoreline ecological functions and other shoreline functions fostered by the policy goals of the act. To ensure no net loss of ecological functions and protection of other shoreline functions and/or uses, master programs shall contain policies, programs, and regulations that address adverse cumulative impacts and fairly allocate the burden of addressing cumulative impacts among development opportunities. Evaluation of such cumulative impacts should consider:

(i) Current circumstances affecting the shorelines and relevant natural processes;

(ii) Reasonably foreseeable future development and use of the shoreline; and

(iii) Beneficial effects of any established regulatory programs under other local, state, and federal laws (WAC 173-26-186.8(d)).

In addition, the cumulative impact analysis should address:

. . . the effect on the ecological functions of the shoreline that are caused by unregulated activities, development and uses exempt from permitting, effects such as the incremental impact of residential bulkheads, residential piers, or runoff from newly developed properties. Accordingly, particular attention should be paid to policies and regulations that address platting or subdividing of property, laying of utilities, and mapping of streets that establish a pattern for future development that is to be regulated by the master program (WAC 173-26-201(3)(d)(iii)).

This report presents a cumulative impact analysis, conducted in accordance with Task 3.6 of the City’s grant agreement with Ecology.

1.2 Planning Versus Project Level Assessments

According to the SMA guidelines, the assessment of cumulative impacts occurs at both the planning stage (when the master program is being developed) and at the site development stage. The guidelines suggest that impacts of commonly occurring and planned development should be assessed at the planning stage “without reliance on an individualized cumulative impacts analysis.” In contrast, developments that have unforeseeable or uncommon impacts, which cannot be reasonably identified at the time of SMP development, should be evaluated via the permitting processes to ensure that all impacts are addressed and that there is no overall loss of ecological function after mitigation (WAC 173-26-201(3)(d)(iii)). This report provides a planning level assessment of the potential cumulative impacts that would result from use and development within the shoreline jurisdiction into the foreseeable future.

1.3 Area of Shoreline Analysis

This analysis is limited to the cumulative impacts of reasonably foreseeable future development in areas subject to SMA jurisdiction. These are areas that meet the criteria for ‘shorelines of the state’ as described in the Inventory and Characterization Report (ESA, 2010). In general, this extent represents:

- Submerged lands waterward of the ordinary high water mark (OHWM) on Lake Ballinger within City jurisdiction, including Ballinger Island located in the north-central portion of the Lake;
- Areas landward 200 feet from the OHWM of the Lake Ballinger shoreline within municipal limits; and
- Associated wetlands.

The Lake Ballinger shoreline planning area (SPA), as shown on Map 1 of the Inventory and Characterization (ESA Adolfson, 2010), includes open water areas of the lake within the City limits (approximately 66 acres of the 101-acre lake with remaining areas within the city of Edmonds), all of Ballinger Island (approximately 3 acres), and the northwestern, northern, eastern, and southeastern shores of the lake. The total lakeshore length within the City is approximately 1.2 miles (7,625 linear feet; 6,289 feet excluding Ballinger Island).

At the north end of the lake, the SPA also includes a portion of the Lake Ballinger Golf Course that was identified as a potential wetland. This area was mapped through a reconnaissance-level inventory conducted in 2004 (Adolfson Associates, 2004). The inventory did not include wetland delineation, but did include a review of existing information and field investigation, based on technical criteria and wetland identification methods in the *Washington State Wetlands Identification and Delineation Manual* (WSDE, 1997). The area was mapped and is included in the SPA. The determination to include this area in the SPA is also consistent with Department of Ecology staff assessment (Pater and Anderson, Personal Communication, 2010).

The shoreline planning area is intended for planning purposes only. As a result, the actual regulated boundaries of the shoreline jurisdiction may differ from the area shown on Map 1 depending on information gathered on the ground at any specific location.

Chapter 2 CURRENT SHORELINE CONDITION

The Shoreline Inventory and Characterization Report (ESA, 2010) identifies existing conditions and evaluates the ecological functions and processes in the City's Lake Ballinger shoreline planning area, as well as conditions within the contributing and downstream basin. Conditions identified in the Inventory and Characterization Report are summarized in this chapter.

2.1 Watershed and WRIA Context

The Lake Ballinger/McAleer Creek watershed and the city of Mountlake Terrace are within the Cedar – Sammamish Watershed (Inventory Map 2, Vicinity Map), referred to as Water Resource Inventory Area (WRIA) 8. WRIA 8, located in King County and Snohomish County, encompasses 692 square miles, collecting water from two major rivers (Cedar and Sammamish Rivers) before flowing into and through Lake Washington and ultimately into Puget Sound.

The land area of WRIA 8 is some of the most intensely developed within the state, including the geographic and demographic epicenter of the Seattle metropolitan area. WRIA 8 has the highest human population of any WRIA in the state with nearly 1.5 million residents (Kerwin, 2001). Land use activities associated with intensifying development can have a significant impact on groundwater and surface water quality, as well as human use, wildlife use, and natural habitat.

The Greater Lake Ballinger/McAleer Creek Watershed is located in south Snohomish County and north King County. It includes portions of the cities of Lynnwood, Edmonds, Mountlake Terrace, and small pockets of unincorporated Snohomish County. It also includes portions of the cities of Shoreline and Lake Forest Park in King County. The watershed is 5,249 acres in extent; 3,566 acres of which drain to Lake Ballinger (Otak, 2009). The watershed includes Hall Lake, which drains to Hall Creek and then into Lake Ballinger. McAleer Creek is Lake Ballinger's only outlet. It flows south through the cities of Mountlake Terrace, Shoreline, and Lake Forest Park, where it empties into the north end of Lake Washington.

2.2 Nearshore Physical Conditions

Lake Ballinger is fed primarily by Hall Creek, which contributes 66 percent of the total inflow (Lake Ballinger Fact Sheet, 2008). Hall Creek enters the lake along the north shoreline, within the Lake Ballinger Golf Course property. Additional sources of inflow include runoff from the Echo Lake / Aurora Village area to the southwest (approximately 16 percent of inflow) and non-specific stormwater and groundwater input from areas immediately adjacent to the lake (18 percent of inflow).

The outlet of Lake Ballinger is McAleer Creek. The creek starts on the lake's eastern shore, within the Nile Golf and Country Club property. The lake area extends approximately 350 feet to the east of the main body of the lake, through a narrow channel, before reaching a lake leveling control structure at the road crossing and culvert for the main Country Club access drive. McAleer Creek then flows to the east through the golf course (with several small culverts and one small bridge for golf course trails) before passing through a culvert under Interstate 5.

There is a long standing and well documented history of flooding associated with Hall Creek and Lake Ballinger. A lake level plan was originally established by Superior Court order in 1942. The Superior court order was re-adjudicated in 1982. The re-adjudicated lake level was established at an elevation between 276.8 and 277.8 feet with seasonal variation up to 278.5 feet. Significant flooding occurred during a 1996-97 winter storm event. At that time the lake level reached a level of 282.5 feet causing very significant flood damage to adjacent residential properties.

2.3 Habitat and Species Use

The riparian corridor of Hall Creek immediately upstream of the lake narrows through the Lake Ballinger Golf Course. It flows into wetland areas associated with the north end of the lake, and additionally appears to be linked with one or more of the golf course water features adjacent to stream and lake shoreline (Map 5 in the Inventory and Characterization Report, Shoreline Modifications). Within this lower reach, Hall Creek and the associated wetlands are highly modified. The existing riparian areas on both sides of the stream are dominated by shrub and emergent riparian communities, with emergent areas primarily focused within wetlands to the east of the stream. The riparian corridor narrows significantly to the north of the golf course parking and club house facilities.

The reach of McAleer Creek directly downstream of Lake Ballinger (partially within the lake SPA) flows through the Nile Golf and Country Club golf course. The riparian corridor through this reach is generally very narrow, consisting of a mixed community of trees and native and ornamental shrubs. Through this area, the stream flows through three culverts. Directly downstream of the golf course, McAleer Creek flows through an approximately 450 foot long culvert under Interstate 5.

Shoreline habitats include the areas landward of the edge of the water bodies as well as the littoral zone where plants grow in the water to the depth where they still receive sufficient sunlight. The shallow nearshore areas of Lake Ballinger, as well as the Ballinger Island nearshore area, offer moderate habitat for aquatic plants due to the shallow depth of the lake. Due to long standing issues with lake water quality and related water clarity, the littoral zone is somewhat limited even within shallow areas and as such does not extend across a significant portion of the lake (Ecology, 2008). Ballinger Island, centrally located in the lake within the City's jurisdiction, is vegetated throughout primarily with herbaceous and shrub (willow and dogwood) wetland species, as well as a several coniferous trees.

Development surrounding the lake has highly modified riparian vegetation. The vegetation of the three residential parcels fronting the shoreline at the northwest corner of the SPA is characterized by lawns and ornamental landscaping. At Ballinger Lake Park, active use of the shoreline and associated modifications has eliminated nearly all riparian vegetation. Both golf course properties, however, have maintained a riparian zone (patchy in some areas) averaging approximately 40 feet wide, including some overhanging vegetation.

The entirety of Lake Ballinger is categorized as a Priority Habitat and Species wildlife area by the Department of Fish and Wildlife (WDFW). Although WDFW has previously documented the weir at the outlet of the lake as a full blockage to anadromous fish passage, there is documented use of McAleer Creek by Chinook salmon, as well as other anadromous species including Coho salmon, up to the weir (Cantrell and Associates, Inc, 2003). Lake Ballinger supports stocked trout, bass, and various warm water

fish species. The lake is stocked with rainbow and cutthroat trout, catfish, yellow perch, and largemouth bass. WDFW releases about 5,000 rainbow trout in the lake each spring for a recreational fishery (City of Edmonds, 2009).

Preservation and enhancement of existing woody vegetation along the lakeshore is a key issue for Lake Ballinger, particularly along the developed shorelines of the golf courses. Shoreline vegetation provides habitat for numerous wildlife species, and additionally provides shelter to the lake from excessive wind mixing.

2.4 Shoreline Modification

Land use and development surrounding Lake Ballinger within the city of Mountlake Terrace has been largely limited by the nature of the land uses immediately adjacent to the lake. Shoreline modifications associated with the residential properties on the west side of the lake have included the placement of bulkheads, construction of docks, and removal of much of the lake-side native vegetation. Within the golf course properties, removal of forested and shrub native vegetation has also occurred although, in most areas, a vegetated buffer with a minimum width of 40 feet has been maintained. The summary of shoreline modifications provided in Table 2-1, below, is based on analysis of City GIS data and aerial photographs.

Shoreline modifications are a concern along the Lake Ballinger shoreline. In many areas of the shoreline, the dense woody vegetation that originally lined the Lake Ballinger shoreline has been narrowed to a thin riparian band causing an overall decrease in woody debris, overhanging vegetation, and detrital inputs. A very small portion of the City of Mountlake Terrace shoreline has been replaced by structurally simple docks and bulkheads (in contrast to City of Edmonds residential lots on west side of lake immediately abutting the three (3) residential properties in Mountlake Terrace).

Approximately 9 percent of the City's Lake Ballinger shorelines have bulkheads. These are located along the Ballinger Lake Park and the residential properties west of the Ballinger Golf Course. Bulkhead construction has eliminated native shoreline vegetation in these locations. Bulkheads can change the slope, configuration, and/or substrate composition of the shoreline by cutting off upland sediment supply and increasing erosion on neighboring properties without bulkheads. In very low energy environments like Lake Ballinger, these effects tend to be localized, but they can still have adverse implications for aquatic habitat (Kahler, 2000).

2.5 Land Use and Public Access

Land uses within the City's shoreline planning area are limited. They include a private golf course (Nile Golf and Country Club), a public golf course (Ballinger Golf Course), Lake Ballinger Park, and three residential properties. Table 2-1 details land use, zoning, and shoreline modification patterns on each of the seven shoreline parcels that fall within the City's shoreline area. Figures 4-2 through 4-5 of the Shoreline Inventory and Characterization (ESA, 2010) provide recent aerial photo coverage of the Lake Ballinger SPA, highlighting uses and development patterns on each shoreline property.

Table 2-1. Shoreline Modification Patterns on the Lake Ballinger Shoreline

Lake Ballinger Shoreline Segment / Parcel	Existing Land Use	Zoning // Comprehensive Plan Designation // Existing SMP Designation	Property acreage	Age of primary structure and use	Structure setback from shoreline
Nile Golf and Country Club	Golf Course - Private	Recreation and Park District (REC) // Park and Open Space // Conservancy	98.30 acres	1926 – Nile Temple / Clubhouse 1996 – Pro Shop	345 feet to closest structure (a large maintenance structure; outside of SPA)
Ballinger Lake Boat and Fishing Access	Recreation / Boat Launch - Public	Recreation and Park District (REC) // Park and Open Space // Suburban	2.31 acres	Restroom structure as well as dock and picnic tables	195 feet for restroom structure. Closest table and pad approximately 15 feet from the shoreline.
Ballinger Golf Course	Golf Course - Public	Recreation and Park District (REC) // Park and Open Space // Suburban	46.02 acres	1989 – Ballinger Park Community Clubhouse	600 feet to closest structure (Clubhouse; outside of SPA)
Ballinger Island	Open Space - Public	Recreation and Park District (REC) // Suburban // Conservancy	3 acres ¹	No structures or development on property	NA
North residential property	Single Family Residence - Detached	Single Household Residential (RS 8400) // Urban Low Residential // Suburban	0.34 acres	1989 – 1 story residential structure	92 feet
Central residential property	Single Family Residence - Detached	Single Household Residential (RS 8400) // Urban Low Residential // Suburban	0.35 acres	1989 – 1 story residential structure	92 feet
South residential property	Single Family Residence - Detached	Single Household Residential (RS 8400) // Urban Low Residential // Suburban	0.36 acres	1981 – 2 story residential structure	78 feet

Source: Aerial photography analysis (2007); Snohomish County Assessor (2010)

¹ Figures may vary based on source

Chapter 3 REASONABLY FORESEEABLE FUTURE DEVELOPMENT AND USE

This chapter describes land use trends and plans in and near the City shoreline planning area.

3.1 Shoreline Development Trends

Land uses and development patterns extending from the City's Lake Ballinger shoreline are well established. The three single-family homes at the northwest corner of the lake are over two decades old, and public and private recreational use patterns on the other (larger) shoreline properties are also well established.

The last significant development activity occurring within the shoreline area occurred in the late 1990's / early 2000's when a major redevelopment occurred at the Lake Ballinger Golf Course property. Redevelopment within the golf course included significant grading to reconfigure the course layout, including modifications to some wetland and water features within the property; all activities were permitted consistent with existing Shoreline Master Program and Critical Areas standards adopted at that time, with mitigation provided for wetland impacts.

All other development activities within the shoreline area have been limited to maintenance of existing structures. The most recent shoreline activity permitted was for soft shoreline stabilization at the Boat Launch Park in 2005. Since then, no other shoreline permits have been issued for modification or in-water projects

3.2 Anticipated Future Development and Use and Potential Impacts

The City's shoreline is generally developed with uses that are expected to continue into the future. Development trends over the last 10-plus years further verify the minimal amount of redevelopment activity expected within the shoreline area in the future.

Maintenance and upkeep activities are expected to occur at the City's Ballinger Lake Park and boat ramp facility, as well as within the two golf courses along the lake. The City's Parks Plan identifies potential redevelopment of the Lake Ballinger Golf Course property into a multi-use public park (with areas of passive and active recreation). Redevelopment as a park is identified as a potential future use; there are no current or expected plans to alter existing use patterns on this property within the anticipated future.

The Nile Golf Course and Country Club is a privately owned property whose owner could decide to redevelop. However, the current Zoning Map and Comprehensive Plan Map designations are "Recreation and Park District (REC)" and "Park and Open Space (POS)," respectively. A change to residential or commercial use would require a comprehensive plan amendment and zoning change. Therefore, it is not reasonably foreseeable that large scale development will occur on that property. Developments of structures that are accessory or appurtenant to the golf course are possible, but no specific plans are known at this time.

Commensurate with anticipated development and/or redevelopment of the City's shorelines, impacts on shoreline functions is expected to be minimal. However, impacts from past development and impacts from development throughout the watershed will continue to affect Lake Ballinger. These include degradation of water quality, localized lack of shoreline riparian vegetation and the presence of invasive terrestrial and aquatic plant species.

Chapter 4 CHANGES TO SHORELINE ENVIRONMENT DESIGNATIONS AND REGULATIONS

4.1 Changes to Shoreline Environment Designations

SMPs are required to have a system for classifying shoreline areas based on their biological and physical characteristics, their existing and planned land use patterns, and the goals of the community. This system of shoreline environment designations (SED) groups areas that share similar characteristics so they can be managed in a uniform and consistent manner.

The City of Mountlake Terrace currently manages shorelines under its Shoreline Master Program (SMP) adopted in 1993. The existing SMP assigned two environment designations to the City's shorelines; Conservancy along the shoreline of the Nile Golf Course property and Suburban for all other shoreline areas. Under the Draft SMP, four environment designations are proposed to differentiate between the distinct uses and environments along the City's shorelines. The proposed shoreline environment designations include the following:

1. Aquatic Environment – Applied to open water and submerged land areas waterward of the OHWM;
2. Natural Environment – Applied to Ballinger Island area;
3. Shoreline Residential Environment – Applied to existing shoreline residential properties;
4. Urban Conservancy Environment – Applied to park areas (golf courses and park area).

The purpose of the “aquatic” environment is to protect, restore, and manage the unique characteristics and resources of the areas waterward of the ordinary high-water mark.

The purpose of the “natural” environment is to protect those shoreline areas that are relatively free of human influence or that include intact or minimally degraded shoreline functions intolerant of human use. These environments require that only very low intensity uses be allowed in order to maintain the ecological functions and ecosystem-wide processes. Consistent with the policies of the designation, local governments should include planning for restoration of degraded shorelines within this environment.

The purpose of the “urban conservancy” environment is to protect and restore ecological functions or open space, flood plain and other sensitive lands where they exist in urban and developed settings, while allowing a variety of compatible uses.

The purpose of the “shoreline residential” environment is to accommodate residential development and appurtenant structures that are consistent with the shoreline master program. An additional purpose is to provide appropriate public access and recreational uses.

4.2 Changes to Development Standards and Use Regulations

The Draft SMP provides for several changes in development regulations that encourage shoreline conservation and prohibit activities that would adversely impact shoreline processes and functions over time.

The Draft SMP proposes shoreline setback standards for the Shoreline Residential and Urban Conservancy environments. New structures in these shoreline environments must be setback from the ordinary high water mark 50 feet and 100 feet respectively.

Shoreline stabilization is prohibited in the Natural environments. Soft shore stabilization measures are encouraged and must be considered before structural measures are allowed (Draft SMP – Chapter 5, Modification Policies and Regulations). New structural shoreline stabilization is allowed only when nonstructural measures such as planting vegetation, or installing on-site drainage improvements, are not feasible or not sufficient and the structure will not result in a net loss of shoreline ecological functions.

Boating facilities and overwater structures are limited to those appropriate for existing uses of the lake; marinas, covered moorage, and facilities serving motorized boats are prohibited. The Draft SMP includes provisions to retain existing native vegetation landward of the OHWM to help stabilize shorelines and maintain habitat functions. Standards include required minimum buffers for all shoreline environments, as well as regulations to ensure that impacts associated with clearing and grading throughout the shoreline environment are assessed and minimized. In all shoreline environments, the Draft SMP specifies that removal of native vegetation and land clearing shall be limited to the minimum necessary to provide for approved shoreline uses and development. Projects to restore and enhance shoreline habitats are encouraged.

Other provisions in the Draft SMP are protective of water quality and hydrologic functions. The use of pervious materials and other low impact development techniques is required (Water Quality, Stormwater, and Non Point Pollution – Regulations) to the maximum extent feasible

The Draft SMP is generally more protective than the existing SMP. The Draft SMP provides policies and regulations for allowed uses and shoreline modifications intended to manage appropriate uses while protecting and improving ecological functions.

4.3 Changes to the Treatment of Non-Conforming Uses and Structures

Much of the shoreline development in the city is longstanding, and therefore predates the adoption of the current SMP in 1993. Despite the age of existing development, however, there are few if any existing non-conforming structures or uses within the shoreline area; it is not anticipated that the updated SMP would establish new non-conformity. The current SMP provides for non-conforming uses and structures in shoreline areas. However, the proposed SMP policies and regulations are intended to increase protection of shoreline ecological functions over the long term.

Chapter 5 RESTORATION PLANNING

This chapter describes the shoreline restoration goals, objectives, and priorities for Mountlake Terrace developed as part of the Draft Shoreline Restoration Plan (ESA 2011). These represent a combination of issues identified by the Lake Ballinger/McAleer Creek Watershed Forum (see the Restoration Plan, Table 3-1) plus other degraded shoreline functions identified in the Inventory and Characterization Report (see Table 5-1, Summary of Shoreline Ecological Functions and Programmatic Restoration and Management Opportunities - Lake Ballinger).

Restoration of shoreline functions on Lake Ballinger, McAleer Creek, and Hall Creek will depend in large part on activities outside of the shoreline, as well as in neighboring jurisdictions that share the watershed. For example, restoration of hydrologic functions will require continued efforts to address stormwater and recharge issues across the entire contributing basin. The City of Mountlake Terrace can contribute toward restoration of these and other functions, but solutions will depend on efforts across the watershed. The City's continuing participation in the Lake Ballinger/McAleer Creek Watershed Forum as identified below, is a shoreline restoration activity opportunity.

For each goal listed below, the Draft Shoreline Restoration Plan (ESA, 2011) provides potential restoration sites, projects, and/or programs that the City can use to achieve the objectives of the Plan. Partner organizations that could provide technical assistance or funding for restoration projects are also discussed within the Draft Restoration Plan (ESA, 2011).

- **Goal 1:** Enhance native shoreline vegetation where feasible. (Rated as a high priority goal.)
- **Goal 2:** Reduce and prevent occurrence of non-native invasive vegetation in water bodies and shorelines. (Rated as a high priority goal, with objectives including posting of public information signs and recruiting volunteers to monitor invasive vegetation.)
- **Goal 3:** Improve water quality and reduce flooding and in Lake Ballinger and McAleer Creek. (Rated as a high priority goal, with objectives identified including protection and restoration of wetlands; encouragement of low impact development (LID) techniques within the shoreline area; and education of residents and businesses about the need and methods to reduce erosion and use of chemicals.)
- **Goal 4:** Continue to participate in basin-wide initiatives to restore aquatic resources of Lake Ballinger and McAleer Creek. (Rated as a moderate priority goal.)

Chapter 6 BENEFICIAL EFFECTS OF ANY ESTABLISHED REGULATORY PROGRAMS UNDER OTHER LOCAL, STATE, AND FEDERAL LAWS

6.1 City Plans and Regulations

The City's SMP works in concert with the Comprehensive Plan and a variety of other regulatory plans and programs to manage shoreline resources and regulate development near the shoreline. The Comprehensive Plan establishes the general land use pattern and provides an overall vision for growth and development for areas inside and outside the shoreline jurisdiction. Various sections of the Mountlake Terrace Municipal Code (MTMC) also play a major role in how shorelines are managed. These include:

- **MTMC Title 19 – Zoning.** Establishes zoning districts and regulates land use in the city including shorelands.
- **Chapter 16.05 MTMC - SEPA.** Establishes procedures and policies to implement the state environmental policy act (SEPA). All non-exempt City actions require environmental review under SEPA.
- **Chapter 16.15 MTMC –Critical Areas.** Establishes policies, regulations and land use controls to protect critical areas, including wetlands, streams, fish and wildlife habitat, geologic hazard areas, aquifer recharge areas, flood hazard areas, and areas with significant trees and vegetation.
- **Chapter 16.21 MTMC - Illicit Discharge Detection and Elimination and Operation, Maintenance and Inspection of Storm Drainage Facilities.** Establishes methods for controlling the introduction of pollutants into the municipal separate storm sewer system (MS4) in order to comply with requirements of the National Pollutant Discharge Elimination System (NPDES) permit process.
- **Chapter 16.20 MTMC - Controlling Stormwater Runoff from New Development, Redevelopment, and Construction Sites.** Establishes policies and regulations for the comprehensive management of surface and stormwater, erosion control, flooding, clearing and grading activities in compliance with requirements of the National Pollutant Discharge Elimination System (NPDES) permit process.

The SMA requires local governments and state agencies to review their plans, regulations, and ordinances that apply to areas adjacent to shoreline jurisdiction and modify those plans, regulations, and ordinances so they “achieve a consistent use policy” in conformance with the Act and the SMP². This means that the City's comprehensive plan and development regulations must be consistent with the SMP overall.

One of the most important areas for consistency is between the SMP and the City's development standards and use regulations for environmentally critical areas. Although critical areas in shoreline

² RCW 90.58.340

jurisdiction are to be identified and designated under the GMA³, they must also be protected under SMA. The Washington State Legislature and the Growth Management Hearings Board have determined that local governments must adopt SMPs that protect critical areas within shoreline jurisdiction at a level that is sufficient to achieve no net loss of ecological functions⁴.

6.2 State and Federal Programs

As stated in WAC 173-27, it is the intent of the SMA to provide for integration of the shoreline permit into a consolidated environmental review and permit process. In achieving this goal, the shoreline policies and regulations contained in the updated SMP will also have to work in concert with several other local, State and Federal programs that relate to shorelines. These include:

- **Federal Endangered Species Act (ESA).** All projects that have the potential to directly or indirectly impact wildlife species listed as endangered or threatened under ESA are subject to environmental review by the U.S. Fish and Wildlife Service (USFWS) or the National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries). Chinook salmon are listed as threatened.
- **Rivers and Harbors Act Section 10 (Permit for Work in Navigable Waters).** The purpose of Section 10 is to prohibit the obstruction or alteration of navigable waters of the U.S. The US Army Corps of Engineers has jurisdiction in all navigable waters of the U.S. Any work in, over, or under navigable waters of the U.S must obtain a Section 10 permit.
- **Clean Water Act Section 404 Dredge and Fill Permit.** Section 404 of the Federal Clean Water Act (USC 1394) regulates the discharge of dredged or fill material into waters of the United States. Any project that proposes discharging dredged or fill material into the waters of the United States, including special aquatic sites such as wetlands (non-isolated), must get a Section 404 permit. The U.S. Army Corps of Engineers (Corps) can authorize activities by a standard individual permit, letter-of-permission, nationwide permit, or regional permit. The Corps makes the determination on what type of permit is needed.
- **Clean Water Act Section 401 Water Quality Certification.** Under the Clean Water Act, applicants receiving a Section 404 permit from the U.S. Army Corp of Engineers, a Coast Guard permit or license from the Federal Energy Regulatory Commission (FERC), are required to obtain a Section 401 water quality certification from the Department of Ecology (Ecology). Issuance of a certification means that Ecology anticipates that the applicant's project will comply with state water quality standards and other aquatic resource protection requirements under Ecology's authority.
- **Hydraulic Project Approval (HPA).** The HPA program applies to any construction activity in or near the waters of the state. The program is administered by the Washington State Department of Fish and Wildlife (WDFW). All applicable projects are required to submit permit applications

³ RCW 36.70A

⁴ ESHB 1653

to show that construction will be done in a manner to prevent damage to the state's fish, shellfish, wildlife and their habitats.

- **Washington State Water Pollution Control Act.** All projects affecting surface waters in the state, including those that are not subject to the Federal Clean Water Act Sections 404/401 must still comply with the provisions of the State's Water Pollution Control Act (RCW 90.48) which declares that it is unlawful to discharge any matter that could cause pollution into any waters of the state.

Chapter 7 CURRENT AND FUTURE PERFORMANCE OF SHORELINE ECOLOGICAL FUNCTIONS

Table 7-1 summarizes the existing level of shoreline ecological functions within the shorelines of Mountlake Terrace as described in the Inventory and Characterization Report (ESA, 2010). Regulations from the proposed SMP that protect ecological functions are identified. The future performance is then assessed based on the type and amount of expected development and associated impacts (noted in Chapter 3), the level of protection the proposed SMP regulations provide, and restoration policies and opportunities. Specific opportunities for restoration will be outlined in the Shoreline Restoration Plan (ESA, 2011).

The current performance of shoreline ecological functions is ranked “low”, “moderate”, and “high” depending on the level of alteration. The table is intended to summarize the information provided in the Inventory and Characterization Report; the full report should be evaluated for additional detail regarding existing conditions.

Future performance of shoreline ecological functions is ranked “reduction,” “no change,” or “improvement” depending on the expected changes from existing conditions over the next seven years (i.e., up to the next SMP update cycle). Based on this assessment, the cumulative actions taken over time in accordance with the proposed SMP were reviewed and a determination made as to whether they will result in a net loss of shoreline ecological functions compared to existing baseline conditions.

Table 7-1. Assessment of Shoreline Functions – City of Mountlake Terrace

Ecological Process/Function	Resources at Risk by Environment Designation	Current Performance of Function	Beneficial Provisions of the Proposed SMP	Future Performance of Function with Regulations and Restoration
HYDROLOGY				
<p>Process: Surface and Groundwater Movement and Storage</p> <p>Functions: Water storage, sediment storage, maintenance of base flows.</p>	<p>Urban Conservancy:</p> <p>Nutrient storage and cycling and the Lake’s natural water and sediment transport regimes.</p> <p>Nearshore and shallow aquatic native vegetation community.</p> <p>Existing woody vegetation along the shoreline.</p> <p>Normal stream bank maintenance.</p> <p>Shoreline Residential:</p> <p>Unarmored shorelines</p> <p>Native shoreline and shallow aquatic vegetation</p> <p>Natural:</p> <p>Nearshore and shallow aquatic native vegetation</p>	<p>“Low” to “Moderate”</p> <p>Upstream drainage area of lake is highly developed with Commercial and residential uses, with significant sources of inflow from stormwater and surface water runoff from out of shoreline jurisdiction. Lake Ballinger stores input water before being released to outlet systems.</p> <p>Recreational (primarily golf course) and moderate density residential uses and developments surrounding the lake have resulted in placement of bulkheads (residential lots) and removal of forested vegetation and other alterations (all areas).</p> <p>Limited areas of forested riparian habitat minimize recruitment of organic inputs and natural on-site retention/detention.</p> <p>Generally, loss /disturbance of wetlands in the basin (and surrounding the lake) has eliminated essential storage, recharge, and water quality improvement functions.</p>	<p>Protection:</p> <p><u>SMP Section 4.1.3(1 – 3):</u> Structural flood hazard reduction measure only allowed when needed to protect existing development and shall not result in net loss of functions.</p> <p><u>SMP Section 4.1.5(1&2):</u> Alteration to native shoreline vegetation is only allowed in limited circumstances and must be limited to minimum necessary.</p> <p><u>SMP Section 4.1.5(3):</u> Exposed soils must be revegetated with native species within one growing season.</p> <p><u>SMP Section 4.1.6(4):</u> All shoreline development must implement LID techniques to the maximum extent feasible.</p> <p><u>SMP Section 5.3.4(1):</u> New development and subdivision must be located and designed to avoid the need for future shoreline stabilization.</p> <p><u>SMP Section 5.3.4(5):</u> Soft shore stabilization measures are preferred over “hard” measures.</p>	<p>PRELIMINARY ASSESSMENT: “No Change”</p> <p>The lake is largely developed. Opportunities for new armoring are limited. Softshore armoring can improve hydrologic functions.</p> <p>Updated local and regional stormwater requirements for new development are more stringent than in the past.</p> <p>The opportunity for significant improvement to hydrologic conditions associated with Lake Ballinger is largely dependent on land use practices throughout the associated basin generally beyond the control of Mountlake Terrace.</p>

Table 7-1. Assessment of Shoreline Functions – City of Mountlake Terrace				
Ecological Process/Function	Resources at Risk by Environment Designation	Current Performance of Function	Beneficial Provisions of the Proposed SMP	Future Performance of Function with Regulations and Restoration
	community. Existing woody vegetation along the shoreline.		<p><u>SMP Section 5.3.4(6)</u>: stabilization measures shall not result in channelization of normal stream flow.</p> <p><u>SMP Section 5.3.4(16)</u>: All shoreline stabilization projects must comply with mitigation sequencing</p> <p><u>SMP Section 5.3.4(6)</u>: LID approaches for managing stormwater and development impacts required.</p> <p>Restoration:</p> <p>Restore native riparian vegetation at Lake Ballinger Park as opportunities arise.</p> <p>Restore or enhance native vegetation on Ballinger Island.</p> <p>Provide information for shoreline property owners through a web page and/or public workshops.</p> <p>Acquire shoreline property for restoration and/or stormwater control.</p>	
WATER QUALITY				
Process: Delivery, movement, and loss or removal of nutrients,	Urban Conservancy: Hall Creek and	“Low” Water quality is highly degraded; long standing condition, with assessment	<u>SMP Section 3.1.2:</u> Defines Aquatic purpose and management policies	PRELIMINARY ASSESSMENT: “No Change” The opportunity for significant

Table 7-1. Assessment of Shoreline Functions – City of Mountlake Terrace

Ecological Process/Function	Resources at Risk by Environment Designation	Current Performance of Function	Beneficial Provisions of the Proposed SMP	Future Performance of Function with Regulations and Restoration
<p>pathogens, and toxicants;</p> <p>Functions: Wetland and shoreline riparian removal of pollutants through sedimentation and adsorption;</p> <p>Storage of phosphorus and removal of nitrogen and toxins through sedimentation and adsorption.</p>	<p>McAler Creek</p> <p>Associated wetlands within and nearby the shorelines</p> <p>Aquatic:</p> <p>Open water of Lake Ballinger</p>	<p>indicating poor quality dating to 1973 (rated poorest lake for water quality within the Puget Sound area). See Section 4.4 of the Inventory Report for more detail on water quality impairments.</p> <p>Development and runoff throughout the basin is the primary driver, but lack of riparian vegetation along the shoreline, reduces the stormwater and pollutant infiltration. The result is increased stormwater inputs from upstream developed basin.</p>	<p><u>SMP Section 4.1.2(1)</u>: incorporation of CAO protections.</p> <p><u>SMP Section 4.1.2(6)</u>: Requirement and establishment of Wetland buffers, buffer standards and restrictions. Minimum setbacks & buffer widths required based on wetland classification (vs. shoreline environment type) – See Table 4-1 Wetland Buffer requirements, and Table 4-2 Required measures to minimize impacts to wetlands;</p> <p><u>SMP Section 4.1.2(7)</u>: Mitigation sequencing required to result in no net loss of functions. Provides for compensatory mitigation.</p> <p><u>SMP Section 4.1.6(4)</u>: All shoreline development must implement LID techniques to reduce stormwater runoff to the maximum extent feasible.</p> <p><u>SMP Section 4.1.7</u> Shoreline Bulk and Dimensional Standards. (Setbacks): Residential- 50 ft. Urban Conservancy - 100 ft.</p> <p><u>SMP Section 5.3.4(6)</u>: LID approaches for managing stormwater and development</p>	<p>improvement to water quality conditions associated with Lake Ballinger is largely dependent on land use practices throughout the associated basin.</p> <p>Updated local and regional stormwater requirements for new development are more stringent than in the past.</p> <p>Proposed Draft SMP does provide additional protection of wetland areas associated with the lake – areas that provide significant water quality functions.</p>

Table 7-1. Assessment of Shoreline Functions – City of Mountlake Terrace				
Ecological Process/Function	Resources at Risk by Environment Designation	Current Performance of Function	Beneficial Provisions of the Proposed SMP	Future Performance of Function with Regulations and Restoration
			<p>impacts required.</p> <p><u>SMP Section 4.1.5(1&2)</u>: Alteration to native shoreline vegetation is only allowed in limited circumstances and must be limited to minimum necessary.</p> <p><u>SMP Section 4.1.5(3)</u>: Exposed soils must be revegetated with native species within one growing season.</p> <p>Restoration:</p> <p>Restore native riparian vegetation at Lake Ballinger Park as opportunities arise.</p> <p>Provide a link on the City’s web page to resources on low impact development practices and non-chemical maintenance alternatives.</p> <p>Provide educational materials and a variety of educational opportunities to properties owners and local residents to educate them on revegetation, LID and non-chemical maintenance practices.</p> <p>Acquire shoreline property for restoration and/or stormwater control.</p>	

Table 7-1. Assessment of Shoreline Functions – City of Mountlake Terrace

Ecological Process/Function	Resources at Risk by Environment Designation	Current Performance of Function	Beneficial Provisions of the Proposed SMP	Future Performance of Function with Regulations and Restoration
HABITAT				
<p>Process: Recruitment of large woody debris, riparian vegetation and other organic material.</p> <p>Function: Space or conditions for reproduction, resting, hiding and migration; and food production and delivery;</p>	<p>Urban Conservancy: Hall Creek and McAleer Creek. Shoreline riparian and nearshore areas along the lake. Associated wetlands in the lakes' vicinity.</p> <p>Natural: Ballinger Island</p> <p>Residential: Lake Ballinger shorelines and nearshore aquatic areas.</p>	<p>“Low “ to “Moderate”</p> <p>Development surrounding the lake shoreline has highly modified riparian vegetation, associated wetland habitat, and habitat provided in inflow and outflow streams (modifications to flow).</p> <p>Vegetation on Ballinger Island is intact with deciduous and shrub community, although modified by 2009 fire.</p> <p>A detailed summary of habitat conditions is provided in the Inventory and Characterization Report, section 4.2.5 (ESA, 2010).</p>	<p><u>SMP Section 3.1.1.</u> Natural - Purpose and management policies</p> <p><u>SMP Section 3.1.3.</u> Urban Conservancy - Purpose and management policies</p> <p><u>SMP Section 3.1.4</u> SR - Purpose and management policies</p> <p><u>SMP Section 4.1.2(1):</u> incorporation of CAO protections;</p> <p><u>SMP Section 4.1.2(6):</u> Requirement and establishment of Wetland buffers and buffer restrictions. Minimum setbacks & buffer widths required.</p> <p><u>SMP Section 4.1.2(7):</u> Mitigation sequencing required to result in no net loss of functions.</p> <p><u>SMP Section 4.1.5(1&2):</u> Alteration to native shoreline vegetation is only allowed in limited circumstances and must be limited to minimum necessary.</p> <p><u>SMP Section 4.1.5(3):</u> Exposed soils must be revegetated with native</p>	<p>PRELIMINARY ASSESSMENT: “Improvement”</p> <p>Impacts to vegetation functions must be mitigated to reduce potential cumulative impacts of shoreline functions provided by vegetation.</p> <p>Opportunities exist for improvement to habitat by diversification of vegetation varieties in particular on the two golf course properties.</p>

Table 7-1. Assessment of Shoreline Functions – City of Mountlake Terrace				
Ecological Process/Function	Resources at Risk by Environment Designation	Current Performance of Function	Beneficial Provisions of the Proposed SMP	Future Performance of Function with Regulations and Restoration
			<p>species within one growing season.</p> <p><u>SMP Section 4.1.5(6):</u> City to provide information on vegetation management</p> <p><u>SMP Section 4.1.5.(8):</u> Use native plants; minimize removal of aquatic vegetation</p> <p><u>SMP Section 4.1.7</u> Shoreline Bulk and Dimensional Standards. (Setbacks): Residential- 50 ft. Urban Conservancy - 100 ft.</p> <p><u>SMP Section 5.2.4(1):</u> Overwater nonresidential structures are limited to water dependent uses, recreational public access, or ecological restoration.</p> <p><u>SMP Section 5.1, Table 5.1, Shoreline Use & Modification:</u> Ballinger Island was assigned the most protective “Natural” designation. Most uses including residential, commercial, and recreation are prohibited on Ballinger Island.</p> <p>CUP required for hard stabilization within Aquatic, Urban Conservancy and Residential Environments. Must also demonstrate need (Sec.</p>	

Table 7-1. Assessment of Shoreline Functions – City of Mountlake Terrace

Ecological Process/Function	Resources at Risk by Environment Designation	Current Performance of Function	Beneficial Provisions of the Proposed SMP	Future Performance of Function with Regulations and Restoration
			5.3.4). Projects to restore and enhance shoreline habitats are encouraged. Restoration: Restore native riparian vegetation at Lake Ballinger Park as opportunities arise Restore or enhance native vegetation on Ballinger Island. Provide educational materials and a variety of educational opportunities to properties owners and local residents to educate them on revegetation, LID and non-chemical maintenance practices. Acquire shoreline property for restoration.	

Chapter 8 SUMMARY OF CUMULATIVE IMPACTS

As shown in the analysis in Table 7-1, when the anticipated uses in the shoreline are considered together with the regulations that would apply, in most cases there would be no change in performance of shoreline or there could be potential improvement of functions from the level established in the Shoreline Inventory and Characterization (ESA, 2010). Activities undertaken in accordance with the City's Draft SMP over time are not likely to result in cumulative impacts to shoreline ecological functions from existing baseline conditions. Conclusions on the future performance of key shoreline functions are summarized as follows:

Hydrology: Loss in hydrological function from baseline is not expected. Limiting further hard shoreline stabilization, vegetation removal and the amount of new impervious surface will be the key factors. However, the upstream drainage area of the lake is highly developed with commercial and low-density residential uses, with significant sources of inflow from stormwater and surface water runoff. The opportunity for the most significant improvement to hydrologic conditions associated with Lake Ballinger would likely be through a watershed wide effort which is beyond the ability of the City to assure. Updated critical areas regulations and more stringent stormwater requirements may lead to an improvement.

Water Quality: No cumulative impacts to water quality are expected. Critical areas regulations would a) limit any additional impacts to wetlands, and b) any impacts would be mitigated. SMP policies and regulations encourage use of low impact development (LID) techniques, addressing non-point source pollution. New policies and regulations limit treated wood, and the use of pesticides, herbicides, and fertilizers. Restoration of shoreline vegetation and education for property owners related to the impacts of pesticides and herbicides on water quality and aquatic habitat may also help improve water quality. As with hydrology, the water quality of Lake Ballinger is highly dependent on the type and intensity of development throughout the watershed and significant improvement to water quality are possible only through actions at a watershed scale. Also, as with hydrology in the basin, updated critical areas regulations and more stringent stormwater requirements may lead to an improvement.

Habitat: Habitat elements such as riparian vegetation, large woody debris and organic contributions have been altered along Lake Ballinger. No further loss of this function is expected over time under the Draft SMP. Adoption of the City's critical areas standards will protect riparian vegetation. The setbacks established under the draft SMP would also allow for shoreline vegetation conservation and re-vegetation. New regulation on overwater structures would also improve nearshore habitat. As discussed above, implementation of the actions in the Restoration Plan (ESA, 2011) especially education about the impacts of pesticides and herbicide in the shoreline will help improve shoreline habitat conditions.

As described in the Shoreline Inventory and Characterization report, past and ongoing uses along Lake Ballinger have lead to altered shoreline functions. Development throughout the watershed has lead to water quality degradation, shoreline modifications have altered natural hydrological processes, and loss of riparian vegetation and overwater structures have altered habitats. However, as described above, updates to shoreline environment designations, use regulations and development standards, along with

implementation of the shoreline restoration plan provide improved protection of shoreline functions within the city. In concert with implementation of restoration actions in the city and other on-going local, regional, state and federal programs, the regulatory provisions of the Draft SMP would serve to maintain the overall condition of shoreline resources and in certain circumstances improve the overall condition.

Chapter 9 REFERENCES

Ecology (Washington State Department of Ecology). 2010. SMP Handbook – Chapter 17, Cumulative Impacts Analysis. Updated May 27, 2010.

ESA Adolfson. 2010. City of Mountlake Terrace Shoreline Master Program Update – Shoreline Inventory and Characterization Report.

Washington Department of Fish and Wildlife (WDFW). 2009a. Priority Habitats and Species database information.

Washington Department of Fish and Wildlife (WDFW). 2009b. SalmonScape data. Olympia, Washington. Available: <http://wdfw.wa.gov/mapping/salmonscape/index.html>

Otak, Inc., Golder Associates, Inc., Clear Creek Solutions, Inc., and EnviroIssues. 2009. Greater Lake Ballinger/McAleer Creek Watershed Study and Strategic Plan. July. Prepared for the Lake Ballinger/McAleer Creek Watershed Forum. Project #31325.