ATTACHMENT A: FINDINGS AND CONCLUSIONS
COMPREHENSIVE UPDATE TO THE CITY OF LAKEWOOD
SHORELINE MASTER PROGRAM

SMP Submittal accepted November 22, 2013 - Resolution No. 2013-07
Prepared by Chrissy Bailey on March 25, 2014

Brief Description of Proposed Amendment:

The City of Lakewood (City) has submitted to the Department of Ecology (Ecology) for review and approval a comprehensive update to its Shoreline Master Program (SMP) to comply with Shoreline Management Act (SMA) and SMP Guidelines (Guidelines) requirements. The updated master program submittal contains locally tailored shoreline management policies, regulations, environment designation maps and administrative provisions, as well as local ordinance #362 (Critical Areas and Natural Resource Lands regulations) which will be adopted by reference as part of the SMP. Additional reports, and supporting information and analyses as noted below, are included in the submittal.

The permit processing and administrative procedures, policies, and regulations in Title 18A of the Lakewood Municipal Code (LMC), as they may be modified in the SMP, are identified as elements of the City's updated SMP. These documents are loosely referenced in the SMP and are not being adopted by reference.

FINDINGS OF FACT

The record submitted by the City to Ecology as part of this SMP update, including Resolution No. 2013-07, reports, analyses and local approval materials, provides information supporting the need for the proposed amendment. The City of Lakewood currently manages shorelines under the Pierce County Shoreline Master Program, which the City adopted after incorporation in 1996.

According to the *Shoreline Analysis and Characterization Report* (AHBL, 2010) approximately 19.1 miles of shoreline within the City are classified as "Shorelines of the State" pursuant to RCW 90.58.030; 3.8 miles of stream shoreline along Chambers Creek and Clover Creek, and 15.3 miles of lake shoreline including Lake Steilacoom, Gravelly Lake, Lake Louise, Waughop Lake and portions of American Lake. Therefore, aquatic areas and adjacent upland areas generally within 200 feet of the shoreline edge in these locations are subject to compliance with the Shoreline Management Act (RCW 90.58). The City stated its intent to pre-designate those shoreline areas within its adopted Urban Growth Area (UGA) in accordance with WAC 173-26-150; however, the City did not follow all of the procedures applicable to a comprehensive update because these areas were not included in the defined study area in any of the background work[1]. Therefore, the City did not pre-designate those shoreline areas within its adopted UGA.

Need for amendment. The proposed amendment is needed to comply with the statutory deadline

[1] The Shoreline Analysis states "The study area for this report includes all land currently within the City's existing shoreline jurisdiction (Figure 1, Appendix C)" and "American Lake shoreline areas outside Lakewood City limits are not included in this report". In order for the City to pre-designate areas with designations other than the default designation outlined in WAC 173-26-211(2)(e), such areas would have had to have been considered throughout the entire update process.

requiring a comprehensive update to local Shoreline Master Programs pursuant to RCW 90.58.080. This amendment is also needed for compliance with the planning and procedural requirements of the SMP Guidelines contained in WAC 173-26, as the SMP has never been comprehensively updated. This SMP update is also needed to address changes that have occurred along the City's shorelines over the past 18 years and to provide consistency between the updated SMP and the environmental protection and land use management policies and practices outlined in the City's Critical Areas and Natural Resource Lands ordinance and Comprehensive Plan. The update is also necessary to reflect current science regarding protection of shoreline resources. This comprehensive SMP update is intended to entirely replace the City's existing SMP.

The SMP update is also intended to reflect current shoreline conditions, as it is recognized that conditions can change over time (WAC 173-26-090). Changing local circumstances, new information, and improved data may refer to both physical/biological conditions as well as how shorelines and shorelands are currently being used.

Chapter 1 (C) of the City's SMP provides the following purpose statements:

1. *To carry out the responsibilities imposed on the City by the SMA.*

2. *To comply with the SMP Guidelines (See WAC 173-26-186), focusing on regulations and mitigation standards to ensure that development under the SMP will not result in a net loss of ecological functions.*

3. *To further both the policies of Chapter 90.58 RCW and the policies of this SMP.*

4. *To promote public health, safety, and general welfare by providing a guide and regulation for the future development of the shoreline resources of the City.*

Current Conditions Documented:

Documentation of current shoreline conditions is vital to achieving the no net loss of shoreline ecological functions goal of the state SMP Guidelines (WAC 173-26-186). Pursuant to this requirement, AHBL and Otak, Inc., on behalf of the City of Lakewood, produced a Shoreline Analysis report, which included a Shoreline Inventory and Characterization, in October 2010. This report served as a basis for and informed development of the City's SMP, including environment designations, policies and use regulations.

The City's Shoreline Analysis Report provides a regional, ecosystem-wide profile as well as a shoreline segment-level analysis characterizing existing shoreline conditions. The document reflects current and anticipated future land uses and summarizes opportunities for preservation and restoration based on information gathered during the assessment.

Shoreline segments[2] were determined based on water body, the level of ecological function occurring on different stretches of shoreline through the City, as well as existing land uses and zoning. Current

[2] See exhibit 1 to this attachment – note that segment 1C (wetland at game reserve) was later determined by the City to not likely be an associated wetland. Therefore, this segment is not referenced in or shown on future maps or SMP update products.

shoreline conditions are generally summarized as follows for shorelines within SMA jurisdiction in the City of Lakewood.

Existing Shoreline Uses. According to the City's *Shoreline Analysis Report*, land use around American Lake, Lake Steilacoom, Gravelly Lake, and Lake Louise consists primarily of residential single family development. A majority of these parcels include bank armoring, boat piers, and/or swim platforms. Clover Creek has a significant amount of single family housing that has encroached upon the stream buffer resulting in a narrowed, or in some cases, nonexistent riparian zone. There is a greater variety of land uses, including commercial uses, along the eastern portion of Clover Creek. Chambers Creek has some single family housing within shoreline jurisdiction along the north/south oriented segment. Some of the north/south oriented segment has been modified by individual homeowners. These modifications include channelizing the stream, armoring the bank with rocks, and eliminating or reducing the riparian vegetation. The east/west segment has little or no development in shoreline jurisdiction, and a significant portion is a park. Waughop Lake is fully contained within Fort Steilacoom Park, and does not have any homes or buildings built around it. However, it does have a paved trail that goes around the lake and is within the shoreline jurisdiction.

There are several areas providing public access to the City's shorelines, including parks or open spaces on American Lake, Gravelly Lake (Lakewold Gardens), Lake Steilacoom, Clover Creek and in the future, on Chambers Creek. The largest historical site in Lakewood's shoreline jurisdiction is Fort Steilacoom Park, where Waughop Lake is located. Other historic properties include Lakewold Gardens (Gravelly Lake), a private home on the southwest shore of Lake Steilacoom, and Thornewood Castle on American Lake. Facilities associated with the Tacoma Golf and Country Club (clubhouse, dock, swimming pool, lawn and gardens) occupy a small portion of the shoreline on American Lake.

The majority of roads located in shoreline jurisdiction in Lakewood are minor roads providing access for homes and to residential properties. There is a bridge that crosses Lake Steilacoom in approximately the middle of the lake, and a bridge at the north end of the lake at the mouth to Chambers Creek. There are a few arterials that cross either over or under Chambers Creek and Clover Creek, and Clover Creek crosses under Interstate 5.

Shoreline Ecological Functions. Shorelines in Lakewood have generally been characterized as moderately to highly impaired. Of the 14 shoreline sub-segments in Lakewood (7 segments, 4 of which have sub-segments), none were recognized as providing high levels of ecological function, and three were recognized as providing moderate to high levels of ecological function. A summary of all of the results is presented below.

During the qualitative assessment that resulted in the sub-segment rankings referenced above, ecological functions that were considered to determine impairment included hydrologic, vegetation, hyporheic, and habitat functions. Hydrologic functions were assessed by evaluating surface water flow, defined as the natural movement of water into lakes and through streams, the physical complexity of vegetation overhanging the lake shore, and the presence/absence of physical structures that influence water movement in/through the shoreline environments. Vegetation functions include an evaluation of the presence and condition of native vegetation within the shoreline zone in relation to its ability to filter sediments, influence water temperature, provide structure for wildlife use; provide food sources for wildlife; provide bank stabilization, and provide a source for large woody debris (LWD) recruitment. Hyporheic flow and shallow groundwater functional assessments focused on the extent of connectivity that remains between the shoreline water and streams in the immediate vicinity

relative to influences on shallow groundwater and water quality. Also assessed was how shallow groundwater connectivity with lakes influences lake levels, water quality, and late summer recharge. Habitat functions assessed include the physical space and conditions for life histories of species using the area, and food production and delivery.

As a result of the qualitative assessment, each shoreline sub-segment was given a rating of low, low/moderate, moderate, moderate/high, or high. Following are the results for all of the shoreline sub-segments:

Chambers Creek - Segment 1A - Overall rating = Moderate
Segment 1A consists of low density residential housing. Aerial photos indicate that portions of the riparian buffer have been left intact, providing a forested area with some houses/buildings interspersed.

Chambers Creek - Segment 1B - Overall rating = Moderate/High
Segment 1B is the most natural condition segment in Lakewood's shoreline jurisdiction and has an intact riparian buffer that protects the stream banks from erosion as well as providing shade, habitat (in stream and on the banks), and water quality improvement.

Clover Creek – Segment 2 - Overall rating = Low/Moderate
Clover Creek has been greatly compromised by development. Approximately half of this segment in the City of Lakewood is heavily compromised by commercial development, including the section that runs through a long culvert under I-5. The lower half of the segment located in the City has been built out with high density residential housing.

American Lake – Segment 3A - Overall rating = Low
The residential segment of American Lake ranks low for overall functions. Shoreline modifications have the largest, overarching impact on the functions of the lake and shoreline. The shoreline modifications have impeded wave attenuation, organic matter recruitment, the ability of the shoreline to remove toxins, and compromised the functions provided by shallow groundwater.

American Lake – Segments 3B & 3C - Overall rating = Low/Moderate
While the parks generally are in a more natural condition than the residential segment, they have still been altered and have moderate amounts of impervious surface, some shoreline modifications, and compacted soils, all of which compromised the ability to provide necessary shoreline functions.

American Lake – Segment 3D - Overall rating = Moderate
Although Silcox Island has been moderately built out with residential structures and has some shoreline modifications, the island has mostly retained its forested canopy and has not had as much modification to the soil structure on the island.

American Lake – Segment 3E - Overall rating = Moderate/High
The forested peninsula south of Silcox Island (Eagle Point) appears to have been left in a natural condition for many decades. It has a forested canopy that provides special habitat niches both in the canopy and on the lake edge. Because the lake has such a high amount of development, this parcel provides a high quality area among an otherwise developed area.

Lake Steilacoom – Segment 4A - Overall rating = Low/Moderate

The residential area of Lake Steilacoom is similar to that of the other lakes in Lakewood - high density residential housing surrounding the lakeshore. Like American Lake, the shoreline has been extensively armored, reducing the ability of the shoreline to perform many shoreline functions.

Lake Steilacoom – Segment 4B - Overall rating = Low/Moderate
Edgewater Park is a small portion of the overall size of Lake Steilacoom and represents the same overall functions and scores. It does have the opportunity to provide organic matter, but again, in relation to the size of the lake, the segment provides similar functions as adjacent residential segments.

Gravelly Lake – Segments 5A & 5B - Overall rating = Moderate
The residential segment of Gravelly Lake is fully developed with residential housing and armored shorelines, reducing the functions the shoreline is able to provide similar to the other constructed lake shorelines. Segment 5B was included in the functions with 5A because it is also built out, but is managed as a 10-acre garden open to the public. Therefore the functions are the same or similar, but its land use is different from the rest of the lake.

Lake Louise – Segment 6 - Overall rating =Low
Lake Louise is completely surrounded by single family housing, boat docks, and armored shoreline. The functions performed by an intact shoreline have almost completely been modified or heavily compromised on Lake Louise.

Waughop Lake – Segment 7 - Overall rating = Moderate/High
Waughop Lake has an intact shoreline and is able to provide nearly all of the functions of a normally functioning shoreline. The lake quality has suffered due to nearby development and land use, which would make this area an excellent candidate for restoration in the way of water quality improvement projects.

All of the lakes in Lakewood are mainly spring fed, and experience water level draw-downs during the summer months. An increase in development density in the watershed is assumed to have had impacts on the volume and quality of water entering lakes and streams. Lake Steilacoom was created in 1852 when a dam was constructed across Chambers Creek, resulting in the inundation of a wetland. The presence of the outlet dam has created a relatively stable lake water elevation and because it is managed, any floodplain of the lake has been virtually eliminated. Development in the watershed and the straightening and ditching of Clover Creek has increased peak flows and the velocity of the stream.

Background data and current aerial photographs document that the vast majority of the shorelines of Lakewood's four developed lakes have been armored with bulkheads of some type, and that nearly 75% of the single family residences have some type of on-water dock or swimming platform. Natural vegetation on the lake margin or overhanging the edges of the lake is significantly absent. The exceptions to this are the natural shoreline of Waughop Lake, the largely forested riparian zone of Chambers Creek, Silcox Island in American Lake, and the forested peninsula south of Silcox Island (Eagle Point). Other than Chambers Creek, this dense, urban center provides little habitat in the shoreline areas, and in general, what is present tends to be of low to moderate quality.

Ecology finds that the City's Shoreline Analysis Report (2010) provides a sufficient assessment of existing shoreline conditions to adequately inform the SMP update process as well as provide a basis for future protection and restoration opportunities within the City's shoreline jurisdiction. The report appears to be consistent with Guidelines requirements of WAC 173-26-201 (3)(c) and (d).

Shoreline Environment Designations:

Assignment of Shoreline Environment Designations (SED) is a fundamental aspect of the SMP update. Each stretch of shoreline has characteristics distinguishing it from others and that can be used to identify the shoreline ecological functions occurring, or those that historically occurred there and have been altered over time. An SMP update must consider how lands have been and are being used, including a general distinction between presently developed areas and relatively undisturbed shoreline areas. The Shoreline Environment Designation criteria provided in WAC 173-26-211 serve as the primary determinant of how shoreline environment designation assignments are made, along with reference to zoning and other regulatory overlays.

The City has identified three of the six recommended environment designations from the SMP Guidelines (the Shoreline Residential, Natural, and Aquatic designations) as appropriate to manage future shoreline development within its shoreline jurisdictional area. The Shoreline Residential designation was applied to areas developed with or platted for residential use around the City's lakes, and the Natural designation was assigned to shoreline areas considered ecologically intact and relatively free of human influence. The Aquatic designation was assigned to areas waterward of the ordinary high water mark. Additionally, the City has chosen to utilize three alternative environment designations: Conservancy, Urban Park, and Urban Stream Protection. The Urban Stream Protection designation was created specifically for shorelands adjacent to Clover Creek, in an effort to provide for the range of uses not present in other jurisdictional shoreline areas and consistent with the underlying zoning.

Lands that in the locally adopted SMP were given Conservancy and Urban Park designations had originally been lumped together and designated Urban Conservancy in early drafts of the SMP. However as the process proceeded, it became clear that certain shoreline areas, particularly City parks with water dependent uses such as boat access, did not clearly fit in the Urban Conservancy designation. There was also considerable discussion during the local process regarding the appropriate designation for Waughop Lake, when considering its current level of ecological function as well as the future vision for the lake as expressed in the parks and recreation master plan.

In early 2012, the City split the Urban Conservancy designation into a Conservancy and an Urban Park designation. The Urban Park designation was applied to all public parks and public street ends on Lakewood's lakes, the private open space on American Lake (Eagle Point), and Lakewold Gardens on Gravelly Lake. The Conservancy designation was applied to the portion of Chambers Creek between Lake Steilacoom and the confluence with Leach Creek (approximately where the creek changes from a north/south orientation to an east/west orientation), the shorelands of Waughop Lake, and portions of the Oakbrook 4th Addition subdivision that fall within shoreline jurisdiction along the east/west oriented portion of Chambers Creek.

Subsequent to this division, conversations continued regarding Waughop Lake. The City's Planning Advisory Board (PAB) recommended retaining the Conservancy designation, while City staff and the Parks and Recreation Advisory Board (PRAB) supported the Urban Park designation. Their position was that the Urban Park designation accommodated ongoing activities, general public access, and implementation of the Parks and Recreation Master plan and the Legacy Plan at Fort Steilacoom Park in future years (Lakewood, 2013), while the Conservancy designation would make implementation of those plans potentially problematic. The City Council ultimately accepted staff and the PRAB's

recommendation when it passed Resolution No. 2013-07, applying the Urban Park designation to Waughop Lake.

The locally adopted SMP and accompanying environment designation map ("map") contained conflicting information regarding the SEDs for various properties, including Springbrook Park on Clover Creek, Waughop Lake, the shoreline public street ends, and the portions of the Oakbrook 4th Addition subdivision that fall within shoreline jurisdiction. The map outlined that Springbrook Park on Clover Creek should have the Urban Park designation and not the Urban Stream Protection designation, which distinction was not made in the SMP text. The map showed that Waughop Lake should be designated Urban Park, which also was not outlined in the SMP text. The SMP text outlined that the shoreline public street ends were given the Urban Park designation, but these areas were not shown with that designation on the map. The portions of the Oakbrook 4th Addition subdivision that fall within shoreline jurisdiction were noted as having the Conservancy designation in the SMP text, but were not shown as such on the SMP map. Therefore, changes to address the conflicting information both on the map and in the text are Ecology required changes (**Attachment B**).

Ecology finds that the City and the SMP record have sufficiently documented the basis for assigning Shoreline Environment Designations. Areas with moderately high function are protected with more restrictive environment designations. In the SMP each environment designation includes a purpose statement, application (designation) criteria, and management policies as required by WAC 173-26-211 (4)(a). Furthermore, designations within the SMP appear to be appropriately assigned with the required changes as outlined in Attachment B. Ecology finds that Waughop Lake could have fit into either environment designation the City considered; the City's decision to apply the Urban Park designation is rationalized and supported by discussion in the record.

Shoreline Use Conflicts and Preferred Uses:

As part of the *Shoreline Analysis Report*, the City's consultant analyzed land use patterns to address the Guidelines requirement to project shoreline development trends and identify potential use conflicts to ensure preference is given to uses that are unique to or dependent upon a shoreline location ("water oriented" uses). Potential conflicts in this context are focused on competing planning priorities inherent in the overall SMA policy objectives, such as the preference for water-dependent uses and for ecological protection. This may also encompass conflicts between SMA policy interests and other interests or regulatory requirements, like zoning or site design requirements, affecting shoreline resources.

Within the City of Lakewood, shoreline areas are mostly built out. A majority of the parcels in shoreline jurisdiction are developed; remaining parcels that could be developed or additions to existing structures would not change the nature of the water bodies. Many larger tracts of land within shoreline jurisdiction are zoned open space and there is public access to all of the shoreline water bodies except for one (Lake Louise). As previously outlined, Lakewood's shoreline jurisdiction is predominantly characterized by single family residences; few areas allowing commercial uses exist. Some new residential development and redevelopment are anticipated along lake shorelines in Lakewood, which the SMP would require be designed and developed consistent with the control of pollution and prevention of damage to the natural environment and to maintain ecological function. When constructed in such a way, single family residences are considered an SMA-preferred use.

Development within segment 1B of Chambers Creek (Chambers Creek Park) would provide future access to the shoreline in this area. Development of the park is proposed to include limited improvements and the area will mostly remain in its natural state. It is recognized that unlimited development or access in this segment would have the potential to result in degradation of the surrounding environment.

Public access and new development or redevelopment of existing lower intensity uses along Clover Creek to higher intensity uses could result in increased impervious areas or removal of vegetation. Low impact development techniques are encouraged whenever feasible, and new development or redevelopment within shoreline jurisdiction would be required to comply with impervious surface and vegetation conservation standards in the SMP. Based on the existing land use patterns and zoning, commercial development is likely to occur, but such development or redevelopment is not likely to be water-oriented in nature.

Development of City-owned properties such as parks or street ends on city lakes would provide public access but also potentially result in the removal of vegetation, shoreline stabilization, impervious surfaces and further impairment of water quality. Low impact development techniques, more natural landscape management, softer shoreline erosion control measures and revegetation could all be considered to help mitigate these potential impacts. The SMP recognizes that existing high quality vegetation and habitat should be protected in these areas.

In summary, there are few land use changes likely within shoreline jurisdiction. In limited areas where development or redevelopment may occur, the SMP has been drafted in such a way so as to give priority to water oriented uses and other SMA-preferred uses, where they are likely to occur. In areas where public access objectives could potentially conflict with the protection of ecological functions, appropriate shoreline environment designations and development standards have been crafted to avoid conflicts.

Ecology finds that the City has adequately considered SMA preferred uses and the potential for use conflicts consistent with WAC 173-26-201 (2)(d) and WAC 173-26-201 (3)(d)(ii).

Shoreline Modifications:

Pursuant to WAC 173-26-231, *"Shoreline modifications are generally related to construction of physical elements such as a dike, breakwater, dredged basin, or fill, but they can include other actions such as clearing, grading, application of chemicals, or significant vegetation removal."* WAC 173-26-231 (2)(b) states as a general principle that Master Programs shall "*reduce the adverse effects of shoreline modifications, and, as much as possible, limit shoreline modifications in number and extent."* These principles are reinforced through associated mitigation sequencing [WAC 173-26-201 (2)(e)(i)] and no net loss [WAC 173-26-186] requirements of the SMP Guidelines.

The City's *Shoreline Analysis Report* documents the presence of various shoreline modifications in and along the City's SMA lakes and streams. Housing construction since the mid 1900's in shoreline jurisdiction has resulted in most shoreline areas being completely built out. The only exceptions are Waughop Lake within Fort Steilacoom Park and portions of Chambers Creek. Housing construction resulted in heavy shoreline modifications in the way of bulkheads, docks, the compaction of adjacent land for the construction of houses, decks and patios and the installation of lawns and gardens.

Information about shoreline modifications in Lakewood was derived from interpretation of aerial photographs. Known shoreline modifications on and around American Lake, Gravelly Lake, Lake Steilacoom and Lake Louise include significant bulkheading around the perimeter shoreline, docks, and boat lifts. To a lesser extent, there are boathouses over the lakes. Waughop Lake appears to have little or no shoreline bulkheading. Another notable modification is the bridge that crosses the middle of Lake Steilacoom. The percentage of parcels having artificially armored shorelines ranges from 34% on Gravelly Lake to approximately 66% on American Lake. The table below summarizes shoreline modifications by lake in Lakewood (AHBL, 2010):

Water body	Segment	Percent Armoring by Segment	Percent Armoring by Water body	Percentage of Parcels with Docks by Segment	Percent of Parcels with Docks by Water body
American Lake	3A	62	66	90	92
	3B	35		100	
	3C	100		0	
	3D	38		100	
	3E	30		66	
Lake Steilacoom	4A	64	62	79	77
	4B	0		0	
Gravelly Lake	5A	36	34	86	85
	5B	0		0	
Lake Louise	6	72	72	51	51
Waughop Lake	7	0	0	0	4

Known shoreline modifications on Clover Creek include channel straightening, armoring along the banks, and portions of the Creek that have been placed in pipes and culverts. The longest segment of the Creek in a pipe in shoreline jurisdiction is the point where the creek is located beneath I-5. The longest piped segment is outside of the City's shoreline jurisdiction, and is located on McChord Air Force Base (now JBLM), where there are twin 12-foot diameter corrugated metal pipe culverts that run beneath the airport runways for a distance of 2,500 feet each. There are several other locations where the creek crosses under roadways both in pipes and in a modified channel. In several areas (particularly neighborhoods) there are sections of the stream that have been channelized or ditched between parcels.

Chambers Creek has experienced fewer modifications. One road (Steilacoom Boulevard) crosses the creek where it outlets from Lake Steilacoom. Portions of the stream are down in a steep ravine. Along the residential segment, some property owners have modified the bank by removing vegetation and placing stabilization such as rock.

According to the City's *Cumulative Impacts Analysis* (CIA), the most common development activity in the City of Lakewood has been pier construction; 51 permits were issued for pier construction or replacement between 1996 and 2009. The consultant's review of permitting data indicates that the City has granted very few permits for bulkhead modifications, which is somewhat unexpected, given the large number of properties in the city with shoreline armoring (AHBL, 2013). The CIA projects new overwater structures on American Lake, Lake Steilacoom, Gravelly Lake, Lake Louise and one new City-owned public access pier on Waughop Lake. Additionally, pedestrian bridges in park areas adjacent to shoreline creeks may occur with future public access efforts.

With regard to nearshore development activities (development activities at the land/water interface, typically consisting of shoreline stabilization and vegetation clearing), the CIA states that very little nearshore development is anticipated to occur along Chambers Creek or Clover Creek. Currently adopted stream buffers prevent buildings from being constructed close enough to the creek to require shoreline stabilization, so no bulkheading or stream channelization is anticipated to be required. Nearshore development in lakefront portions of shoreline jurisdiction is anticipated to consist of shoreline modification and stabilization measures associated with upland residential development. These modifications may include installation or expansion of shoreline stabilization structures that could adversely affect hydrologic, vegetation, hyporheic, and habitat resources.

Relative to shoreline modifications, the City's SMP would ensure no net loss of ecological function from upland development by requiring compliance with specific standards. Chapter 5 of the SMP contains standards that restrict the use of shoreline modifications, including installation of shoreline stabilization, clearing, grading, dredging, and fill, for example:

- Clearing, grading, filling, and alteration of any natural drainage features are limited to the minimum necessary for development.
- The SMP places strict limits on new structural stabilization measures, as well as the repair or replacement of existing structures. Bioengineered shoreline protection measures are the preferred means of erosion prevention, and structural solutions shall only be allowed where it can be demonstrated that such methods are necessary.
- New structural stabilization measures on developed lots shall only be allowed to protect an existing structure.
- Applicants must demonstrate a need for armoring in the form a geotechnical report that confirms the existing structure will be damaged within 3 years due to shoreline erosion, and must also show that non-structural stabilization measures are infeasible or would not provide adequate protection to prevent damage to the property.
- New development, including land subdivision, must be located and designed to minimize the need for shoreline stabilization, and new non-water dependent uses shall be prohibited from constructing stabilization that would cause significant impacts to adjacent or downstream properties.
- The proposed SMP would allow for minor repairs of existing armoring, but as existing stabilization structures fail over time, replacement will result in the conversion of many properties that currently use hard structural protection methods to softer protection measures.

Chapter 5 of the SMP also contains standards specific to overwater uses and development, for example:

- Piers, docks, and recreational floats are permitted uses in the Shoreline Residential and Urban Park environments. Piers and docks are prohibited in the Natural and Conservancy environments.
- Components of overwater structures that contact the water shall be free of toxic substances that may contaminate lakes.
- On Lake Steilacoom, all recreational floats shall be grated to allow passage of light to the water, thus reducing impacts on growth and behavior of aquatic organisms.
- All reconstructed, repaired, or modified overwater structures must provide mitigation to ensure no net loss of ecological function.

- The size of new docks and piers is restricted to limit impacts on aquatic organisms and ecological processes. As existing docks and piers age, replacement structures will be required to comply with the size limits, which will result in a decrease in overwater coverage over time.

As outlined above, the most common shoreline modifications in Lakewood are generally piers bulkheads. While the City's SMP addresses these types of modification, some changes to the SMP language were required so the SMP would conform to the SMP Guidelines. These changes included correcting internal conflicts in the document with regard to where piers and docks and launch rails may be authorized, clarifying the difference between hard and soft structural shoreline stabilization measures, clarifying there are two separate levels of analysis necessary to justify shoreline stabilization (first, *if* shoreline stabilization is necessary and second, *when* hard armoring may be authorized over soft stabilization measures), what constitutes natural processes with regard to justifying need for shoreline stabilization, and clarification that docks and piers are intended to be moorage facilities and cannot includes decks, storage facilities, etc.

Contingent on the City accepting the required changes listed in Attachment B, Ecology finds that the City's Shoreline Modification standards are consistent with mitigation sequencing principles provided for in WAC 173-26-201 (2)(e) and provisions relating to shoreline modifications in WAC 173-26-231. Further, the City's Cumulative Impact Assessment has identified and analyzed the updated development standards and regulations relating to shoreline modifications authorized through the updated SMP; Ecology finds that the Program is consistent with the no net loss policy goal of the SMP Guidelines.

Cumulative Impact Analysis:

Upon local adoption of the recommended draft SMP in May 2013, the City's consultant updated the *Cumulative Impacts Analysis* (CIA) for the Lakewood SMP, intended to consider cumulative impacts of reasonably foreseeable future development or redevelopment allowed by the updated SMP. Due to current and proposed regulations and the extensively developed nature of most shoreline areas, it is assumed that properties with significant redevelopment potential are concentrated in the multi-family and commercially zoned portions of Clover Creek, as well as on American Lake. The majority of shoreline areas are likely to see relatively slow and incremental changes associated with on-going uses, as well as redevelopment and expansion of existing uses.

Reasonably foreseeable development in the shoreline area was assessed using several data sources. Based on that review, the following development types were identified as potentially occurring in the future. Information is organized by shoreline segment (AHBL, 2013):

Summary of Reasonably Foreseeable Land Use Changes by Water Body

Inventory Segment	Redevelopment of Developed Lots	Development of Existing Vacant Lots	Potential New Lots from Subdivision	Total Potential New Dwelling Units	New Overwater Structures
Segment 1: Chambers Creek	• Up to 10 multi-family dwelling units	• 10 new residences	• 3 lots subdivided to create 5 new waterfront lots	• 25 total new dwelling units	None

Inventory Segment	Redevelopment of Developed Lots	Development of Existing Vacant Lots	Potential New Lots from Subdivision	Total Potential New Dwelling Units	New Overwater Structures
Segment 2: Clover Creek	• Up to 55 new multi-family dwelling units • Up to 0.92 acre of new commercial development	• 6 new residences	• 2 lots subdivided to create 2 new waterfront lots	• 63 total new dwelling units	None
Segment 3: American Lake	• Incremental renovation and expansion of existing single-family uses	• 16 new residences	• 10 lots (9 developed and 1 vacant) subdivided to create 16 new waterfront lots	• 32 total new dwelling units	• 1 City-owned public access pier • 1 private joint-use dock/pier • 20 private, single-use docks/piers
Segment 4: Lake Steilacoom	• Up to 19 new multi-family dwelling units • Incremental renovation and expansion of existing single-family uses	• 6 new residences	• 10 lots (8 developed and 2 vacant) subdivided to create 17 new waterfront lots	• 42 total new dwelling units	• 1 City-owned public access pier • 1 private joint-use dock/pier • 37 private, single-use docks/piers
Segment 5: Gravelly Lake	• Incremental renovation and expansion of existing single-family uses	• 2 new residences (one without shoreline frontage)	• 5 lots subdivided to create 17 new waterfront lots	• 19 total new dwelling units	• 9 single-use docks/piers
Segment 6: Lake Louise	• Incremental renovation and expansion of existing single-family uses	• 3 new residences (none with lake frontage)	• 1 developed lot subdivided to create 1 new waterfront lot	• 4 total new dwelling units	• 34 single-use docks/piers
Segment 7: Waughop Lake	None	None	None	None	• 1 new City-owned public access pier as part of planned park improvements

The CIA recognizes that in general, shoreline development has the potential to affect ecological functions in various ways. For example, streams convey water and sediment from surface runoff, wetlands, or lakes to other water bodies. Upland areas adjacent to streams that have large areas of impervious cover or that have been extensively cleared of vegetation provide less opportunity for water infiltration and can increase the amount of surface runoff collected by the stream, increasing flows to downstream water bodies. The CIA examined potentially impacted processes and ecological functions relative to the specific types of reasonably foreseeable development activities in Lakewood. The following summary identifies the anticipated resources at risk:

Upland Development Activities

Upland development is anticipated to consist of new and expanded residential and commercial development, leading to a potential increase in impervious surface area and clearing of vegetation above the OHWM. These development activities have the potential to impact hydrologic, vegetation, and habitat resources negatively. Upland development activities have the potential to impact the following ecological processes and functions associated with streams:

- Recruitment of large woody debris and organic material;
- Improvement of water quality;
- Sediment removal and bank stabilization;
- Physical habitat space and conditions for life history; and
- Wildlife food production and delivery.

Upland development activities also have the potential to impact the following ecological processes and functions associated with lakes:

- Water and sediment storage;
- Removal of excess nutrients and toxic compounds;
- Recruitment of large woody debris and organic material;
- Improvement of water quality;
- Sediment removal and bank stabilization;
- Physical habitat space and conditions for life history; and
- Wildlife food production and delivery.

Nearshore Development Activities

Nearshore development consists of construction activities performed at the interface between a water body and its adjacent upland areas. Development activities at the land/water interface typically consist of shoreline stabilization and vegetation clearing.

Streams
Very little nearshore development is anticipated to occur along Chambers Creek or Clover Creek. Currently adopted stream buffers prevent buildings from being constructed close enough to the creek to require shoreline stabilization, so no bulkheading or stream channelization is anticipated to be required.

Lakes
Near-shore development in lakefront portions of the shoreline jurisdiction is anticipated to consist of shoreline modification and stabilization measures associated with upland residential development. These modifications may include installation or expansion of shoreline stabilization structures that could adversely affect hydrologic, vegetation, hyporheic, and habitat resources. Specifically, nearshore development activities would impact the following ecological processes and functions associated with lakes:

- Attenuation of wave energy;
- Recruitment of large woody debris and organic material;
- Sediment removal and bank stabilization;
- Removal of excess nutrients and toxic compounds;
- Water storage;
- Vegetation support;
- Maintenance of base flows; and
- Physical habitat space and conditions for life history.

Overwater Development Activities

Streams
The streams in Lakewood do not support recreational swimming or boating, so no new overwater structures are anticipated to be constructed on Chambers Creek or Clover Creek. There may be small, pedestrian footbridge(s) associated with development of trails for the Chambers Creek Park.

Lakes
Overwater development on lakes is anticipated to consist of the development of new docks or piers, as well as the gradual replacement and repair of existing overwater structures. Overwater development is anticipated to result in a net increase in overwater coverage. The presence of overwater structures can adversely affect hydrologic and aquatic habitat resources and would specifically impact the following ecological processes and functions:

- Attenuation of wave energy;
- Removal of excess nutrients and toxic compounds;
- Physical habitat space and conditions for life history; and
- Wildlife food production and delivery.

The level of overwater development anticipated in the shoreline jurisdiction varies by water body, as shown above.

As outlined in the previous section, there are a number of SMP provisions specific to shoreline modifications (generally addressing nearshore and overwater development activities) that are intended to limit the type, number and extent of shoreline modifications so as to achieve the no net loss of shoreline ecological functions standard. Additionally, the CIA finds that the SMP would ensure no net loss of ecological function from upland development by requiring compliance with standards such as maximum impervious surface standards, minimum shoreline setback requirements, minimum lot frontages, stormwater treatment and control standards, vegetation conservation standards, and connection of development to sanitary sewer.

The City's CIA finds that the regulations in the proposed SMP address stormwater, hydrology, and water quality in shoreline jurisdiction, as well as preventing degradation of ecological functions relative to existing conditions. Any project within shoreline jurisdiction that introduces negative impacts is required to include mitigation measures and return ecological function back to baseline conditions at a minimum. The SMP assures no net loss of ecological function through a number of measures including those outlined above. In addition, the proposed SMP includes critical area regulations that protect steep slopes, wetlands, streams, and their buffers as well as vegetation conservation regulations.

The proposed SMP requires that shoreline development fully mitigate impacts caused by such development. Although not required to improve conditions over and above the impacts of their development action, a development proponent may elect to conduct restoration with mitigation for shoreline development, if appropriate. Implementation of portions of the *Shoreline Restoration Plan* irrespective of proposed development activity and as part of future capital improvement plans will help ensure conditions improve over time while achieving no net loss and the overall goal of improving shoreline functions. The combination of regulations, mitigation, and restoration help provide a high margin of error, ensuring no net loss over the long-term.

The City has also included shoreline restoration incentives in the SMP. These incentives are voluntary and if taken advantage of, allow a development proponent to reduce the standard buffer or setback from a water body to a minimum setback or buffer when specific options are utilized to restore or improve the function of the specific water body.

Contingent on the City accepting the required changes listed in Attachment B, Ecology finds that the City's Cumulative Impact Assessment provides an adequate and accurate examination of anticipated development and potential effects to shoreline ecological functions. This finding is based on review and analysis of existing shoreline characteristics, anticipated future development, redevelopment, and use, new shoreline environment designations and regulations, development standards such as setback and nonconforming use and structure provisions, and shoreline stabilization standards, which have been demonstrated within the Cumulative Impacts Assessment to satisfy the no net loss of shoreline ecological function requirement as provided by the SMP Guidelines.

Restoration Plan:

Pursuant to WAC 173-26-201 (2)(c), "Master programs shall also include policies that promote restoration of ecological functions, as provided in WAC 173-26-201 (2)(f), where such functions are found to have been impaired based on an Inventory and Characterization as described in WAC 173-26-201 (3)(d)(i)".

It is intended that local government, through the master program, along with other regulatory and non-regulatory programs, contribute to restoration by planning for and fostering restoration and that such restoration occur through a combination of public and private programs and actions. Local governments should identify restoration opportunities through the shoreline inventory process and authorize, coordinate and facilitate appropriate publicly and privately initiated restoration projects within their master program. The goal of this effort is to produce master programs that include planning elements which, when implemented, serve to improve the overall condition of habitat and resources within the shoreline area of each city and county.

The City conducted restoration planning actions consistent with the requirements of the SMP Guidelines and its consultant produced a *Shoreline Restoration Plan* (June 2013). The plan builds on information gathered through the shoreline inventory, characterization and analysis process as well as restoration goals and objectives in the City's Comprehensive Plan and policy guidance from the Chambers-Clover Creek Watershed Council towards implementation of the Chambers-Clover Creek Watershed Action Plan. The *Shoreline Restoration Plan* contains a summary of restoration opportunities at the shoreline segment scale, includes restoration goals and objectives, provides implementation targets and monitoring methods, and identifies restoration priorities and constraints.

Ecology finds that the City's Restoration Plan is based on appropriate technical information available during the SMP update. The Restoration Plan will serve as an effective tool for the City, non-profit organizations and the public to guide individual or collective improvements to shoreline conditions over time. Such restoration efforts are understood to help achieve the no-net-loss goal of the SMP Guidelines (WAC 173-26-186).

Amendment History, Review Process:

The City initiated the comprehensive SMP update by entering into a grant agreement with the Department of Ecology in September 2009. The record shows that the City held an SMP kick-off meeting on May 18, 2010, followed by meetings in July and August 2010 focused on individual water bodies, to solicit comments and concerns from the public prior to creation of the Shoreline Analysis report. The City also held two public meetings in January 2011 for discussion of the preliminary draft SMP, and a public hearing before the Planning Advisory Board (PAB) on November 9, 2011. The City notified the public of the hearing via a Notice of Public Hearing, which was sent to the Tacoma News Tribune for publication on October 25, 2011, posted on the City's website, and sent to the interested parties distribution list.

In addition to this information, the City's submittal to Ecology provides more detailed information regarding the City's deliberations and communication and outreach efforts. Submitted materials generally include summaries of public input at various stages of the update in meeting minutes, meeting and hearing agendas, minutes, staff reports and presentations from meetings where the SMP was discussed, SEPA documents, published, posted and mailed notices, correspondence with State agencies and Tribes, individuals, and other interested parties. With passage of Resolution No. 2013-07 on May 20, 2013, the City authorized staff to forward the proposed amendments to Ecology for approval.

The proposed SMP amendment was received by Ecology for state review on July 10, 2013, and after a request for additional information was accepted as complete on November 22, 2013. Notice of the state comment period was distributed to 190 state task force members and local interested parties identified by the City on December 10, 2013, in compliance with the requirements of WAC 173-26-120. The state comment period began on December 13, 2013 and continued through January 15, 2014. In accordance with Ecology's discretion under WAC 173-26-120 (4), a public hearing was not conducted as part of the state comment period. Ecology received no written comments during the state comment period.

Ecology finds that City and its consultant(s) sufficiently engaged the public and interested parties in the SMP update process in accordance with WAC 173-26-100 and 110.

Consistency with Chapter 90.58 RCW: The proposed amendment has been reviewed for consistency with the policy of RCW 90.58.020 and the approval criteria of RCW 90.58.090(3), (4) and (5). The amendment was also reviewed for consistency with RCW 36.70A.480 as required by RCW 90.58.610. The record also contains evidence of compliance with SMA procedural requirements for amending SMPs contained in RCW 90.58.090(1) and (2).

Consistency with "applicable guidelines" (Chapter 173-26 WAC, Part III): The proposed amendment has been reviewed for compliance with the requirements of the applicable Shoreline Master Program Guidelines (WAC 173-26-171 through 251) as well as the definitions in 173-26-020. This included review of an SMP Submittal Checklist, which was completed by the City's consultant.

As described in Attachment B (Required Changes), a few revisions are required to ensure the City's SMP is consistent with the SMP Guidelines. These amendments are generally focused on consistency with "Master Program Content" (WAC 173-26-191), "General Master Program Provisions" (WAC 173-26-221), "Shoreline Modifications" (WAC 173-26-231), and "Shoreline Uses" (WAC 173-26-241).

Therefore, Ecology finds that the proposed SMP as approved by the City under Resolution No. 2013-07 is not consistent with the applicable SMP Guideline requirements, as specifically identified within Attachment B (Required Changes). However, Ecology also finds that the SMP can be amended to ensure compliance with the SMP Guidelines through the City's acceptance of "Required Changes" listed within Attachment B together with supporting rationale. Ecology has also identified "Recommended Changes" (Attachment C) to the SMP, for consideration by the City.

Consistency with SEPA Requirements: The City submitted evidence of SEPA compliance in the form of a SEPA checklist, Determination of Non-Significance (DNS), and Notice of Issuance. Ecology's Toxic Cleanup Program commented on the DNS, recommending the city consider adopting future policies related to the Tacoma Smelter Plume and include standard conditions of approval for future soil disturbance projects located in the shoreline jurisdiction.

Other Studies or Analyses supporting the SMP update: Ecology reviewed the following reports, studies, map portfolios and data prepared for the City in support of the SMP amendment:

- *Public Participation Plan,* prepared by AHBL and dated November 2009
- *Shoreline Analysis Report, Including Shoreline Inventory and Characterization for City of Lakewood Shorelines,* prepared by AHBL and Otak, Inc. and dated October 2010.
- *Cumulative Impacts Analysis,* prepared by AHBL and dated September 2013
- *Shoreline Restoration Plan,* prepared by AHBL and Otak, Inc. and dated June 2013, and
- *Final SMP Checklist,* prepared by AHBL on behalf of the City of Lakewood and dated September 6, 2013.

Ecology also received and reviewed City Ordinance No. 362, which constitutes the City's Critical Areas and Natural Resource Lands (CANRL) ordinance and is being incorporated by reference, with revisions, into the SMP.

Contingent on the City accepting the required changes listed in Attachment B, Ecology finds that the City's CANRL orindnace, which will be incorporated by reference into the SMP with the appropriate exceptions and revisions, implements the principles and adheres to the provisions in the Guidelines

relating to critical areas (WAC 173-26-221 [2]). Therefore, the critical areas segment of the Master Program provides a level of protection that assures no net loss of shoreline ecological functions necessary to sustain shoreline natural resources (WAC 173-26-221 [2][a][ii]).

Summary of Issues Raised During The Public Review Process:

Ecology received no comments during the formal State review process.

The City's SMP update process included multiple public meetings and one hearing, as outlined above. A summary of issues commonly raised in these forums was compiled by the City in September 2013 (responsiveness summary). The responsiveness summary outlines modifications made to the original SMP drafts, some of which were made in response to comments received during the update process. Some of these changes included reduction in standard setbacks for non-water oriented structures, expanded maximum dock/pier lengths to respond to shallow lake depth concerns, and provisions relating to light penetration and materials used in the construction of overwater structures in salmon bearing water bodies.

The responsiveness summary also identified additional modifications that the City Council was asked to consider. One of the primary items related to the Shoreline Environment Designation for Waughop Lake, as was previously discussed. Additionally, the standards for nonconforming structures, uses and lots were simplified and a policy was established that will allow for the replacement of legally established nonconforming upland structures within specific timelines.

CONCLUSIONS OF LAW

After review by Ecology of the complete record submitted, Ecology concludes that the City's comprehensive SMP update proposal, subject to and including Ecology's required changes (itemized in **Attachment B**), is consistent with the policy and standards of RCW 90.58.020, RCW 90.58.090, RCW 36.70A.480 and the applicable SMP guidelines (WAC 173-26-171 through 251) as well as the definitions in WAC 173-26-020. This includes a conclusion that the proposed SMP, subject to required changes, contains sufficient policies and regulations to assure that no net loss of shoreline ecological functions should result from implementation of the new updated master program - WAC 173-26-201(2)(c).

Ecology concludes that a separate set of recommended changes to the submittal (identified during the review process and itemized in **Attachment C**) would be consistent with SMA policy and the Guidelines and would be beneficial to SMP implementation. These changes are not required, but if accepted by the City, can be included in Ecology's approved SMP amendment.

As stipulated in RCW 90.58.610, RCW 36.70A.480 governs the relationship between shoreline master programs and development regulations to protect critical areas that are adopted under chapter 36.70A RCW. Consistent with RCW 36.70A.480(4), Ecology concludes that the SMP provides a level of protection to critical areas located within shorelines of the state that assures no net loss of shoreline ecological functions necessary to sustain shoreline natural resources.

Ecology concludes that the City has chosen not to exercise its option pursuant to RCW 90.58.030(2)(d)(ii) to increase shoreline jurisdiction to include buffers for critical areas located within shorelines of the state. Therefore, as required by RCW 36.70A.480(6), for those designated critical

areas with buffers that extend beyond SMA jurisdiction the buffer shall continue to be regulated by the City's Critical Areas and Natural Resource Lands regulations.

Ecology concludes that subject to and including Ecology's required changes, those SMP segments relating to shorelines of statewide significance provide for the optimum implementation of Shoreline Management Act policy - RCW 90.58.090(5).

Ecology concludes that the City complied with the requirements of RCW 90.58.100 regarding the SMP amendment process and contents.

Ecology concludes that the City has complied with the requirements of RCW 90.58.130 and WAC 173-26-090 regarding public and agency involvement in the SMP update process.

Ecology concludes that the City has complied with the purpose and intent of the local update process requirements contained in WAC 173-26-100, including conducting open houses and public hearings, notice, consultation with parties of interest and solicitation of comments from tribes, government agencies and Ecology.

Ecology concludes that the City has complied with requirements of Chapter 43.21C RCW, the State Environmental Policy Act.

Ecology concludes that the City's comprehensive SMP update submittal to Ecology was complete pursuant to the requirements of WAC 173-26-110 and WAC 173-26-201(3)(a) and (h) requiring an SMP Submittal Checklist.

Ecology concludes that it has complied with the procedural requirements for state review and approval of shoreline master program amendments as set forth in RCW 90.58.090 and WAC 173-26-120.

DECISION AND EFFECTIVE DATE

Based on the preceding, Ecology has determined the proposed amendments comprehensively updating the SMP are consistent with the policy of the Shoreline Management Act, the applicable Guidelines and implementing rules, once required changes set forth in **Attachment B** are accepted by the City. Ecology approval of the proposed amendments with required changes is effective 14 days from Ecology's final action approving the amendment.

As provided in RCW 90.58.090(2)(e)(ii) the City may choose to submit an alternative to all or part of the changes required by Ecology. If Ecology determines that the alternative proposal is consistent with the purpose and intent of Ecology's original changes and with RCW 90.58, then the department shall approve the alternative proposal and that action shall be the final action.

REFERENCES

AHBL and Otak, Inc. *Shoreline Analysis Report, Including Shoreline Inventory and Characterization for City of Lakewood Shorelines*. Prepared for City of Lakewood. Seattle, Washington. October 1, 2010.

AHBL and Otak, Inc. *Shoreline Restoration Plan Component.* Prepared for the City of Lakewood Shoreline Master Program Update. Seattle, Washington. June, 2013.

AHBL and City of Lakewood. *Cumulative Impacts Analysis Component*. Prepared for the City of Lakewood Shoreline Master Program Update. Seattle, WA. September 2013.

City of Lakewood. *Request for Council Action*. Submitted by Marc Amrine, Senior Planner and Dan Catron, Principle Planner. Lakewood, WA. May 2013.

City of Lakewood. R*esponsiveness Summary*. Submitted by Marc Amrine, Senior Planner. Lakewood, WA. September 2013.