March 10, 2011

Tim Stewart, Development Services Director
Travis Saunders, Planner
City of Mercer Island
9611 SE 36th Street
Mercer Island, WA 98040

RE: Ecology Comments on 2011 Draft Shoreline Master Program

Dear Tim Stewart and Travis Saunders:

Thank you for the opportunity to review the draft SMP prior to the March 16th public hearing. Ecology very much appreciates the work the City staff and the Planning Commission have put into the existing draft SMP. The present draft represents a nice job of addressing Ecology’s previous comments. It is also apparent that the Planning Commission has worked very hard to meet the community’s concerns. The following points are raised to help the City get to a successful and approved SMP update. The order of topics below reflects the location of these elements in the draft SMP.

1) The City has done a nice job of building sidebars around approval for dredging by limiting the area; limiting the reasons for permitting to accommodate unduly restricted navigational access or other extraordinary conditions associated with water-dependent use, and prohibiting dredging in fish spawning areas and unique environments, such as lake logging of the underwater forest. Although other permits such as the Water Quality 404 and federal permits are required for dredging and the disposal of dredge spoils, and it may seem that there would be enough multi-agency review of a dredging proposal, each agency is constrained by their legal review context. The criteria for one agency do not necessarily match the criteria of another agency. This gap in review criteria is why Ecology recommends a CUP for dredging.

The criteria for review as a CUP under the SMA is slightly different than the criteria associated with other permit requirements. Under WAC 173-27-160 SMP CUP criteria are: a) that the proposed use is consistent with the policies of RCW 98.58.020 and the master program; b) that the proposed use will not interfere with the normal public use of public shorelines; c) that the proposed use of the site and design of the project is compatible with other authorized uses within the area and with uses planned for the area under the comprehensive plan and SMP; d) that the proposed use will cause no significant adverse effects to the shoreline environment in which it is to be located; and e) that the public interest suffers no substantial detrimental effect.
Also, please note that WAC 173-26-231 (f) requires that dredging waterward of the OHWM for the primary purpose of obtaining fill material shall not be allowed, except when the material is necessary for the restoration of ecological functions. When allowed, the site where the fill is to be placed must be located waterward of the OHWM. The project must be either associated with a MTCA or CERCLA habitat restoration project or, if approved through a shoreline conditional use permit, any other significant habitat enhancement project. This language could be added to the code in Section 1 (E)(8) or added as a footnote to Table B to the P for both the Urban Residential Environment and the Urban Park Environment.

2) Most jurisdictions currently updating SMPs prohibit covered moorages. Covered moorages are discouraged by Ecology, WDFW and ACOE, as covered moorages often leave a very large shade footprint on the aquatic environment. Although Ecology and resource agencies do not support the development of new covered moorages, it is recognized that the shade impact can be at least partially mitigated, but not entirely, through materials, construction specifications, and location of covers relative to arc of the sun. The City’s requirement for translucent covers and no sidewalls are conditions to mitigate the aquatic shading effects, as when sidewalls are added, the structure then becomes a boat house, a structure that should be prohibited. Therefore, your requirements associated with these structures in the draft document are consistent with these mitigating measures, with the exception of “arc of the sun”. Covered moorages should be placed in a north-south orientation rather than east-west. I have seen this work out in the field.

3) Ecology will require maximum moorage width to be 4 feet within the first 30 feet waterward of OHWM with a 6-foot width beyond that point. This is to protect the ambient light patterns in the nearshore. Although exceptions can be made for residents with handicaps, for which 4 feet may be too narrow to negotiate, a 6-foot width from land, can be allowed without a variance. Anything larger than the above 4 and 6 foot dimensions would otherwise require a variance. This handicap exception could be footnoted in your page 11 Table D Dock design standards.

4) MICC 19.07.030. CAO-related provisions. Ecology will require that CAO Reasonable Use exceptions to be excepted from the CAO adoption by reference language, as only shoreline variance and conditional use permits apply to an SMP.

5) CAO buffers. In general, the present MIC 33.19.07 for wetland buffers do not meet state standards. During the process of updating the City’s CAO in 2005, Ecology indicated this in a comment letter. However, as the only two known shoreline-associated wetlands within shoreline jurisdiction are the North and South wetlands in Luther Burbank Park, Ecology is not requesting a change of the wetland buffer standards at this time. These Category II wetlands are protected from future development by the manner in which the park is managed and the existing 75-foot buffers.
6) Geotechnical Report. Ecology requires a more robust definition of a “geotechnical report” be added to the Definitions section, using language either directly cites the language from the WAC 1737-26-020 (16) or a slightly different version of that particular language.

7) Per WAC 173-26-191(2)(a)(iii)(A), Ecology also requires the SMP to include provisions insuring that general SMP requirements and limitations be considered and followed in all permit decisions. This includes future redevelopment through expansions, repair and replacement of existing structures that do not meet current standards. The SMP addresses non-conforming development. However, in the case of docks which do not meet the updated SMP standards, thresholds could be set for when a repair or replacement of existing dock structures meets the standards of the updated SMP.

8) Clarification of the intent of 25% plantings would help to understand the graphic planting plan on page 16. The graphic is an excellent addition to the code text. However, a little clarification on the 25% intent would greatly help.

9) WAC-173-26-211(2)(e) requires the map and SMP to note that all areas within shoreline jurisdiction that are not mapped and/or designated to be automatically assigned an “urban conservancy” designation, if within a municipality or urban growth area, or the comparable environment designation of the applicable master program until the shoreline can be re-designated through a master program amendment.” In the case of Mercer Island designations, and given the City’s criteria for those designations, if future “undesignated areas were discovered, they would be designated either Urban Conservancy Park or Urban Conservancy Residential, depending on their uses and public access provisions at the location.

Thank you for your conscientious and diligent work on this project. I look forward to working with you to the completion of a locally-adopted and approved SMP. If you have any questions or wish to discuss this, please feel free to contact me at the numbers below or through email.

Sincerely,

Barbara Nightingale, Regional Shoreline Planner
Washington State Department of Ecology-Northwest Office
3190 – 160th Avenue SE
Bellevue, WA 98008
425-649-4309

Cc: Geoff Tallent, NWRO
Peter Skowlund, Ecology HQ
March 30, 2010

Travis Saunders
City of Mercer Island
9611 SE 36th Street
Mercer Island, WA 98040

Dear Travis Saunders;

Thank you for your continued and diligent work on the City’s SMP Update products. It is appreciated and respected. In order to successfully assist the City through the final step of having an approved and updated SMP, Ecology shares the following concerns with the present draft SMP.

**Setbacks and Vegetated Buffers**

Ecology has concerns that the existing language prescribing vegetated buffers could result in only 25% of the total area adjacent to OHWM being vegetated. As the City’s SMP appropriately states, “Shorelands directly impact water quality as surface and subsurface waters are filtered back into the lake.” Ecology recommends that the code language clarify that the vegetated cover should not be limited to one small area or corner of a lot; rather, it is intended to be extended across the face of the lot adjacent to OHWM. With this clarification, the buffer could provide the expected functional water quality benefits. This could be worded, something like: “the vegetated portion of the setback shall average 20 feet in depth from OHWM and across 75% of the entire lot adjacent to Lake Washington, up to a maximum of 60 feet across the shoreline. The first 5 feet, landward from OHWM, of that area will consist of native vegetation.” The 75% allows for a pathway (25%) to the water and the optional limit of 60 feet across the shoreline provides a limit for shoreline landowners with lots wider than 60 feet.

**Dock Specifications**

Ecology also has concerns with the dock requirements of the proposed SMP. Although Ecology appreciates the continued work on the SMP, remember that the locally adopted SMP must illustrate no net loss in order for Ecology to approve this program. A fundamental requirement of the SMP guidelines is the concept of Mitigation Sequencing (Avoidance, Minimization, and Mitigation). Impacts from existing docks cannot be avoided; but they can be minimized by the grating requirement. This inclusion of grated decking for “repair” and “replacement” is an important piece of the City achieving no net loss. Although it is true that the City can contribute to its achievement of no net loss with the addition of grating to existing docks that do not have grating, it does not necessarily hold true that expanding the
size of new single family docks to 1000 square feet can achieve no net loss with only the addition of grating. Based on a formal biological opinion on jeopardy of endangered species, the ACOE requires that new piers on Lake Washington include fully grated decking with at least 60% open area. The ACOE also limits the overwater coverage to 480 square feet for single-family docks. Basically, Ecology accepts the ACOE standards for residential piers and docks in Lake Washington. If the City wants more flexibility to expand acceptable dock sizes, minimizing and mitigating the multiple impacts of larger docks needs to also be included. For example, the additional inclusion of denser and larger vegetated buffers and the addition of overhanging trees could help assure against no net loss of ecological function. As an example, I have enclosed a piece from Kirkland’s cumulative impacts analysis displaying their effort to identify potential impacts of new docks and then reference the City’s proposed regulations that address those impacts in the updated SMP.

The one-to-one trade-off for grated areas on “new” docks to reduce “effective” “new” dock area is not a straight-across equivalency. New piers are required by the ACOE to be fully grated, as well as a suite of other conditions listed on the attached ACOE Table 3 of the Regional General Permit standards for Lake Washington. These standards are intended to avoid the multiple impacts of new docks to species, water quality and navigation interests. The City is also required to have multiple conditions in place to begin to assure no net loss of ecological function with the addition of “new” and larger sized docks. Basically, the outright allowance of 1000 square foot docks is inconsistent with both avoidance and minimization of impacts and the recent standards set by neighboring jurisdictions on Lake Washington.

If you have any questions regarding the subjects in this letter or would like a presentation or meeting on any topic in this letter, please feel free to contact me at 425-649-4309. Ecology’s role is to provide support, direction and input on the draft SMP, with the overall objective to have an approved SMP update that adequately reflects local conditions and protects against any overall net loss of ecological functions.

Sincerely,

Barbara Nightingale, Regional Shoreline Planner
3190 160th Avenue SE
Bellevue, WA 98008

BN:cja

Enc

Cc: Geoff Tallent, SEA Section Manager
Example of achieving “No Net Loss” through dock specifications in the recently adopted City of Kirkland SMP.

New docks have multiple impacts. These include impacts to: aquatic vegetation, juvenile salmon, sediment movement, chemical contamination and external lighting impacts. All of these impacts need to be addressed and avoided, minimized or mitigated. The following is an example, based on the City of Kirkland’s Cumulative Impacts Analysis, on how these additional impacts of piers and docks can be avoided, minimized and mitigated by regulations in the City’s SMP and how it can be demonstrated in the Cumulative Impacts Analysis Report.

The proposed regulations have specifically been crafted to avoid and minimize the following specific potential impacts as outlined below:

1. Growth of aquatic vegetation: Overwater cover is minimized through size and height; restrictions for new piers (SMP 83.270(4) and 83.280(5)), restricting size of replacement structures (SMP 83.270(5) and 83.280(8)) and requiring grated decking (SMP 83.270 and SMP 83.270).

2. Juvenile salmon migration: Impacts to juvenile salmon migration are mitigated via the same provisions listed under #1 above. Additionally new piers must be mitigated through the addition of shoreline vegetation (SMP 83.270(4)(g) and SMP 83.280(7)).

3. Sediment movement. Piles and floats are restricted in the nearshore area (SMP 83.270(4) and SMP 83.280(5)). The use of jetties or groins are prohibited in most environments except they are allowed only with a Conditional Use Permit (SMP 83.170).

4. Chemical contamination: Piers and other structures shall be constructed of materials that will not adversely affect water quality (SMP 83.270(5) and SMP 83.280(5)).

5. External lighting impacts: Placement and direction of external lighting is restricted to minimize impacts (SMP 83.470).
<table>
<thead>
<tr>
<th>General Approach</th>
<th>The Army Corp regulates total area of the pier as well as width, length, configuration of the main pier and any attached floats, ramps, and ells.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Where Allowed</td>
<td>No structure can be installed within 100 feet of the mouth of a river, stream or creek.</td>
</tr>
<tr>
<td>General</td>
<td>Only piers and ramps are allowed within the first 30 feet from shore.</td>
</tr>
<tr>
<td>Configuration</td>
<td>All floats and ells must be 30 feet waterward of OHW. No skirting is allowed on any structure.</td>
</tr>
<tr>
<td>Overall Size</td>
<td>Total Allowed Surface Coverage (includes all floats, ramps, and ells) is as follows:</td>
</tr>
<tr>
<td></td>
<td>• Single property owner: 480 sq. ft.</td>
</tr>
<tr>
<td></td>
<td>• Two property owners (residential): 700 sq ft.</td>
</tr>
<tr>
<td></td>
<td>• Three or more residential property owners: 1000 sq. ft.</td>
</tr>
<tr>
<td>Length</td>
<td>There are no direct regulations of length except through maximum area requirements.</td>
</tr>
<tr>
<td></td>
<td>Any proposed pier that extends further waterward than adjacent piers is reviewed on a case-by-case basis. Piers determined to have an adverse effect on navigation will not be authorized.</td>
</tr>
<tr>
<td>Width</td>
<td>Piers can not exceed a width of 4 feet.</td>
</tr>
<tr>
<td>Height</td>
<td>The bottom of all structures except floats must be at least 1.5 feet above OHW.</td>
</tr>
<tr>
<td>Extensions, Floats,</td>
<td>As mentioned previously, all floats and ells must be 30 feet waterward of OHW. No skirting is allowed on any structure.</td>
</tr>
<tr>
<td>Ells and Ramps</td>
<td>Floats must be in water with depths of 10 feet or more at the landward end of the float. They may be up to 6' wide by 20' long and must contain a minimum of 2 feet of grating down the center.</td>
</tr>
<tr>
<td></td>
<td>Ells must be in water with depths of 9 feet or greater at the landward end of the ell and may be built in the following manners: (Currently problematic as some docks are limited to 8 foot depth under current Seattle regs.)</td>
</tr>
<tr>
<td></td>
<td>a) Up to 6' wide by 20' long with a 2-foot strip of grating down the center.</td>
</tr>
<tr>
<td></td>
<td>b) Up to 6’ wide by 26’ long with grating providing 60% open area over the entire ell.</td>
</tr>
<tr>
<td></td>
<td>c) One 2’ wide by 20’ long, fully grated finger ell is allowed.</td>
</tr>
<tr>
<td></td>
<td>Ramps must not exceed a width of 3 feet and must be fully grated.</td>
</tr>
<tr>
<td>Pier Grating</td>
<td>Piers must be fully grated with at least 60% open area.</td>
</tr>
</tbody>
</table>
Table 3. Army Corps of Engineers Regional General Permit (RGP) 3 Regulations for residential piers

| Mitigation | Other grating rules are outline in Extension, Floats, Ells and Ramps above. Existing habitat features such as woody debris or substrate material can not be removed. Plantings for 10 feet on either side of OHW are required for entire length of property if site is appropriate. If pier is shared, all co-owners must execute plantings.  
- No chemical fertilizers, herbicides and pesticides can be used in the planting area.  
- A 6 foot path without vegetation is allowed for access to the pier.  
- A minimum of 2 trees and 3 willow plants is required; otherwise there appears to be a lot of flexibility in the planting plan.  
- The plantings must be maintained for the life of pier with a 100% survival rate required in first and second year and a 100% survival rate for tree and an 80% survival rate for remaining plants in years 3-5.  
- Monitoring reports for planting due annually for 5 years. Status reports on impact reduction construction must be submitted 12 months after permit is issued. They are due annually until the Corp accepts as-build drawings. Construction must abide by work windows for bald eagles and listed fish species. Work disturbing soil in substrate, bank or riparian area must occur in the dry whenever practical. Equipment should be operated out of water whenever possible, should minimize disturbance of soils and should be maintained in clean condition. Proper sediment control must also be used. Disturbance of bank vegetation should be limited. When disturbed, it must be replaced with native vegetation. Structures within 100 feet of a wetland must avoid impacts to the wetland to the maximum extent possible. |
| Existing Piers | Existing structures within 30 feet of OHW may need to be removed to receive a permit unless they facilitate water access. |
| Other | Regulations regarding spacing of pilings, treatment of materials, mooring piles and maintenance are also detailed. |
May 17, 2011

Tim Stewart, Planning Services Director
City of Mercer Island
9611 SE 36th Street
Mercer Island, WA 98040

RE: City of Mercer Island Draft SMP

Dear Tim Stewart:

This letter is intended to clarify key areas of Ecology’s concern with the Planning Commission’s SMP Recommendations, now before the City Council. Ecology appreciates the work that has gone into the draft SMP development to date. The city staff, Planning Commission, and citizens are to be commended for the time and energy they have put into this effort. However, there are still issues that need to be addressed before this document can receive Ecology approval. This letter provides an overview of the legal and substantive context for three remaining major issues and topics. These outstanding issues are buffers, setbacks, and dock and pier standards.

BACKGROUND

SMA Guidelines
Ecology is required under the Shoreline Management Act to review and approve locally developed Shoreline Master Programs. In our approval, we look for consistency with the Shoreline Management Act (RCW 90.58) and the Shoreline Master Program Guidelines (WAC 173-26). The Shoreline Management Act was adopted by popular vote in 1972 and lays out goals of careful planning, environmental protection, and public access for Washington’s shorelines. The Guidelines were negotiated in 2003 among business interests, ports, environmental groups, shoreline user groups, cities and counties, and Ecology through a legal settlement agreement. They were adopted into state regulation under Chapter 173-26 Shoreline Master Program Guidelines. These are rules laying out the requirements for Shoreline Master Program updates.

Shorelines of Statewide Significance (SSWS)
The Shoreline Management Act identifies Mercer Island Lake Washington shorelines as Shorelines of Statewide Significance (SSWS). This places special emphasis upon statewide objectives and consultation with state agencies to: 1) recognize and protect the statewide interest over local interest; 2) preserve the natural character of the shoreline; 3) result in long term over short term benefit; 4) protect the resources and ecology of the shoreline;
5) increase public access to publicly owned areas of the shorelines; 6) increase recreational opportunities for the public in the shorelines, and 7) provide for any other element as defined in the Act (RCW 90.58). In a recent Growth Management Hearings Board Decision (GMHB Case No. 10-1-0011), the Board cited that in appeals concerning a SSWS, the legislature has: 1) narrowed the scope of GMHB review and 2) prescribed a high evidentiary standard of “clear and convincing evidence” with the board upholding the decision by Ecology unless the Board, by clear and convincing evidence, determines that Ecology’s decision is inconsistent with the policy of RCW 90.58.020 and the SMP Guidelines.

SALMON RECOVERY & SHORELINE ANALYSIS REPORT

Mercer Island 2009 Shoreline Analysis Report

The WAC 173-26-201 requires local jurisdictions to collect the most current, accurate, and complete scientific and technical information, and ensure that development will be protective of ecological functions necessary to sustain existing shoreline natural resources and, at a minimum, achieve no net loss of ecological functions necessary to sustain that system. Consistent with this requirement, the City completed a 2009 Shoreline Analysis Report. This report was reviewed, approved, and funded by a grant through Ecology. This work lays the foundation for the development of an SMP and this SMP, in order to be approved, needs to demonstrate the potential to achieve no net loss with future development.

Salmon Recovery

Ecologically, the actions that take place on Mercer Island shorelines are important for their impacts on native salmon populations, such as the ESA-listed Puget Sound chinook in Lake Washington. The City’s Shoreline Analysis Report identifies the following limiting factors for salmonids in the Salmon and Steelhead Habitat Limiting Factors Report for the Cedar-Sammamish Basin (WRIA 8) (Kerwin 2001):

- The riparian shoreline of Lake Washington is highly altered from its historic state. Current and future land use practices all but eliminate the possibility of the shoreline to function as a natural shoreline to benefit salmonids;
- Introduced plant and animal species have altered trophic interactions between native and non-native animal species;
- The known historic practices and discharges into Lake Washington have contributed to contamination of bottom sediments at specific locations;
- The presence of extensive numbers of docks, piers and bulkheads have highly altered the Shoreline, and
- Riparian habitats are generally non-functional.

The Lake Washington/Cedar/Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan, July 2005 identifies several actions to improve salmon populations in the Lake Washington/Cedar watershed. These include:

- Reducing predation to outmigrating juvenile chinook,
- Reduced bank hardening,
- Restoring overhanging riparian vegetation,
- Replacing bulkhead and rip-rap with sandy beaches with gentle slopes, and
- Use of mesh dock surfaces and/or community docks.
Similarly, the City’s Restoration Plan identifies many shoreline opportunities on private property, through:

- Reduction or modification of shoreline armoring,
- Reduction of overwater cover and in-water structures (grated pier decking, pier size reduction, pile size and quantity reduction, moorage cover removal),
- Improvements to nearshore native vegetative cover, and/or
- Reductions in impervious surface coverage.

SETBACKS AND BUFFER CONCERNS

Ecology has two significant concerns with the setback standards and the buffer requirements of the Planning Commission draft. One concern is that the setbacks are too small, being closer to OHWM than where the majority of waterfront homes are presently located, relative to OHWM. The other concern is that the required vegetation plantings are far too small and sparsely planted to achieve any filtration capacity and perform ecological functions.

Setbacks
First, the setback standards may allow the pattern of development to move closer to the water, reducing the buffering functions, without mitigation in some circumstances. Per the City’s Shoreline Analysis Report, there are 945 waterfront lots with 57 or 5.9% of those lots presently vacant. The new setbacks and buffers would apply to new development and expansion of existing development. Similarly, the City’s Draft Cumulative Impact Report shows the island having a total of 713 waterfront parcels with only 44 (6%) of these being vacant.

In terms of what exists and achieving no net loss of ecological functioning with future development, presently the median setback for Urban Residential is 66.4 feet from OHWM, with only 18% of these 713 parcels having less than 25-foot setbacks and 82% having greater than 25-foot setbacks. Presently, 41% (291) of the total 713 parcels have residential structures located greater than or equal to 75 feet from OHWM and 29% of these 713 parcels have setbacks greater or equal to 100 feet from OHWM. Given these large present setbacks on the lake, setting a SMP structural setback at 25-feet from OHWM could effectively allow homes to move closer to the shoreline, either through expansion or new development. The result of this would be a net loss of ecological functions rather than no net loss of ecological functions.

Ecology understands that there may be situations where it is appropriate for development to move into buffer areas. However, in a framework of “no net loss,” the new or expanded development should come with mitigation to offset the impacts. On a case-by-case basis, through the use of incentives in the SMP, it is conceivable that “no net loss” could result in lower setbacks, depending upon the selection of buffer enhancements. Such buffer incentives could include:

- Removal of a bulkhead,
- Restoring the shoreline to a natural or semi-natural state,
- Preserving existing trees and native vegetation,
- Restoring native vegetation along the lot’s lake frontage, and
- Further limiting the total impervious surface in the 25-50-foot setback area to 5% rather than the City’s current standard of 30% impervious surface.
Buffers
Vegetated buffers are an important piece of protecting and improving water quality through vegetated buffer areas that can filter out the contaminants and nutrients generated from an urbanized environment. The Shoreline Analysis Report also cites nitrate and phosphate concentrations, for Lake Washington, often being higher than the federally recommended concentrations for western Washington waters. These nutrients are found in fertilizers and animal wastes which, in turn, contribute to an overabundance of algae and other plants in the lake. The inventory also reports residential uses along the shorelines to be dominated by lawn and landscaping, rather than dense buffers of lakeside vegetation. Such landscaping practices are sources of water quality contaminants, such as fertilizers, herbicides and pesticides. In addition to these garden pollutants, urban runoff carries hydrocarbons, metals, sediments and other pollutants from roads and parking lots. Without significant vegetated buffers to filtrate these contaminants, metals, sediments and other pollutants will drain across impervious surfaces to the lake. In general, neighboring jurisdictions to Mercer Island are proposing setbacks of approximately 45 feet with significant buffers, with policies that allow those buffers to be reduced to 25 feet only with significant enhancements, such as bulkhead removal or buffer enhancement. When applying enhancements or mitigation offsets, please keep in mind that WAC 173-26-186(8)(b)(i) requires local SMPs to include regulations and mitigation standards ensuring that each permitted development will not cause a net loss ecological functions of the shoreline. Likewise, WAC 173-26-201(2)(e)(i) requires the application of mitigation standards according to standard mitigation sequencing of first avoiding, then minimizing, then compensating for impacts or providing replacement resources.

Our second concern with respect to buffers is the distribution/extent of vegetation, when planting is required as mitigation. Previously Ecology has submitted comment letters requesting clarification of the intent of 25% vegetation in a 25-foot setback. Although the City has improved their presentation with the use of a graphic of the intended setback and vegetation areas in the SMP showing 0 to 25 ft and 25 ft to 50- ft setback areas, it is still unclear how and where the 25% applies to the perimeter of the shoreline. If the intent is to have only a vegetative cover of 25% of the perimeter, this will not provide the functions of filtration and the organic input to aquatic habitat that a vegetated buffer is expected to provide. The following scientific studies have measured the phosphorus removal capacity of vegetation buffers. Dillaha (1993) reported that a buffer width of 15 feet resulted in only 61% of phosphorus in surface runoff, whereas a 30 foot buffer removed 79% of the phosphorous. Other researchers have found that even wider buffers are necessary to achieve similar levels of phosphorous removal. A 69-foot buffer was required to remove 67% of phosphorous according to Young (1980) and Shisler et al. (1980) found that a forested riparian buffer of 62 feet removed 80% of phosphorous.

DOCK CONCERNS

Dock Standards

Dock area standards are consistent with the ACOE, a major exception is width. The City is proposing an 8 ft rather than 4 ft- width. This is twice the width recommended by the ACOE and the Biological Evaluation supporting the ACOE standards. The City has not developed a science-based justification for why an 8 ft width is adequately protective of ecological resources.

The standards for the ACOE programmatic dock permitting process is a streamlined application process with federal agencies. In addition to dock specifications, further impact reduction in the form of shoreline buffer plantings and limitations on herbicides and pesticides in the riparian area are also required to avoid cumulative
dock impacts. The following table identifies the City of Mercer Island’s consistencies with the ACOE Programmatic permit specifications for residential docks.

<table>
<thead>
<tr>
<th>Dock Standards</th>
<th>ACOE Programmatic Standards</th>
<th>Mercer Island Proposed Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Only piers and ramps allowed within the first 30 feet from OHW</td>
<td>Only piers, ramps, lift stations may be within the first 30 feet from OHWM.</td>
</tr>
</tbody>
</table>
| Overall Size    | Total allowed Surface coverage (includes all floats, ramps, and ells) is:  
• Single property owners: 480 sq ft  
• Two property owners (residential): 700 sq ft.  
• Three or more residential property owners: 1000 sq. ft | Consistent with ACOE |
| Width           | 4-foot width | 8-foot width |
| Height          | Bottom of all structures, except floats, must be at least 1.5 feet above OHW | Consistent |
| Pier Grating    | • Piers must be fully grated with at least 60% open area.  
• Up to 6 ft wide by 20 ft long :2-foot strip of grating in center 
• Up to 6 ft wide by 26 ft long with grating providing 60% open area over the entire ell.  
• One 2 ft‘by 20 ft long, fully grated finger ell is allowed.  
• Ramps must not exceed a width of 3 ft and must be fully grated. | Piers, docks, and platform lifts must be fully grated with materials that allow a minimum of 40% light transmittance. |
| Mitigation Plantings for Impact Reduction | • 10-ft deep buffer planted for entire length of property.  
• No chemical fertilizers, herbicides & pesticides used in planting area.  
• 6-foot path without vegetation allowed for access to pier.  
• Minimum 2 trees and 3 willow plants.  
• 100% planting required in 1st year and 100% survival rate for trees and 80% survival rate for remaining plants in years 3-5  
• Monitoring reports for planting due annually for 5 years. | Within 25-ft shoreline setback 20-ft vegetation area from OHWM with only 25% vegetation coverage.  
5-ft from OHWM 25% native vegetation. |

**Alternative Dock Standards**

The City of Kirkland SMP, the first example of an approved SMP along Lake Washington shorelines, provides for approval for alternative designs pending approval by state and federal regulatory agencies. Similar to Kirkland, Mercer Island has also proposed alternative development standards, if approved by ACOE and WDFW. However, Kirkland alternative standards remain with a 4-ft width within the first 30 ft of OHWM; while Mercer still proposes an 8-ft width within the first 30 feet from OWM. This 8-ft width is a significant difference from region-wide standards and one that will likely require a longer permit process with a NOAA Biological Evaluation required rather than the shorter permit process associated with a programmatic dock requirement.

Another tool towards achieving no net loss of ecological function with new development is through the setting of dock repair and replacement thresholds. Through this tool, docks can begin to comply with new standards as the amount of repair meets thresholds set in the City’s SMP. This can help the City achieve no net loss of ecological function through cumulative benefits from repair using new specifications.
Another dock inconsistency for Mercer Island is the approval of covered moorage. Most jurisdictions currently undertaking an SMP update, prohibit covered moorage, due to both biological and aesthetic impacts. The proposed City standards for covered moorage that include translucent covers and no sidewalls are known to reduce environmental effects. However, to further reduce the aquatic ecological impacts, Ecology recommends that any new or replaced covered structures be constructed in an orientation of north-south to avoid the longer-term shading impact of an east-west structure orientation.

I hope this is helpful in the effort towards an approved SMP. Ecology looks forward to assisting the City’s SMP update work and achieving formal approval. If you have any questions, please feel free to contact me at 425-649-4309.

Sincerely,

Barbara Nightingale, Regional Shoreline Planner
3190 – 160th Avenue SE
Bellevue, WA 99808
425-649-4309

Cc: Travis Saunders, Planner, City of Mercer Island
    Geoff Tallent, Ecology
    Peter Skowlund, Ecology
    Stephen Stanley, Ecology
    Hugo Flores, WDNR, Aquatics Division
    Lalena Amiotte, WDNR, Aquatic Division
    Katie Knight, WDFW
    Kirk Lakey, WDFW

References


June 10, 2010

Honorable Mercer Island Planning Commission
Attn: Travis Saunders
City of Mercer Island
9611 SE 36th Street
Mercer Island, WA 98040

RE: SMP Update – Development Standards (Docks and Buffers)

Dear Travis Saunders:

This letter is pursuant to your request for a follow-up to my March 30, 2010 letter to the City regarding setbacks, vegetated buffers and dock specifications. Ecology continues to have concerns regarding the shoreline setbacks, vegetated buffers and dock specifications cited in the existing draft SMP.

Setbacks and Vegetated Buffers
As presently written, the draft SMP states: “Section I B.3. 25% of the 20 feet closest to the OHWM shall contain vegetation coverage. The five feet nearest the OHWM shall contain at least 25% native coverage. A shoreline vegetation plan shall be submitted to the City for approval. A variety of ground cover, shrubs and trees that provides lake shading is encouraged.” As written, this language could be interpreted to mean that only 25% of the first five feet would be required to contain vegetation coverage. Twenty-five percent of five feet is 15 inches. If this is not what is intended, then the language needs to be clarified to express more clearly the intentions. Please be advised that Ecology also has concerns with a setback of only 20 feet. The setback size needs to be supported by a net loss analysis. Ecology recommends that the City review what is being considered by other jurisdictions around Lake Washington. Some jurisdictions are using sliding scale setbacks to accommodate for small lot sizes and, at the same time, work towards achieving no net loss on a city-wide basis.

Dock Specifications
The commission also requested further information on dock specification alternatives to the standard RGP 3 options for authorization of new residential overwater structures in Lake Washington. I have attached the RGP 3 form with this letter. On page 3, the RGP 3 provides the following standard dock specifications.
3. Pier, Ramp, Float, and Ell Specification Options. Note that only piers and ramps can be within the first 30 feet from shore. All floats and ells must be at least 30 feet waterward of OHW. No skirtling is allowed on any structure.

a. Surface Coverage (includes all floats, ramps, and ells):
   (1) Single property owner: 480 square feet
   (2) Two property owners (residential): 700 square feet
   (3) Three or more residential property owners: 1000 square feet.

b. Height above the water surface: except for floats, the bottom of all structures must be at least 1.5 feet above OHW.

c. Widths and lengths:
   (1) Piers - must not exceed a width of 4 feet and must be fully grated with at least 60% open area.
   (2) Ramps - must not exceed a width of 3 feet and must be fully grated.
   (3) Ells - must be in water with depths of 9 feet or greater at the landward end of the ell.

      a. Up to 6-feet wide by 20-foot long with a 2-foot strip of grating down the center.
      b. Up to 6-feet wide by 26-foot long with grating providing 60% open area over the entire ell.

As written, the draft SMP proposes single family docks of 1000 square feet in coverage. This is over twice the standard coverage option specified by the RGP 3. The Commission requested information on alternatives to the 480 square foot requirement. Please note in the following language, taken from page 4 of the attached RGP, that impact reduction measures can vary.

"10. Impact Reduction Measures. The above-described construction measures will minimize impacts of these structures to the aquatic environment. However, because of cumulative impacts of numerous floating and stationary structures to be authorized under this RGP, impact reduction measures must be implemented. Impact reduction measures consist of planting emergent vegetation waterward of OHW (if site appropriate) and a zone of riparian vegetation a minimum of 10-feet wide along the entire length of the shoreline immediately landward of OHW. Joint use piers will require a planting plan covering all properties sharing the pier. A path 6-feet wide or less is allowed through the zone of riparian vegetation for access to the pier. Chemical fertilizers, herbicides and pesticides shall not be applied to the riparian zone.

The purpose of this zone is to establish a riparian plant community and associated food web that can be used by migrating salmonids as they pass through the project area. The vegetation will provide food, organic matter, and root structure for protection of juvenile fish in the near shore area. Woody debris from the buffer that enters the water will provide nutrients to the lake ecosystem. Therefore, woody debris shall not be removed from the water or shoreline.

A permittee is required to establish and preserve impact reduction plantings at the project site for the duration that the overwater structure is in place. The intent of the shoreline planting should be to provide a continuous native plant community along the shoreline. The impact reduction planting will consist of native shrubs and trees and, when possible, emergent vegetation. At least two native trees and three willow plants (See Appendix D) shall be included in the planting plan. Planting density and spacing should be commensurate with spacing recommended for each individual species. Prior to issuance of an RGP, the Corps must approve the prospective permittee's planting plan and species list and numbers. The impact reduction planting must be completed within 12 months of the Corps' issuance of an RGP to the permittee."
Other impact reduction measures may be proposed by the applicant, particularly if riparian plantings are not feasible, due to lack of space. These will be reviewed and approved by the Corps, the U.S. Fish and Wildlife Service and NOAA's National Marine Fisheries Service on a case-by-case basis.”

As the above measures indicate, “other impact reduction measures may be proposed”. This indicates a case-by-case flexibility. Ecology recommends that the City consider how some of the other Lake Washington and Lake Sammamish jurisdictions have approached this topic and built flexibility into their SMPs. For example, a recent locally-adopted SMP, submitted by the City of Kirkland, includes mitigation requirements for all dock installations and the flexibility of a multi-agency approval process for design alternatives that differ from the standard RGP specifications.

I hope this is helpful, as you continue to work on the City’s ongoing SMP update effort. If you have any questions, please feel free to contact me at 425-649-4309.

Sincerely,

Barbara Nightingale, Regional Shoreline Planner
North West Regional Office
425-649-4309

Attachment

cc: Geoff Tallent