



MEMORANDUM

DATE: September 1, 2010

TO: Chair Ferris and Members of the Planning Commission

FROM: Shoreline Master Program Update Team
Michael Paine, Environmental Planning Manager, 425-452-2739
Heidi Bedwell, Land Use Planner, 425-452-4862
David Pyle, Land Use Planner, 425-452-2973

SUBJECT: Shoreline Master Program, Shoreline Stabilization – September 8, 2010
Planning Commission Study Session

At the July 28 study session, Development Services Department staff presented policy and regulatory approaches for overwater structures (such as residential docks, piers, and boatlifts) and new shoreline stabilization (including bulkheads). The focus of the September 8 meeting is a continuation of the discussion on shoreline stabilization, and presentation of a framework to process public and internal city department comment with the object of completing a revised Shoreline Master Program (SMP) draft for release in December prior to an open house and public hearing.

SUMMARY OF JULY 28 MEETING

At the July 28 study session, background information on docks and shoreline stabilization was presented. Detailed information on proposed dock rules was included in the agenda memo and was presented to the Commission. The memo included proposed rules, a summary of Ecology's Shoreline Master Program Guidelines, Chapter 173-26 WAC (the "Guidelines" or "Rules), the SMP Working Draft, and policies that relate to docks and shoreline stabilization. Additionally, a description of the highly productive nature of shoreline ecosystems was outlined with current knowledge on the impacts to shoreline ecological functions from dock and bulkhead construction. (See minutes of the July 28 meeting for details.)

The September 8 meeting will continue the July 28 presentation with a focus on shoreline stabilization. As a continuation of the July 28 presentation, information presented in the July 28 agenda memo is incorporated by reference and those materials will be useful to the Planning Commission during the September 8 discussion. Additional new information summarizing the proposed shoreline stabilization rules not presented as part of the July 28 agenda memo is included below and is intended to supplement the information previously provided as part of the July 28 study session.

ONGOING PUBLIC OUTREACH

Following the July 28 meeting, the City has met with various community groups and property owners to provide detailed information responding to their articulated interests. Meetings have been held with individual property owners, the Meydenbauer Bay Neighborhood Association (MBNA), the Newport Shores Homeowners Association, the Sambica and Standvick property management and ownership, and with the Washington Sensible Shorelines Associations (WSSA) board. During these outreach meetings written feedback and comment was solicited from all groups.

The recent meetings with all groups have been productive. In the last month, three separate meetings with the WSSA board were held. During these meetings general SMP issues and current proposed dock and shoreline stabilization standards were reviewed. Explanation of specific regulatory approaches was provided to the group, questions were answered, and initial verbal comment and feedback from the group was received. Additional meetings are planned with WSSA to continue to review specific Working Draft proposals related to setbacks, vegetation, floodplains, and other miscellaneous general topics of interest to the group. The City also plans to hold additional meetings with MBNA to discuss specific issues related to the Marina Civic designation. It is anticipated that many misunderstandings can be resolved and information provided by WSSA and other groups can be used to modify current Working Draft concepts when consistent with the Shoreline Management Act (SMA), WAC, and the project principles. We expect a large volume of comment and have already received several detailed submittals from WSSA and MBNA.

In addition to meetings with public groups, project staff has met internally with the Utilities Department and Parks Department to discuss different sections of the Working Draft and how these sections may impact or influence their operations and long term facility plans. City Departments were asked to provide comments on pertinent sections of the SMP Working Draft within the same timeframe as requested of the public.

One of the comments received from WSSA was related to the City's approach for release of a revised draft prior to the public hearing. The comment was founded on concern that given the current proposed schedule, the City would not have time to consider WSSA's comments when preparing the revised draft and WSSA would not have an opportunity to comment on the revised draft before its release and scheduling of the public hearing. As a consequence, staff proposes to modify the current schedule to allow the public this additional opportunity to comment. This would result in the release of the revised draft in December and push the open house and public hearing into January and February of 2011. This would allow sufficient time for the Commission and interested parties to become acquainted with the draft before the public hearing.

INCORPORATION OF PUBLIC COMMENT

In producing a revised draft of the SMP, project staff is developing a comment matrix that identifies substantive written comment provided during public outreach and which categorizes comments into those that have been addressed and those where the commenter continues to have issues with the revised draft. When a comment is addressed in the revised draft, staff will note in

the matrix where and how the issue is addressed. As many issues as possible will be addressed during the rewrite of the working draft; however, we anticipate that some substantial issues may not be resolved and if not resolved, likely will continue to attract public comment. As part of the revised draft release, larger unresolved issues will be identified to assist the Planning Commission in development of their recommendation to the Council.

RELEASE OF DRAFT SMP AND PUBLIC HEARING

It is anticipated that several weeks of drafting and document preparation are required to release the revised working draft. In addition, to satisfy public hearing scheduling and public notice requirements, and in order to allow sufficient time for the public to review the draft before a public hearing, the release of the draft will need to be scheduled in advance of the hearing to provide sufficient time for public notice and public review. We anticipate providing at least 30 days between the draft release and the commencement of a public hearing on the draft SMP. This additional time also gives the Planning Commission adequate time to review the revised draft prior to the public hearing and work related to developing a recommendation to Council.

To accomplish this, project staff is proposing a draft release date of December 16, 2010. While this pushes the open house and public hearing into the new year, the slight delay is justified given the public concern about the amount of time required to read the revised draft and be adequately prepared prior to providing comment at the public hearing.

BACKGROUND REGARDING SHORELINE STABILIZATION PRE-2006

The SMA requires SMPs to contain provisions that protect single-family residences and appurtenant structures against damage or loss due to shoreline erosion. RCW 90.58.100(6). Consistent with this requirement, bulkheads have traditionally been allowed in the City's SMP, although approval of bulkhead construction has always been limited to the protection of existing areas or facilities landward of the OWHM. Shoreline stabilization has not been allowed for the purposes of creating land or the extensive leveling of land by filling behind the bulkhead or stabilization structure. Historically, construction or improvements to bulkheads could not extend into lakes or streams beyond the OWHM. Also, height of the structures was limited to 30 inches from average grade and a specific allowance was given up to 45 inches when there was no negative impact on abutting properties and it was necessary to protect upland property because of extraordinary wave height or slope of the property. Finally, standards required bulkheads be designed to minimize transmission of wave energy to other properties.

SHORELINE MANAGEMENT ACT AND WAC GUIDELINES

Several sections within the Rules address standards and requirements for shoreline stabilization. In addition to the standards for environment designations in WAC 173-26-211, WAC 173-26-231 pertains to shoreline modifications that include general principles applicable to all shoreline modification and specific provisions for shoreline stabilization (including bulkheads). A complete reference to these provisions was provided as part of the July 28th study session agenda memo.

The standards for shoreline stabilization are perhaps the most prescriptive of all elements in the Rules. The Rules acknowledge that "Shorelines are by nature unstable, although in varying

degrees. Erosion and accretion are natural processes that provide ecological functions and thereby contribute to sustaining the natural resource and ecology of the shoreline. Human use of the shoreline has typically led to hardening for various reasons including reduction of erosion or providing useful space at the shore or access to docks and piers. The impacts of hardening any one property may be minimal, but cumulatively the impact of this shoreline modification is significant.” WAC 173-26-231(3).

The Rules go on to describe where shoreline alterations are deemed necessary to protect single-family residences and principal appurtenant structures in danger from active shoreline erosion. Under the obligation to implement the SMA and avoid or mitigate adverse impacts to shoreline ecological functions, master programs are required to include rules defining circumstances where alteration of the shoreline is allowed. Additionally, when shoreline alterations are allowed, the rules must include preferred design and type approaches. The Rules are very specific for new structural stabilization measures and the conditions necessary to demonstrate their need. Detailed criteria is provided for: (1) protection of existing primary structures; (2) support of new nonwater-dependent development (including single-family residences); (3) support of water-dependent development; and (4) protection projects for the restoration of ecological functions or hazardous substance remediation projects.

The Rules permit existing stabilization structures to be “replaced with a similar structure if there is a demonstrated need to protect principal uses or structures from erosion caused by currents, tidal action or waves.” Replacement is defined by the WAC as “the construction of a new structure to perform a shoreline stabilization function of an existing structure which can no longer adequately serve its purpose. Additions to or increases in size of existing shoreline stabilization measures shall be considered new structures.” WAC 173-26-231(3)(a)(iii)(C).

When stabilization measures are necessary, the Rules emphasize nonstructural methods including building setbacks, relocation of structures to be protected, groundwater management, and planning and regulatory measures to avoid the need for structural stabilization. The Rules provide a preference for soft stabilization measures because generally the harder the construction measure the greater the impact on shoreline processes. A discussion of shoreline processes and impacts to processes was provided as part of the July 28th agenda memo. Soft structural measures rely on less rigid materials, such as biotechnical vegetation measures or beach enhancement. There is a range of measures varying from soft to hard that include:

- Vegetation enhancement;
- Upland drainage control;
- Biotechnical measures (vegetation and anchored wood);
- Beach enhancement;
- Anchor trees;
- Gravel placement;
- Rock revetments;
- Gabions;
- Retaining walls; and
- Bulkheads

In both new and replacement structures, “soft approaches shall be used unless demonstrated not to be sufficient to protect primary structures, dwellings and businesses.” WAC 173-26-231(3)(E). It is important that the Commission refer to the excerpted section from the Rules (WAC 173-26-231(3)(E)) provided as part of the August 28 study session materials because of the specificity and direction provided in this section.

POLICY GUIDANCE FROM WORKING DRAFT SMP

The SMP working draft presented to the Commission at the May 12, 2010 study session continues to be our starting point for policy and regulatory discussion. As with the policies for structure setbacks, the working draft policies for stabilization generally reflect the concept of minimizing impacts on ecological function while allowing some flexibility for alternative development based on site conditions. In addition to the environment designation criteria establishing how shoreline modifications are treated in the aquatic environment, the following is an excerpt of relevant working draft policies to consider when discussing the regulatory options for this topic:

5.B.1.b. General Shoreline Modification Policies

POLICY SH –192. Assure that shoreline modifications, individually and cumulatively, do not result in a net loss of ecological functions.

POLICY SH –193. Shoreline modification actions should first avoid, and when avoidance is not technically feasible, minimize ecological impacts.

POLICY SH –194. Only allow shoreline modifications when in support of an allowed use or activity.

5.B.2.b. Shoreline Stabilization Policies

POLICY SH-195. Allow for new hardened stabilization as the least favored alternative and only when no technically feasible alternative to avoidance and softened stabilization exists.

POLICY SH-197. Promote through incentives the use of soft shoreline stabilization measures or other measures that incorporate innovative habitat restoration techniques.

POLICY SH-198. Existing legally established shoreline stabilization measures requiring replacement are presumed needed to protect existing shoreline uses and may be replaced provided that, at a minimum, non-vertical structural shoreline stabilization is used; however, soft structural shoreline stabilization is preferred.

POLICY SH-199. When a vertical or near-vertical bulkhead no longer adequately serves its purpose, the bulkhead may be replaced; provided that replacement with a new vertical bulkhead is prohibited unless replacement with a non-vertical structure is technically infeasible.

POLICY SH-200. Existing vertical and near-vertical bulkheads supporting the artificial canals in the Shoreline Residential Canal environment may be repaired or replaced in their current configuration and design.

POLICY SH-201. Allow maintenance and repair of shoreline stabilization structures; provided that no expansion of the structure is allowed. Repair shall not include full replacement of a shoreline stabilization structure that can no longer adequately serve its purpose.

POLICY SH-203. Recognize the unique physical conditions of Phantom Lake and discourage shoreline stabilization measures.

SHORELINE STABILIZATION

Current Code- New stabilization

The City's current regulations for shoreline stabilization and bulkheads were updated in 2006 as part of changes to the City's critical areas regulations. During that update, staff referenced the Rules in presenting the changes to the Commission. The provisions applicable to new stabilizations, including bulkheads, allows new or enlarged shoreline stabilization measures only to protect existing primary structures, public facilities or public use structures and allowed land area. Stabilization measures are allowed only where avoidance measures are not technically feasible. The determination of technical feasibility is based on site conditions, location of existing infrastructure, risk to primary structures, public facility or public use structures and allowed land area and ability to mitigate the risk, cost of avoiding disturbance compared to environmental impact, and ability to mitigate disturbance. When a stabilization measure is allowed, soft techniques (those that use natural materials to provide stabilization while mimicking or preserving functions and values) are preferred over hardened techniques (measures which present a vertical or nearly vertical interface with the water).

Included in these provisions is a distinction between minor and major repair. Minor repair refers to modifications and improvements to an existing stabilization measure designed to ensure continued function of the stabilization by preventing failure of any part of the stabilization. A repair that is proposed after a significant portion of the stabilization measure has collapsed, eroded away or otherwise demonstrated a loss of structural integrity is not minor repair. The concept is that if a structure is maintained routinely over time, this should be allowed. However, the point where maintenance is neglected to the point where the functional integrity of the structure is compromised this rebuilding would be considered and assessed as needing to meet new stabilization measure standards.

Regulatory approach for new stabilization measures

No changes to the standards are recommended because of the prescriptive nature of the Guidelines and the recent update to the City code. However, with an interest in providing predictable support to homeowners who have a concern related to shoreline erosion and the protection of their residences, staff suggests developing guidance in determining when hardened stabilization measures are acceptable, when softened stabilization measures are required, and when stabilization is discouraged or prohibited. Current rules require a property owner to demonstrate through the hiring of an independent expert, the need for and appropriate type of stabilization measures.

Types of stabilization

To better define what shoreline stabilization is and how it fits into the broader range of different features found along the shoreline, we have divided the topic of stabilization into three essential areas - Flood Protection Measures, Retaining Walls, and Shoreline Stabilization Measures. We anticipate that flood protection measures will be included as part of the section in the SMP that addresses areas of special flood hazard and retaining walls will be addressed in the sections that cover setbacks and vegetation. The focus of this discussion and the information being transmitted to the Planning Commission is on shoreline stabilization measures. Flood protection measures, retaining walls, and shoreline stabilization measures are defined as follows:

- 1) **Flood Protection Measures:** The use of such measures is applicable to sites with a regulated floodplain. Typically this would include walls, revetments, riprap, rockeries, and other stabilization features that are located more than five feet landward from the OHWM and up to the Base Flood Elevation (BFE).
- 2) **Retaining Walls:** Retaining walls are landscape features including rockeries, riprap, or other stabilization features that are less than 30 inches in height and located within the shoreline structure setback more than five feet from the OHWM and outside of the regulated floodplain.
- 3) **Shoreline Stabilization Measures:** Shoreline stabilization measures are structural and non-structural measures undertaken to address erosion impacts to property, dwellings, businesses, or structures caused by natural shoreline processes. Shoreline stabilization measures are features developed at, below, or within five feet landward of Ordinary High Water Mark (OHWM) and may include bulkheads, revetments, riprap, and rockeries.

Shoreline stabilization measures

Shoreline stabilization measures can be divided into two construction types: hard and soft. Traditionally, most shoreline stabilization measures were constructed using “hard” techniques.

- 1) **Hard Shoreline Stabilization Measures:** These are hard construction types that include rock revetments, gabions, concrete groins, retaining walls, bulkheads and similar measures which present a vertical or nearly vertical interface with the water.
- 2) **Soft Shoreline Stabilization Measures:** These are soft construction types that include biotechnical measures, beach enhancement, anchor trees, gravel placement, stepped back rockeries, shoreline plantings and similar measures that use natural materials engineered to provide shoreline stabilization while mimicking or preserving the functions and values of the shoreline critical area.

As defined above, shoreline stabilization measures are those features that are located at, below, or within five feet landward of the OHWM. Features located more than five feet landward of the OHWM are either considered Flood Protection Measures or Retaining Walls and are not part of this discussion.

Shoreline stabilization draft SMP regulatory concepts

The actual code language will be further developed with the revised draft, although the following concepts unless modified through public and Commission involvement should remain.

1) Minor repair of existing legally established shoreline stabilization measures: Minor repair includes repairs made to an existing shoreline stabilization measure that do not include additions to or changes/increases in size or construction of the feature (such as height, width, length, or depth). As used in this part, “minor repair” refers to modifications or improvements to an existing shoreline stabilization measure that are designed to restore a stabilization measure to its original condition and configuration and ensure the continued function of the stabilization measure by preventing failure of any part of the stabilization measure. Minor repair may include actions such as surface re-finishing, the placement or repair of wall tiebacks, limited re-setting of the bottom rock course, toe, or footing, the minor replacement or re-setting of the top or middle course of rocks, or the minor replacement of wall panels. A repair that affects more than 50 percent of the linear length of the stabilization measure is not a minor repair.

- Minor repair is only allowed on existing legally established stabilization measures.
- Minor repair is allowed with no associated requirements (clearing and grading permit requirements may apply).
- Minor repair may be completed on both hard and soft stabilization measures.
- As an allowed activity, no additional discussion on minor repair is included in this analysis.
- Minor repair of legally established shoreline stabilization measures on Phantom Lake is allowed.

2) Major repair or replacement of existing legally established shoreline stabilization measures: A major repair is a repair needed to restore a portion of an existing stabilization measure that has collapsed, eroded away or otherwise demonstrated a loss of structural integrity and where that portion of the stabilization measure affected by the repair is 50 percent or greater than the linear length of the shoreline stabilization measure. Major repairs may include the replacement or re-setting of the bottom rock course, toe, or footing, the replacement or re-setting of the top or middle course of rocks, or the replacement of concrete wall panels. Repairs less that affect less than 50 percent of the linear length of the shoreline stabilization measure are considered as minor.

- Existing legally established shoreline stabilization measures are presumed needed to protect existing shoreline uses and may be repaired (replaced). In other words, a property owner does not need to begin with a determination of whether or not a stabilization measure is justified.

- Major repairs on existing legally established shoreline stabilization measures are considered replacement.
- Only that portion of the stabilization measure under repair is subject to the shoreline stabilization standard for replacement. (But a property owner may choose to replace the whole structure at their choosing.)
- Repair (replacement) of existing legally established shoreline stabilization measures is allowed in the following order:
 - i. Use of soft stabilization (primarily wood and vegetation) measures is preferred, although alternative hard and soft integrated measures are allowed. Integrated measures include laid back rockeries with integrated plantings or revetments designed using engineered gravel, cobble, boulders, or wood combined with plantings. Soft stabilization or integrated stabilization is required unless demonstrated by applicant through submittal of engineering analysis completed by a qualified professional that use of soft or integrated measures is technically infeasible. Consideration of wind direction, velocity, and frequency, fetch, probable wave height and frequency along with slope, beach configuration, nearshore depth and proximity of primary structure to OHWM must be considered.
 - ii. If non-vertical hard stabilization measures are proven technically infeasible, then vertical hard stabilization measures may be allowed only when designed by a qualified professional;
 - iii. Soft stabilization techniques and concepts must be incorporated into any hard stabilization measure to the maximum extent practicable.
- Major repair of shoreline stabilization measures on Phantom Lake is prohibited (stabilization measures are not deemed necessary on Phantom Lake).

- Existing bulkheads in the SR-C may be replaced in their existing configuration.

3) Relocation or removal of existing legally established shoreline stabilization measures:

- Removal of shoreline stabilization measures is allowed and encouraged.
- Landward relocation of shoreline stabilization measures is encouraged.
- If moved more than five feet landward of OHWM, will be considered as a flood protection measure or retaining wall.
- If relocated within five feet landward of OHWM considered as replacement.
- Relocation of shoreline stabilization measures on Phantom Lake is prohibited (stabilization measures are not deemed necessary on Phantom Lake).

4) New or expanded shoreline stabilization measures:

- Avoidance is the preferred measure.
- If avoidance is not feasible applicant must demonstrate need through an engineering analysis completed by a qualified professional.
- If need is demonstrated then stabilization measures are only allowed in the following order:
 - i. Use of soft stabilization measures is required unless demonstrated by applicant through submittal of engineering analysis completed by a qualified professional that use of soft stabilization measures is technically infeasible. Consideration of wind direction, velocity, and frequency, fetch, probable wave height and frequency along with slope, beach configuration, nearshore depth and proximity of primary structure to OHWM must be considered;
 - ii. If soft stabilization measures are technically infeasible, non-vertical hard stabilization measures are allowed;
 - iii. If non-vertical hard stabilization measures are proven technically infeasible, then vertical hard stabilization measures may be allowed only when designed by a qualified professional;
 - iv. Soft stabilization techniques and concepts must be incorporated into any hard stabilization measure to the maximum extent practicable.
- New or expanded shoreline stabilization measures on Phantom Lake are prohibited (stabilization measures are not deemed necessary on Phantom Lake).

NEXT STEPS

Staff seeks Commission direction in three areas: (1) is the proposed schedule change to accommodate public comment prior to release of the revised draft acceptable; (2) is the method by which staff proposes to deal with public comment satisfactory; and, (3) is the regulatory approach to new shoreline stabilization sufficiently developed to begin drafting code language for the revised draft? WSSA has committed to give us written comments on a rolling basis within two weeks of meeting with staff to discuss a particular topic. This should enable staff to address many community comments in the revised draft prior to release for Public Hearing. A revised schedule is listed below.

Table 1. Proposed Planning Commission Schedule

September 22	Critical Areas Vegetation Conservation Marinas
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October 20	Setbacks Revisited Landscape Standards
November 3	Non-Conforming Development
November 17	Bundle remaining issues
December 8	Bundle remaining issues (continued)
December 16	Release revised draft
January 2011	Open House Introduce revised draft
February 2011	Public Hearing