



SHORELINE MASTER PROGRAM UPDATE

ATTACHMENT 1



The City of Kirkland is currently in the process of updating its Shoreline Master Program, which constitutes the rules that govern development along the lakefront. A number of questions have arisen concerning the program and, in particular, concerning shoreline stabilization, restoration planning and water quality. This handout provides summary information on these issues – for more information please visit the website (www.ci.kirkland.wa.us and search Shoreline) for this project.

A. BACKGROUND INFORMATION

What is the Shoreline Master Program (SMP)?

The City developed its first Shoreline Master Program in 1974 as a component of the Comprehensive Plan. Key considerations within this plan and subsequent amendments have included conservation of natural areas, public access to the shoreline, view corridors from the adjacent public right-of-way and regulations for water-oriented recreational uses and other uses to locate along the Kirkland shoreline. These initial policy objectives are reflected in today's protection of the City's significant natural areas as open space, as well as the extensive shoreline trail system, view corridors across properties and a network of shoreline parks which have been established over time.

Why update the SMP?

Residents and visitors remark on the special quality of the Kirkland's lakefront. The City's identity is strongly influenced and defined by its waterfront setting. Views of Lake Washington give Kirkland its sense of place and the City's integrated network of trails, parks, and open space along the shoreline provide abundant opportunities for public access to the shoreline. At the same time, the shoreline area is one of Kirkland's most valuable and fragile of Kirkland's natural resources. While the City's shoreline residents, visitors and property owners have acted as good stewards of this important resource, over time our knowledge of issues affecting this special environment has grown, revealing new issues that need to be addressed in order to protect this valued shared resource.

In 2003 the State issued a comprehensive set of

How can I get involved?

- Attend the Planning Commission meeting on November 20, 2008 & the Houghton Community Council meeting on November 24, 2008 at 7pm in Kirkland City Hall.
- Visit our website (www.ci.kirkland.wa.us and search Shoreline).
- Review and comment on draft shoreline goals, policies & regulations (available through the website).
- Join the listserv (available through the website).
- Submit written comments.

There will be opportunities for the public to be involved throughout the update process.

For more information

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guidelines addressing requirements for local Shoreline Master Programs, which are contained in Chapter 173-26 of the Washington Administrative Codes.

The City's SMP must meet the new State Guidelines and the Department of Ecology must approve the City's updated SMP. After review of the City's SMP and the new State Guidelines, the City has determined that the current SMP is not consistent with many key requirements of the new Guidelines. Therefore, the City will be amending sections and adding new sections to make the City's SMP consistent with the State Guidelines.

What is the process being used to update the SMP?

City staff is in the process of drafting new regulations and will be presenting these to the Planning Commission and Houghton Community Council now through February, 2009. It is anticipated that the Planning Commission will hold a hearing on the proposed SMP, including policies and regulations, in Spring of 2009 and will be forwarding their recommendations to the City Council for consideration



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in Summer of 2009. Once the final plan is adopted by Council it will be sent to the Department of Ecology for their review and approval.

The Planning Commission and Houghton Community Council meetings will be the primary forum for shoreline discussions. These meetings are open to the public with opportunity for public comment.

Where are we in the process?

The Planning Commission has prepared draft shoreline goals and policies and now is discussing new shoreline regulations. Some of the new regulations being considered are as follows:

- For new development and major redevelopment:
 - Possible increased setbacks from the shoreline
 - Shoreline restoration that is appropriate to the existing site conditions, which could include bulkhead removal (if feasible) and replacement with soft structural shoreline stabilization measures Other restoration techniques include placement of gravel in front of an existing bulkhead or planting of native vegetation.
 - Incorporation of natural shoreline vegetation planted at the shoreline edge
- Standards for application of pesticides, herbicides, and some fertilizers near the shoreline edge.
- Increases in buffer setbacks from wetlands & new wetland rating system for wetlands associated with Lake Washington
- Revised standards for piers to protect and enhance fish habitat
- Revised standards for the existing view corridor & public access requirements along the shoreline.

This information sheet focuses primarily on the issues related to shoreline stabilization that has come up as part of the public meetings being held for the SMP update.

What has changed?

Since the original adoption of the City's first Shoreline Master Program, in the 1970's there have been substantial changes to the lakefront environment.

The shoreline ecology has declined over time. Degraded shoreline conditions first started with the lowering of the lake water surface levels when the Ballard Locks were constructed. Since then properties have been developed and bulkheads (between 80% and 90% of the Kirkland shoreline has bank armoring) have been built that have contributed to a loss of woody debris, a reduction in riparian vegetation, the elimination of shallow water habitat, and alteration of the lakebed materials. All of these conditions reduce juvenile Chinook salmon habitat quality.

More docks have been constructed that provided abrupt transitions from open to darkly shaded areas, reduced aquatic vegetation, and increased the presence of in-water structures which adversely have affects aquatic organisms, prey for the juvenile Chinook, and benefits predators of Chinook. Docks also negatively affect the migration movements of juvenile Chinook. Paved surfaces have increased with construction of new structures that has been correlated with increased velocity, volume and frequency of surface water flows. These and other changes have negatively impacted habitat associated with Lake Washington.

In 1999, Chinook salmon and bull trout were listed as Threatened under the Federal Endangered Species Act. Further, in 2007, Puget Sound Steelhead were listed as Threatened under the federal Endangered Species Act. Habitat loss and modification are believed to be one of the major factors determining the current status of salmonid populations. Lake Washington is a significant rearing and migratory habitat for juvenile Chinook salmon. As a result, shoreline habitat conditions are important for juvenile Chinook using Lake Washington.

The region's response to this listing has resulted in new scientific data and research that has improved our understanding of shoreline ecological functions and their value in terms of fish and wildlife, water quality, and human health. Recent research shows that juvenile Chinook salmon need shallow water habitat, with a gentle slope, small sized materials along the lake bottom (such as sand or gravel), and overhanging vegetation as they migrate and rear in Lake



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Washington. Yet, these conditions are now rare along Kirkland's shoreline.

What is being done to address Salmon Recovery?

In 2005, after nearly five years of collaboration among citizens, scientists, community groups, businesses, environmental groups, public agencies and elected officials, 27 local governments, including Kirkland, ratified the Lake Washington/Cedar/Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan. This plan, together with other plans prepared throughout the Puget Sound region, became part of the official Puget Sound Salmon Recovery Plan approved by NOAA Fisheries Service in 2007. WRIA 8's efforts at the local jurisdiction level focus on the conservation and restoration of salmon habitat.

For Lake Washington nearshore areas, the WRIA 8 key recommendations are to reduce bank hardening, restore overhanging riparian vegetation, replace bulkheads and rip-rap with sandy beaches and gentle slopes, use plastic mesh rather than solid wood dock surfaces and reduce the number of docks by replacing single-family docks with shared docks, where possible. The SMP needs to be amended to reflect these recommendations.

What must the new SMP contain?

In 2003 the State issued a comprehensive set of guidelines addressing requirements for local Shoreline Master Programs, which are contained in Chapter 173-26 of the Washington Administrative Codes. The guidelines were developed as part of a year-long negotiated settlement that also led to adoption of shoreline legislation, and are the result of extensive negotiations and discussions with a broad range of interested participants, including the environmental community, property owners, and business interests.

As part of the State Guidelines, there are certain requirements that the City's new SMP must meet. After the local plan is approved by the City Council, the plan will be transmitted to the Department of Ecology, which must approve the new Shoreline Master Program. The following describes some of the key new requirements from the State Guidelines:

- **No Net Loss.** The Guidelines require that the impacts of establishing uses or conducting development are identified and mitigated with a final result that is no worse than maintaining the current level of environmental resource productivity or "no net loss". This means that through implementation of the updated SMP, the existing condition of shoreline ecological functions should remain the same or be improved over time. The current level is established based upon the 2006 Final Shoreline Analysis.

The no net loss standard is designed to halt the introduction of new impacts to shoreline ecological functions resulting from new development. Impacts resulting from shoreline uses, when they cannot be avoided, must be reduced by other SMP environment designations and regulations which follow the required mitigation sequence. Mitigation sequencing sets a priority to first avoid, then minimize, rectify, reduce or compensate for impacts. Since most types of new shoreline developments produce at least some degree of impact to ecological functions, the no net loss standard means that the SMP must contain provisions for mitigating these unavoidable impacts.

A no net loss of ecological functions determination will need to be justified by the City through a Cumulative Impact Analysis, which essentially anticipates build-out of shoreline areas based on the intensity of development allowed through the updated SMP. This determination must conclude that further build-out and redevelopment of the local shoreline will not further threaten existing shoreline ecological functions.

- **Restoration Planning.** The Guidelines also require jurisdictions to plan for restoration of ecological functions where they have been impaired. It is intended that local government contribute to restoration by planning for restoration and that such restoration occur through a combination of public and private programs and actions. The goal is to improve the overall condition of habitat and resources within the shoreline area over time, when compared to the existing conditions as documented in the 2006 Final Shoreline Analysis.



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are treated the same as new shoreline stabilization structures.

B. SHORELINE STABILIZATION AND RESTORATION

How will the new SMP regulate Shoreline Stabilization?

As noted above, Kirkland's shoreline has been significantly armored by past development activities. As part of the SMP update, the City needs to consider how to minimize new hardening, while also addressing how best to restore some of the ecological functions that have been impacted by past activities, while at the same time protecting property from damage. This is a significant challenge given the past degree of shoreline hardening. At this time, no decisions have been made on how best to approach this issue. The Planning Commission is considering a range of different options that will need to be more fully discussed before any recommendations are made.

In order to respond to the State Guidelines for new, enlarged, or replacement shoreline stabilization structures, the Planning Commission is evaluating draft regulations that would include the following provisions:

- A requirement for a geotechnical analysis for new, enlarged and replacement hard shoreline stabilization structures.
- Implementation of soft structural shoreline stabilization techniques, where feasible with new development, if it will provide the necessary protection in lieu of a hard structural shoreline stabilization technique.

The Planning Commission is also considering what mitigation should be required to ensure that these projects minimize adverse impacts. The U.S. Army Corps of Engineers (Corps), who is also responsible for permitting associated with shoreline stabilization, generally requires implementation of a native shoreline planting plan and enhancement of shallow-water habitat through placement of gravel.



Example of shoreline restoration located north of Kirkland. Design by The Watershed Company. Photograph courtesy of The Watershed Company.

- **Shoreline Stabilization.** The Guidelines and the proposed regulations make clear distinctions between hard structural shoreline stabilization and soft structural shoreline stabilization. Soft shoreline stabilization typically includes a mix of gravels, cobbles, boulders, logs and native vegetation placed to provide shore stability, whereas hard shoreline stabilization typically uses concrete, boulders, dimensional lumber or other materials to construct linear, vertical or near-vertical faces, such as bulkheads, rip-rap, groins, and similar structures. Attached is information from King County called "Better Than Bulkheads" that shows examples of shorelines with soft stabilization.

The Guidelines limit the use of hard shoreline stabilization measures, such as bulkheads, because of the impacts of these structures on shoreline processes, including sediment transport and biological functions. New, enlarged, and replacement hard shoreline stabilization measures may only be permitted if they are supported by a geotechnical report that addresses the necessity of the shoreline stabilization measure. Further, if the proposed development is new, there must also be a demonstration that non-structural measures are not feasible or not sufficient. Replacement structures



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Example of shoreline restoration located north of Kirkland. Design by The Watershed Company. Photograph courtesy of The Watershed Company.

The Planning Commission is also considering how to address major repairs to existing bulkheads and what requirements this work should be required to meet. It should be noted that the Corps and the Washington State Department of Fish and Wildlife (WDFW) both have jurisdiction over many bulkhead construction or repair projects, and are strongly encouraging property owners to implement fish- and wildlife-friendly shoreline protection measures when feasible.

The Corps has recently issued a Programmatic Consultation which provides a streamlined permitting process for projects which, depending upon the existing site conditions, either result in replacement of hard structural shoreline stabilization structures with soft structural shoreline stabilization measures, or, if this is not feasible, soften the shoreline edge by placing spawning gravels in front of existing bulkheads or installing plantings on the shoreline edge.

The City is trying to ensure that our own policies are consistent with these provisions in order to provide a more coordinated permitting process across the local, state and federal jurisdictions. As an example, the draft regulations propose a lower level of review for soft structural shoreline stabilization measures than hard structural stabilization measures. In some cases, the soft structural shoreline stabilization may qualify as a

restoration project and only require a Shoreline Exemption from the City, saving time and money.

Is there a way to include flexible approaches?

In order to better enable shoreline property owners to implement soft shoreline stabilization approaches in Kirkland, the proposed regulations would allow placement of fill material for purposes of habitat enhancement waterward of the ordinary high water mark. This will allow property owners who are not able to remove their hard structural stabilization to improve shoreline function, and increases design flexibility for those who can remove their hard structural stabilization. In addition, for those restoration projects that result in shifts of the ordinary high water mark landward of its existing location, the waterfront setbacks and lot coverage would be measured from the pre-restoration ordinary high water mark (OHWM) location.

Has the City considered the need for bulkheads and other hard shoreline protective structures due to narrow lot depth, exposure to extremely rough water conditions, and existing development located close to the water?

Yes, protection of property owners' investments along and near the shoreline is one of the City's objectives of the SMP update.

The term 'soft structural shoreline stabilization' is somewhat imprecise, since it does not reflect the fact that these designs use large boulders, log and other features to attenuate wave energy and stabilize the shoreline. The City's environmental consultant, The Watershed Company, has extensive experience working with property owners to install these designs in similar situations as are presented along Kirkland's shoreline. Monitoring has shown these installations have been successful in stabilizing the shoreline when installed properly.

However, not all properties may be viable for a softer shoreline design. As a result, it is important that the following variables be considered as part of any proposal to modify existing shoreline stabilization structures:



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- Wave fetch and boat-driven wave patterns.
- Bathymetry (shallow or steep slope below the water line).
- Topography (shallow or steep slope above the water line).
- Depth of water at shoreline face.
- Location of existing residences, utilities, or other built structures relative to the shoreline edge.

Given restricted conditions, there may be other restoration alternatives that can be incorporated, such as placing gravel and other materials in front of the bulkhead or planting along the top of the bulkhead.

Will I be required to replace my bulkhead?

No, you will not be asked to replace existing, legally established bulkheads, except in limited circumstances. If you are proposing to enlarge or replace your bulkhead, you may be asked to study the feasibility of incorporating alternative shoreline stabilization techniques, such as the soft structural shoreline stabilization measures noted above, as part of this work.

With new development or significant redevelopment of properties, the City is also considering how best to initiate restoration of the shoreline. Restoration could involve a number of different actions, such as planting vegetation along the shoreline edge, installing fill material for purposes of habitat enhancement waterward of a bulkhead, partial removal of a bulkhead to create a coved area protected by large boulders, log and other features, or replacement of a bulkhead with soft shoreline stabilization measures (if feasible).

One of the options being explored would be to evaluate the potential for shoreline restoration as part of new development or significant redevelopment. At this time, no decision has been made about this concept.

How will the potential requirements for soft stabilization affect lakeshore property owners? Will lakefront property owners be required to have a professional study done on their property in order to retain bulkheads?

Under the requirements of the State Guidelines, a geotechnical report needs to be completed and

submitted for review in order to construct a new bulkhead, or add to or replace an existing bulkhead. The City is working with the Department of Ecology to determine if there is any flexibility in this requirement for circumstances in which the need for a stabilization structure is clear, given the existing site conditions.

How will the City, as the largest waterfront property owner, pay for compliance with its own policies? Have there been cost estimates?

Development activities on City-owned properties will be required to meet the same standards as private property. Many of the requirements for soft stabilization that the City is considering are already addressed by the Corps and WDFW that have permitting authority – therefore the City, in many cases, is not imposing new requirements that would not otherwise need to be met. As an example, in examining approaches to repair a portion of an existing bulkhead at David E. Brink Park, the City decided, after consultation with state and federal agencies, to pursue a soft shoreline stabilization a mix of gravels, cobbles, boulders, and native vegetation placed to provide shore stability. The proposed design also creates a new beach cove area, allowing for public access to the lake which did not exist before due to the vertical nature of the bulkhead.

Is the City proposing to remove all lawns from our public parks?

The City is not proposing to remove all lawn from our public parks, but with new projects the City is considering how to implement shoreline restoration planning concepts. For instance, in future months the City will be installing native vegetation along the shoreline edge of a number of shoreline parks and hopes to use this restoration technique as an educational resource.

Have any studies been commissioned to determine what damage may occur as a result of the City removing all armoring from its parks and other properties?

As noted above, each property needs to be independently evaluated to determine the appropriate restoration approach that should be used, considering



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such factors as wave patterns, shoreline and property characteristics, and location of improvements.

C. STORM WATER RUNOFF

What is being done to reduce the volume of runoff into Lake Washington? How do you plan to deal with polluted and toxic runoff from Lake Washington?

While most of the storm water entering streams and the lake does not come from the shoreline jurisdiction, surface water management is still a key component of the shoreline environment due to the potential of activities in the larger watershed basin to contribute to water quantity and quality conditions in streams and the lake.

Within the shoreline jurisdiction, the City can regulate development and provide education and incentives to minimize impacts to water quality and limit the amount of surface water runoff entering the lake.

As part of Kirkland's Surface Water Utility, Surface Water Master Plan, and implementation of the NPDES Phase II Municipal Stormwater permit requirements, the City is pursuing activities and programs within the larger watershed basin to address flood protection, water quality improvement, and habitat protection and restoration. The following is a listing of some of these efforts:

- The City is in the process of adopting a new surface water design manual. These new standards will provide much greater water quantity reduction standards, which will help to address the amount of runoff leaving developed sites. In particular, the new standards will facilitate the use of low impact development (LID) techniques. LID is a set of techniques that mimic natural watershed hydrology by slowing, evaporating/transpiring, and filtering water before it reaches a stream channel, thereby reducing the volume of runoff.
- The City implements a program to reduce pollutants in stormwater runoff from new development, redevelopment, and construction sites.
- Kirkland Municipal Code Chapter 15.52 addresses control of stormwater runoff from new development,

redevelopment and construction sites and includes a permit review and approval process, design standards, erosion control requirements, maintenance standards, inspection and maintenance of post-construction permanent stormwater controls, and enforcement provisions.

- The City has a program that inspects businesses for stormwater compliance. The City annually inspects private stormwater detention systems and businesses for hazardous material handling. These inspections help ensure that materials are not getting into the public/private storm system, which eventually finds its way to our lakes, streams and wetlands.
- City staff maintains records of review, inspection, and enforcement of erosion control, spills and complaints.

More information on City-wide efforts relating to stormwater can be found on the City's website under the Storm and Surface Water link under the Public Works Department page.